Lithic Bibliography
John C. Whittaker

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This is a computerization of bibliographic file cards I started keeping around 1980 for my own research, incorporating most of the references from my two books, *Flintknapping: Making and Understanding Stone Tools*, and *American Flintknappers: Stone Age Art in the Age of Computers*, plus many more. It is large but far from comprehensive, as publications with relevance to stone tool studies are literally innumerable. No mortal human could possibly read them all or would want to. Many entries are annotated, mostly notes to remember what was important in my research at the time and what I thought of an article. Comments [in brackets] thus reflect my interests and biases at some point in the last 30+ years, and I have occasionally added comments for students and others who might use this bibliography. The more recent notes tend to be longer as my memory gets shorter. Although irregular, the annotations and titles make it possible to search somewhat by key words and authors. Many of the unannotated newsletter articles are cited in my books. Articles primarily about atlatls or bows are in my *Atlatl Bibliography* and mostly not duplicated here. As they relate to my research projects, a few non-lithic miscellaneous experimental archaeology articles are included, some on looting, faking, archaeological politics and the antiquities market, and some archaeology related fiction.

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Abe, Satoshi
2006 Correlation of Tephra Layers with Upper Paleolithic Industries in Kyushu, Japan. *Current Research in the Pleistocene* 23:1-3.

Abramiuk, Marc A., and William P. Meurer
2006 A Preliminary Geoarchaeological Investigation of Ground Stone Tools in and Around the Maya Mountains, Toledo District, Belize. *Latin American Antiquity* 17(3):335-354.

Mano + metate sourcing used to link exploiting communities to consumers. Four small centers in Bladen region of Maya Mts with access to lots of rock resources, mostly volcanic ash and clastic sediment related. Intercommunity exchange of stone probably reflects political links. Stone that can be identified with one or more of the 4 also found outside Maya Mts eg at Baking Pot, Xunantunich, and Altun Ha, altho granites and other stone from elsewhere used too.
Bladen site workshops not yet identified, much work may have been in stream bed stone sources. Fits model of small-scale specialization as integration into larger ecologies and economies.

Abrams, Elliot M.
1987 Economic Specialization and Construction Personnel in Classic Period Copan, Honduras. *American Antiquity* 52 (3): 485-499.

Energy cost of large masonry palace equals 40 specialists for a year, approx. 371 non-specialists for 60 days. Therefore not major stress factor [interesting definition of specialist, calculation of cost]. Probably lineage organized.

Abrams, Elliot M. and Thomas W. Bolland
1999 Architectural Energetics, Ancient Monuments, and Operations Management. *Journal of Archaeological Method and Theory* 6 (4):263-292.

Modeling construction costs (man/days) to understand possible organization of labor at Copan. Not lithic, some experiment, but largely theoretical concerns.

Adams, Brian
1999 Lower, Middle, or Upper Palaeolithic? A Classificatory Analysis of the Barsony House Handaxes from the North Carpathian Basin. *Lithic Techology* 24(1):7-26.

Adams, Jenny L.
1989 Experimental Replication of the Use of Ground Stone Tools. *Kiva* 54(3):261-272.

Homol'ovi, prehistoric Hopi, Arizona. Experiments, use-wear on manos and metates, wood smoothing, shell grinding, some microscopic differences. [Pilot project only, not very extensive or controlled]

Adams, Jenny L.
2002 *Ground Stone Analysis: A Technological Approach*. University of Utah Press, Salt Lake City.

discusses methodology, then most of book covers major types, with SW emphasis

Adams, Jenny L.
2010 Understanding Grinding Technology Through Experimentation. In *Designing Experimental Research in Archaeology: Examining Technology Through Production and Use*, Jeff Ferguson, editor., pp. 129-152. University Press of Colorado, Boulder.

Adams, Steve
2004 Blades and Blade Technology. *Bulletin of Primitive Technology* 28: 62-67.

Basic use and hafting suggestions.

Adams, Steve
2005 Experiments with Mesoamerican Obsidian Blade Production and Usage. *Bulletin of Primitive Technology* 22:48-50.

Experiments based on Titmus work. Pecking line around exhausted core allows it to be broken in middle, making two flat platformed short cores. Pecking and grinding the plats makes them non-slip and helps initiate fractures with micro-cones.

Adams, Steve
2005 Three Edged Knife: The Hafted Blade, or "Triface". *Bulletin of Primitive Technology* 30:57-58.

Thick ridge on hafted blade gives strength and a sharp planing edge.

Adams, Steve
2007 Flintknapping and Intuitive Mathematics. *Bulletin of Primitive Technology* 33:43-45.

Knappers intuitively use math relationships of angle, degrees of force, geometry.

Addington, Lucile R.
1986 *Lithic Illustration: Drawing Flaked Stone Artifacts for Publication*. Chicago: University of Chicago Press.

Adler, Michael A. and John D. Speth
1988 The Projectile Points from the Henderson Site. Unpublished Manuscript.

Adovasio, J.M., D.R. Pedler, J. Donahue, and R. Stuckenrath
1998 Two Decades of Debate on Meadowcroft Rockshelter. *North American Archaeologist* 19 (4): 317-342.

Reiterates dating debate, better explanation of environmental problems. Illustrated stone tools "unique" assemblage of prismatic [well sort of] blades and Miller lanceolate point (unfluted).

Adovasio, J. M., and David R. Pedler
2013 The Ones That Still Won't Go Away: More Biased Thoughts on the Pre-Clovis Peopling of the New World. In *Paleoamerican Odyssey*. Kelly E. Graf, Caroline v. Ketron and Michael R. Waters ed., pp. 511-520. Tops Printing, Inc., Texas.

Adovasio, J.M., JD Gunn, J. Donahue, and R. Stuckenrath
1982 Meadowcroft Rockshelter, 1973-1977: A Synopsis. In *Peopling of the New World*. J.E. Ericson, R.E. Taylor, R Berger eds. Ballena Press Anthropological Papers N. 23. Los Altos: Ballena Press.

Defends early date, shows tools – [but not great stuff - a few biface flakes.] No extinct forms but early level preservation poor – only deer identifiable. Better in rest of site. [Dates and stratigraphy do bit of shift at junction of earliest stuff, so maybe there is a groundwater problem although he doesn't think so]. No pollen evidence. [Dumb Quote: p. 125 "Two buck antlers had been naturally shed, a condition that occurs in mid-winter, suggesting that deer hunting occurred during the winter as well as during the fawning season…"]

Adovasio, J.M., G.F. Fry, J.D. Gunn, and R.F. Maslowski
1975 Prehistoric and Settlement patters in western Cyprus (with a discussion of Cypriot Neolithic stone tool technology). *World Archaeology* 6(3): 339-364.

Agenbroad, Larry D., and Bruce B. Huckell
2007 The Hunting Camp at Murray Springs. In *Murray Springs: A Clovis Site with Multiple Activity Areas in the San Pedro Valley, Arizona*. C. Vance Haynes and Bruce B. Huckell eds. Pp. 146-169. Tucson: University of Arizona Press.

Areas 6 + 7, scatter of lithic tools, including 3 pts and 3 bases, bifaces, flakes. A few bones, Archaic wells.

Agogino, George A.
1985 The Hell Gap Point: A Twenty-Year Evaluation. *Central Texas Archaeologist* 10:110-116.

Development from Agate Basin – stem then develops to Eden/Scotsbluff. Average date approx. 8000 B.C. Folsom develops to Agate Basin and Midland.

Agogino, George
1997 30 Years Later: A Re-evaluation of the Hell Gap Point. *Indian Artifact Magazine* 16 (2):36.

At Hell Gap type site Goshen level and Goshen points are close in date to Clovis (unfluted Clovis-like), then Folsom but no time difference, then Midland, Agate Basin, Hell Gap in order. Then after 10,000 B.P. Plainview, Alberta, Scottsbluff, Eden, oblique flaked points. Then after 6800 Archaic.

Hell Gap points developed from Agate Basin, but have constricted stem and are usually thicker.

Ahler, Stanley A.
1971 Projectile Point Form and Function of Rodgers Shelter, Missouri. *Missouri Archaeological Society Research Series* No. 8 Columbia Mis. Arch. Soc.

Ahler, Stanley
1983 Heat Treatment of Knife River Flint. *Lithic Technology* 12 (1): 1-8.

Experiments using low temperature oven. Good bibliography.

Ahler, S.
1989 Mass analysis of flaking debris: studying the forest rather than the tree. in *Alternative Approaches to Lithic Analysis*, D.O. Henry and G.H. Odell, Editors. Archaeological Papers of the American Anthropological Association, No. 1. p. 85-118.

Ahler, Stanley A., George C. Frison, and Michael McGonigal

2002 Folsom and Other Paleoindian Artifacts in the Missouri River Valley, North Dakota. In *Folsom Technology and Lifeways*, J. E. Clark and M. B. Collins, eds., pp. 69-112. Lithic Technology Special Publication No. 4. University of Tulsa, Tulsa.

Ahler, Stanley A. and Phil R. Geib
2002 Why Flute? Folsom Point Design and Adaptation. *Journal of Archaeological Science* 27:799-820.

Folsom fluting produces a very thin point that can be hafted in a split haft with only leading edge and tip exposed, allowing maximum penetration but controlling breakage so that only the tip breaks off and the point can be resharpened and reused many times. Probably an adaptation to mobile bison hunting where a reliable, maintainable weapon is needed, but where suitable material is not always available. Assumes used with atlatl. Summarizes previous ideas on fluting, proposes a convincing hafting model.

Ahler, Stanley A. and Phil R. Geib
2002 Why the Folsom Point was Fluted: Implications from a Particular Technofunctional Explanation. In *Folsom Technology and Lifeways*, J. E. Clark and M. B. Collins, eds., pp. 371-390. Lithic Technology Special Publication No. 4. University of Tulsa, Tulsa.

Ahler, Steven R., Paul P. Kreisa, and Richard Edging
2010 *Marginality and Continuity: The Archaeology of the Northern Ozarks*. Missouri Archaeological Society Special Publication 9. Springfield.

Survey of regional prehistory. Point types and illustrations.

Aimers, James J., W. James Stemp & Jaime J. Awe
2011 Possible functions of grooved ground stones from Baking Pot, Belize. *Lithic Technology* 36(1):5-26.

Many fragments, mostly granite, polished surfaces without use wear, but broken. Previously proposed functions: net or line weight, weft weight, anchor, standardized measure, construction weight, bola, mace head, maul or pounder. Not sim to common bark beaters. Exper reproduction: peck to oblong shape, groove around, takes many hours of labor. Hafted, limited + inconclusive pounding experiments. Recent find in cave in ritual context assoc with food producing artifacts. Suggest ritual function.

Ainsworth, Peter W.
1987 Comments on Austin's "Discovery" of Biface Notching Flakes. *Lithic Technology* 16 (2-3): 56-58.

Others before – Crabtree 1972, 1973, Titmus 1985.

Akerman, Kim
1978 Notes on the Kimberley Stone-tipped Spear Focusing on the Point Hafting Mechanism. *Mankind* 2(4):486-489.

On light spears 170 gm ave, 150-200 cm long, reed or bamboo with hardwood foreshaft, point attached by resin and sinew. Currently opalescent pyrex ovenware glass preferred for points at Kalumburu, bought for purpose, given to skilled craftsman, fractured with hot wire. Metal leaf points also made. Points often small, 1.5-2.0 cm long. Foreshaft notched but not split, lashed to prevent splitting, butt of point left thick. Resin molded around base of point and down shaft for strength. Impact fractures when hit hard object, shattering if miss in rocky country. Resharpening. Resin hafting advantages: allows point to come free rather than breaking as shaft vibrates in target, curved points can be aligned with shaft, neat join for better penetration, very small points can be used. Large ostentatious pts more for gift exchange than use. Now made for tourist trade.

Akerman, Kim
2005 The Efficiency of Tula Adze-Flake Production: A Contrary View, with Comments on the Suggested Use of Tula Adzes. *Antiquity Online Project Gallery*, URL http://antiquity.ac.uk/ProjGall/akerman/index.html, accessed 10/05.

Australia, arch and ethnographic. Not inefficient to make, lower failure rate than Moore (2004). Frequent ring cracks on high angle platforms = very controlled high velocity blow [or lots of mistakes with difficult platforms]. Use associated with production not of hardwood items, but of large containers + shields of softwood, thus reflecting seed emphasis in subsistence.

Akerman, Kim
2006 High-Tech, Low-Tech: Lithic Technology in the Kimberley Region of Western Australia. In *Skilled Production and Social Reproduction*. Jan Apel and Kjel Knutsson eds., pp. 323-346. Societas Archaeologica Upsaliensis, Uppsala.

Ground-edge tools like axes, grinding equipment, unhafted flake blade and core cutting tools, hafted knives and scrapers, pressure flaked spearheads in 3 different lithic zones. Heat treatment of rock common.

Kimberley points as spear heads, knives, trade goods. Descriptions of flaking process. Man might have 5-20 at one time, but renew or replace maybe 4/week. Glass favored, takes 15 + minutes.

Composite spears 250-350 cm, ave wt 170 grams, so could be thrown with long spear thrower up to 140 yards, accurate to 80. Solid wood spears thrown with shorter desert style thrower often with adze on handle.

Akerman, Kim
2010 To Make a Point – Ethnographic Reality and the Ethnographic and Experimental Replication of Australian Macroblades Known as Leilira. In *Experiments and Interpretation of Traditional Technologies: Essays in Honor of Errett Callahan*. Edited by Hugo Nami, pp. 407-430. Editiones de Arqueologia Contemporanea, Buenos Aires.

Large flake blades, usually quartzite or silcrete, up to 240 mm, hafted in knob of resin as knives for men or women, or as spear tips. “technological observation in the recent ethnographic present may not always reveal the true nature of technological understanding and ability that existed in the traditional ethnographic past." Quotes several detailed accounts of knapping. Many pieces rejected by knapper before successful blade, but at quarry, others might collect and use his rejects. Hard hammer percussion with large core resting on ground. Current knappers not as skillful – 1960s to 1980s selling blades hafted as knives or spears, but mostly using recovered quarry rejects. Blades for spearpoints have base thinned, hafted with beeswax. Those used in knives are not thinned, and a wooden "finial" may be added to the haft and decorated with totemic marks, but is non-functional. Some recent accounts of traditional knapping are flawed because the knappers observed remembered poorly or had never been very skilled. "some indigenous peoples try to discover for themselves how 'the old people did it'. I have heard indigenous people describe how Kimberley points were made, by heating a flake of stone and carefully dripping water onto it."

Describes his replication, compares to Levallois technique.

Akerman, Kim and John C. Fagan

1986 Fluting the Lindenmeier Folsom: A Simple and Economical Solution to the Problem, and its Implications for other Fluted Point Technologies. *Lithic Technology* 15 (1): 1-8.

Use of backing to prevent flex while fluting Paleoindian pts by indirect percussion (after Flenniken) lowers failure rate.

Akerman, Kim, Richard Fullager, and Annelou van Gijn

2002 Weapons and wunan: production, function, and exchange of Kimberley points. *Australian Aboriginal Studies* 2002 (1): 13-42.

NW Australia, bifacial pressure flaked points. Microscopic residues and use-wear. Change in production, design, function, and distribution through time.
Four types 1) Wanji pt, crude elongate biface, ethnographic 2) Northern Territory triangular, long triangle, prehistoric only 3) Kimberley dentate, long narrow, toothed, prehist only 4) Kimberley point, broad ovate, pressure flaked, serrated or denticulated, ethnog. Also "pirri point" = small unifacial point, and a Levallois like prehist pt.

Oral tales: culture hero Tjungkun made 1st spearthrower from limb with branch stub (later became long slender form with lashed on hook). Wodoi made 1st stone tipped spears to throw with them. Other myths, intro of pressure flaking by blanket lizard, dentate points made by nightjar etc.

Raw materials and quarries varied. Fine glass and quartz pts had esthetic and magic curative powers, exchanged. But also used hunting, and as knives. Some stone heat treated. Wood and bone used to pressure flake blanks. Phragmites for shafts of composite spears. Point in resin blob on foreshaft, usually < 4 cm long. Spears long and light, av 170 gm, "low mass, high velocity with point that disengaged from the shaft to promote bleeding." [only light in comp to other Aust spears]. Last knappers at Kalamburu 1980s, using white glass. Points require 15-45 min to make. A man might have 5-20 at a time, make for exchange and later for tourist trade.

Residues likely to come from many sources – hands, fiber wrap storage, hafting resin, use – so should be interpreted cautiously.

Detailed metrical, microscopic, residue studies of museum and excavated collections. Large fine glass specimens often no use, prob made for exchange and tourists.

Akin, Marjorie
1996 Passionate Possession: The Formation of Private Collections. *In Learning from Things: Method and Theory of Material Culture Study*, ed. By W. D. Kingery. Pp. 102-128. Washington: Smithsonian Inst. Press.

Collections – "conserving" (Schiffer) = shift from technofunction to socio or ideofunction (but only partial dichotomy). Collecting reflects individual and cultural values, movement of artifacts. Case study: Asian coins from New World sites in private collections. What collectors choose to "preserve" indicates value [example from my work: collectors choose arrowhead rather than less appealing, more informative things - because more interested in artifacts than knowledge]
5 Reasons for Collecting:
1) Satisfy personal aesthetics-"reify own sense of wonder" most shaped by cultural values –some collections more "normal" or valued than others. Collector self-definition by collection.
2) Control or sense of completion-including children, control something in an uncontrollable world. Native American artifact collections as symbols of territorial control –"civilization"
3) To make connections with the past - childhood, ancestors, history etc. [I would say wider connections too - e.g. to sports, to heros, to a place]
4) Profit – insurance, investment, business- but usually not main motive for collectors (vs investors) also "symbolic capitol" = prestige
5) Thrill of the chase- process = fun – camradery, demo of skill etc.
Forces that shape a collection – finance, opportunity "completeness" lists for some Types of Collection Behavior – formal (narrow) vs idiosyncratic collections "open" – collect what they like vs "closed" – limited range bound by rules, collect systematically. Closed often for reference or study or work-related. Intensity from "maximizing" to "opportunistic." Spatial organization - storage and display reflect "value." Collecting changes contexts to change meaning. Access + Ethics – to use looted material or not, collector attitudes toward museum.

Akoshima, Kaoru
1987 Microflaking Quantification. *In the Human Uses of Flint and Chert*. G. Sieveking and M. Newcomer eds. Pp. 71-80 Cambridge: Cambridge University Press.

Albasini-Roulin, P.A.
1987 Approche Ethno–comparative des emmanchements de l'outillage lithique néolithique de quelques stations littorales du canton de Fribourg (Suisse occ.) In *Le Main et l'Outil : Manches et emmanchements préhistoriques*. D. Stordeur ed. pp 219-228. Lyon : Maison de l'Orient.

Aldenderfer, Mark
1991 Flaked Celt Production at Becán, Campeche, Mexico. In *Maya Stone Tools: Selected Papers from the Second Maya Lithic Conference*. T. R. Hester and H. J. Shafer eds, pp. 143-154. Prehistory Press, Madison.

Aldenderfer, Mark, Larry R. Kimball and April Sievert
1989 Microwear Analysis in the Maya Lowlands: The use of Functional Data in a Complex-Society Setting. *Journal of Field Archaeology* 16 (1):47-60.

Overall good article. Good discussion of expectations for specialization and centralization in terms of tool use and production, activity patterns – but poorly used simplistically applied without testing by context etc. Formal design tends to coincide with action or motion but not material worked, e.g. "General utility bifaces" used as hoes or axes.

Aldhouse-Green, Stephen, Heather Jackson, and Tim Young
2004 Lithics, Raw Materials, and Ocher: Interogation of Data from the Middle Pleistocene Hominid Site of Pontnewydd Cave, Wales. In *Lithics in Action: Papers from the Conference 'Lithic Studies in the Year 2000'*. E. A. Walker, F. Wenban-Smith, and F. Healy eds., pp. 93-104. Oxbow Books, Oxford.

Early Neanderthals, 250 kya. Flint is minor component of lithics. Ochre present, potential symbolic colorant = modern behaviours, but not sourcable, so may not be manuport.

Aldred, Cyril
1965 *Egypt to the End of the Old Kingdom*. New York: McGraw-Hill Book Company.

Cite for Gerzean Knife with handle illustrated p. 35.

Alexander, Hartley B.
1922 The Flint Maker. *Art and Archaeology* 14 (3):156.

Poem.

Alexander, J.E."Swoose"
1997 *Parallel Flaking the Paleo Indian Way!* VHS. Texas Amateur Archaeological Association, San Angelo.

Alexander, J E and Bob McWilliams
1997 Parallel Flaking – The Paleo Indian Way. *Texas Cache* 3 (3):24-27, 3 (4):24-27, 4(1):24-27

Alexander is an old Texan guy, knapping 66 years unaware of others, born 1919. Prefers horn to antler, but developed lever device 1939, doesn't use anymore but helped figure out parallel flaking, then quit around 1954 until now, kept secret so fakers couldn't use. [Photos look like good points] [He was actually a remarkable early knapper]

Allchin, Bridget
1957 Australian Stone Industries, Past and Present. *Journal of the Royal Anthropological Institute of Great Britain and Ireland*. 87 (1):115-136.

Extensive survey, useful bibliography.

Allely, Steve
1995 A Peek into the Past: An Ancient Wood Carving Kit Cache. *Bulletin of Primitive Technology* 9:37-39.

Oregon find: sandstone abrader, 9 flakes, antler wedge, beaver incisor and teeth.

Allely, Steve
2008 Ishi's Archery Tackle. In *The Traditional Bowyer's Bible, Volume Four*. Pp.269-290. The Lyons Press, Guilford, CN.

[Nicely illustrated with detailed drawings, detailed descriptions, excerpts from Pope.] Bows, arrows, stone and other points, techniques of manufacture.

Allely, Steve, and Jim Hamm
2002 *The Encyclopedia of Native American Bows, Arrows, and Quivers, Vol 2, Plains and Southwest*. Bois d'Arc Press, Goldthwaite, TX.

Very fine drawings of a variety of ethnographic archery equip, but too little descriptive and provenience info. A number of stone pt arrows, including a couple misc Anasazi, and the Hidden House quiver, bow and some arrows, but not complete documentation.

Altiere, Gene
1993 Minnesota Knappers Guild: "The Beginning." *The Platform* 5 (4): 2-4

History of MKG on 5th anniversary. Altiere, Romano, Regan plus a couple of others.

Ambrose, Stanley H.
2002 Small Things Remembered: Origins of Early Microlithic Industries in Sub-Saharan Africa. In *Thinking Small: Global Perspectives on Microlithization*, edited by Robert Elston and Steven L. Kuhn, Archeological Papers of the American Anthropological Association 12, pp. 9-30.

Ames, Kenneth N., Kristen A. Fuld, and Sara Davis
2010 Dart and Arrow Points on the Columbian Plateau of Western North America. *American Antiquity* 75(2):287-326.

Amick, Daniel S.
1986 Calculating Artifact Planview Area. *Lithic Technology*. 15 (3):90-95

Amick, Daniel S.
1994 Folsom Diet Breadth and Land Use in the American Southwest. PhD. dissertation, University of New Mexico, Albuquerque.

Amick, Daniel S.
1995 Patterns of Technological Variation Among Folsom and Midland Projectile Points in the American Southwest. *Plains Anthropologist* 40 (151):23-38

Amick, Daniel S.
2002 Manufacturing Variation in Folsom Points and Fluted Preforms. In *Folsom Technology and Lifeways*, J. E. Clark and M. B. Collins, eds., pp. 159-189. Lithic Technology Special Publication No. 4. University of Tulsa, Tulsa.

Amick, Daniel S.
2004 A Possible Ritual Cache of Great Basin Stemmed Bifaces from the Terminal Pleistocene-Early Holocene Occupation of NW Nevada, USA. *Lithic Technology* 29 (2): 119-145.

19 tools represent all stages of manuf of obsidian Parman points (Great Basin Stemmed cluster). Well-made, but variable [doesn't suggest 1 individ to me], with some intentional overshoot like Clovis [actually no signs of it in illusts]. Points are not quite finished (dull tips), some platforms are prepared but not struck, possible red ochre coating, transport abrasion wear on some pieces. Suggests ritual cache intentionally representing stages of manuf. Info on other caches. [Good article, probably was a cache, at least in part, but needs caution because collection was looted from an unknown site by a particularly sloppy pothunter who damaged some of the pieces].

Amick, Daniel S.
2014 Reflection on the Origins of Recycling: A Paleolithic Perspective. *Lithic Technology* 39(1):64-69.

Workshop in Tel-Aviv

Amick, Daniel S. and Paul D. Lubowski
2006 Late-Pleistocene and Early-Holocene Projectile Points at Fort Bliss, Southern Tularosa Basin, New Mexico and West Texas. *Current Research in the Pleistocene* 23:75-79.

436 surface specimens including 272 Folsom, 3 Clovis

Amick, Daniel S. , Raymond P. Mauldin, and Steven A. Tomka
1988 An Evaluation of Debitage Produced by Experimental Bifacial Core Reduction of a Georgetown Chert Nodule. *Lithic Technology* 17 (1):26-36.

Discriminate analysis using several variables of dimension and cortex cover classifies 76% correctly as hard or soft hammer. Stages harder to ID. Confusion caused by changing tools during work, i.e. small hard hammer to prep platforms. Cites Dibble and Whittaker.

Amick, Daniel S. and Raymond P. Mauldin
1997 Effects of Raw Material on Flake Breakage Patterns. *Lithic Technology* 22(1):18-32.

12 core +12 biface replicas of different materials, debitage classified in Sullivan + Rozen system. Sullivan and Rozen expectations don't work well distinguishing core vs biface. Broken flake percents strongly affected by material-chert vs qtzite and basalt. Sullivan analysis of Homol'ovi material thus is wrong. Flake breakage patterns relate more to materials than to technique of knapping.

Amick, D., R. Mauldin, and L. Binford
1989 The potential of experiments in lithic technology, in *Experiments in Lithic Technology*, D. Amick and R. Mauldin, Editors. BAR 528: Oxford. p. 1-14.

Ammerman, Albert J., Keith Kintigh and Jan Simek
1987 Recent Developments in the Application of the K-means Approach to Spatial Analysis. In *The Human Uses of Flint and Chert*. G. Sieveking and M. Newcomer eds., pp. 211-216. Cambridge: Cambridge Univ. Press.

Amos, Jonathan
2005 Ancient Phallus Unearthed in Cave. *BBC News World Edition*, July 25, 2005. URL http://news.bbc.co.uk/2/hi/science/nature/4713323.stm accessed 10/10/05.

Hohle Fels Cave in Swabian Jura, Germany. Upper Paleolithic levels. Life size stone rod with ring around one end. N. Conard says "may be sex aid.... In addition to being a symbolic representation of male genitalia, it was also at times used for knapping flints." [This is just too good - a real-life satire on archaeologists and flint-knappers! Could anyone take this seriously?]

Anderson, David G.
2004 Paleoindian Occupations in the Southeastern United States. In *New Perspectives on the First Americans*. B. T. Lepper and R. Bonnichsen, eds., pp. 119-128. Center for the Study of the First Americans, College Station, TX.

Pre-Clovis hopeful. SE fluted point distributions.

Anderson, David G., Thaddeus G. Bissett, and Stephen J. Yerka
2013 The Late-Pleistocene Human Settlement of Interior North America: The Role of Physiography and Sea-Level Change. In *Paleoamerican Odyssey*. Kelly E. Graf, Caroline v. Ketron and Michael R. Waters ed., pp .183-206. Tops Printing, Inc., Texas.

Anderson, David G., and Michael K. Faught
2000 Palaeoindian artefact distributions: evidence and implications. *Antiquity* 74(285):507-513.

Fluted points more common in E - 70% - than Plains. Point counts by type and county – 12,791 points: 1971 Folsom , 348 Cumberland, 490 Suwannee, 51 Simpson, 9931 Clovis & other variants.

Anderson, Mark L.
2005 Book Review: American Flintknappers, by John C. Whittaker. *Journal of the Iowa Archaeological Society* 52 (2): 76-79.

Anderson, Mark L. and Sarah Horgen
2005 The Sandia? Project. *Iowa Archeology News* 55 (3+4):1.

Requests info on Sandia points in IA, admits controversy but accepts as legitimate type. Two [unconvincing] photos.

Anderson, Mark L., and Mary Mortenson
2010 The Origins of Iowa Gunflints: Initial Investigations of Local Lithic Materials as Viable Alternatives to European Imports. Poster presented at the 122nd Annual Meeting of the Iowa Academy of Sciences, Graceland University, Lamoni, IA, april 16, 2010.

Testing Iowa materials for sparking qualities. Warsaw, Burlington, some others work well enough. [No description of archaeological examples.]

Anderson, Patricia C.
1979 A Microwear Analysis of Selected Flint Artefacts from the Mousterian of Southern France. *Lithic Technology* 9:32.

Anderson, P.
1980 A Testimonial of Prehistoric Tasks: Diagnostic Residues on Stone Tool Working Edges. *World Archaeology* 12(2): 181-194.
Cite for use-wear.

Anderson-Gerfaud, Patricia
1983 A Consideration of the Uses of Certain backed and 'Lustred' Stone Tools from late Mesolithic and Natufian Levels of Abu Hureyra and Mureybet (Syria). In Traces d'utilisation sur les outils néolithiques du Proche-Orient. Travaux de la Maison de l'orient No. 5, Lyon.

Anderson-Gerfaud, Patricia
1987 Aspects of Behavior in the Middle Paleolithic: Functional Analysis of Stone Tools from Southwest France. In *The Human Revolution: Behavioral and Biological Perspectives on the Origins of Modern Humans*. P.A. Mellars and C.B. Stringer eds. Pp 389-417. Edinburgh U. Press.

Anderson-Gerfaud, Patricia
1988 Using Prehistoric Stone Tools to Harvest Cultivated Wild Cereals: Preliminary observations of traces and impact. In *Industries Lithiques: Tracéologie ef Technologie*. Beyries, Sylvie ed. pp175-195. BA.R. International Series 411: Oxford.

Anderson, P.C.
1992. Experimental Cultivation, Harvest and Threshing of Wild Cereals and their Relevance for Interpreting the Use of Epipalaeolithic and Neolithic Artifacts. In *Prehistoire de l'Agriculture; nouvelles approaches experimentals et ethnographiques*. Patricia C. Anderson, ed. Centre National d'la Recherche Scientifique, Paris pp. 179-210. and in *Prehistory of Agriculture: New Experimental and Ethnographic Approaches*. Patricia C. Anderson ed., Monograph 40, Institute of Archaeology, University of California, Los Angeles, pp. 118-144.

Very specific distinctions attempted/claimed. Abu Hureya and Mureybit sickles for harvest of grain while green, striated from grit so cut low to ground. Discusses nature of glosses. Tried different sickle forms, other collection methods.

Anderson, Patricia C.
1994 Reflections on the Significance of Two PPN Typological Classes in Light of Experimentation and Microwear Analysis: Flint "Sickles" and Obsidian "Çayönü Tools". In *Neolithic Chipped Stone Industries of the Fertile Crescent*. H. G. Gebel and S. K. Kozlowski eds., pp. 61-82. Berlin, Ex Oriente.

Two 'types' defined partly by wear. Expers show distinctive sickle wear on some PPN tools, indicated by particular gloss + short striations = cut grain stalks when grain ripe but still well attached and stalk moist, close to ground where soil particles scratch sickle. But many PPN glossed tools show different microwear from reed harvest instead.

Çayönü Tools = obsidian blade tools with steep retouch along both edges, often constricting blade but leaving one or both ends wider, abraded ventral surfaces. Back and forth longitudinal abrasion from other lithic materials, but not cutting with the edge, abrading with the surface. [this doesn't make sense to me - obsidian is not abrasive enough for that and I don't see how the edge can not be affected, although PA seems to be suggesting polishing a stone artifact and then retouching the tool edge by pressure - but that implies needing it sharp - why?]

Anderson, Patricia C., ed.
1999 *Prehistory of Agriculture: New Experimental and Ethnographic Approaches*. Monograph 40, Institute of Archaeology, University of California, Los Angeles.

Most of the same articles as in *Prehistoire de l'Agriculture,* including lots of non-lithic ones.

Anderson, Patricia C.
2003 Observations on the threshing sledge and its products in ancient and present-day Mesopotamia. In *Le Traitement des Récoltes: Un Regard sur la Diversité du Néolithique au Présent*. P. C. Anderson, L. S. Cummings, and T. K. Schippers, eds., pp. 417-438. APDCA, Antibes, France.

Anderson, Patricia, and Jacques Chabot

2006 Non-mechanized Processing and Storage of Cereals, Grasses, and Pulses Used for Fodder, Fuel, Food, and Crafts : Examples from N. Tunisia, Atlas Region, Northwestern Tell. In *Ethnobotany : At the Junction of the Continents and Disciplines : Proceedings of the Fourth International Congress of Ethnobotany*. Z. Fusun Ertug, ed., pp.223-231. Yeditepe University, Istanbul.

Anderson, Patricia C., Jacques Chabot, and Annelou van Gijn
2004 The Functional Riddle of 'Glossy' Canaanean Blades and the Near Eastern Threshing Sledge. *Journal of Mediterranean Archaeology* 17 (1): 87-129.

Syria and Iraq 3rd Mil. B.C. Canaanean blade segments are not sickles, but standardized inserts for 'raft-like' threshing sledge described in cuneiform texts. Microwear polish, experimental replication, silica phytolith fragmentation patterns as evidence. Chopped straw important product. Specialized manufacture of blades with copper tipped lever pressure device. N. Mesopotamian manufacture, wide distribution = local centers controlling networks of villages, and devoted to large-scale production, storage, and redistrib of agric products, possibly in exchange for specialist items such as blades.

Anderson-Gerfaud, P. and Helmer G.
1987 L'emmanchement au Moustérien. In *La Main et l'outil : Manches et emmanchements préhistoriques*. D. Stordeur ed. pp. 37-54. Lyon: Maison de l'orient.

Anderson, Tim
2014 *Arrowheads : A Beginner's Guide*. Self-published, Tim Anderson, Lexington, KY.

Basic info aimed at arrowhead collectors. [Overall fairly good, reasonably ethical]. Many drawn illustrations, some photos, adequate quality though simplified flake scar illustrations. Intro warns against fakes but defends knappers who 'keep alive the tradition'. Stories about fakers, he tried an aged point and 9 of 10 'experts' thought it was old. Don't destroy old pieces by trying to restore or rechip them.

Lengthy glossary [generally good]. Distinguishes between 'abo' knapping and 'folk' knapping which uses modern tools.

Knapping – warns against trying without instruction. Safety and Ethical guidelines – don't disturb sites, sign work. P. 36 heat treatment, fire-and-water knapping dismissed as myth started by resentful Indians, 'anybody who tried to make arrowheads this way would be seriously injured by the flint nodule as it exploded in their hand.' Archy friend says just misinterpretation of heat treating by Euros. Fire pits, roasters, ovens, kilns. Temperature suggestions for different materials. Tools [calls antler pressure flakers 'punches']. 'Abo' knapping a 'badge of honor' because harder. Copper billets – he illustrates a Jim Regan type paddle. Fluting and pressure jigs. Conchoidal fracture [ok]. Importance of platforms. Pressure, percussion, notching, fluting.

Reproductions and Fakes. Difference is in intent. Knapping important for understanding prehist tools, experiments, inexpensive type collections. Several pages illustrate common reproduction types : Mexican arrowheads, Danish Daggers, Effigies Grey Ghosts made by mysterious reclusive man [not named], paperweights [arrowhead in stone like Ecklund's], perforated pieces (none known in US, so all modern if for sale) [shows Maya ring].

How Arrowheads Were Used. Hafting. Atlatls : from Aztec word 'I have heard that the Aztec's flint points actually punctured the metal armor of the conquistadors' (121). Atlatls are springy, weights time spring : 'you can perfect your atlatl by making it spring forward at the precise moment, giving your dart an extra 100-foot boost'(121). Dart also springy, it will 'flop back and forth, yet fly to its target – at speeds of more than 150 mph' (122). [other than such spring and speed nonsense, the illustrations and info is ok, and in caption, he recognizes atlatl is a lever]. Drawings of various dart and arrow and knife forms. Point life-cycles and resharpening by beveling [ok, but accepts Sandia as real type]. Many pages of drawn types and their resharpened forms.

Tips for Hunting Artifacts. Avoid public lands [scare story]. Digging should be by archaeologists. Texas – burned rock piles, quarry sites, camps. Plowed fields and disturbed areas.

What are they Worth ? Very basic price guide, good ethics avoid looting, many ethically acquired artifacts available. Reproductions good to collect for types. Photos of many real and repro specimens.

Anderson, Wayne I.
1998 *Iowa's Geological Past: Three Billion Years of Change*. University of Iowa Press, Iowa City.

Andersson, Stina and Johan Wigforss
2004 The Late Mesolithic in the Gothenburg and Alingsas Area. In *Coast to Coast – Arrival: Results and Reflections*. Helena Knutsson, ed., pp.85-104. Coast to Coast Project Book 10, Uppsala.

Mesolithic Scandinavian tools including transverse pts, flaked and ground axes.

Andrefsky, William Jr.
1986 A Consideration of Blade and Flake Curvature. *Lithic Technology* 15 (2):48-54.

Ok – measurement of curvature described. Curvature decreases thru production sequence of bifaces. Curvature results from fracture mechanics and especially surface morphology. [Nothing said about motion, fracture mechanics part is unclear.] Refs for other mentions of curvature.

Andrefsky, William Jr.
1994 Raw-Material Availability and the Organization of Technology. *American Antiquity* 59(1):21-34.

Ethnographic Australia, archaeological W. US. Availability = abundance + quality. Poor quality results in informal tools, good quality > formal tools if low abundance. If high abundance > both formal and informal. Availability is more important than residence mobility. [Good points]

Andrefsky, W.J.

1994 The Geological Occurrence of Lithic Material and Stone Tool Production Strategies. *Geoarchaeology* 9: p. 375-91.

Andrefsky, William
1995 Cascade Phase Lithic Technology: An Example from The Lower Snake River. *North American Archaeologist* 16 (2):95-116.

Raw materials differ for different uses. Washington. Sedentism vs mobility: more diverse material = more mobile than expected. Low biface thinning flakes = points made elsewhere. Cites my book, but oddly.

Andrefsky, William Jr.
1998 *Lithics: Macroscopic Approaches to Analysis*. Cambridge University Press, Cambridge.

Generally good manual, thorough discussion of issues and practicalities of lithic analysis, good biblio. A bit weak on replication. Some confusion in discussion of platforms where he seems to mean interior platform angle when he should be dealing with exterior platform angle. Commendable consideration of issues of consistency in measurement and typology. Recommends weight for measurement of debitage size [consistent but slow]. Correctly criticizes 3-cortex class debitage typology, and Sullivan and Rozen "interpretation free" typology. He seems to prefer "technological typology" in combination with size grade analysis or other, but still gives S+R way too much credence. See Clark 1999a.

Andrefsky, William Jr.
2001. Emerging Directions in Debitage Analysis. In *Lithic Debitage: Context, Form, Meaning.* William Andrefsky, Jr. ed. Pp. 2-14. Salt Lake City, The University of Utah Press.

Andrefsky, William Jr.
2005 Review: Lithic Analysis by George H. Odell. *Journal of Field Archaeology* 30 (1): 100-105.

Andrefsky, William
2008 Projectile Point Provisioning Strategies and Human Land Use. In *Lithic Technology: Measures of Production, Use, and Curation*. William Andrefsky, editor, pp. 195-215. Cambridge: Cambridge University Press.

Hunter-gatherers range away from base camps, must have enough bifaces for purposes, or be able to supply, thus biface use-lives reflect land-use patterns. Birch Creek, SE OR residential base camp, obsidian from 11+ sources indicates range of movement. Dates ca 5300-2300 BP, little change, 200+ pts, 52 of obsid from known sources, 32-130 km distant, more pts from nearer sources. Near source points have more impact damage because when distant source projectiles damaged in field, likely to be repaired and damaged pts left there, distant pt brought back. In contrast, weapons damaged near home more likely brought back to camp for fix with local stone. [I don't like the logic of this – why would you replace

distant points at home more often when they are not damaged? I think small sample problems]. If not home, using distant sources, more likely to resharpen pts – data agrees. 61 flakes also sourced: none from distant sources, so it was only worked when there.
Paulina Lake site compared, close to obsid source: same pattern of source use (more pts of close source) but almost all pts have impact damage, so being replaced there.
So if close to home, bring back weapons for fix, if distant, repair in field. Further test: index of resharpening, average of scores 0, .5, 1 on 8 equal segments on each face of blade. Again, more retouch on pts of distant obsidian.

Andrefsky, William Jr.
2013 Fingerprinting Flake Production and Damage Processes: Toward Identifying Human Artifact Characteristics. In *Paleoamerican Odyssey*. Kelly E. Graf, Caroline v. Ketron and Michael R. Waters ed., pp. 415-428. Tops Printing, Inc., Texas.

Andreson, John M.
1976 Notes on the Pre-Columbian Chert Industry of Northern Belize. In *Maya Lithic Studies* T.R. Hester and N. Hammond eds. pp. 151-176. Center for Arch Research, Univ. Texas San Antonio Special Rept. 4.

Andrews, Bradford
2002 Stone Tool Production at Teotihuacan: What More Can We Learn From Surface Collections? In *Pathways to Prismatic Blades: A Study in Mesoamerican Obsidian Core-Blade Technology*. K. Hirth and B. Andrews, eds., pp. 47-60. Cotsen Institute of Archaeology Monograph 45. University of California, Los Angeles.

Andrews, Bradford
2003 Measuring Prehistoric Craftsman Skill: Contemplating Its Application to Mesoamerican Core-Blade Research. In *Mesoamerican Lithic Technology: Experimentation and Interpretation*, K. G. Hirth ed., pp.208-219. University of Utah Press, Salt Lake City.

Andrews, Bradford
2006 Skill and the Question of Blade Crafting Intensity at Classic Period Teotihuacan. In *Skilled Production and Social Reproduction*. Jan Apel and Kjel Knutsson eds., pp. 263-276. Societas Archaeologica Upsaliensis, Uppsala.

Andrews, Brian N.
2013 Review of Quantitative Analysis in Archaeology by Todd VanPool and Robert Leonard. *Lithic Technology* 38(2):124-125.

Andrieu, Chloé **o**
2013 Late Classic Maya Lithic Production and Exchange at Rio Bec and Calakmul, Mexico. *Journal of Field Archaeology* 38(1):21-37.

Household production, using material from construction fill, so can only be assoc with group, not very specific. Mostly thick bifaces [GUBs] and deb from them, which is pretty much same in 3 hshld grps at RB and one at C, not enough debitage to support local production, suggesting obtained thru similar market, not necess under elite control. Vs thin biface [knife forms] made with non-local brown chert, but higher presence of deb of all stages, again sim in all sites, suggesting intinerant craftsmen making bifs in market or hshld on demand, leaving some deb. [Interesting, but theoretical expectatons for dif systems are convoluted and arguable: Hirth (1998) says regular pattern of goods within site from market because "individuals participate in market place independent of their class or social rank" [Utter nonsense!] [And there are serious practical problems for itinerant knappers – a largely outmoded European model – how do they carry supplies, need some light exchange medium in a non-monetary economy, etc.]

Anikovitch, Mihail V.
2000 About Character of Hunting Implements in the Sites of the Kostenki-Streletskaya Culture. In *La chasse dans la Préhistoire/ Hunting in Prehistory, Anthropologie et Préhistoire 111*. C. Bellier, P. Cattelain, and M. Otte eds., pp. 38-43. Societé Royale Belge d'Anthropologie et Préhistoire, Bruxelles.

Late Paleolithic bifacial points.

Anneaud, Jean-Jacques, dir.
1981 *Quest for Fire*. VHS, DVD. Fox Home Entertainment.

Movie, starring Everett McGill, Ron Perlman, Nicholas Kadi, and Rae Dawn Chong. After their tribe is attacked by apemen [Australopithecines?] and loses their fire, three Neanderthals [?] set out, meeting hairy cannibals [Homo erectus?] and a hyper-active tribe of fully modern humans. From the woman who joins them, they learn to joke, enjoy face-to-face intercourse, use atlatls, and ultimately to make fire. [Got a lot of hype from using only primitive language designed by A. Burgess and body language by D. Morris. Ultimately a story about becoming human, not too bad, but archaeologically silly despite pretensions – pathetic material culture even for Neanderthals, moth-eaten wooly mammoth costumes, absurd mix of hominids from different times, etc. Atlatl use depicted briefly and unclearly - they have been shown to be clumsy throwers, but immediately become accurate with atlatl. Only stone tool use shown is scraping charred end of spear – Neanderthals without stone tools would be as desperate as without fire.]

Anonymous
1838 The Manufacture of Gunflints. *The Saturday Magazine*.reprint 1960 in TM Hamilton ed. Indian Trade Guns. *Missouri Archaeologist* 22:70-72.

Anonymous
1903 The Man Who Makes Genuine Arrowheads. *Rhyolite Herald*, Wednesday, May 6, 1903.

xerox sent me by David Valentine of Las Vegas. Rhyolite he says is a ghost town near Death Valley Nat'l Park. F.S. Washburn of Rhyolite claims to be only white man who has rediscovered how to make arrowheads of stone or glass, but hides his methods. Tom Sloan [another local] says it's no secret, material is "heated and tiny drops of water placed on it, causing little chips to crack out." Washburn says Sloan is mistaken, you just have to have the right tools and knowledge. He has had "some good offers to share the secret with others" but apparently still refuses. [From David Valentine.]

Anonymous
1905 Grangeville Man Makes Arrow Heads. *Idaho Daily Statesman*, Oct 22, 1905:13.

"Aborigines Eclipsed By A Pale Faced Expert, F.R. Whitney Discovers the Lost Art of Making Perfect Arrowheads by Hand." "...long weary months in perfecting himself in the art..." pressure flaking with a piece of stone or iron, makes better pts than Indians, used a lot of Yellowstone obsidian, also "...mossagate and other semi-precious stones, and finds a ready market for all his product at two or three times the price of the best Indian manufacture." [Sent by David Valentine 10/25/14.]

Anonymous
1979 How to make Stone Age Tools. *Science Month*. May 1979:20-21.

Anonymous
2005 Trial of the Century. *Archaeology* 58(2): 14.

Ring of forgers involved in James Ossuary up for trial soon.

Anonymous
2005 Forgery Fallout. *Archaeology* 58(2): 16.

Interview with Eric Meyers. Biblical fakes – vastly profitable. Israel needs to tighten laws on sale of antiquities, but fears discussion of human remains with religious leaders. [which could lead to disasters equal to NAGPRA, with really vicious zealots in Israel]

Aoyama, Kazuo
1994 Socioeconomic Implications of Chipped Stone from the La Entrada Region, Western Honduras. *Journal of Field Archaeology*. 21 (2):133-145.

PreClassic to Late Classic trade systems. Specialized builders, non-spec others.

Aoyama, Kazuo
1995 Microwear Analysis in the Southeast Maya Lowlands: Two Case Studies at Copan, Honduras. *Latin American Antiquity* 6(2):129-144.

Both obsidian and chert, extensive classification of polishes, different activities associated with buildings.

Aoyama, Kazuo

1999 *Ancient Maya State, Urbanism, Exchange, and Craft Specialization: Chipped Stone Evidence from the Copán Valley and the La Entrada Region, Honduras*. University of Pittsburgh Memoirs in Latin American Archaeology 12.

Period by period, some microwear for function. [Ugly Japanese-style lithic illustrations, too few of them, and no photos of artifacts.] p 111-113 side-notched small pts on obsid prismatic blades may indicate use or even local invention of bow in Early Classic, but bow virtually absent from Classic period depictions, and prismatic blade pts rare - spears more important. p 115- dumps from production of prismatic blades in center. [Too many sweeping interpretations from very small evidence, and unsupported generalizations, e.g. “because of their sharper edges, obsidian bifacial points should have been more valuable than those made of chert.” and 2 chert eccentric frags from midden instead of usual caches “could be one line of evidence for demise of central political authority” (149)]

Aoyama, Kazuo
2001 Classic Maya State, Urbanism, and Exchange: Chipped Stone Evidence of the Copan Valley and Its Hinterland. *American Anthropologist* 103:346-360.

Aoyama, Kazuo
2007 Elite Artists and Craft Producers in Classic Maya Society: Lithic Evidence from Aguateca, Guatemala. *Latin American Antiquity* 18(1):3-26.

Aguateca rapidly abandoned at conquest by enemies in Late Classic, most artifacts analyzed come from storage or floor assemblages, not fill [making this uniquely useful data]. Used 10,000+ stone artifacts, ground stone, chert, and obsidian. Source info, high power microwear on ca 35%.

Obsidian from several sources, mostly used for prismatic blade segments, some evidence of elite manuf and control of obsid blades.

Chert - “expedient flake tool production was dominant in each household.” and “production of chert oval bifaces and bifacial points took place intensively at Aguateca.” [This last is wrong - based on high percentage of biface thinning flakes (18% of chert artifacts) but N is only 1100, not nearly enough to indicate intensive production on site of anything, and all but 175 of these BTF are supposed to be from multiple use or storage contexts, so absolutely no evidence of workshop situation. A handful of unfinished or recycled oval bifaces are as likely to have been worked elsewhere. There are 235 points (thin bifaces) but only one manufacturing failure.] “Some nobles, including scribe/artists, were knappers who manufactured utilitarian tools on a part-time basis.” [Evidence does not support this].

Extensive typology of wear derived from his experiments used to interpret microwear. Obsid blades mostly used for wood carving, meat + hide processing, a little shell or bone carving. Chert artifacts more diverse, but casual flakes, BTF, and bifacial points show similar uses: 40-56% meat or hide cutting, 7-15% wood work, 11-32% shell, bone, or antler. The oval bifaces [celts] are 68% stone cutting + 16% meat/hide, little bit of other craft. Only 3 of 186 oval bifaces show soil polish [so almost no agricultural tools represented at all, except 3 celts from a lower class house]. Same house also lots bone work. Polished stone celts from M8-8 scribe + family residence - all (>20) used for stone carving - stelae. Other M8-8 tools show meat/hide processing, some wood carving, little bone/shell, so other crafts also produced by scribe's household. N room has storage vessels, metate, needles, spindle whorls - ie female activities, also chert tools processing meat/hide, carving wood/shell/bone, hammerstone + casual flakes, so women engaged in craft and some knapping.

M8-4 making mosaic pyrite mirrors, more wood/shell/bone carving, some polished celts = stone carving, manuf of royal regalia, presumably as attached noble craftsman. N room again female food prep and textile + other craft, maybe ceramic manuf, "concentration of biface thinning flakes...suggests she may have been devoted to biface tool manufacturing." [Highly unlikely! How many BTF? Do they refit? Is there really any evidence of manufacture rather than storage/use of these flakes as tools?]

Conclusions: Maya elite engaged in a wide range of crafts, including but not only making high value goods. Overlap among households, but some degree of specialization too. Women participated in crafts as well. Maya elite had multiple identities.

[The unusually good contexts are helpful, but Aoyama should not take them as unmixed or unambiguous - he tries too hard to make specific activity assignments to different segments of society; we need repetition of these patterns. Basic conclusions seem very likely, but the absurd claims of biface manufacture based on a few flakes make me wonder about the reliability of other specific interpretations. I don't think he understands stone tools well enough.]

Aoyama, Kazuo
2005 Classic Maya Warfare and Weapons: Spear, Dart, and Arrow Points of Aguateca and Copan. *Ancient Mesoamerica* 16:291-304.

In both regions, concludes that bow and arrow arrived earlier than thought (Early Classic, 400-600 AD). [based on small points made on obsidian blade segments, but probably right] although there is little iconographic sign of bows at any time. Maya elite were involved in craft production, including knapping, and warfare. Endemic warfare explains rise and fall of centers, traceable by points. [General conclusions probably correct, but no real good data on points: he assumes distinctions between bifaces used as tools "spear/knife" and those used as points "dart/spear" based on incoherent and ambigous use-wear ("cutting and piercing unidentified material") and size data, never shows correlations with macro impact damage although he depicts it, and makes specific interpretations of sites and regional trends from pathetically small samples from individual sites, apparently reassured just because his overall sample is large. No specifics on atlatls, just assumed some points used with them.]

Aoyama, Kazuo
2009 *Elite Craft Producers, Artists, and Warriors at Aguateca: Lithic Analysis*. University of Utah Press, Salt Lake City.

Apel, Jan
2001 *Daggers, Knowledge, and Power: The Social Aspects of Flint Dagger Technology in Scandinavia 2350-1500 cal BC*. Uppsala University, Uppsala.

Apel, Jan
2004 From Marginalization to Specialization: Scandinavian Flint-Dagger Production during the Second Wave of Neolithisation. In *Coast to Coast –Arrival: Results and Reflections*. Helena Knutsson, ed., pp. 295-308. Coast to Coast Project Book 10, Uppsala.

2800-1950 cal BC 2nd wave culminates in intro of "Neo package" of Late Neo I to new areas of Scand. N Jutland 2350 BC lg scale dagger production results from process of social marginalization that in turn produced successful specialization. Daggers relate symbolically to warrior and elite identity, replace stone battle axe in graves. Yemen and Masai as ethnog parallels. Learning to knap daggers probably transmitted within kin groups by apprenticeship. Probably male symbol, male manufacture. As bronze began to be new prestige dagger in Late Neo II, eastern knappers increased quality of flint daggers = late fishtail parallel flaked forms. But Limfjord area craft diminished.

Apel, Jan
2006 Skill and Experimental Archaeology. In *Skilled Production and Social Reproduction*. Jan Apel and Kjel Knutsson eds., pp. 207-218. Societas Archaeologica Upsaliensis, Uppsala.

Apel, Jan
2011 Skill and Experimental Archaeology. In *Experiment and Interpretation of Traditional Technologies: Essays in Honor of Errett Callahan*, Hugo Nami, ed., pp. 75-89. Ediciones de Arqueología Contemporánea, Buenos Aires.

We need both emic, practical assessments of skill based on experience of knappers, and objective ways of measuring and discussing in archaeological record. [Way too theoretical and complex discussion at first, but good example]. Scandinavian dagger example, defining stages of manufacture. Issues of practical know-how and theoretical knowledge – which stages require more skill in different spheres.

Apel, Jan, and Kjel Knutsson
2006 Skilled Production and Social Reproduction - An Introduction to the Subject. In *Skilled Production and Social Reproduction*. Jan Apel and Kjel Knutsson eds., pp. 11-24. Societas Archaeologica Upsaliensis, Uppsala.

Arakawa, Fumiyasu and Kimberlee M. Gerhardt
2007 Toolstone Procurement Patterns on Wetherill Mesa, Mesa Verde, A. D. 600-1280. *Kiva* 73(1):67-84.

Debitage analyses. Early use of local igneous and indurated shale, PII shift to Brushy Basin chert (20 km), by end PII, shift to silicified mudstones from Burro Canyon and Morrison Formations (10km).

Arbeiter, Dennis
2000 The Atlas Spear. *Prehistoric Antiquities and Archaeological News Quarterly* 20(4):4.

Armbruster, Barbara
2010 Lithic Technology for Bronze Age Metalworking. In *Lithic Technology in Metal Using Societies*, B. V. Eriksen ed., pp. 9-24. Arhus, Arhus University Press.

Moulds, hammer, anvil, abrasives. Interp info from Egyptian art, African ethnog smiths, experimental arch, and archaeometry.

Arnold, Jeanne E.
1985 The Santa Barbara Channel Islands Bladelet Industry. *Lithic Technology* 14(2):71-80.

Large industry in quarries and village middens, suggests specialists.

Arnold, Jeanne E.
1987 Technology and Economy: Microblade Core Production from the Channel Islands. In *The Organization of Core Technology*. J.K. Johnson, C.A. Morrow, eds. Pp. 207-238. Boulder: Westview Press.

Arnold, Jeanne E.
1992 Early Stage Biface Production Industries in Coastal Southern California. In *Stone Tool Procurement, Production, and Distribution in California Prehistory*. Arnold, J. E. ed. Pp 67-129, Los Angeles: Regents of the University of California.

Arnold, Jeanne E.
1992 Lithic Analyses and Recent Research in California. In *Stone Tool Procurement, Production, and Distribution in California Pre-history*. Arnold, J. E. ed. Pp1-3, Los Angeles: Regents of the University of California.

Arnold, Jeanne E. ed
1992 *Stone Tool Procument, Production, and Distribution in California Prehistory*. Los Angeles: Regents of the University of California.

Arnold, Jeanne E and Ann Munns
1994 Independent or Attached Specialization: The Organization of Shell Bead Production in California. *Journal of Field Archaeology* 21(4):473-489.

Ascher, Robert
1960 Archaeology and the Public Image. *American Antiquity* 25 (3):

Ascher, Robert
1961 Experimental Archeology. *American Anthropologist*. 63: 795-816.

Early New Archaeology: jargon like a Schiffer, describes logic of experiments and hypothesis testing, but does not make either point that it creates analogy or that it rarely provides positive proof, more often negative – although he recognizes conditional nature of conclusions.

Ascher, Robert
1961 Analogy in Archaeological Interpretation. *Southwestern Journal of Anthropology* 17:317-325.

Ascher, Robert
1968 Time's Arrow and the Archeology of a Contemporary Community. In K. C. Chang ed., *Settlement Archaeology*, pp. 43-52. National Press Books, Palo Alto. And *Experimental Archaeology*, D. Ingersoll, J. Yellen, and W. MacDonald eds. pp.228-240.Columbian U. Press, New York, 1977.

Time's arrow - trend toward disorganization as community is abandoned, but not static. "Smearing" and "blending" of boundaries and remains of activities, cycling or reuse of materials. [But he implies this is all trending toward disorganization, rather than recognizing that it may create new patterns and organization.]

Ashton, Nick
2004 The Role of Refitting in the British Lower Palaeolithic: A Time For Reflection. In *Lithics in Action: Papers from the Conference 'Lithic Studies in the Year 2000'*. E. A. Walker, F. Wenban-Smith, and F. Healy eds., pp. 57-64. Oxbow Books, Oxford.

Ashton, Nick and John McNabb
1994 Bifaces in Perspective. In *Stories in Stone*, N. Ashton and A. David eds. Pp. 182-191. Lithic Studies Society Occasional Paper No.4. British Museum, London.

History of research and terminology led to perceptual bias – a stereotyped "mental template" in archeological perception. Varation in shape proved to be poor chronological or geographical indicator. Need alternative approaches: non-classic pieces common, used as examples. Raw material influences – suggest tendency to follow form of original material. Function – butchery best evidenced, explains curation for unpredictable availability of meat.

Ashton, Nick, John McNabb, Brian Irving, Simon Lewis, and Simon Parfitt
1994 Contemporaneity of Clactonian and Acheulian Flint Industries at Barnham, Suffolk. *Antiquity* 68 (260):585-589.

Excavations Aug '93 (when I visited with J. Lord).
Hoxnian, same time as Swanscombe, 400,000. Lag gravel in river channel with flakes and cores = Clactonian but 50 m away on same gravel in same channel [really sure?] lots of biface thinning flakes. Difference between Clautonian and Acheulean reflects different material quality, manufacturing activities, functions – here, position on site rather than time.

Assaf, Ella, Ran Barkai, and Avi Gopher
2015 Knowledge transmission and apprentice flint-knappers in the Acheulo-Yabrudian: A case study from Qesem Cave, Israel. *Quaternary International* xxx:1-16.

Later Lower Paleolithic, >300 kya, post H. erectus, new hominids with development of long maturation unique to humans. New behaviors including flint quarrying and blades, use of Quina scrapers and lithic and bone recycling. "Acheulo-Yabrudian Cultural Complex" including Amudian stone industry. Southern area of cave industry differs from that elsewhere in cave - reflecting varied levels of knapping skill. 3 stratig layers with similar assemblage. Analysis of cores (255), 5-10% for blades. High % flake cores, use of nodule blanks might reflect lower skill knappers. Specific cores show 2 'generations' of use, first successful, 2nd lots of steps etc, possible less experienced knappers reusing cores [but problems accumulate as cores get used, so unless patina or refitting shows reuse, can't make that claim]. Also use of problematic low quality pieces. Differs from other areas of cave. [Maybe but same problem as Mid Pal "tool kits" of Binford: cannot claim contemporaneity, or use of S area for same activity (learning to knap) for 10s of k yrs. All these assemblages are palimpsests.]

Associated Press
2007 How One Man Unraveled Arrowhead Falsification. Electronic Document, Billings Gazette, URL: http://www.billingsgazette.net/articles/2007/03/18/news/wyoming/55-arrows.txt accessed 1/25/08.

Jeb Taylor who buys + sells points, "authenticator," bought 3 fakes for 10k from Woody Blackwell after elaborate set-up, got suspicious, WB confessed.

Ataman, K
1992 Threshing sledges and Archaeology. In *Prehistoire de l'Agriculture*. Patricia C. Anderson, ed. pp. 305-320. Centre National de la Recherche Scientifique, Paris. and in 1999 *Prehistory of Agriculture: New Experimental and Ethnographic Approaches*. Patricia C. Anderson ed., Monograph 40, Institute of Archaeology, University of California, Los Angeles, pp. 211-222.

Some Turkish ethnographic info with photos, good account [so are they still there?] (Urfa province, Cankersek village). Probably can't tell debitage from other prehistoric debitage. Now more used to cut straw for mudbrick than to thresh grain. 100 specimens of flakes and wear described. Discusses several possible ids from prehistoric by others – feels they are only tentative.

Aubry, Thierry, Bruce Bradley, Miguel Almeida, Bertrand Walter, Maria Joao Neves, Jacques Pelegrin, Michel Lenoir, and Marc Tiffagom
n.d. 2007 An Experimental Approach to Solutrean Large-sized Laurel Leaf Production Based on Refitting and Techno-economic Analysis of the Maitreaux Lithic Assemblage.

Ms peer reviewed for World Archaeology 10/19/2007
Experimental replication by several knappers, focused on technological strategies suggested by refitting of archaeological material. In particular, overshot flaking to remove masses and problematic edges, and either symmetrical bifacial reduction of nodules, or asymmetrical removing most of the mass from one face, which allows removal of poor material in the center of the nodule and preservation of the finest stone right under the

cortex for the finished piece. At M, making late-stage laurels that were exported for finish elsewhere.

Audouze, F.
1987 Outils et manches dans le travail du bois à la période protohistorique. In *Le Main et l'Outil : Manches et Emmanchements Préhistoriques*. D. Stordeur, ed. pp. 327-328. Lyon : Maison de l'orient.

Audouze, F
1999 New Advances in French Prehistory. *Antiquity* 73 (279):167-175.

Usefully outlines current French theoretical approaches to lithics – chaines operatoire, Pelegrin's mental concepts, Boeda, refitting, Leroi-Gourhan, etc.

Auel, Jean M.
1980 *The Clan of the Cave Bear*. New York City: Bantam Books Inc.

Novel. The first of Auel's enormously successful series. Ayla, child of modern humans is orphaned and adopted by Neanderthal tribe. She grows up to begin a feminist struggle against a backward, patriarchal society incapable of spontaneous change. Auel's writing is ok, her story is well-structured with good characterizations, and she uses elements of archaeological understanding of Neanderthals at the time of writing in interesting ways. Most notably, they are largely incapable of speech, but use a gestural system of communication. In most ways however, these are prehistoric suburbanites. Their gestures allow speech as complicated and symbolic as spoken words, they maintain implausibly complex social organizations and symbolic religious practices, and their concerns are often modern social issues. Auel incorporates much detail of woodcraft and primitive technology but without really understanding much of it - for instance, Ayla learns to use a sling, shooting with implausible speed, the Neanderthal diet includes ludicrous elaborate feasts with complex multi-ingredient foods, and so on. In later books of the series she invents most prehistoric technology and domesticates horses, etc. This is not remotely how prehistoric people lived, but the accessible soap-opera story with lots of sex, prehistoric violence, and interesting characters played well to modern social concerns, and sold much better than such books as Reindeer Moon, which is both more realistic and better written.

Augereau, Anne
1995 Les ateliers de fabrication de haches de la minière du "Grand Bois Marot" a Villemaur-sur-Vanne (Aube). In *Les Mines de Silex au Néolithique en Europe: Avancées Récentes*. J. Pelegrin and A. Richard, eds, pp. 145-158. Comité des Travaux Historiques et Scientifiques, Vesoul.

Ausel, Erica L.
2012 Lithic Analysis of Chau Hiix, Belize: Raw Material Consumption and Artifact Types. *Lithic Technology* 37(2):141-154.

In ‘chert-bearing zone’ but most material is chalcedony, varying quality, grades into building stone, and into chert - opaque and banded.

Austin, Robert J.
1986 The Experimental Reproduction and Archaeological Occurrence of Biface Notching Flakes. *Lithic Technology* 15 (3):96-101.

Described, claims first description. (also cites House & Balleger 1976 as first description of biface thinning flake [!]. Uses in 2 sites – infers late stage point work.

Austin, Louise
1994 The Life and Death of A Boxgrove Biface. In *Stories in Stone*, N. Ashton and A. David eds. Pp. 119-126. Lithic Studies Society Occasional Paper No. 4 British Museum, London.

In situ hand axes and manufacture flakes. Newcomer experiment as comparative info, shows not enough early stage flakes and little evidence of roughing out = transport of partially finished bifaces. Refitting groups show strategy, especially cortex removal and thinning. One scatter suggests seated knapper selected flakes placed to right. [Misleading title – no one biface traced very far.]

Austin, Robert J.
1999 Technological Characterization of Lithic Waste-Flake Assemblages: Multivariate Analysis of Experimental and Archaeological Data. *Lithic Technology* 24 (1):53-68.

Supports Sullivan and Rozen.

Avelung, Liz
1997 Mesolithic ‘mastics’: a sticky problem. *Lithics* 17/18:84-85.

Hafting glue analysis at Star Carr, Sweden, Neolithic Sweet Track. All birchbark tar – why?

Avner, Uzi, P. C. Anderson, Bui Thi Mai, J. Chabot, and L. S. Cummings
2003 Ancient threshing floors, threshing tools, and plant remains in ‘Uvda Valley, southern Negev desert, Israel: A preliminary report. In *Le Traitement des Récoltes: Un Regard sur la Diversité du Néolithique au Présent*. P. C. Anderson, L. S. Cummings, and T. K. Schippers, eds., pp. 455-476. APDCA, Antibes, France.

Avery, B.P.
1873 Chips from An Indian Workshop *Overland Monthly* 2(6):489-493.
Reprinted 1953 as Appendix C in R.F. Heizer and A.B. Elsasser, Some Archaeological Sites and Cultures of the Central Sierra Nevada. Reports of the U. of California Archaeological Survey 21.

Obsidian sources, romantic early archaeology.

Awe, Jaime
1991 Lithic Studies from a Belizean Perspective. In *Maya Stone Tools: Selected Papers from the Second Maya Lithic Conference*. T. R. Hester and H. J. Shafer eds, pp. 267-270. Prehistory Press, Madison.

Bachechi, L., P.-F. Fabbri, and F. Mallegni
1997 An Arrow-Caused Lesion in a Late Upper Paleolithic Human Pelvis. *Current Anthropology*. 38 (1):135-140.

By Mesolithic, bow & arrow widely distributed no evidence before end Upper Paleolithic. Female burial in Up. Pal. San Teodoro Cave, Sicily. Fragments of backed triangle microlith embedded in pelvis, septic drainage of wound. Part of light point, so bow & arrow. [Not conclusive at all!] Date ca. 14-12,000 b.p., other examples listed.

Backhouse, Paul N., Eileen Johnson, and Doug Cunningham
2010 The Bouchier Cache: A Biface Cache from the Western Rolling Plains of Texas. *Plains Anthropologist* 55(214):169-180.

Biface cores, probably resource stockpile related to mobility. Unknown age, probably holocene. Prob Edwards chert from over 120 miles away.

Baena-Preysler, Javier
1992 Talleres Paleolítico en el Curso Final del Rio Manzanares. Departamento de Prehistoria y Archaeologia. Universidad Automoma de Madrid. R.N. Montaje Artes Graficas, Madrid.

Baena-Preysler, Javier, and Manuel Luque Cortina
n.d. ca. 1996 Consideraciones Technologicas Sobre La Talla Laminar Por Presion ; Sistemas de sujecion.

Baena Preysler, Javier
1998 *Tecnologia Litica Experimental: Introduccion a la talla de utillaje prehistorico*. BAR International Series 721.

Baena Preysler, Javier, and Elena Carrión Santafé
2011 Experimental Approach to the Function and Technology of Quina Side-Scrapers. In *Experiment and Interpretation of Traditional Technologies: Essays in Honor of Errett Callahan*, Hugo Nami, ed., pp. 171-202. Ediciones de Arqueología Contemporánea, Buenos Aires.

Interps based on typology, chronology, culture now more dynamic understanding of technological process and tool use-life. Cueva de Esquilleu in Cantabria, Spain. Quartzite, refitted simple cores, thick flake detachment desired, edge retouch. Experimented with wrap and wooden hafting – wrapping seemed best given characteristics of blanks, low standardization, low investment. Convex edges because corners of straight edges cut hide.

Denticulates as precursor stage – teeth would striate. Or more likely, develop Q retouch by successive retouch and edge cleaning when scraping hides

Baena, J., and M. Luque
1994 La industria litica. In *El Horizonte Campaniforme de la Region de Madrid en el Centenario de Ciempozuelos*. M. Concepcion Blasco, ed. Departamento de Prehistoria y Archaeologia, Universidad Automoma de Madrid. M. Picasso Artes Graficas, Madrid. Pp. 173-225.

Baerries, David
1953 Blackhawk Village Site. *Journal of the Iowa Archaeological Society* 2(4).

I don't have this, just the ref here from Perino 1985, who says he named Waubesa

Baggett, Mark
2009 A Hunt with Aunt Jemima. *Primitive Archer* 17(3):32-33.

Killed deer with brown glass point, cane arrow, self bow, 8 yards. Entry between ribs, split rib on other side but no exit.

Bailey, E.L.
1913 Flint Arrow Points. *Forest and Stream*. Nov. 1, 1913. Reprinted 1993, *The Flint Knapper's Exchange*. 3(1):4-6.

[Ancestor of FKE! – badly written, good'ol boy figures out how-to, but not real well (pounding with sharp rock- his pts must have been UGLY]

Baker, Anthony
2002 The Indian Quarries of Piney Branch Park, District of Columbia. *Indian Artifact Magazine* 21(3): 6-7, 80-81.

Ok non-professional description, significance, how to find today.

Baker, Tony
2002 Digital Crabtree: Computer Simulation of Folsom Fluting. In *Folsom Technology and Lifeways*, J. E. Clark and M. B. Collins, eds., pp. 209-226. Lithic Technology Special Publication No. 4. University of Tulsa, Tulsa.

Baker, Tony
2005 The Elephant in the Parlor: Another Story of Sandia Cave. Electronic document on webpage "Paleoindian and Other Archaeological Stuff" by Tony Baker. URL: http://www.ele.net/ accessed 5/2007.

Baker's parents were involved in UNM archaeology at time of Hibben excavation, heard nothing except rumors that something was wrong at Sandia. Baker interviewed Jim Greenacre, a student who excavated with Bliss at Sandia, went on to be archaeologist. His memories support Bliss contention that the flowstone layer Hibben claimed sealed the old levels was not solid, they recovered lots of rat dung, and most importantly "found nothing of significance in the Cave." [Baker does not speculate on origins of the points.]

Baker, Tony
2008 Marvin McCormick: The First Modern Fluter. Electronic document on webpage "Paleoindian and Other Archaeological Stuff" by Tony Baker. URL: http://www.ele.net/mccormick/mccormick.htm accessed 4/8/2008

Tony's grdfa, Wm Baker, collector in OK 1930s-40s memories and correspondance with V. Dale (collector) and E. B. Howard (U. Penn) about Folsom + Yuma pts, and McC - are the Alibates points turning up in CO fakes? TB visited McC in 1970s - McC told him he fluted first by percussion, which was "more realistic" but had high failure rate, so turned to lever pressure. TB's father had slides, duplicated in 1967, so made earlier, of McC knapping with a copper rod [earliest documented copper bopper?] and fluting with punch. Letters and photos reproduced, photos show M knapping, with comments by Patten.

Baker, Tony, and Michael Kunz
2003 Contrasting the Lithic Technologies of Mesa and Folsom. Paper presented at 68th Annual Meeting of the Society for American Archaeology. Electronic document on webpage "Paleoindian and Other Archaeological Stuff" by Tony Baker. URL http://www.ele.net/mesa_folsom/mesa_fol.htm accessed 4/8/2008

Contemporary bison hunters, different technologies explained by access to raw material. Cortex is a measure of effort - flakes removed are chosen for least effort, which often produces biface forms. Reducing biface margin improves accuracy for reduced flake variability. All tool "types" reduce to three: cutting edges, scraping edges, and perforating points. Folsom tools, because material scarcer, put more tool edges on any piece of stone.

Backhouse, Paul N., Eileen Johnson, and Doug Cunningham
2009 Lithic Technology and Toolstone Variability at Two Gravel Exposures Neighboring the Eastern Llano Estacado. *Plains Anthropologist* 54(211):259-280.

Bakken, Kent
1993 Lithic Raw Material Resources in Western Minnesota. *The Platform* 5(1):2-3; 5(2):6-7; 5(3):7-8; 5(4):7-8.

Baldwin, John
2006 Fraud, Conspiracy, Extortion, Greed. *Indian Artifact Magazine* 25 (2): 3-6, 62.

Ohio collectors scammed out of big money by dealers who sell them modern fakes and buy up the good pieces in their collections. Rumored to be also involved in drugs. Flint Ridge dovetails and Knife River Ross points photos, Woody Blackwell identified as maker of one, principal parties not named but probably recognizable. Fraud amounts associated with two main dealers about $2 million. [Lots of portrayal of the collectors as good citizens "hard-working" "business man" etc, but then one of the bad guys is a "retired school teacher." They are all trading in 10s of 1000s of dollars, and at that level, and in that collector world, most of them actually know full well they are dealing with criminals some of the time. A good example of the blind self-righteousness of the collecting world.]

Balfour, Henry
1903 On the Method Employed by the Natives of N.W. Australia in the Manufacture of Glass Spear-heads. *Man* 3(35): 65, plate E

Fine bifacial spearheads. Pressure of point against bone – reverse pressure flaking. Use of glass.

Balkan-Atli, Nur
1994 *La Néolithisation de L'Anatolie*. Varia Anatolica VII. De Boccard, Paris.

Info only up to 1986, so missing some sites. Describes and gives chemical characterization info for a number of obsid sources known up to then, in two main regions, central Anatolia and southeast. Central includes two areas distinguished early by Renfrew, Dixon, and Cann, at Açıgöl and Çiftlik, later subdivided by Paynes work published in Todd 1980. [Info is hard to use on the ground because all of the maps are vague, do not include the same roads and towns as landmarks, and use different names for sources.] A includes Kaleiçi NE of A, and Lac A/Güney Dağ and Kocatepe SE of A along the Aksaray/Nevshehir road, and Hotamış Dağ and Koru Dağ further S of them. [The obsidian we collected along the road was to the W of Açıgöl village so unclear source, perhaps one of the first two, K is described as cone with prominent crater near village, so should be the one you see from the road looking across the town and closest to our finds].

Çiftlik region is assoc with Göllü Dağ volcano S of above and includes several sources. Kömürcü Köyü - 2 km NE of village in valley, numerous deposits and workshops, black good quality obsidian with some striated brownish, Todd calls "densest concentration in central Anatolia". Payne notes also some sources SW of village. [The NE source is what I visited 10/2007]. Others include Sırça Deresi, Kayırlı, and Nenezi Dağ.

Eastern Anatolian sources not well known, but are around Lake Van eg Nemrut Dağ, and around Bingol and Kars.

Flint not as important in Anatolia as obsidian. Sources not well known. Vague info from geology only, but Taurus Mts have limestones with flint.

Lithic assemblages and types from some of the Neo sites discussed and figured.

Balkan-Atli, Nur
1994 The Typological Characteristics of Aşıklı Höyük Chipped Stone Industry. In *Neolithic Chipped Stone Industries of the Fertile Crescent*. H. G. Gebel and S. K. Kozlowski eds., pp. 209-221. Berlin, Ex Oriente.

Aceramic Neolithic tell site near Aksaray in central Anatolia, dates 8700-8500 BP, rectangular mudbrick architecture, hunting economy, no agric traces yet. Lithic assemblage 72,000 pieces all of obsidian, from Kayırlı and Nenezi Dağ sources, arriving as blocks and tablets and knapped on site. Debitage = 83.5%. Cores 2.3% mostly opposed platform blade cores, usually exhausted or broken. Blades more common in debitage than flakes. Hard percussion only technique observed. [I'm not so sure - admittedly quick look on site

10/2007, lots of obsid, dominated by blades, little sign of cortex or early prep, and some blades small, regular, small plat suggests pressure or punch. Saw only one core, a poor bidirectional.] Tools include scrapers on round flakes and blades (63% of retouched pc), rare arrow points, microliths and geometrics, various retouched blade tools. [Saw 3 of round scraper]. Figures for all of these.

Balkan-Atli, Nur, and Gérard Der Aprahamian
1998 Les Nucléus de Kaletepe et Deux Ateliers de Taille en Cappadoce. In *L'Obsidienne au Proche et Moyen Orient: Du Volcan á L'Outil*, edited by M.-C. Cauvin, A. Gourgaud, B.Gratuze, N. Arnaud, G. Poupeau, J.-L. Poidevin, and C. Chataigner, pp. 241-257. BAR International Series 738. Archaeopress, Oxford.

Kayirli and Komurcu at Gollu Dag. Naviform cores, very long and narrow, reconstructed as working a biface, starting with one edge as a lame a crete.

Balkan-Atli, Nur, Didier Binder, and Marie Claire Cauvin
1999 Obsidian: Sources, Workshops, and Trade in Central Anatolia. In *Neolithic in Turkey: The Cradle of Civilization, New Discoveries*. Edited by Mehmet Özdoğan and Nezih Başgelen, pp. 131-145. Arkeoliji ve Sanat Yayinlari, Istanbul.

Capadocian sources, largest volcanic province in Central Anatolia. Acigöl, Göllü Dağ (Çiftlik obsidians) Nenezi Dağ, Hasan Dağ, and Erciyes Dağ in the Melendez Massif and Çiftlik plain, where lots of archaeol in progress too, eg Aşıklı Höyük which has obsidian from Nenezi and Kayirli (= Gollu Dag).

Nenezi Dag - 3 km E of Bekarla village, NW of Gollu Dag, 500 m isolated dome. Obsid on W flank, homogeneous chemically, mostly black but some red + grey. Dense workshops with Neo pyramidal + bi-directional cores, biface preforms, oval bif pts.

Gollu Dag - 12 km diam volcano N of Çiftlik-Gölcük road, 2143 m high, 6 diff sources, 3 described: Bozköy, Kayırlı, and Kömürcü. Bozkoy - small dome, black or grey striped obsid, workshop with unipolar [conical] cores. Kayirli - big dome, lots obsid, shiny black good quality, 2 wkshps w conical + bidirectional cores, bif performs, cores very regular, [low angle platforms]. Komurcu - most spectacular [all these pics show large masses of obsid flow in drainages, lots of scatter], similar Neo cores, but also handaxe and Levallois, prob Paleolithic. Several wkshps, including Kaletepe [this is where Fusun worked] large dense area on plateau with large standardized cores of unidirectional and naviform types, naviforms for long blades on narrow surface [levallois-like technique], differ chaine op from others. Excavs show 6 m of debitage, not reaching natural surfaces. Workshop debris shows specialization for long blades c 15 cm (used as blanks for proj pts of PPNB)

Balkan-Atli, Nur, Didier Binder, and Marie Claire Cauvin
1998 Exploitation de l'Obsidienne de Cappadoce: Premiere Campagne de Fouille a Kaltepe (Kömürcü). *Anatolia Antiqua* 6:301-315.

N flank of Göllü Dağ, quaternary stratovolcano with acidic rholites, obsid, ignimbrites, and "ponces". Obsidian occurs in several vertical vein masses 20-60 m, dates ca 1 mya but she feels some is too fresh for so old. Naviform "bipolar" [NO - bidirectional] cores + blades typical, excav to establish stratig position and chaine operatoire, illustrated, but not the Paleolithic tools reported from same vicinity. Naviform cores assoc with PPNB at nearby sites, producing blades for points, well developed specialized industry.

Balkan-Atlı, Nur, Nurcan Kayacan, Mhiriban Özbaşaran, and Semra Yıldırım x disk
2001 Variability in the Neolithic Arrowheads of Central Anatolia (Typological, Technological, and Chronological Aspects.) In *Beyond Tools: Redefining the PPN Lithic Assemblages of the Levant*. Isabella Caneva, Cristina Lemorini, Daniela Zampetti, and Paolo Biagi eds., pp. 27-43. ex oriente, Berlin.

Site summaries: Aşıklı Höyük - close to obsid sources, material arriving unworked, bipolar [incorrect, they mean bidirectional] cores for blades, arrowheads on blades scarce.
Musular - 400 m away across river, prob similar but cortical flakes rare, arrowheads more common.
Raw material sources: Nenezı Dağ, Göllü Dağ with 6 specific sources including Kayırlı and Kömürcü/Kaletepe.

Ballenger, Jesse A.M.
1996 The Southern Plains Craft Lithic Cache. *Plains Anthropologist* 41 (157):297-309.

TX flint – Edwards Plateau & Alibates (sources >112 km from site). Craft cache in N TX – 43 unifaces not assoc. with other stuff – possibly 2 individuals [citations on individuals all old]. Usewear suggests bison hide processing. [Poor drawings, no photo].

Ballin, Torben Bjarke
2000 Classification and Description of Lithic Artefacts: A Discussion of the Basic Lithic Terminology. *Lithics* 21:9-15

[Scandinavian typological influence, not very useful.]

Ballin, Torben Bjarke
2010 The lithic industries of Later Bronze Age Great Britain. In *Lithic Technology in Metal Using Societies,* B. V. Eriksen ed., pp.95-105. Arhus, Arhus University Press.

Compares 3 industries: flint from Raunds, Northamptonshire, quartzite from Angus, Scotland, and quartz from Shetland. [Incorrect diagrams of knapping techniques!]

Ballin, Torben
2011 The felsite quarries of North Roe, Shetland – An overview. In *Stone Axe Studies III*. Vin Davis and Mark Edmonds, ed., pp. 121-130. Oxbow Books, Oxford.

Bamforth, Douglas B.
1986 A Comment on "Functional Variability in an Assemblage of Endscrapers." *Lithic Technology* 15(2):61-64.

Bamforth, D.B.

1986 Technological Efficiency and Tool Curation. *American Antiquity* 51:38-50.

Bamforth, Douglas B.
1991 Flint Knapping Skill, Communal Hunting, and Paleoindian Projectile Point Typology. *Plains Anthropologist* 36(137): 309-321.

[Good Article] Sources of point variation: templates, material, rework and damage, knapper skill and idiosyncracy. Communal kills as data sources- require "gear-up" to have enough tools on hand – not just points but all equipment, so making lots of points under time pressure- most efficient if best knappers do it. Need to distinguish major variation (gross form & technique) which differs between groups and time from minor variation which differs between individuals. E.g. points from Folsom sites often not fluted – but fluted dominate in communal kill sites. Beware current excess of Cody Complex types based on minor distinctions – Eden, Scottsbluff, Alberta are just individual interpretations of standard multi-stage manufacturing process.

Bamforth, Douglas B.
1992 Quarries in Context: A Regional Perspective on Lithic Procurement. In *Stone Tool Procurement, Production, and Distribution in California Prehistory*. Arnold, Jeanne E. ed., pp. 131-150, Los Angeles : Regents of the University of California.

Bamforth, Douglas B.
2003 Discussion. In *Stone Tool Traditions in the Contact Era*. Charles Cobb, ed., pp.165-172, University of Alabama Press, Tuscaloosa.

Bamforth, Douglas B.
2010 Conducting Experimental Research as a Basis for Microwear Analysis. In *Designing Experimental Research in Archaeology: Examining Technology Through Production and Use*, Jeff Ferguson, editor., pp. 93-110. University Press of Colorado, Boulder.

Bamforth, Douglas B.
2013 Paleoindian perambulations and the Harman Cache. *Plains Anthropologist* 58(225):65-82.

Cody-era artifacts, found central NB 1930s. 2 finished Cody [Alberta/Scottsbluff] points, and 38 preforms, other tools. White R Group chalcedony NECO, Smoky Hill jasper NB/KS, Permian chert E KS, Burlington chert MO

Bamforth, Douglas and Mark Becker
2000 Core/Biface Ratios. Mobility, Refitting, and Artifact Use-Lives: A Paleoindian Example. *Plains Anthropologist* 45(173):273-290.

Banks, Kimball M.
1982 Late Paleolithic and Neolithic Grinding Implements in Egypt. *Lithic Technology* 11(1): 12-20.

Wadi Kubaniya – Cereals at 18,000 possibly domesticated, at least important. Paleolithic grinding implements are unshaped, less used. Neolithic are shaped, more worn, deeper.

Banks, Larry D.
1990 *From Mountain Peaks to Alligator Stomachs: A Review of Lithic Sources in the Trans-Mississipi South, the Southern Plains, and Adjacent Southwest*. Oklahoma Anthropological Series Memoir 4, University of Oklahoma, Norman.

[Excellent, why doesn't someone reprint it?]

Banks, Larry D.
2014 Reflections of a Former US Army Corps of Engineers Archaeologist. In *Kennewick Man: The Scientific Investigation of an Ancient American Skeleton*. Owsley, Douglas W., and Richard L. Jantz, eds., pp. 108-109. Texas A&M Press, College Station.

Insider view of Corps political environment and destruction by burial of the site to prevent research.

Banks, William E. and Marvin Kay
2003 High-resolution casts for lithic use-wear analysis. *Lithic Technology* 28(1):27-34.

Barber, Martyn
2005 Mining, Burial, and Chronology: The West Sussex Flint Mines in the Late Neolithic and Early Bronze Age. In *The Cultural Landscape of Prehistoric Mines*. P. Topping and M. Lynott eds., pp. 94-109. Oxbow Books, Oxford.

Barber, Martyn and Carolyn Dyer
2005 Scouting for Shafts: Aerial Reconnaissance and the Neolithic Flint Mine at Stoke Down, West Sussex. In *The Cultural Landscape of Prehistoric Mines*. P. Topping and M. Lynott eds., pp. 30-50. Oxbow Books, Oxford.

Barber, Martyn, David Fields and Peter Topping
1999 *The Neolothic Flint Mines of England*. Swindon: English Heritage.

Barbieri, Joseph A.
1937 Technique of the Implements from Lake Mohave. In *The Archaeology of Pleistocene Lake Mohave: A Symposium*, Southwest Museum Papers 11: 99-107.

Angle of Blow should be 45°, Platform Width =Flake Thickness. [He strikes straight blow, moves nodule for outward force, and is one of the first to describe importance of these variables]. Mostly stone or antler percussion, some pressure. Soft hammer precussion, describes support, "shearing" edge with pressure tool to form "seat". [Early platform recognition, maybe first use and definition of "shearing". Early relatively skilled knapper using his skill to describe archaeological assemblage.] See also H. Harris 1926.

Bard, James and Colin Busby
1974 The Manufacture of a Petroglyph: A Replicative Experiment. *Contributions of the University of California Archaeological Research Facility.* 20:83-102.

Experiments, made simple petroglyphss with 6 different stone hammer materials.

Barfield, L. H.
1987 Recent Work on Sources of Italian Flint. In *The Human Uses of Flint and Chert*. G. Sieveking & M. Newcomer eds., pp. 231-240. Cambridge: Cambridge Univ. Press.

Barkai, Ran disk
2001 Make My Axe: Flint Axe Production and Resharpening at EPPNB Nahal Lavan 109. In *Beyond Tools: Redefining the PPN Lithic Assemblages of the Levant*. Isabella Caneva, Cristina Lemorini, Daniela Zampetti, and Paolo Biagi eds., pp. 27-43. Ex Oriente, Berlin.

Barkai, Ran
2011 The evolution of Neolithic and Chalcolithic woodworking tools and the intensification of human production: axes, adzes and chisels from the Southern Levant. In *Stone Axe Studies III*. Vin Davis and Mark Edmonds, ed., pp. 39-54. Oxbow Books, Oxford.

Barkai, Ran, and Avi Gopher disk
2001 Flint Quarries in the Southern Levant Holocene: A Routine Procedure? New Evidence from the Upper Galilee, Israel. In *Beyond Tools: Redefining the PPN Lithic Assemblages of the Levant*. Isabella Caneva, Cristina Lemorini, Daniela Zampetti, and Paolo Biagi eds., pp. 17-25.. ex oriente, Berlin.

Seam and cave-like quarries for flat flint nodules

Barkai, Ran, Avi Gopher, and Philip C. La Porta
2002 Palaeolithic landscape of extraction : flint surface quarries and workshops at Mt Pua, Israel. *Antiquity* 76 (293): 672-80.

Heaps of quarry waste (1500) with Lower and Middle Paleolithic tools, up to 15 m diam, 3 m high. Prying nodules out of fractured limestone. Waste heaps are over exhausted sources, indicating organization. Making Levallois cores, handaxes

Barkai, Ran, Avi Gopher, and Philip C. LaPorta
2006 Middle Pleistocene landscape of extraction: quarry and workshop complexes in northern Israel. In *Axe Age: Acheulian Toolmaking from Quarry to Discard*. Naama Goren-Inbar and Gonen Sharon, eds., pp. 7-44. Equinox Publishing, London.

Extensive quarry sites in Levant, characterized by landscape alteration, open cast mining pits, waste piles, mining tools of local limestone or basalt, workshops on tailing piles with few formal tools but many primary reduction products and large flake production by

Levallois technique. [Remarkably extensive mining - I would like to see dating evidence beyond typology].

Barker, Alex W., and Paula K. Lazrus
2012 Introduction. In *All the King's Horses: Essays on the Impact of Looting and the Illicit Antiquities Trade on our Knowledge of the Past*. SAA Press, Washington, DC.

Archaeology differs from other claimants of the past in making non-exclusive claims, and in wanting to preserve as much knowledge about an artifact as possible. We don't really study the past, only remnants of it in the present.

Barker, Alex W., C. E. Skinner, M. S. Shackley, M.D. Glasscock, and J.D. Rogers
2002 Mesoamerican Origin for an Obsidian Scraper from the Prehistoric Southeastern United States. *American Antiquity* 67(1): 103-108.

From Craig Mound at Spiro, a scraper recovered after looters left. Energy Dispersive X-Ray Fluorescence identified as Pachuca source in Hidalgo, Mexico (green/gold obsidian).

Barket, Theresa M. and Robert M. Yohe II
2011 A technological evaluation of the flint blade-core reduction sequence at Wadi El-Sheikh, Middle Egypt. *Lithic Technology* 36(1):27-38.

Pharaonic period, lithics usually neglected. Reviews old work, brief field exam of blades [photos, but none of quarry], suggest percussion production of trapezoidal blades with lame a crête. Large quarry + reduction site reported Seton-Carr (1898) [But he remains elusive - this citation was omitted from the refs! See also Weisgerber 1987] Open pit mining and shafts. Different work areas distinguished, producing preforms for axes, rings + bifaces, and also finished blades.

Barnes, Alfred S.
1937 L'Industrie des Pierres à Fusil par la Méthode Anglaise et Son Rapport Avec le Coup de Burin Tardenoisien. *Bulletin de la Société Préhistorique Française* 36 (7-8) : 328-335.

Barnes, Alfred
1980 How English and French Gunflints were Made, translated by Robert and Carol Breazeal Vernon. In *Colonial Frontier Guns*, T.M. Hamilton ed., pp. 160-163. The Fur Press, Chadron, NB. Reprinted 1987, Pioneer Press, Union City, TN.

Barrett, S A and E W Gifford
1933 Miwok Material Culture. *Milwaukee Public Museum Bulletin* 2 (4):119-377 Reprinted c. 1978 Yosemite National Park: Yosemito Nat'l History Assoc. Inc.

Excellent general info on material culturer, subsistence. Xeroxed p 211-219 on steatite, chipped stone, bone & antler, bow and arrow, arrow specialist, quiver.

Barrowclough, David A.
2004 The Secrets of the Craft Production of Scandinavian Late Neolithic Flint Daggers. *Lithic Technology* 29 (1): 75-86.

Type IVE daggers replic by Stafford, who suggests used metal tool for "stitching" on handles. If Cu controlled by elite, dagger production might be too. Electron microprobe analysis of 29 daggers showed not copper, but organic traces on handles, but located only where should be if from manuf. Callahan, Apel, Stafford agree metal needed for stitching, but no traces, no tools known either. so manuf knowledge could be passed thru apprentice system without elite control of attached specialists. Regional workshops seem more likely

Barton, C.M.
1988 *Lithic Variability and Middle Paleolithic Behavior*. Oxford: British Archaeological Reports International Series 408.

Barton, C.M.
1990 Beyond Style and Function: A View from the Middle Paleolithic. *American Anthropologist* 92:57-72.

Barton, C.M.
1990 Stone Tools and Paleolithic Settlement in the Iberian Peninsula. *Proceedings of the Prehistoric Society* 56:15-32.

Barton, C.M.
1991 Retouched Tools: Fact or Fiction? Paradigms for Interpreting Paleolithic Chipped Stone. In *Perspectives in Prehistory*, G.A. Clark, Editor., University of Pennsylvania Press: Philadelphia. p. 143-163.

Barton, C. Michael, Deborah I Olszewski, and Nancy R. Coinman
1996 Beyond the Graver: Reconsidering Burin Function. *Journal of Field Archaeology* 23(1):111-125.

Not a tool class, but a technique for modifying edges for variety of purposes – dulling, making spalls, as well as for gravers with other use edges.

Barton, Huw
2008 Expedient Technologies and Curated Tools within a System of High Residential Mobility: An Example Using Mass Analysis of Flakes from the Simpson Desert, Central Australia. *Lithic Technology* 33(1): 51-71.

Barton, R.N.E. and C.A. Bergman
1982 Hunters at Hengistbury: Some Evidence from Experimental Archaeology. *World Archaeology* 14(2): 237-248.

Mesolithic and Upper Paleolithic sites in England.
Point breakage in a carcass experiment – burination and fluting.

Refitting and formation processes in sand.

Bar-Yosef, O.
1987 Direct and Indirect evidence for hafting in the Epi-Paleolithic and Neolithic of the Southern Levant. In *Le Main et l'Outil : Manches et Emmanchements Préhistoriques*. D. Stordeur ed., pp 155-164. Lyon: Maison de l'Orient.

Bar-Yosef, Ofer
2006 The known and the unknown about the Acheulian. In *Axe Age: Acheulian Toolmaking from Quarry to Discard*. Naama Goren-Inbar and Gonen Sharon, eds., pp. 479-494. Equinox Publishing, London.

Baudais, D.
1987 Les Manches en bois dans le Neolithique du Jura. In *Le Main et l'Outil : Manches et Emmanchements Préhistoriques*. D. Stordeur ed., pp 197-210. Lyon: Maison de l'Orient.

Bauer, Liz
1991 *Gustaf Nordenskiold: Pioneer Archeologist of Mesa Verde*. Mesa Verde Museum Association, Cortez.

good photos of hafted full-grooved maul, flint drill on thin shaft, and stone knife in wooden handle with hide sheath, proveniences not stated.

Baugh, Dick
1986 Bullwhips, Tidal Waves, and the Flintknapper's Curse. *Flintknapping Digest* 3(2):15-19.

Analogizes end shock to cracking a whip.

Baugh, Dick
1986 A Note on Indian Bow Making, or the Secrets of Sinew Revealed. *Flintknapping Digest* 3(1): 10-12.

Experiments with sinew – says it shrinks 3%.

Baugh, Dick
1994 A Note on Indian Bow Making, or the Secrets of Sinew Revealed. *Bulletin of Primitive Technology* 7(1):68-69.

Experiments with sinew and sinew backings.

Baugh, Dick
2001 The Hoko Knife. *Bulletin of Primitive Technology* 21: 39-40

Simple how-to hafted flake.

Baugh, Timothy G. and Fred W. Nelson Jr.
1987 New Mexico Obsidian Sources and Exchange on the Southern Plains. *Journal of Field Archaeology* 14(3):313-329.

Several sources described – Polvadero etc.
Artifact from Pecos and Texas and Oklahoma sites.
Some Utah and Idaho obsidian reaching them too.
Change from down-the-line pattern after 1450 to a "S. Plains macroeconomy" = direct trade to E pueblos by plains tribes at the same distance.

Baumhoff, Martin A. and J.S. Byrne
1958 Desert Side-Notched Points as a Time Marker in California. *University of California Archaeological Survey Report #42*. U.C. Berkeley.

Baumler, Mark F.
1988 Core Reduction, Flake Production, and the Middle Paleolithic Industry of Zobiste (Yugoslavia). In *Upper Pleistocene Prehistory of Western Eurasia*, eds. H. Dibble, A. Montet-White, pp. 255-274. Philadelphia: University of Pennsylvania University Museum.

Baumler, Mark F. and Leslie B. Davis
2000 Upon Closer Examination: Paleoindian Behavioral Inferences from a Folsom Feature Lithic Assemblage at the Indian Creek Occupation Site, West-central Montana Rockies. *Archaeology in Montana* 41(2):17-62.

Tools, tool fragments, channel flakes, aggregate analysis focusing on "small-sized" (<1/4") debitage. Folsom feature shows late stage reduction, prob both manufacture + maintenance of tools. Probably an activity area with secondary refuse from a hearth area as well.

Baumler, Mark F. and Leslie B. Davis
2004 The Role of Small-Sized Debitage in Aggregate Lithic Analysis. In *Aggregate Analysis in Chipped Stone*, Christopher T. Hall and Mary Lou Larson eds., pp. 45-64. University of Utah Press, Salt Lake City.

Lost by usual ¼" screening, larger than 2.0 mm microdebitage. Folsom feature at Indian Creek Site, Montana. Advantages: enhances count of Minimum Analytical Nodules, provides evidence of reworking etc missed by larger debitage analysis, not removed from record by use as blanks, less broken by trampling etc so more suited to Sullivan + Rozen analysis, large enough to work with easily, flake attributes visible.

Baumler, Mark F. and Christian E. Downum
1989 Between Micro and Macro: A study in the interpretation of small-sized lithic debitage. In *Experiments in Lithic Technology*. Daniel S. Amick and Raymond P. Mauldin, eds. BAR International Series, Oxford, pp 101-116

Experiment shows diff btwn proportions of complete flakes, broken flks and shatter in 1-20 mm debitage produced by core reduction and tool retouching.

Baumler, Mark F., Cora Helm, Steve Platt, Patrick Rennie, and Stan Wilmoth
2001 Assault on Basalt: The Cashman Quarry Site, Madison County, Southwestern Montana. *Archaeology in Montana* 42(2):1-26.

Dacite quarry, fine-grained grey to black igneous "basalt." Surface + sub quarrying, reduced to blocky cores, early stage bifaces, large flakes. Quarry pits >50, lots debitage. In surrounding hills, cobbles used.

Baumler, Mark F., David C. Schwab, Stephen A. Aaberg, William P. Eckerle, and Richard Faflak.
1996 Investigation of Foothill-Mountain Prehistory in the Northern Madison Range, Southwestern Montana: The Flying D Ranch Archaeological Project. *Archaeology in Montana* 37(1):41-66.

Info on lithic sources, uses, points.

Baumler, Mark F and John D. Speth
1993 A Middle Paleolithic Assemblage from Kunji Cave, Iran. In *The Paleolithic Prehistory of the Zagros-Taurus.* The University Museum, University of Pennsylvania: p 1-73

MB says supports Dibble scraper model
Speth says "disastrous" project – was to be dissertation, but stratigraphy all jumbled, wasted weeks digging.

Bayman, James M.
1995 Rethinking "Redistribution" in the archaeological record: Obsidian exchange at the Marana Platform Mound. *Journal of Anthropological Research* 51(1):3-64.

Bipolar technique for small point blanks. Mix of redistribution and reciprocity likely.

Bayman, James M.
2003 Stone Adze Economies in Post-Contact Hawai'i. In *Stone Tool Traditions in the Contact Era*. Charles Cobb, ed., pp.94-108, University of Alabama Press, Tuscaloosa.

Bayman, James M. and Jadelyn J. Moniz Nakamura
2001 Craft Specialization and Adze Production on Hawai'i Island. *Journal of Field Archaeology* 28 (3-4): 239-252.

Beaglehole, Ernest
1937 Notes on Hopi Economic Life. *Yale University Publications in Anthropology* number 15.

Non-specialized craftsmanship - everyone competent, pay an expert for extra-good items for gifts etc.

Beck, Charlotte and George T. Jones
1990 Toolstone Selection and Lithic Technology in Early Great Basin Prehistory. *Journal of Field Archaeology* 17(3):283-299.

Late Pleistocene/Early Holocene Pluvial Lakes Tradition. Different material selected for different tool types – partly by mechanical property of stone, part by availability, relates to mobility and overall procurement strategy.

Beck, Charlotte and George T. Jones
2010 Clovis and Western Stemmed: Population Migration and the Meeting of Two Technologies in the Intermountain West. *American Antiquity* 75(1):81-116.

Beck, Charlotte, and George T. Jones
2013 Complexities of the Colonization Process: A View from the North American West. In *Paleoamerican Odyssey*. Kelly E. Graf, Caroline v. Ketron and Michael R. Waters ed., pp. 273-292. Tops Printing, Inc., Texas.

Beck, Curt W.
1996 Comments on a Supposed Clovis "Mastic." *Journal of Archaeological Science* 23: 459-460.

Tankersley's definitions of mastic, amber not correct. True amber does not melt. His tests not adequate to establish what the material on the Clovis point is. If it is not amber it doesn't serve as another shared trait between Up Pal and Clovis. [Some of the quibbles are silly, some good, but Beck also misses the point – was the resin adhesive on the point fresh or fossilized at time of use? Can we tell?]

Becker, C. J.
1945 New Finds of Hafted Neolithic Celts. *Acta Archaeologica* 16:156-175.

Scandinavia. Two from peat digging, 2 already in museum. Simple perforated handles of ash, round x-sections, stone blade inserted so cutting edge angled down slightly. Modification and re-use of broken stone blade. The thick-butted axes hafted less deeply than the thin butted type, with butt protruding only slightly from haft [makes the axe stick out oddly far - I wonder]. This last specimen has tenon instead of handle, apparently set up in some base as ritual display [which might explain odd hafting]. Assoc with animal + human bone, probably ritual site.
From one bog with axe, also Neo pottery, arrow caches. Arrows with bunt heads and one slotted for stone.

Becker, C.J.
1959 Flint Mining in Neolithic Denmark. *Antiquity* 33: 87-92.

Several mines described, short shafts 2-7 m deep, with galleries – crude versions of Grimes Graves . Early for axes, later daggers, lithic finds not much discussed. Wooden platforms and ladders used, antler pry bars.

Becker, Mark and Fred Wendorf
1993 A Microwear Study of a Late Pleistocene Qadan Assemblage from Southern Egypt. *Journal of Field Archaeology* 20(4):389-398.

Becker, Marshall J
1973 Archaeological Evidence for Occupational Specialization among Classic Period Maya at Tikal, Guatemala. *American Antiquity* 38(4):396-406.

Compounds with unusual quantity of artifacts and waste, tool kits. Flint and obsidian, pottery, wood or bone workers, maybe others. Not as definite as would like.

Beckum, Thad
2010 The Quest of Hunting Whitetails with Primitive Bow and Arrow. *Primitive Archer Magazine* 18(5): 51-56.

claims 20 deer with primitive gear + stone points, photos of a couple points w impact fracture

Bee, T.W.
2001 Paleolithic Handaxes from the Lymn Valley Lincolnshire. *Lithics* 22: 47-52

Glaciated valley – finds from areas above elevations of glacier action.

Behm, Jeffrey A
1983 Flake Concentrations: Distinguishing Between Flintworking Activity Areas and Secondary Deposits. *Lithic Technology* 12(1): 9-16.

Size and shape of scatter. Ratio of small flakes – ca. 2:1 ratio of 1/8”:1/4” indicates in situ work. Experiments. [Not bad, probably generally applicable.]

Behrnes, Jeff
1991 From the Editor. *The Flint Knapper’s Exchange* 1(5):11-12.

Belfer-Cohen, Anna, and Nigel Goring-Morris
2002 Why Microliths? Microlithization in the Levant. In *Thinking Small: Global Perspectives on Microlithization,* edited by Robert Elston and Steven L. Kuhn, Archeological Papers of the American Anthropological Association 12, pp. 57-68.

Belk, Roger
1988 Collectors and Collecting. *Advances in Consumer Research* 15:548-553. Reprinted in *Interpreting Objects and Collections*, edited by Susan M. Pearce, 1994, pp. 317-326. Routlege, London and New York.

Bell, Robert E.
1947 Trade Materials at Spiro Mound as Indicated by Artifacts. *American Antiquity* 12(3):181-184.

Flint mace from Mill Creek IL quarries, others from Dover TN; Kay Co. OK.
Small pts of novaculite from Hot Springs Ark, crystal quartz from same area as boatstones and points. Turquoise – maybe from Cerrillos NM. Copper from lake Michigan.

Bell, Robert E.
1958 *Guide to the Identification of Certain American Indian Projectile Points.* Special Bulletin No. 1, Oklahoma Anthropological Society, Oklahoma City.

Bell, Robert E.
1960 *Guide to the Identification of Certain American Indian Projectile Points.* Special Bulletin No. 2, Oklahoma Anthropological Society, Oklahoma City.

includes Adena, no Dickson or Waubesa

Bement, Leland C
1991 The Thunder Valley Burial Cache – Group Investment in a Central Texas Sinkhole Cemetery. *Plains Anthropologist* 36(135):97-109.

OK – sinkhole with burials, cache.
Uses platform preparation, hinging, and scar angle as idiosyncratic variables to cluster bifaces – produces 3 "individuals". [Cites Gunn, not me.]

Bement, Leland C.
1997 The Cooper Site: A Stratified Folsom Bison Kill in Oklahoma. *Plains Anthropologist* 42(159):85-100.

Three deposits in arroyo: Upper = 29 articulated cows, calves and juveniles, 12 Folsom points, flake tools. Middle = trampled bones, 29 animals as before, 7 pts, flk tls. Lower = trampled, 20 artic cows, calves, juvs, 7 pts, flk tls. All end of summer/early fall, at least 1 yr apart. Red zig zag painted on skull from lowest, near its skeleton. Slumped (mixed) material had 6 more pts, 30+ bison.

Bement, Leland C.
2002 Pickin' Up the Pieces: Folsom Projectile Point Re-Sharpening Technology. In *Folsom Technology and Lifeways*, J. E. Clark and M. B. Collins, eds., pp. 135-140. Lithic Technology Special Publication No. 4. University of Tulsa, Tulsa.

Bement, Leland C., and Brian J. Carter
2003 Clovis Bison Hunting at the Jake Bluff Site, NW Oklahoma. *Current Research in the Pleistocene* 20: 5-7.

12 bison in arroyo, 2 Alibates Clovis pts, C14 10754 RCYBP, possibly after mammoths extinct

Bement, Leland C., Ernest L. Lundelius, and Richard A. Ketcham
2005 Hoax or History: A Bison Skull with Embedded Calf Creek Projectile Point. *Plains Anthropologist* 50 (195): 221-226.

Amateur river find, Oklahoma. Tests include: CT scan, determining that bone flexed = fresh at impact. Shattered point can be reconstructed, damage consistent with impact. Biometric analysis of skull concludes *Bison antiquus occidentalis*, correct for Calf Crk period. C14 date on skull 5,120±125 BP uncal agrees.
So CC pts not just knives, but atlatl dart pts (cites Hutchings velocity ideas).

Bement, Leland C and Solveig A. Turpin
1987 Technological Continuity and Functional Change: The Case of the Dorso End Scraper. *Plains Anthropologist* 32(116):191-196.

Texas. Use-wear shows plains hide scraper introduced, shift in use to vegetal matter processing.

Ben-Dor, Miki, Avi Gopher, Israel Hershkovitz, and Ran Barkai
2011 Man the Fat-Hunter: The Demise of Homo erectus and the Emergence of a New Hominin Lineage in the Middle Pleistocene (c. 400 kyr) Levant. *PLoS ONE* 6(12): e28689. Electronic document, Accessed Oct 2012, URL: http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0028689

H. e. larger bodied than successors, large brain, needed lots fat. Elephant is "ideal food package" but disappeared, until then "a main calorie contributor to the diet of H. e. in the Levant." Led to evolution of new species with lighter body weight, improved knowledge, skill, coordination allowing hunt more smaller game. Model based on Qesem Cave hominins which 400-200 kyr that are not H.e. but more similar to later pops like Skuhl/Qafseh H. sapiens/Neanderthals. Assoc with Acheulo-Yabrudian industry, no elephant assocs. Smaller gut, larger brain enforced human carnivory/encephalization process, i.e. high-energy foods. Can't get >50% calories from protein without energy imbalance "rabbit starvation." Plant foods less nutritious, require processing often beyond H.e. technol. Elephants are simple to hunt with limited technology, and found in many Acheulean sites. [I have a hard time swallowing H.e. as technologically capable of specialized elephant hunting. There also seems to be a systematic calculation problem: elephant 4.1% bodyweight is fat, fat is 2.5X more calories than protein, but % fat cal for eleph given as 49%. Not possible, since there is so much more protein (edible mass ca 50% of live weight). Other game figures similarly odd.]

Benedict, James B.
1992 Sacred Hot Springs, Instant Patinas. *Plains Anthropologist* 37(138): 1-6

Colorado chert point patinated more than possible for age, reflaked – suggests rapid patination in sodium-rich hot springs, reflecting ritual use of spring and maybe of point.

Bennett, James R.
2003 *Relics and Reproductions : Identifying Reproduction and Altered Ancient American Artifacts.* Homestead Publishing Co, Polk, Ohio.

Detailed info on identifying fakes, well-illustrated with color photos. Microscopic inspection for patina, mineral deposits, wear, UV inspection for rechipping etc. Collector point of view, but relatively tolerant of knappers. Notes fakes in collections made 100 yrs ago.

Bennett, Jim
2005 The Clash of Generations: New Collectors are Demanding Accountability. *Indian Artifact Magazine* 24(1):24-26.

Old collectors just passed fakes on to others, this is no longer acceptable, because rise in artifact prices has made fakes a serious matter.

Bennett, Jim
2009 *Authenticating Ancient Indian Artifacts: How to Recognize Reproductions and Altered Artifacts*. Collector Books, Paducak, KY.

Repros/fakes very common. Knappers often just hobby craftsmen, not all bad, but aging a new artifact crosses the line to faking. Old collectors felt it OK to pass a known fake to others, buyer beware ethic, but not acceptable now, sale without disclosure is as bad as the faking itself. [He doesn't show much evidence of direct info from knappers. Wants to avoid the obvious conclusion that if so many fakes, so many knappers, then so many collector/dealers are dishonest - knapping is riddled with shady knappers, but the collecting industry is even more rotten.] Earliest faking was rechipping to improve appearance, but these and complete fakes found in early 1900s collections. Flint effigies common fakes, rare or non-existent in prehistory - eagle, buffalo, turtle, snake, fishhook. Grey Ghost TX slab cut flints [doesn't give names or other info]. Flea market fakes aka "one flake wonders" poor quality for ignorant buyers.

Ground stone artifacts faked too: ornamental slate and pipes "are entirely flooded with fakes." (189) Monolithic stone axes "have more known fake examples sold in the relic market than actual authentic ones." Slate especially hard to judge because often overcleaned to show color + polish. Uniform grinding lines often on fakes.

[Lots of good photos of features used in authentification: mineral stains and deposits, wear, resharpening, black light and textural differences of restored areas, "hang nail" flakes, edge crushing, metal marks, etc. Useful.]

Benson, Michael P.
1980 A Prehistoric Subsistence Kit from Castle Valley, Utah. *Flintknappers' Exchange* 3(1): 6-15.

Elk hide bundle with knapping kit, ochre, leather etc.
Knap kit: leather palm pad, antler baton, antler baton/presser, bone punch, “notcher”-antler presser, hammerstone.
23 stone tools – scrapers, knives, biface frags, and one large 38 cm long narrow basalt biface [like the black one from Grasshopper?] and a flat quartzite one.

Berg, Caryn M.
1993 Using Microwear Analysis to Determine Stone Tool Use at Elden Pueblo. Unpublished MA thesis, Northern Arizona University.

Berg, Caryn M.
1994 Microwear Analysis and the Informal Tool Kit at Elden Pueblo. Paper presented at the 59th Annual meeting of SAA, Anaheim, CA.

High power, all flakes >2.5 cm; nothing surprising, concludes that her analysis supports importance of hunting and gathering as well as agriculture.

Berg, Robert S.
1995 A Wild Boar Hunt at Cold Brook: An Eolithic Adventure. *Chips* 7(3):4-5.
Also in *The Atlatl* 9(1):1-2.

Killed a boar with atlatl, not much lesson here, but can be done!

Berger, Billy
2009 The Lethality of the Primitive Bow. *Primitive Archer* 17(5):30-35.

Defends accuracy, power and effectiveness of primitive bow and stone tipped arrows, lots of annecdotes of successful hunts.

Berger, Billy
2010 Small Game Hunting is Big Time Fun. *Primitive Archer* 18(2):34-37.

Squirrel, rabbit tips, prefers small stone points to blunts.

Berger, Billy
2010 Treasures of the Smithsonian Part IV: Archery of the Southwestern United States Paiute. *Primitive Archer Magazine* 18(5): 20-25.

Several photos of 1874 arrows with stone tips - small side-notched, one held only with pinyon pitch.

Berger, Billy
2010 Treasures of the Smithsonian Part V: Archery of the West Coast: Hupa. *Primitive Archery Magazine* 18(6):22-29.

19th C bows and arrows from N California. Slightly reflexed sinew backed flat bows, sets of arrows, some with jasper [looks like red obsidian to me] and blue glass points. Nice Desert Side-Notched form with deep notches, one set on barbed bone foreshafts.

Berger, Billy
2011 How to Make Pine Sap Glue. *Primitive Archer* 19(2):48-53.

Tips for hafting stone arrow points with sap and sinew.

Berger, Billy
2012 For the Love of Stone. *Primitive Archer* 20(3):48-50.

Flint is not inferior, has personality, timeless, heat treatable. Pics of his points.

Berger, Billy
2012 Hunting Fox Squirrels with a Primitive Bow. *Primitive Archer* 20(5):64-64.

Small barbed stone points "help immobilize the animal if a shot misses the vitals"

Berger, Billy
2013 Making the Cahokia Point. *Primitive Archer* 21(3) :54-59.

Berger, Billy
2013 Stone vs Steel. *Primitive Archer* 21(4):54-57.

Shot deer carcass 3 shots each, equal penetration.

Berger, Billy
2014 Stone Point Penetration Test on a Deer. Youtube video, http://www.youtube.com/watch?v=LsqrlaIef2o accessed July 15, 2014.

4 shots, 300 grain cane arrows with small stone "bird points", 45 lb primitive bow, all pass through body and out the other side, one pt lost tip.

Berger, Billy
2014 Making a Norther Paiute Bow and Arrow Set. *Primitive Archer* 22(4):24-29.

Sinew backed juniper bow, Desert Side-Notched type obsidian arrow points on *Arundo*.

Berger, Billy
2014 The Favell Museum. *Primitive Archer* 22(4):58-63.

Oregon. Nicholarsen Cave foreshafts and other finds. Many lithics, obsidian dance blades, modern knappers.

Berger, Thomas D. and Erik Trinkhaus
1995 Patterns of Trauma among the Neandertals. *Science* 22: 841-852.

Compares Neanderthaler injuries to rodeo riders = contact with large angry animals.

Bergman, C.A.
1987 Hafting and use of bone and antler points from Ksar Akil, Lebanon. In *Le Main et l'Outil : Manches et Emmanchements Préhistoriques*. D. Stordeur, ed., pp. 117-126. Lyon: Maison de l'Orient.

Bergman, Christopher A. and Edward McEwen
1997 Sinew-reinforced and composite bows: Technology, function, and social implications. In *Projectile Technology*. H. Knecht, ed., pp. 143-160. Plenum Press: NY.

Summarizes bow types; discusses technology and manufacture and mechanics of composite bows, as still made in Mongolia.

Bergman, Christopher, Donald Miller, John F. Doershuk, Ken Duerksen, and Teresa W. Tune
1998 Early Woodland occupations of the Northern Bluegrass: The West Runway Site (15BE391) Boone County, Kentucky. *North American Archaeologist* 19(1):13-33.

Early Woodland site; basic lithic analysis with points. "Kramer" pts or E.Wdlnd stemmed cluster; manuf sequences; use wear and impact = atlatl pts.

Bergman, C.A. and M.H. Newcomer
1983 Flint Arrowhead Breakage: Examples from Ksar Akil, Lebanon. *Journal of Field Archaeology* 10(2): 238-243.

Bergman, C.A., R.N.E. Barton, S.M. Collcutt, and G. Morris
1987 Intentional Breakage in a Late Upper Paleolithic Assemblage from Southern England. In *The Human Uses of Flint and Chert*. G. Steveking and M. Newcomer, eds., pp. 21-33. Cambridge: Cambridge University Press.

Bergman, Mary Jane, April K. Sievert, and Thomas R. Whyte
1999 Form and Function of Bipolar Lithic Artifacts from the Three Dog Site, San Salvador, Bahamas. *Latin American Antiquity* 10(4): 415-432.

Economizing imported stone by bipolar microliths, recycling and reuse. Too weathered for use-wear, but starch grains suggest grater use.

Bergsvik, Knut Andreas and Einar Østmo
2011 The experienced axe. Chronology, condition and context of TRB-axes in western Norway. In *Stone Axe Studies III*. Vin Davis and Mark Edmonds, ed., pp. 7-20. Oxbow Books, Oxford.

Berman, Judith C.
1999 Bad Hair Days in the Paleolithic: Modern (Re)constructions of the Cave Man. *American Anthropologist* 10(2):288-304.

Conventional iconography of human ancestors shows with long unkempt hair - not from evidence, but expressing beliefs about humans and 'others', which influence scientific study as well. Hair is symbolically important and easily manipulated, must have been so in past too. Wild hair = natural, primitive, animal, sexual. Upper Paleolithic modern humans lack pelts, but can't tell when we lost them. Upper Pal figurines show manipulated hair, and we don't know anything about Neanderthal hair, but "hairstyles are a clue to where on the evolutionary tree an artist or illustrator places his or her subject." We can see ancestors as 'noble savages' of a golden age from which we may have declined ('soft primitives') or beasts from whom we have ascended ('hard primitive view') but who still live dangerously inside us. [One could suggest same things from tools shown with cave men - good tools = civilization, crude = other, the story is one of advance and progress.] She shows Burian's Cro Magnon with anachronistic bow and arrows derived from N. Am. ethnog of artists.

Berner, John
1984 Artifact or Artifake? *Central States Archaeological Journal* 31(4): 186-188.

Berner, John
1997a The Authenticators. *Prehistoric American* 31(4): 10-11.

Early worries about fakes mentioned; 1964 "Genuine Indian Relic Society" [publisher of P.A., aka "Society for the Documentation of Prehist Am"] began specifically to educate public about fakes and promote "real" artifacts, had an authentication program off and on, Perino started private one, now many others, "papers a must by 2000."

Berner, John
1997b Is it a Reproduction or a Fake? *Prehistoric American* 31(3): 21.

A matter of intent. Faking/aging techniques discussed.

Berner, John
1997c Perfect Arrowhead Phenomena. *Prehistoric American* 31(2): 9.

Perfect points are real rare – gives some estimates. But now there are lots for sale = fakes.

Berner, John
1998a Advice for New Collector/Investors. *Prehistoric American* 32(4): 3.

Museums and good collections have fakes; everybody gets fooled some. Archaeologists claim fakes reduce looting - ridiculous! Price is not good guide to authenticity.

Berner, John
1998b Popularity of Reproduction Styles. *Prehistoric American* 32(4): 10.

From photo record of all reproduction points we examine as authenticator: Clovis 22 %, Dovetail 18.4 %, etc. – [most of major types but no "other" category – how good are his stats? Don't know!]. Knappers are good now, but you can usually tell fakes.

Berner, John
1998c Twentieth Century Reproductions/Fakes. *Prehistoric American* 32(4): 16-17.

2 page color photos of 13 pts – products of modern midwestern knappers. Most with old labels added, some had "certificates of authenticity".

Berner, John F.
1998d Inside "Prehistoric American" *Prehistoric American* 32(4): 2.

Issue of fakes: thriving. "Tomorrows Antiquities" ads for faking business – aging, etc.

Berner, John F.
1998e Authenticity, What Does it Mean? *Prehistoric American* 32(4): 11.

Complaints about fakes: scaring investors, sleazy authenticators who will provide papers for anything, in cahoots with dealers.

Berner, John F.
1999a Beware of False Prophets. *Prehistoric American* 33(4): 13.

Warns of fakers, mentions Woody Blackwell case but not by name. Proliferation of new authenticators – but only 4 "have any credibility".

Berner, John F.
1999b Self-diagnosis: How to Recognize a Fake. *Prehistoric American* 33(4): 22-23.

"Every type made to specific format" = style and material. Fakes made every which way. Know your types – problem: many collectors want all types so don't know them well. Study patination of real specimens. I see 25-30,000 flints/yr. Most fakes start as replicas, some knappers sign work. Many aging techniques, but real "feel" hard to fake. [Very optimistic about his ability to detect fakes, but little solid info.]

Berner, John F.
1999c Welcome to Artifact Fraud on the Web! *Prehistoric American* 33(1): 3.

Problems of eBay selling fakes.

Berner, John
2000a *American Indian Artifacts: Genuine or Reproduction*. American Antiquities Inc, Roswell.

Reprints of his columns in Prehistoric American and elsewhere back to 1969. Complaining about flint fakers already by 1984. Lots pictures of fakes and real, [with some evaluation, but not enough to be really useful. Uses my "5000 knappers" figure, but cites NO archaeology article anywhere, while preaching the value of knowledge about real artifacts.]

Berner, John
2000b Their Real Dream is to Fool the Experts. *Prehistoric American* 34(1): 19.

Commentary on the Woody Blackwell fakes.

Berner, John F.
2000c You Pays Your Money and You Takes Your Chance. *Prehistoric American* 34(2): 4.

Complaints about fakes – fake old collectors labels and provenances on fake artifacts.

Bernstein, David J.
1984 Utilitarian Lithics as Prestige Items: A Preliminary Examination of Some Lower Central American Mortuary Practices. In *Inter-Regional Ties in Costa Rican Prehistory.* Esther Skirboll and Winifred Creamer, eds. BAR International Series 226**.**

Assoc of ground celts with rich male burials – relatively costly, probably symbolic. [Weak article]

Bernstein, David J. and Michael J. Lenardi
2005 Glacial Erratics as Sources of Lithic Raw Material: The McGregor Site on Long Island, New York. *Lithic Technology* 30(2): 145-154.

Mostly quartz cobble sources on Long Island, but some small stations like McG working erratics for expedient tools when people away from coastal homes.

Berry, Clyde Franklin
1937 Glass Scrapers: The Unnoticed Link in the Indian Chain. *National Archaeological News* 1(10): 24-27.

Bertouille, H.
1989 Theories Physiques et Mathematiques de la Taille des Outils Préhistoriques. Paris: CNRS, Cahiers du Quaternaire, no. 15.

Bettinger, Robert L., James F. O'Connell, and David Hurst Thomas
1991 Projectile Points as Time Markers in the Great Basin. *American Anthropologist* 93(1): 166-172.

If points are rejuvenated, the forms supposedly made from Elkos etc should average smaller weights – they do not, and thus are not just reduction series but are good temporal markers (contra Wilke and Flenniken 1991).

Bettinger, Robert L. and Jelmer Eerkens
1999 Point Typologies, Cultural Transmission, and the Spread of Bow and Arrow Technology in the Prehistoric Great Basin. *American Antiquity* 64(2):231-242.

Tests 2 typologies of points for conflict: "Berkeley" separates dart/arrow by weight, "Monitor" by base W. Great Basin pts smaller ca. 1350 BP = bow + arrow. Typologies agree except in central NV – dart pts too light, and in E. CA – arrow pts too wide.
Elko = dart vs Rosegate = arrow (<3 gm wt) but resharpening affects wt, so Monitor uses base width – Elko >10 mm.
In NV probable limits on material, lots Elko resharpened, so get too light.
E. CA different pt traits, so a different mode for replacement of atlatl – wt and base W not correlated (they are correlated in most of Gt B – why both typologiess agree). Cultural Transmission models: 1) Guided Variation = copying with individualistic modification 2) Indirect Bias = copy a single model for many traits, usually groups select same model, thus less idivid variation in groups of traits, more correlation.
So maybe indirect bias in NV – traits correlated vs E. CA guided variation; Why different modes of transmission? Maybe E. CA got bow from groups of diff ethnic/linguistic stock, less contact, thus did more experimentation. Different transmission may reflect diff cultural norms- i.e. E. CA more individualistic, C NV more group-oriented, slower to change. Maybe explains why Numic spread out of E. CA after 1000 BP-successful innovation and competition. [Quite good article – test hypotheses abut pts + typol, then good hypotheses to show significance].

Bettison, Cynthia Ann
1985 An Experimental Approach to Sickle Sheen Deposition and Archaeological Interpretation. *Lithic Technology* 14(1): 26-32.

2 types of sheen from plant processing; type depends on life stage of plant – green vs. dry; dry = attritional polish, green = depositional layer

Betts, Colin
2014 The Schulte High Ridge Site: A Plainview Paleoindian Site in Allamakee County, Iowa. *Newsletter of the Iowa Archaeological Society* 63(4):2-3.

3 pts of heated Galena/Platteville chert, lanceolate, parallel flaking, possibly from a cache but surface collected by landowner in past, now in Luther College collections

Beyin, Amanuel, and John J. Shea
2007 Reconnaissance of Prehistoric Sites on the Red Sea Coast of Eritrea, NE Africa. *Journal of Field Archaeology* 32(1):1-16.

A few Acheulean hand axes, mostly Middle Stone Age, Late SA, and Neolithic coastal sites; such coastally adapted humans could be source populations for dispersal into Eurasia.

Beyries, S.

1987 Quelques exemples de stigmates d'emmanchements observés sur des outils du Paléolithique Moyen. In *La Main et l'Outil: Manches et emmanchements préhistoriques*. D. Stordeur, ed., pp. 55-62. Lyon: Maison de l'Orient.

Beyries, S.
1993 Are we able to determine the function of the Earliest Paleolithic Tools? In *The Use of Tools by Human and Non-Human Primates*. A Bethelet and J. Chavaillon, eds., pp. 225-238. Clarendon Press, Oxford.

Beyries, Sylvie, Claudine Karlin, and Youri Tchesnokov
2001 *Living in the Skin of My Reindeer: Traditional Leathercraft in Siberia*. DVD 28 min. CNRF?

Killing reindeer with spear, butchering. Hides pounded to break down fibers with stone pestle and anvil, scraped with stone scrapers, set in wooden bar for 2-handed use, pushing motion while skin is held on board pressed against stomach on one end and ground on other. "Pickled" with reindeer dung, tanned with fresh alder bark, dried for storage, soaked and boiled. Dyed with same, mixed with urine to mordant. Hides scraped between each application. Worked with hands and feet to soften, finally smoked. Scrapers made by smashing core on iron truck hub, selecting large flake, shaping edge with iron chisel or stone as percussor to make large thick ovoid scraper. Apparently held in handle socket by friction alone. Similar metal scrapers preferred for difficult areas like dry curled edges of skin, but stone scraper edges are "less abrasive" and reduce risk of tearing. Scrapers passed down generations, rarely sharpened, preferred dull. All of the hide workers shown are old women. Sewn with sinew to make garments and tents.

Biagi, Paulo and Mauro Cremaschi
1991 The Harappan Flint Quarries of the Rohri Hills (Sind-Pakistan). *Antiquity* 65(246): 97-102.

Source of tools for Mohenjodaro, etc.; Blades from halving thick biface to begin core

Bienenfeld, Paula
1995 Duplicating Archaeological Microwear Polishes with Epoxy Casts. *Lithic Technology* 20(1): 29-39.

Bietti, A. and S. Grimaldi
1995 Levallois Debitage in Central Italy: Technical Achievements and Raw Material Procurement, in *The Definition and Interpretation of Levallois Variability*, H.L. Dibble and O. Bar-Yosef, Editors.Prehistory Press: Madison. p. 125-142.

Bigazzi, G., G. Poupeau, Z. Yeğingil, and L. Bellot-Gurlet
1998 Provenance Studies of Obsidian Artefacts in Anatolia Using the Fission-Track Dating Method: An Overview. In *L'Obsidienne au Proche et Moyen Orient: Du Volcan á L'Outil*, edited by M.-C. Cauvin, A. Gourgaud, B.Gratuze, N. Arnaud, G. Poupeau, J.-L.

Poidevin, and C. Chataigner, pp. 69-89. BAR International Series 738. Archaeopress, Oxford.

Lake Van area obsidians younger, but most including Acıgöl and Göllü Daği in Cappadocia are Mio-Pliocene ages. Can source archaeological obsidians using these F-T data. Carpathian and Aegean sources not noted in Bosphorus region. Most artifacts from Gollu Dag volcanics w some N Anatolian sources, 2 eastern sites Cayonu and Cafer Hoyuk have Bingol obsidians primary.

"Big Blue Frog"
1994 Knapper's Profile: Oskey Nondesson. *The Flint Knapper's Exchange*. Jan-Feb 1994:6.

Knapping myth making – flint more plentiful in prehist; knap w/ mammoth tusk

Bill, J. H.
1862 Notes on Arrow Wounds. *The American Journal of the Medical Sciences* 40(88):365-387.

Arrow wounds will be less common as "our Indian tribes are being fast exterminated." But still common, and "in skilfull and desperate hands the wound which it inflicts is attended with a fatality greater than that produced by any other weapon…" Construction of arrows [generalized and odd]: dogwood limbs, straightened by twisting, soft hoop iron head held in by tendon. [Oddly, no mention of stone points.] The wet tendon loosens in the wound, leaving the head. If lodged in bone, requires great force to remove. Poison by having snake bite liver, letting it putrify. But knows no instance of human wounded by poison. Table of body part wounded and fatality rates. Wounds to abdomen + chest most likely to be fatal. Expert bowman can dischard 6 arrows per minute and "a man wounded with one arrow, is almost sure to receive several arrows". If arrow passes through without injuring organs, most will heal "by first intention," cleaning wound if pus forms [no effective antiseptic]. Most wounds must be enlarged to find and extract head [remember this is without modern anesthetic, though morphia and laudanum were used], inserting fingers and forceps. Lengthy discussion of cases, wounds in different body parts, treatments, including such things as "I bled him until he fainted."

Bill, J. H.
1882 Sabre and Bayonet Wounds; Arrow Wounds. In *International Encyclopedia of Surgery: A Systematic Treatise on the Theory and Practice of Surgery by Authors of Various Nations*. John Ashhurst, ed., pp. 101-117. William Wood and Company, New York.

Sabre as used usually not sharpened [!]. Bayonet wounds so infrequent, military may decide to disuse.
Generalized description of arrows. Head loosely attached by sinew, likely to detatch in wound. Stone heads mentioned from Coues info. Metal arrowheads usually not barbed. Effective range less than100 yds, but 'penetrativeness' is surprising. "The N Am Indian does not use poison on his arrow, at least not designedly." Just unsanitary. Table of wounded parts and recovery rates, 154 cases from observation and lit. p 108 importance of removing head, need to push through, or enlarge wound along shaft to probe, careful not to detach head. Wire loop for extracting head;

forceps. [Even now, no mention of anaesthesia or antisepsis, except carbolic. The following article on bullet wounds talks about experiments in keeping a wound aseptic, as a new idea.]

Billeck, William T.
1991 Triangular Projectile Point Stages of Manufacture at the Late Woodland Sweeting Site, 13WS61. *Journal of the Iowa Archaeological Society* 38:11-15.

[Useful, short] Madison and Cahokia points (94) [well drawn, comparable to Grasshopper but not cited] Similar stages, similar breaks. Compares breaks – early stage = transverse, late stage = tip; 2 manufacturing strategies “flake” and “biface” [= thick and thin, fortuitous, not strategies]

Billeck, William T.
1994 Corner Tang Artifacts in the Paul Rowe collection. *Journal of the Iowa Archaeological Society* 41:140-144.

Billeck, William T.
1998 Fluted Point Distribution in the Loess Hills of Southwestern Iowa. *Plains Anthropologist* 43(166): 401-409.

Surface collected pts from amateurs N=35; most on loess hills, not river valleys, a few from creek beds. Chert ID’s – most local W IA, a few not – eg Burlington, KRF. Finished points and performs of both. Isolated pts usually finished, clusters have finished and un.

Binder, Didier, and Nur Balkan-Atlı disk,
2001 Obsidian Exploitation and Blade Technology at Kömürcü-Kaletepe (Cappadocia, Turkey). In *Beyond Tools: Redefining the PPN Lithic Assemblages of the Levant*. Isabella Caneva, Cristina Lemorini, Daniela Zampetti, and Paolo Biagi eds., pp. 1-16. ex oriente, Berlin.

Excavs in Neo workshop deposits: topography and access to outcrops not clear, 2 assemblages chronologically distinct: naviform technol for production of standardized bladelets, reduced naviform production with unidirectional arched blade technol. Other trenches, blades made using bifacial preforms. Blades for points and sickles. [Her types and explans not clear. Thick bifaces are worked to produce bidirectional naviform cores; the unidirectional cores shown are conical, not naviform.] Also pressure prismatic blades from naviform cores.

Bindon, P., Raynal, J.P., and Sonneville-Bordes, D.
1987 Sagaies en bois d’Australie occidentale: fabrication, fixation, fonctions. In *Le Main et l’Outil: Manches et emmanchements préhistoriques.* D. Stordeur, ed., pp. 103-116. Lyon: Maison de l’Orient.

Binford, L.
1980 Willow Smoke and Dogs' Tails: Hunter-Gatherer Settlement Systems and Archaeological Site Formation. *American Antiquity* 45(1): p. 4-20.

Binford, Lewis R.
1986 An Alyawara Day: Making Men's Knives and Beyond. *American Antiquity* 51(3): 547-562.

1 day craft work – flake knives, core reduction, hafting w/resin. Often more than 1 man worked on tool, not begun and finished by same man – implications for concept of style discussed. Distrib of artifacts in site.

Binford, Lewis R. and Shelly R. Binford
1969 Stone Tools and Human Behavior. *Scientific American* 220(4): 70-84.

Binford, Lewis R. and Jacqueline Nichols
1979 Problems/Solutions: Interview with Lewis R. Binford. *Flintknapper's Exchange* 2(1):19-25.

Why he shifted to fauna; negative view of knapping experiments.

Binford, Lewis R., and James F. O'Connell
1984 An Alyawara Day: The Stone Quarry. *Journal of Anthropological Research* 40(3):406-432.

1974, stone tools and quarry no longer in use, but old men remember skills, organized demo. Making 'men's knives' of fine quartzite, large blades with converging sharp edges, also used on fighting axes and spears by 'old ones' further north. Struck from prepared core, hammerstone percussion. These were made at quarry, could be retouched into other tools (e.g. womens' knives) at camp. Quarzite boulder broken by fire under it, no water used. Successful blades and tools wrapped in grass or paper-bark for transport to avoid dulling edges.

Work done squatting, core on ground. Contrast to early archaeol knappers who took Brandon as model, worked seated on chairs - Bordes, who learned from Coutier, was aware of this. Bordes + Crabtree exchanged skills, and taught many others - all on chairs. So modern experiments with flake distributions in knapping may be wrong. 'Block on Block technique may more often be just working large core on ground by percussion. N. Am. ethnog refs to wood or stone 'anvils' as working surfaces. Similarity of Alyawara 'leilira' blades to Levallois technique. Variability in working location and technique for different tools, e.g. quarry vs camp.

Bird, Caroline F. M.
1993 Woman the Toolmaker: Evidence for Women's Use and Manufacture of Flaked Stone Tools in Australia and New Guinea. In *Women in Archaeology: A Feminist Critique*, edited by Hilary du Cros and Laurajane Smith, pp. 22-30. The Australian National University, Canberra

Common assumptions: men hunt, associated with stone tools, bones; women gather, associated with organics or archaeologically invisible. Contradicted by ethnography.

Australian ethnographys dominated by men, women ignored even by woman ethnographers. Reviews ethnography: Central Aust - women use stone tools for woodwork and butchering, but not hair cutting or scarification. Women make digging sticks, men make spears, woman use coarser stone, simpler tools, men more likely to use hafted adzes. Kimberley – women use stone hatchets for forage, make dig sticks, men make most wooden tools for women, Kimberley points. SW W Aust - account of women making stone barbs for fighting spears! Tasmania - women and groups did quarrying. Queensland - women might grind axe blanks. New Guinea - some tribes men do all stonework, others women too, men make large flakes by freehand percussion, women small sharp flakes for tattooing by bipolar. Usually make women's gear with stone, but a few also male gear like spears. Axes often borrowed from men, but sometimes made. Male/female differences less in use and tasks, but perhaps more in quantity of stone used; women tend to use simpler stone tools.

Bird, Junius B. **sic**
1969 A comparison of South Chilean and Ecuadorean fishtail projectile points. *Kroeber Anthropological Society Papers* 40: 52-71.

Bisson, Michael S.
2000 Nineteenth Century Tools for Twenty-first Century Archaeology? Why the Middle Paleolithic Typology of Francois Bordes Must Be Replaced. *Journal of Archaeological Method and Theory* 7(1):1-48.

Bisson, Michael S.
2001 Interview with a Neanderthal: an Experimental Approach for Reconstructing Scraper Production Rules, and their Implications for Imposed Form in Middle Paleolithic Tools. *Cambridge Archaeological Journal* 11(2):165-184.

Bixby, Lawrence B.
1945 Flint Chipping. *American Antiquity* 10(4): 353-361.

Describes his experiences learning to knap. E. Hooton connected him with other knappers: F. R. Whitney of Tacoma WA, Charles E. Snow, student at Harvard U. Brandon flint (ballast?) found in dump in Chelsea. [His tool kit strongly resembles my early ones.] Striking platform on core should be about 90 degrees. Flakes are 'thrown off'. Pressure direction in and down [but doesn't understand need to prepare platform]. "Hinge fractures are accidents beyond the control of the worker, as the probably are due to some fault in the stone." [Or your 90 degree platforms!].

Blacking, John
1953 Edward Simpson, alias 'Flint Jack': A Victorian Craftsman. *Antiquity* 27: 207-211.

Quicky biography, harsh words about Victorians – quotable.

Blackman, E.E.

1932 A Study in Chipping a Nebraska Flint Knife. *Nebraska History Magazine* 13(1):36-41.

Parallel flaking was produced by glue. He claims to have replicated it. [Preposterous!]

Blackmar, Jean
2001 Regional Variability in Clovis, Folsom, and Cody Land Use. *Plains Anthropologist* 46(175): 65-94.

Uses point survey info – pts from many sources and collections, by county, compared to prehistoric environmental zones for KS, OK, TX.
1615 PaleoInd pts, 80 % isolated finds.
45% (720) Folsom, 35% (570) Clovis, 20% (325) Cody

Blackmun, Barbara W.
2008 Late 20th Century Bronzes and Ivories in Benin City, Nigeria. In Pernicka, Ernst, Silke von Berswordt-Wallrabe, and Hilke Wagner eds, *Original - Copy - Fake? Examining the Authenticity of Ancient Works of Art - Focusing on African and Asian Bronzes and Terracottas*. pp., 153-163. Verlag, Philipp von Zabern, Mainz.

Modern craftsmen making bronzes for current elite use and as reproductions for art sale; some middlemen remove signatures, patinate, and sell as forgeries.

Blackwell, Woody
1994 Making Fluted Points with the Sollberger Jig, Part I. *Chips* 6(2): 6-8.

[Fairly good], this part discusses preparation of the blank and platforms for fluting.

Blackwell, Woody
1994 The Sollberger Jig: Part II. *Chips* 6(3): 4-6.

Good detailed instructions with diagram for making fluting jig.

Blackwell, Woody
1995 *Fluting Points with the Sollberger Jig*. VHS. Opposable Thumbs Productions.

Blackwell, Woody
1996 *Welcome Back to the Stone Age: Beginning and Intermediate Flintknapping with Woody Blackwell*. VHS. Opposable Thumbs Productions.

Blackwell, Woody
1995 Knapping the Montell Point. *Chips* 7(3): 5-8.

Large TX point, good tips on percussion thinning.

Blackwell, Woody
1996 The Golden Age is Here. *Chips* 8(3): 4-5.

Golden Age: more skill and new materials than ever before, on to high art knapping, abstract sculpture.

Blackwell, Woody
1997a Billets and Bad Attitudes. *Chips* 9(3): 2-4.

Copper vs antler – live and let live.

Blackwell, Woody
1997b Making the Scottsbluff II. *Chips* 9(2): 9-11.

Compares to Shaker philosophy of form must follow function and every task is worthy of your best effort.

Blackwell, Woody
1997c Knapping the Pine Tree Point. *Chips* 9(4): 12-13.

Blackwell, Woody
1997d Some Thoughts on Folsom Culture. *Chips* 9(1):12-13.

Info from Stanford visit to Smithsonian 1994 – larger points were worked down and resharpened to "classic" form. Used obsidian for many. [Could be justification for his own outsized pts]

Blackwell, Woody, and Derek McLean **o**
2005 *Flintknapping: The Art of the Ancients*. DVD Opposable Thumbs Productions/McLean Design.

Introduction to flintknapping. Covers some percussion and pressure basics, raw materials, safety and tools (he uses exclusively copper but shows other tools). Serration, notching, beginning slabs. Follows one dovetail all the way through. Talks about art, esthetics, his philosophy. Points shown include an oak-leaf eccentric, and lots of Hardins. Several things mentioned but not performed, like indirect percussion and fluting. Produces a multi-technique teaching piece with prepared platforms that is cast and available from McLeandesign. [Well filmed and Woody is very articulate, but the range of tips is odd if intended for beginners. Useful, but not really new for experienced knapper, and not enough basics of percussion for the beginner - especially no explanation of angle of blow and not enough about platforms.]

Blake, Mike
1989 Untitled letter. *Chips* 1(2): 2.

Blake, Mike
1991 Fort Osage Knap-in. *The Flint Knapper's Exchange* 1(4): 13-16.

Blake, Mike
Back in Time. *Chips* 4(4): 6-7.

Blanchette, Jean-Francois
1975 Gunflints from Chicoutimi Indian Site (Quebec). *Historical Archaeology* 9:41-54.

Blank, Patrick
2012 From the Pit: Flintknapping FAQ. *Primitive Archer* 20(5):20-21.

Column, basic knapping questions answered, ok but brief.

Blank, Patrick
2013 From the Pit: Flintknapping FAQ. *Primitive Archer* 21(4):18-20.

[A regular column, usually good info. This one mixed.] Uses lots indirect percussion. Can't recommend any knapping books. Heat treating in past: in SW 20% for large + medium pts, high as 50% for arrowheads (he includes TX in SW, so maybe, but not in real SW).Where find archaeol data?: Arch society lit, universities but "need guide" reliable info hard to find. Cut antler compound pressure flakers best. "Lack of copper pressure flakers in ancient past," one ref to possible billets (in TN).

Blankenship, Bart and Robin Blankenship
1996 *Earthknack: Stone Age Skills for the 21st Century*. Layton, Utah: Gibbs Smith.

Reasonable but not great section on knapping.

Blankenship, Bart and Robin Blankenship
1996 On the Cutting Edge: Stone Tool Bow Making. *Bulletin of Primitive Technology* 12: 46-49.

Wedges, choppers, planes.

Blankenship, Gordon
2003 Folsom Points and Preforms. *Chips* 15(4):13-15.

Bleed, Peter
1986 The Optimal Design of Hunting Weapons: Maintainability or Reliability. *American Antiquity* 51(4):737-747.

Engineering design concepts relate tools to function and environmental constraints. [Good concepts] Reliable = overdesigned, strong, redundant and backup parts, specialized, separation between manuf/repair and use, good in situations with high cost of failure.

Maintainable = simpler, light, easily fixed or adapted to new function, user-made, on spot repair, good in situations of unpredictable variable encounters with low failure costs.
Both promote "availability" – usableness in diff situations.

Bleed, Peter
1996 Risk and Cost in Japanese Microcore Technology. *Lithic Technology* 21(2): 95-107.

Bleed, Peter
2002 Cheap, Regular, and Reliable: Implications of Design Variation in Late Pleistocene Japanese Microblade Technology. In *Thinking Small: Global Perspectives on Microlithization*, edited by Robert Elston and Steven L. Kuhn, Archeological Papers of the American Anthropological Association 12, pp. 95-102.

Bleed, Peter and Marlene Meier
1980 An Objective Test of Heat Treatment of Flakeable Stone. *American Antiquity* 45(3): 502-507.

Tested by flaking in tumbler.

Blinkenberg, Christopher
1911 *The Thunderweapon in Religion and Folklore: A Study in Comparative Archaeology*. Cambridge University Press: Cambridge. Reprinted 1987 by Caratzas Publishing Co. Inc.: New Rochelle

Blitz, John H.
1988 Adoption of the Bow in Prehistoric North America. *North American Archaeologist* 9(2): 123-145

Need continental perspective, not local adoptive viewpoint.
Speed of bow's spread across ecological boundaries seen as "contagious competitive advantage in intergroup conflict".
Chronology (usually based on small pts): Arctic by 3000 BC – microblade traditions Subarctic - 500-600 AD small bifacial pts. Plains - (small notched pts) N Plains by 200 AD, Wyoming by 500 AD, S plains after 500 AD. Great Basin - pt size reduction AD 1-500, Desert Side Notched + Cottonwood Triangular appear 800-1200. If Rosegate series are arrows, then ca 200 AD, probably overlap.
Pacific NW and CA after 500 AD shifts to small pts. SW: "unambiguous" replacement in BM III 575-750 AD. Gt Lakes and NE Woodland: triangular Levanna pts 600-700 AD. MidW and SE: small triang pts around 700 AD sudden appearance.
1) small pts are the only widely useful criterion 2) N to S spread, rapid = diffusion as well as migration 3) Long stasis in Arctic, rapid adoption in S 4) Beginning 200 AD, intensifying after 500 – smaller pts. When small + large pts coexist, also other evid of atlatl (Gt B), where sudden shift to small pts (SW, Plains MidW, SE) atlatl rapidly disappears.
Atlatl best for water hunting but bow has better range and accuracy, more efficient but no evid of major change in hunting patterns or success.

Bow might enhance individual hunt success, leading to advantage in status competition, or better warfare, allowing intergroup competition + expansion into new territory.
Some evidence of warfare increase after bow – bodies, defensive structures.

Blumenschine, Robert J and John A Cavallo
1992 Scavenging and Human Evolution. *Scientific American* 267 (4): 90-96

[Good article] cite for support of scavenging model – using stone tools.

Boaz, Joel
1984 Towards a Time Sensitive Projectile Point Typology for Southwest Idaho. *Idaho Archaeologist* 7(1):15-30

Modification of Thomas Great Basin computerized point key. Types agree w/ C^{14} dates.

Bodington, Alice
1896 Mental Action During Sleep, or Sub-Conscious Reasoning. *The American Naturalist* 30(358):849-853.

Account of an Assyriologist's dream in which he found solution to a problem.

Bodio, Stephen
1984 *A Rage for Falcons*. Pruett Publishing Company, Boulder.

Another hobby subculture similar to knappers.

Bodu, Pierre
1996 Les Chasseurs Magdaleniens de Pincevent: Quelques Aspects de Leur Comportements (with English translation by Frieda Vereecken-Odell) *Lithic Technology* 21(1): 48-70.

Upper Paleolithic. Refitting study from 10 hearths in 500 sq m, differing hearth morphol (+ function?). Flint – 3000 pc, 23 kg, 85% debris 15% blades + tools, 20 nodules. Mostly backed bladelets for spear pts, also burins, perforators, a few scrapers. Skill levels – good knapper made blades at one hearth, but blades were mostly taken to others. Some cores worked in several places in camp, by diff knappers. Too much movement for tents. Best knappers made big blades for all, but basics done by many. A few did pts + bladelets which require more skill. Some hearths no knapping, tools "borrowed" or distributed or brought from knapping area, like animal remains. This level appears to be preparation for reindeer hunt – bladelets, antler pts, fit them together, refit old pts. Demos contemporaneity of hearths on this level.

Bodu, Pierre, C. Karlin, and S. Ploux
1990 Who's Who: The Magdalenian Flintknappers of Pincevent, France. In *The Big Puzzle: International Symposium on Refitting Stone Artifacts.* E. Cziesla, S. Eickhoff, N. Arts, and D. Winter eds, pp. 143-163. Holos Verlag, Bonn.

Opportunistic knapping at several skill levels; child identified by game-like and non-utilitarian poorly knapped pieces showing less skill than novices.

Boëda, E.
1994 Le concept Levallois: variabilité des méthodes. *Bulletin de la Société Préhistorique Française* 90(6): 392-404.

Boëda, E., J.-M. Geneste, and L. Meignen
1990 Identification de chaînes opératoires lithiques du Paléolithique ancien et moyen. *Paléo* 2:43-80.

Boëda, Eric, S. Bonilauri, J. Connan, D. Jarvie, N. Mercier, M. Tobey, H. Valladas, H. al Sakhel, and S. Muhesen
2008 Middle Paleolithic Bitumen Use at Umm el Tlel around 70,000 BP. *Antiquity* 82(318):853-861.

Central Syria. Black residues on stone tools chemically IDd as bitumen, altered by weathering. C13 isotopes correlate to sources - Djebel Bichri tar sands, 40 km distant from site. Residues common on Levallois artifacts, including points and flakes; interpreted as sleeves for gripping or mastic for hafting.

Boëda, Eric, J. M. Geneste, C. Griggo, N. Mercier, S. Muhesen, J.L. Reyss, A. Taha, and H. Valladas
1999 A Levallois Point Embedded in the Vertebra of a Wild Ass (*Equus africanus*): Hafting, Projectiles, and Mousterian Hunting Weapons. *Antiquity* 73:394-402.

Umm el Tlel in El Kowm basin, Central Syria, open air Middle Paleolithic site. Deep, many layers Acheulean to Neolithic. Level IV 3b'1 = Mid Pal, Mousterian, with thermoluminscence dates >50,000. Small mesial [middle] fragment of triangular Levallois point, 1.4 cm long, bending fractures both ends. In the vertebral foramen [spinal cord] of 3rd cervical [neck] vert [which is broken open, although it looks like the whole thing, both pieces, are present]. Passed through the wall of the vert, needed considerable force. Tip missing, not enough space for it in bone, so likely broke on soft tissue, broken point pentrated bone [That would really need lots of force - it's not very sharp.] Force needed, and bending fracture after penetrated bone both indicate point was hafted. Bitumen as hafting mastic in other levels at site. Probably a projectile, but can't tell what kind, could also be thrusting spear. Suggest parabolic trajectory to enter from R and above, thus likely to be thrown . [Other scenarios equally possible.]

Boëda, Eric, Antoine Lourdeau, Christelle Lahaye, Gisel DAltrini Felice, Sibeli Viana, Ignacio Clemente-Conte, Mario Pino, Michel Fontugne, Sirlei Hoeltz, Niede Guidon, Anne-Marie Pessis, Amelié Da Costa, and Marina Pagli
2013 The Late-Pleistocene Industries of Piauí, Brazil: New Data. In *Paleoamerican Odyssey*. Kelly E. Graf, Caroline v. Ketron and Michael R. Waters ed., pp. 445-466. Tops Printing, Inc., Texas.

Boesch, Christophe
1993 Aspects of transmission of tool-use in wild chimpanzees. In *Tools, Language, and Cognition in Human Evolution*. Kathleen R. Gibson and Tim Ingold, eds. pp. 171-183. New York: Cambridge University Press

Boguszewski, Andrzej
1995 Les outils en bois de cerf de la mine Neolithique de silex a Sevres (Hauts-de-Seine). In *Les Mines de Silex au Néolithique en Europe: Avancées Récentes*. J. Pelegrin and A. Richard, eds, pp.107-113. Comité des Travaux Historiques et Scientifiques, Vesoul.

Antler picks and chisels, use-wear.

Boisvert, Richard A.
2004 Clovis-Era Archaeology in Northern New Hampshire: The Israel River Complex. In *New Perspectives on the First Americans*. B. T. Lepper and R. Bonnichsen, eds., pp. 49-54. Center for the Study of the First Americans, College Station, TX.

Boksenbaum, Martin W, Paul Tolstoy, Garman Harbottle, Jerome Kimbelin and Mary Neivens
1987 Obsidian Industries and Cultural Evolution in the Basin of Mexico Before 500 BC *Journal of Field Archaeology* 14(1): 65-76.

Sourcing, change thru time.

Boldurian, Anthony T
1990 Lithic Technology at the Mitchell Locality of Blackwater Draw: A Stratified Folsom Site in Eastern New Mexico. *Plains Anthropologist* 35(130).

Boldurian, Anthony T.
2004 James Ridgley Whiteman. *Plains Anthropologist* 49 (189): 85-90.

Obituary. Artist, avocational arch, involved in Clovis discovery and work, early flintknapper.

Boldurian, Anthony
2007 Weaponry of Clovis Hunters at Blackwater Draw. In *Seeking Our Past: An Introduction to North American Archaeology*. Neusius, Sarah W., and G. Timothy Gross, eds. On accompanying CD. Oxford University Press, New York.

Accepts assumption that Clovis had atlatls, discusses hafting models for Clovis points and bone rods, and promotes idea of a socketed harpoon with C point as end-blade [for which the archaeological evidence is nil - model is based on one Archaic specimen and analogy to Inuit harpoons.]

Boldurian, Anthony T; George Agogino, Philip Shelley, and Mark Slaughter
1987 Folsom Biface Manufacture, Retooling, and Site function at the Mitchell Locality of Blackwater Draw. *Plains Anthropologist* 32(117): 299-311.

Campsites; blood residues on scrapers; channel flakes and finished pts – usually bases, impact fracture.

Boldurian, Anthony T; Phillip T. Fitzgibbons, and Phillip H. Shelley
1985 Fluting Devices in the Folsom Tradition: Pattering in Debitage Formation and Projectile Point Basal Configuration. *Plains Anthropologist* 30(110 pt1): 293-303.

Supports indirect percussion by experiment and comparison with Black Water Draw & elsewhere.

Boldurian, Anthony T., P.T. Fitzgibbons, P.H. Shelley, and J. L. Montgomery
1986 A reply to Sollberger and Patterson on Experimental Folsom Biface Manufacture. *Plains Anthropologist* 31(113): 245-248.

Can't use argument of success rate to support S and P's lever device. [Otherwise confused defense of selves]

Boldurian, Anthony T. and John L. Cotter
1999 *Clovis Revisited: New Perspectives on Paleo-Indian Adaptations from Blackwater Draw, New Mexico*. University Museum Monograph 103, University of Pennsylvania, Philadelphia.

Summary and reanalysis of early work by Howard at key site. Geology, type artifacts, excavation account, old and new interpretations.

Pp 94-104 - Projectile point hafting and use: Could be atlatl dart, or thrusting, or both represented by Clovis points. Cotter in 1937 proposed bone rods as foreshafts, also suggested use as lance points (Upper Paleolithic analogy), or as foreshaft to fit a toggle harpoon head with point on it (Inuit analogy). Stanford has same idea. Made experimental versions. Toggles date to early Archaic at least, cordage earlier, might help entangle mammoth or help track it. Counter arguments: if rod survives in sites, why no harpoon heads? "The idea of being attached by a line to a panic-stricken mammoth is not an attractive one." (102) All ethnog toggles used on sea mammals.

Cotter and Hibben among early archys looking at Solutrean antecedents to Clovis.

Folsom points from site mostly damaged, a few new, both workshop and repair/discard represented.

Clovis seen as generalized hunters - Blackwater draw produced also manos, turtle + tortoise bones. But points definitely used on mammoth (blood residue in Alaska). Water as key resource, common to many kill sites. Mammoth populations already declining by 15 k BP, so Clovis would have pushed toward extinction, but as generalized hunters can't be blamed for all.

Folsom as ecological succession to Clovis, many technological connections. Covis origins debates summarized. Cotter early noted many technological similarities to general Up Pal cultures in N Europe, and to Solutrean in specific, but Hibben's Sandia Cave sequence (shouldered, unfluted pts like Solutrean, followed by fluted version) must now be discarded. Good arguments against Solutrean theory [but he still wants to consider it.] Perhaps entry from both Siberia and across Atlantic.

Boldurian, Anthony T. and Susanne M. Hubinsky
1994 Preforms in Folsom Lithic Technology: A view from Blackwater Draw, New Mexico. *Plains Anthropologist* 39(150): 445-464.

Useful biface performs as important as points, recycling important. Used at all stages of manufacture = efficiency, skill, good material – classic Folsom traits for mobile life where stone scarce. Microwear exam.

Bond, Clive Jonathon
2004 The supply of raw materials for later prehistoric stone tool assemblages and the maintenance of memorable places in central Somerset. In *Lithics in Action: Papers from the Conference 'Lithic Studies in the Year 2000'*. E. A. Walker, F. Wenban-Smith, and F. Healy eds., pp. 124-139. Oxbow Books, Oxford.

Social + symbolic context: craft skill, stone knowledge, transmission of knowledge, meanings of knapping at particular locations in the landscape.

Bond, David
2011 A True Challenge. *Primitive Archer* 19(5):10-13.

Taking a doe with stone tip and primitive bow, photo of several stone tips that killed deer.

Bonnichsen, R.
1977 *Models for Discovering Cultural Information from Stone Tools*. National Museum of Canada, Archaeological Survey of Canada Paper No. 60.

Bonnichsen, Robson and Errett Callahan
1978 Craftsman: Robson Bonnichsen *Flintknappers' Exchange* 1(2): 16-24.

Worked with Crabtree 1968 – his 1st student. Association with Young before 1978.

Bonnichsen, Robson and Karen L. Turnmire (editors)
1991 *Clovis: Origins and Adaptations*. Center for Study of the First Americans, Corvallis.

Bordaz, Jacques
1965 The Threshing Sledge. *Natural History* 74(4): 26-29.

Turkey, traditional knappers of sledge blades.

Bordaz, Jacques
1969 Flint Flaking in Turkey. *Natural History* 78(2): 73-77.

Ethnographic knappers making sledge blades and mining flint.

Bordaz, Jacques
1970 *Tools of the Old and New Stone Age*. Natural History Press, Garden City.

Survey, one of the first general books on stone tools. Threshing sledges only mentioned, one photo of Turkish knapper. Basic types, principles and evolution from a 1960s perspective. Illustrations of knapping techniques are a bit crude, with odd emphasis on "moving the blank" ie striking or pressing it against an anvil, which are not widely considered today. Heat treatment mentioned as a new discovery.

Bordes, François
1947 Étude comparative des differentes techniques de taille du silex et des roches dures. *L'Anthropologie* 51: 1-29.

Bordes, F.
1950 Principes d'une methode d'étude des techniques de debitage et de la typologie du Paléolithique ancien et moyen. *L'Anthropologie* 54:19-34.

Bordes, François
1961 *Typologie du Paleolithique Ancien et Moyen*. Publications de l'"Institut de Préhistoire de l'Université de Bordeaux, Memoire l. Bordeaux: Imprimeries Delmas.

Bordes, F.
1970 Observations Typologiques et Techniques sur le Perigordien Supérieur de Corbiac (Dordogne). *Bulletin de la Société Préhistorique Française* 67(4): 105-113.

Blades, flakes; especially burins, notches, similar tools, unusual breakages.

Bordes, François
1972 *A Tale of Two Caves*. New York: Harper and Row.

Combe Grenal, Pech de l'Aze. Mousterian in France. Popular treatment of some of his ideas.

Bordes, François and Don Crabtree
1969 The Corbiac Blade Technique and Other Experiments. *Tebiwa* 12(2): 1-21.

Borkowski, Wojciech
1995 Élements d'analyse du système d'aménagement d'une minière: L'example de Krzmionki. In *Les Mines de Silex au Néolithique en Europe: Avancées Récentes*. J. Pelegrin and A. Richard, eds, pp. 67-72. Comité des Travaux Historiques et Scientifiques, Vesoul.

Borgeson, John, and Cecelia Borgeson

2014 A different Guarani bow. *Primitive Archer* 21(6):24-28.

60 inches, ca 40 lbs, self bow, notches in handle to estimate range. 3 arrows, 2 feather fletching, wooden points. [No provenience info - no info on how old, or why "different" from other Guarani bows.]

Borrell, Ferran
2011 Bi-directional Neolithic blade technology in northern Levant during the 7th-8th millenia cal B.C. : New insights from Mamarrul Nasr 2, Syria. *Journal of Field Archaeology* 36(2) :132-150.

PPNB flint workshop, in situ materials. Douara basin, central Syrian desert. Concentrated lithics, dry stone wall, under rock shelter, 9767 flint artifacts, little else. Focus on blades [from narrow boat-shaped cores, with platforms at each end removing blades off the large upper surface in Levallois manner rather than down dorsal faces]. Platforms offset, so blades slant across surface L to R. Reflects skilled knappers. Co-exists with other tradition, suggesting ethnic diffs.

Bosch, P.W.
1979 A Neolithic Flint Mine. *Scientific American* 240 (6): 126-132.

Bostrom, Pete
2003 Mack Tussinger's Oklahoma Eccentrics, ca 1921. Lithic Casting Lab webpage, http://www.lithiccastinglab.com.

One of many useful articles on Bostrom's website, illustrated with fine photos. [He also sells the best casts ever made of some lithic artifacts.]

Bostrom, Pete
2005 A Short History of Flintknapping. *Modern Lithic Artists Journal* 1 (January): 3-6.

Bostrom, Pete
2012 Marvin McCormick: "The Man Who Reinvented Folsom," 1929-1970's. Electronic document, URL": http://lithiccastinglab.com/gallery-pages/2012aprilmccormickpage1.htm accessed 12/3/2013.

good images of his points, which tend to be Alibates and slightly thick but well-fluted

Bostyn, Francoise, and Yves Lanchon, eds.
1992 *Jablines Le Haut Château (Seine et Marne) : Une Minière de Silex au Néolithique*. Documents d'Archéologie Française No. 35. Editions de la Maison des Sciences de l'Homme, Paris.

In French. Salvage archaeology at Neolithic flint mines N of Paris. Shafts into chalk 6-8 m deep, with surrounding galleries at bottom, much like Grimes Graves. Details of geology and stratigraphy. Numerous antler picks and their traces on the walls. Debitage concentrations and refitting. Manufacture trajectory for nice long bifacial axes (celts). Some blades, cores, and other tools. Some experiments and use-wear study briefly described.

Bostyn, Francoise, and Yves Lanchon
1995 Modalités d'extraction et types de productions sur la mine de silex de Jablines "Le Haut Chateau" (Seine-et-Marne). In *Les Mines de Silex au Néolithique en Europe: Avancées Récentes*. J. Pelegrin and A. Richard, eds, pp. 89-92. Comité des Travaux Historiques et Scientifiques, Vesoul.

Boszhardt, Robert F.
1998 Additional Western Lithics for Hopewell Bifaces in the Upper Mississippi River Valley. *Plains Anthropologist* 43(165):275-286.

Trempeleau WI area burial bifaces 15-35 cm long [those shown are cornernotched, long & narrow]. Obsidian fromYellowstone, CO 1600 km W of Trempeleau; Knife River Flint from N Dakota 1100 km W of Trempeleau. Locally available stone in W Wisc = Prairie du Chien chert, Hixton and other orthoquartzites, but not id for large bifaces. Speckled jasper – Madison formation along E edge Rocky Mts or Morrison Form, also E CO. Microscopic exam of bifaces and comp to chert specimens = Jasper from Madison formation, dendritic chert, perhaps from Spanish Diggings in E WY; quartzite (gray) from Morrison and Taylor qtzite, also E WY. Red platform pipes = Minn catlinite. N Plains Besant and other groups have Hopewell influence, skills to make bifaces, & material sources.

Boudreau, Jeff
1995 Flint Hunting in Denmark. *Chips* 7(3):10-12.

Boulanger, Jason R., Daniel E. Hubbard, Jonathan A. Jenks, and Larry M. Gigliotti

2006 A Typology of South Dakota Muzzleloader Deer Hunters. *Wildlife Society Bulletin* 34(3):691-697.

904 surveys (67% of state's muzzleloader deer hunters): 31% modern m-l (in-line, mod sights, pellet powder etc), 69% traditional - used flint, cap, or black powder. Most satisfied with equip regulations. Success higher for mod users. Trad users more experienced, more likely to cite "nature" or "challenge" as motive. Both groups willing to shoot at distance up to 91 m, spend similar practice time. No success differences between time spent practicing or scouting (46% don't scout), or claimed motivation. Higher success rates using mod equip and willing to shoot farther.

Bourdier, F.
1963 Sur la genèse et la morphologie de l'éclat préhistorique. *Comptes Rendus de l'Acadamie des Sciences (Paris)* 257:3975-3978.

Bourke, John G.
1890 Vesper Hours of the Stone Age. *American Anthropologist* (old series) 3:55-63.

Bows and arrows, poison (snake + liver; ineffective), chipping in brief, other weapons; Use of ordinary arrow in drilling

Bourke, John G.
1891 Remarks, on Arrows and Arrow-makers. *American Anthropologist* (old series) 4:71-74.

Apache info – in same quiver many different forms of points. Bottle glass pts used like obsidian. Pts made 5-8 minutes, not made by separate class of artisans, headless arrow used in war. Some tribes use spiral fletching, some no fletch.

Bousman, C. Britt
1993 Hunter-Gatherer Adaptations, Economic Risk and Tool Design. *Lithic Technology* 18(1 and 2): 59-86.

Shows how mobility/expedient tool model is much more complex on a number of dimensions.

Bower, Bruce
1987 Flakes, Breaks, and the First Americans. *Science News* 131:172-3.

Bowman, Rex
1997 Obsidian Scalpels are Prized. *Richmond Times-Dispatch*, E1,E5, October 23, 1997.

Photo feature in health section on E. Callahan and his obsidian scalpels – $20 compared to $1-2 for steel throw-aways; "refuses to teach scalpel-making technique, partly for competitive reasons, partly doesn't want inferior product in doctor's hands"

Bradbury, Andrew P.
1996 Bow and Arrow in the Eastern Woodlands: Evidence for an Archaic Origin. *North American Archaeologist* 18(3):207-234.

Re-does Thomas classification function using ethnographic specimens. Discusses differences between weapon systems and their requirements. His functions use width and neck width, elim length, tests on 579 hafted specimens. Lots of Late Archaic pts = arrows [but is his sample good? – can't tell – lots of small things in Archaic, but relatively few Woodland specimens]. So bow and arrow arrived in L Archaic, specifically Merom and Matanzas pts, but concurrent use, atlatl not replaced until late Woodland [details useful, but he needs more evidence than point size].

Bradbury, Andrew P.
2001 Modern or Prehistoric: Experiments in Distinguishing between Culturally and Mechanically Produced Chipped Stone Artifacts. *North American Archaeologist* 22 (3): 231-258.

Experimental knapping debris compared to rock crusher road gravel products, using Sullivan and Rozen and mass analysis. Statistical analyses used to distinguish both assemblages and flakes. Applied to IL sites impacted by gravel roads, some found to be non-prehistoric. [OK, but if he used something besides the worthless S+R system and mass analysis, knapping would be even more readily differentiated – the products of biface manufacture cannot be mistaken for accidental fracture by a competent analyst.]

Bradbury, Andrew P, and Phillip J. Carr
1995 Flake Typologies and Alternative Approaches: An Experimental Assessment. *Lithic Technology* 20(2):100-115.

Experimental debitage analyzed; does not agree with Sullivan & Rozen typology expectations, nor are older "primary, 2nd, 3ry" classes based on cortex % reliable either for assigning flakes to reduction types (hard vs soft) because cortex relates more to size of parent core. Multible attribute approaches are best, can be used in conjunction w/size grade approaches. [They deny, but clearly show in their data that lipping was confined to soft hammer biface thinning flakes.]

Bradbury, Andrew P. and Philip J. Carr
2014 Non-metric Continuum-Based Flake Analysis. *Lithic Technology* 39(1):20-38.

Assigning flakes to their place in production continuum possible by size grade, platform facet count, dorsal scars count, and weight.

Bradbury, Andrew P., and D. Randall Cooper
2014 Middle Woodland Blades from the Carskadon Site, Lewis County. *Missouri Archaeological Society Quarterly* 31(4):12-18.

Avenue of Saints salvage, NE MO. 34 small blades from Mid Woodland features, good quality Burlington cherts. Low mag microwear study [not very useful] but most little wear, suggest expedient tools.

Bradbury, Andrew P. and Jay D. Franklin
2000 Raw Material Variability, Package Size, and Mass Analysis. *Lithic Technology* 25(1): 42-58.

Bradley, Bruce
1972 Predynastic Egyptian Flint Implements – An Inductive Technological Sequence. *Newsletter of Lithic Technology* 1(3):2-5.

Bradley, Bruce
1974 Comments on the Lithic Technology of the Casper Site Materials. In *The Casper Site*, G. Frison, ed. Pp. 191-197, New York: Academic Press.

Bradley, Bruce
1975 Lithic Reduction Sequences: A Glossary and Discussion. In *Lithic Technology: Making and Using Stone Tools*, Earl Swanson, ed., pp. 5-14, The Hague: Mouton.

Blank = can be modified to >1 form. Preform = unfinished, makes 1 form only. Stage = "intended previsualized goal in lithic reduction sequence" [too much about "demonstrate" intent and unfinishedness etc.] Concepts applied to hypothetical assemblage. [Nothing real new, but cite for sequence idea]

Bradley, Bruce
1978 Hard Hammer-Soft Hammer: An Alternative Explanation. *Flintknappers' Exchange* 1(2):8-10.

Marginal vs. non-marginal (point of percussion) produces differences in flakes, not quality of hammer. [Important point]

Bradley, Bruce
1989 *Flintknapping with Bruce Bradley*. VHS. INTERpark, Cortez.

[Good video for teaching. Works one piece through a series of steps showing different kinds of reduction, modification of tools for different tasks and maintenance through use-life of tool.]

Bradley, Bruce A.
1991 Lithic Technology. In *Prehistoric Hunters of the High Plains, 2nd ed*. George Frison ed., pp. 369-396. Academic Press, New York.

quoted in Boldurian + Cotter as p. 373 as saying Clovis industry is a product of biface reduction, rather than a core-blade industry [quite right, and a major contrast with Solutrean which is a blade industry with bifaces, vs Clovis, a biface industry with blades]

Bradley, Bruce A
1995 Review of Flintknapping: Making and Understanding Stone Tools by John C. Whittaker. *Plains Anthropologist* 40(153):304-306.

positive

Bradley, Bruce
1997 Bifacial Thinning in the Early Upper Paleolithic of Eastern Europe. *Chips* 9(2): 8-9.

Short large triangular pts, thin, pressure & percussion, some heat treatment 20-38,000

Bradley, Bruce
1997 Sloan Site Biface and Projectile Point Technology. In *Sloan: A Paleoindian Dalton Cemetery in Arkansas*, Dan F. Morse ed., pp. 53-57.Washington, Smithsonian Institution Press.

Bradley, Bruce
2001 Getting to the Point: Arrowheads at Stix and Leaves Pueblo. *Indian Artifact Magazine* 20(1):36-38, 81.

[color photos-why advertise SW pueblos to looters in a collector magazine?]. PI-II SW CO, private site, 26 rooms, several kivas. Kivas and pithouse burned – dates 850-875, 949-970, 1054-; Old pts collected by puebloans, 1 notched for pendant or ritual use.
Late PI has dart pts – but no atlatl in earlier BMIII – was it reintroduced? By new people? Also late in PI tanged arrowheads, in PII cornernotched [much like tanged ones], in mid PII narrower pts, then convex base with side notch. Manufacture sequence described from failures. Flaking tools. [Comparable to my Grasshopper points]

Bradley, Bruce
2001 Points from Two Pueblo Sites in Southwestern Colorado. *Chips* 13 (1):22-23.

Wallace Ruin, Chaco outlier, he purchased it. AD 1040-1280, evidence of pt manuf. Also supervising work at Stix and Leaves Pueblo for private owners. More pts than usual in SW pueblo. 850-1075, excav 50 rms, 4 kivas, 2 ph. Sees pt styles change. Archaic points at pueblo sites. Atlatl in PI w b+a, but apparently not in BMIII, just b+a. Unusual perc work of small pts. Possible specializ at these sites since others not making quantities of pts. Photos of pt examples.

Bradley, Bruce
2007 *Flintknapping Featuring Clovis Technology with Bruce Bradley PhD*. DVD, INTERpark, Cortez.

Knaps a Clovis point while talking about Clovis, specifically overshoot flaking as characteristic thinning strategy. Demonstrates clearly, uses hammerstone and antler alternately, but ca 70% hammerstone. Lots of grinding preparation of platforms. No pressure work except setting one flute platform; first flute hammerstone, second antler, no further finish. Pretty clear, platforms visible, explanation clear, but assumes basic knapping knowledge to understand. In separate sections, Bradley explains several other point examples and Ziggy Gamble gives short description of Blackwater Draw Clovis site.

Bradley, Bruce A., and Michael B. Collins
2013 Imagining Clovis as a Cultural Revitalization Movement. In *Paleoamerican Odyssey*. Kelly E. Graf, Caroline v. Ketron and Michael R. Waters ed., pp . 247-256. Tops Printing, Inc., Texas.

This is a clever idea to overcome the problem of the gap between Clovis and Solutrean cultures: Solutrean produced pre-Clovis ancestors, then Clovis came later when their descendants ‘revived’ Solutrean technology to make Clovis points. [But unconvincing: why would they remember but not use Solutrean tech for several thousand years?]

Bradley, Bruce A., Michael B. Collins, and Andrew Hemmings

2010 *Clovis Technology*. International Monographs in Prehistory, Ann Arbor, MI.

Technological focus on bifacial complex and blade complex, with minor component of small tools, and where preserved, bone and ivory.

Stone raw materials indicate mobility or exchange, include intentional choice of nice ones [their emphasis on cache sites may exaggerate this]; p.9 some like Knife River Flint were available but not used. P.57 heat treatment apparently not used.

P.56: "Bifacial technology was used by Clovis for the majority of their primary tool blank production, either as cores for flake blanks or as bifaces and proj points. Even the production of blades used a basically bifacial technique…" [one reason for me it doesn't resemble Solutrean industry at all]. Lengthy discussion of overshot flaking. [Numerous illustrations and detailed examples show the variety of point finishes, local or individual styles, but their selection is biased in favor of "nice" pieces, especially in a few color photos.]

Bone, ivory, antler used includes at least llama, dire wolf, horse, mastodon, mammoth, and deer. Most known from FL rivers where no real context. Forms include long beveled rods. Bone points more reliable, could compensate for high failure rate of stone points in manufacture (>50%) [that's got to be an exaggeration]. Good for puncture wounds, especially if greased, possibly with red ochre [huh?]. So 3 projectile forms: thrown stone C points, thrown short bone pts, thrust long curved ivory points. Atlatl hooks of paleofauna bone in FL rivers indicate atlatl use. Some C points highly fractured, may indicate high velocity impact - need more testing p120. Stone and short bone points, including one barbed one, intended to remain in animal, long point as close quarters lance. One bone pt from Blackwater draw mammoth has diving hinge high velocity impact fracture, other examples. Also some rods that are not points. Atlatl hooks made of proximal phalanx of llama, vestigial mammoth tusk, and beveled ivory rod fragment [photos and details].

Bradley, B. and C.G. Sampson
1986 Analysis by Replication of Two Acheulian Artefact Assemblages from Caddington, England. In *Stone Age Prehistory*, G. Bailey and P. Callow, Editors. Cambridge University Press: Cambridge. p. 29-46.

Bradley, Bruce A., and Dennis J. Stanford
1987 The Claypool Study. In *The Horner Site: The Type Site of the Cody Cultural Complex*. G. Frison and L. Todd, eds., pp. 405-434. Academic Press, New York.

Experiments in making Eden/Scottsbluff pts show all the same process, just stopped at diff degree of reduction, w/variation in hafting.
Need to distinguish variation in pts on community level (gross form, techniq) – which is useful for temporal typol, from individ variation (flaking details, form details).

Bradley, Bruce A. and George C. Frison
1987 Projectile Points and Specialized Bifaces from the Horner Site. In *The Horner Site: The Type Site of the Cody Cultural Complex*. G. Frison and L. Todd, eds., pp. 199-231. Academic Press, New York.

Bradley, Bruce A. and Yeugeny Giria
1996 Concepts of the Technological Analysis of Flaked Stone: A Case Study from the High Arctic. *Lithic Technology* 21(1): 23-39.

Technological vs. typological vs. traceological analyses. Technological necessities of knapping, 3 rules: 1) existing material form determines result of each fracture; 2) product determined by 1) and by knapping technique; 3) continuous knapping vs. stadial knapping (stages) - stadial knapping must be used to produce specific predetermined forms [complex ones]. Application to Johova site, Siberian Mesolithic Reconstructs microblade technol sequence [chaine operateur]. [nothing new here, so why all the theoretical bs to start?]

Bradley, Richard
1987 A Field Method for Investigating the Spatial Structure of Lithic Scatters. In *Lithic Analysis and Later British Prehistory: Some Problems and Approaches*. A.G. Brown and M.R. Edmonds, eds., pp. 39-48. B.A.R. British Series 162: Oxford.

Bradley, Richard `
1987 Flint Technology and the Character of Neolithic Settlement. In *Lithic Analysis and Later British Prehistory: Some Problems and Approaches*. A.G. Brown and M.R. Edmonds, eds,. pp. 181-186. B.A.R. British Series 162: Oxford.

Bradley, Richard, M. Edmonds, R. Entwistle, S. Ford
1985 Fieldwork at Great Langdale, Cumbria, 1985-Interim Report. *Lithics* 6:10-14.

Neolithic axe site, quarry & workshop areas a) careless wk at quarry, but less so on working floors, b) blades as well as axes, c) some flake cores, d) diff size axes in diff quarry areas, e) possible grinding stones – finishing? Variation does not suggest specialists. Experimental knapping at 72 locations to test flaking quality of rock and accessibility to assess efficiency of operations. Best rock favored, but not always good locations – again suggest non-specialists. Hammer stones sampled to see if local or import.

Bradley, Rosemary and Chris Clayton
1987 The Influence of Flint Microstructure on the formation of Microwear Polishes. In *The Human Uses of Flint and Chert*, G. Sieveking and M. Newcomer, eds., pp. 81-90. Cambridge: Cambridge University Press.

Brandt, Steven A. and Kathryn Weedman
2002 Woman the Toolmaker. *Archaeology* 55(5): 50-53.

Ethiopian hide scraping by women with stone scraper. [Good example of ethnographic lithics, female stone tool use and knapping.]

Brandt, Steven A. and Kathryn Weedman
2002 The Ethnoarchaeology of Hide Working and Stone Tool Use in Konso, Southern Ethiopia: An Introduction. In *Le Travail du Cuir de la Préhistoire a Nos Jours, XXII*

Rencontres Internationales d'archéologie et d'histoire d'Antibes. F. Audoin-Rouzeau and S. Beyries, eds, pp. 113-129.

Countering impression of earlier work that all hide workers are male, that technology, style, and function are similar, and that there is little difference between ethnic groups. Actually, several groups use different materials, handle forms, organizational practices. Chaine operatoire of process - collect chert, agate, and chalcedony in small pieces, heat treat under fire, knap by direct or bipolar percussion, retouch by same or on anvil, haft in wooden handle in socket with resin. Debitage removed for discard. Hides dried and scraped, softened with castor bean oil and ochre mixture. Excavation of abandoned household.

Brandt, S.A., K.J. Weedman, and G. Hundie
1996 Gurage Hide Working Stone Tool Use and Social Identity: An Ethnoarchaeological Perspective, in *Essay on Gurage Language and Culture*, G. Hudson, Editor. Berlin. p. 35-51.

Brantingham, P. Jeffrey
2003 A Neutral Model of Stone Raw Material Procurement. *American Antiquity* 68 (3): 487-510.

Stone tool assemblage variability is often considered to reflect organizational complexity, espec in resource collection in hunt-gath soc, and stone sources expected to affect settlement and mobility patterns. A "neutral model" of random encounters produces similar patterns, suggesting behavioral responses to stone may be less complex than often assumed. Paleolithic Europe.

Braun, David R.
2005 Examining Flake Production Strategies: Examples from the Middle Paleolithic of Southwest Asia. *Lithic Technology* 30 (2): 107-125.

Raw material availability and conservation affecting flake production strategies in Zagros and Middle East.

Brecht, Tatiana B.
1994 A Description of the Microwear Formed by Working Charred Wood. *Lithic Technology* 19(2):83-87.

Brennan, Louis A.
1975 *Artifacts of Ancient America*. Stackpole Books, Harrisburg, PA.

[Respected amateur archaeologist.] Focus on E N.Am. but general info. Detailed description + typologies of most classes of artifacts: flaked stone including points and tools, ground stone including axes, bannerstones [he accepts as atlatl weights], antler, bone, basketry, wood, copper, ceramics.

[Some interesting mistakes and outdated info: a Folsom point labeled as "Clovis," accepts Sandia, Pikimachay, and Old Crow flesher dated 27,000, probably because he favors a pre-Clovis, pre-projectile point culture. Lengthy but weak description of knapping, e.g. p20 making flake blades "overcomes disposition of stone to flake conchoidally" by preparation of platform and calculation of angle and force of strike. For some reason, doesn't use "knap" or "knapper," uses "chipping" and "flintsmith." Recognizes heat treatment p24, but "because direct exposure to fire causes pot-lidding…core materials about to be worked were heated in hot water or other indirect method."]

Lengthy point typology includes section on atlatls p 29-33. Bow replaced ca AD 1 in SW, AD 1000 in NE, atlatl survived in Aztec and Arctic where allows kayak use + bow strings get wet. Ballistics: weight forward of midpoint. "Rule of thumb that stone point <1.75 inches is arrow point is not a bad one. On the other hand, it is not a reliable one either." Some small points too early for bow, probably on light composite dart. Four good photos of Richard Regensburg of DL Division of Archaeology using atlatl. Indian Knoll type with antler handle + hook, wooden bannerstone, 4 oz as suggested by Mau, close to hook. "Although it appears that the dart is about to be catapulted, the proper throwing motion is to keep the dart and atlatl in contact on a straight horizontal line throughout the entire casting action; the atlatl adds to the length of time of this contact, in effect lengthening the arm (31)." [Must have got this from Howard 1974. Ironically, his 4th photo clearly shows Regensburg using the atlatl correctly, flipping the dart away with the atlatl vertical as the dart leaves, contradicting what Brennan and Howard think happens.]

Brennan, Louis A., ed.
1982 A Compilation of Fluted Points of Eastern North America by Count and Distribution: An AENA Project. *Archaeology of Eastern North America* 10:27-46.

Brézillon, M.
1968 La Dénomination des Objets de Pierre Taillée. Matériaux pour un vocabulaire des préhistoriens de langue française. *Gallia Préhistoire Suppl. 4.* Paris: Centre National de la Recherche Scientifique.

Briggs, Stephen
2011 Neolithic near-identical twins: The ambivalent relationship between 'factory' rock and polished stone implements. In *Stone Axe Studies III*. Vin Davis and Mark Edmonds, ed., pp. 353-360. Oxbow Books, Oxford.

Briz i Godino, Ivan
2006 Lithic Analysis in Spanish Archaeology. *Lithic Technology* 31 (2): 89-99.

Questioning and innovation suppressed by fascist government, leading to diversity of methods with little theoretical underpinning, much based on old French models. Now still chronological-cultural foundations but new theoretical perspectives.

Briz, Ivan, Ignacio Clemente, Jordi Pijoan, Xavier Terradas, and Assumpcio Vila

2005 Stone Tools in Ethonarchaeological Contexts: Theoretical-Methodological Inferences. In *Lithic Toolkits in Ethnoarchaeological Contexts,* edited by Xavier Terradas, pp. 1-7. BAR International Series 1370.

Brizzi, Vittorio
2005 Otzi, The Iceman : Murder Victim Thaws Out, but Whodunnit and Why? *Bulletin of Primitive Technology* 22:52-58.

Consulting for Discovery Channel "Iceman: Hunt for A Killer" Reconstruction w actors allows theorizing. [Some romantic bs about peaceful pre-agric people and Inds]. Suggestions of battle: Otzi has arrow in shoulder, cuts on hand and forearm, bruises on back, blood of 4 diff men on knife and jacket. Quiver contained 12 unfinished Viburnum shafts slotted for arrowhead, and 2 complete but broken shafts, one a composite with hardwood foreshaft and stone pt fixed with birch resin mastic. [Lots of not-so-useful speculative scenarios for death].

Broehm, Cory J. and Troy R. Lovata
2004 Five Corner Tang Bifaces from the Silo Site, 41KA102, a Late Archaic Mortuary Site in South Texas. *Plains Anthropologist* 49 (189): 59-78.

Large, made of central TX local cherts, unused, prob made for burial. Assoc with two burials, adult male and child. Long discussion of burial theories, symbolic import, concludes probably evidence of developing ranking and social diff.

Bronowicki, Jaroslaw and Miroslaw Masojc
2010 Lusatian Flint Industries in Silesia, SW Poland. In *Lithic Technology in Metal Using Societies,* B. V. Eriksen ed., pp. 107-127. Arhus, Arhus University Press.

Bronze Age to Hallstadt Iron Age.

Brothwell, Don and Eric Higgs
1970 *Science in Archaeology*. Preaeger Publishers: New York.

Basic info on trace elements and sourcing.

Brown, A.G. and Edmonds, M.R.
1987 Lithic Analysis and Later British Prehistory: Some Problems and Approaches. *B.A.R. British Series* 162: Oxford.

Brown, David O., Meredith L. Dreiss, and Richard E. Hughes
2004 Preclassic Obsidian Procurement and Utilization at the Maya Site of Colha, Belize. *Latin American Antiquity* 15 (2): 222-240.

X-ray fluorescence, 104 specimens from PreClassic – El Chayal source most, then San Martin Jilotepeque, also Ixtepeque. By Classic, San Martin disappearing in favor of El Chayal, coinciding with rise of Kaminaljuyu.

Brown, Gary M.
1982 Lithic Exchange and Production on Anderson Mesa, North Central Arizona. Unpublished MS thesis, Dept. of Anthro, Arizona State University, Tempe.

Sees “centralized obsidian production and exchange before large nucleated villages” so a factor in explaining their development. Chavez Pass obsidian mostly from Gov’t Mt, except S Pueblo has Polvadero Peak from NM. Surface collections from sites in his transect from Flagstaff to Anderson Mesa – but few small sites included. Uses both weight and count data. P.38: Anderson Pass 1/2 non-local, Chavez Pass 1/4 non-local, Flagstaff 1/4 non-local material. Centralization of goods due to social patterns of access = social complexity (chiefdom or state) but functional centralization = specialization, but does not = status or central decision making. Tries various distance/quantity models – concludes inter-regional exchange = direct links between centers, intra = down the line in Flagstaff, more centralized in Anderson Pass. [I doubt his data are good enough for this, the site sample is weak.] Clear Creek Phase data small, but notes in A Pass Pollock site has little, Kinnikinnick + Grapevine have up to 60%.

Technological evidence: obsid used preferentially for retouched tools, pts etc. Experiment – made flake blanks for pts – similar waste + usable flakes for ad hoc tools. Use intensity = # edges used/ # pieces. Higher 3x at “recipient sites” vs larger “procurement centers” so latter doing more knapping, less use. Recipients twice as much cortex as proc center but low everywhere = previous reduction [actually 10-20% cortical flakes seems like complete on site reduction – source nodules are small].

Low freq of obsid at Old Caves, other Clr Crk Flagstaff sites near sources, more at Kinnikinnik and Grpvn, so they had direct access. Proc centers more biface manufacture (pts, preforms) [sample is way too small to say that]. Nuvakwetaqa Gt Kiva and plaza = obsid workshop. Burial of male with lithics = specialist part time, burial had pt preforms, evid for manuf sequence. Pollock has little obsid, a few pts, agric terraces = specialized exchange of crops for obsid? but this level of specializ need not imply centralized organization – which devel later in Clr Crk on Anderson Mesa, by manipulation of such specializ by central individuals, perhaps obsidian was one major commodity involved. [This model is much more elaborate than the data will bear, and unconvincing idea of specialists in simple craft. For instance, Lizard Man Village has enough obsidian to = procurement center, which it is NOT.]

Brown, Gary M.
1991 Embedded and Direct Lithic Resource Procurement Strategies on Anderson Mesa. *Kiva* 50(4):359-384.

Most lithics obtained as embedded resource, obsid and some others possible direct procurement which increased thru time, w/ development of specialization at some sites, but not control of sources. Distributed raw as well as finished, not just elite. [statistical data weak- lots of minute differences over-interpreted]

Brown, James A.
1966a *Spiro Studies vol 1: Description of the Mound Group*. University of Oklahoma Research Institute, Norman.

Brown, James A.
1966b *Spiro Studies vol 2: The Graves and Their Contents*. University of Oklahoma Research Institute, Norman.

Brown, James A.
1971 *Spiro Studies vol 3: Pottery Vessels*. University of Oklahoma Research Institute, Norman.

Brown, James A.
1976 *Spiro Studies vol 4: The Artifacts*. University of Oklahoma Research Institute, Norman.

Brown, James A.
1996 *The Spiro Ceremonial Center: The Archaeology of Arkansas Valley Caddoan Culture in Eastern Oklahoma*. Memoirs of the Museum of Anthropology, University of Michigan, Ann Arbor.

Brown, Jeffrey L.
1969 Some Sources of Variation in Projectile Point Form. MA Thesis, U of A Dept. Anthro.

Browne, Jim
1938 Antiquity of the Bow. *American Antiquity* 3(4): 358-359

Precursor to Browne 1940, Disputes Baker and Kidder 1937 that bow is late. Suggests Folsom pts "made for efficient b + a shooting"

Browne, Jim
1940 Projectile Points. *American Antiquity* 5(3): 209-213

Size of points is not a good marker for dating "pre-bow" - Pt 87 mm long, 37 wide on arrow still shoots - many "too large" pts actually ok for bow and arrow.
Experiments with self bow and Basketmaker type atlatl: "Any close degree of accuracy is impossible with atlatl and spear." (uses overhead sweep, full extension) [why his accuracy was so poor with atlatl]: 6 mo practice "can't hit buffalo 1 out of 10 at 30 yards." Bow much more accurate. Dart greater penetration than arrow with same pt. Maximum atlatl throw 81 yards.

Bruce, J.C., Mark Dubuc, and James Walsh
1983 Repeating an Experiment: Confirmation of Quantitative Variation in Lithic Debitage. *Contract Abstracts and CRM Archaeology* 3(2): 147-154

cf Henry, Haynes and Bradley 1976, but made an Archaic bifurcated base point.
Pressure flakes significantly different in weight, max thick from hard and soft perc. Hard + soft perc diff in max thick (compared w/in 4-10 mm size range)

Are there diffs btwn debitage from individ pts, knappers, + types?
Errors maybe from mixing several pts, using standardized size range, biased sample, effect of staging.
Individual flakes not classifiable

Brugal, Jean-Philip, and Vincent Mourre
2005 Utlisation Opportuniste d'Outils en Pierre Chez Les Turkana (Nord Kenya).). In *Lithic Toolkits in Ethnoarchaeological Contexts,* edited by Xavier Terradas, pp. 25-33. BAR International Series 1370.

simple sharp edged tools made and used for butchery and hide preparation

Bruhns, Karen Olsen
2000 www.plunderedpast.com *SAA Bulletin* 18(2):14-15, 17

Uncontrolled ebay market, US unwilling in general to support international antiquities laws. Forgeries rife (cites W + S)
"These days the 'trained eye' itself has possibly been trained on fakes"

Bruhns, Karen O. and Nancy L. Kelker
2010 *Faking the Ancient Andes*. Left Coast Press, Walnut Creek, CA.

Companion to Kelker and Bruhns (2010) Faking Ancient Mesoamerica.
p 19 "Thomas Hoving (1996:17), former director of Metropolitan Museum of Art…. reported that a full 40% of the works (some 50,000 items) offered for sale to the Met during his tenure as director were fakes or so overly restored as to be virtual fakes." [Shocking, but from there they make the leap that 40% of art objects everywhere are fakes. They make a convincing case for pervasive faking, but are not justified in applying the 40% figure everywhere.] However, many examples: Much (85% !!) of Gallo's Gold Museum in Lima was exposed as fake at exhibit in Montreal, but continues to display, and book widely circulated, probably the most used source on SA gold [meaning beware of atlatl representations in S. Am. gold]. Mummies and their equipment frequently pastiched together [probably should be wary of old unprovenanced atlatls - they can be easily assembled from parts, including old wood, or completely fake.] Meggers and Evans Valdivia material compromised by faking, as well as their silly trans-Pacific ideas.

Bruller, Jean (alias "Vercors")
1953 *You Shall Know Them*. Boston: Little, Brown and Company

Novel: a group of "Paranthropus" discovered alive – are they human? Hero kills his own hybrid son (by artific insemination) to force trial on that and define Humanity! Final legal act of Parliament uses "presence of religious spirit (= belief in God, science, question of self etc)" as def of man, but shown to be continuous controversy, ambiguity
Some anthropological absurdities = lemurs are apes who throw stones
Paranthropus w/ prehensile foot etc.

Brumfiel, Elizabeth M. and Gary M. Feinman, eds.
2008 *The Aztec World*. Abrams, New York.

edited volume, fine photos include Offering 106 from Templo Mayor with 22+ fine bifaces, shells, eagle? bones, painted cylinders, 2 carved “solar darts”, 6+ flaked or carved stone water or serpent forms, deity etc. Many sacrifice images including “sacrifice with arrows” from codex [victim on scaffold, darts shown same as reeds in name “handful of reeds” - probably indicating material of atlatl darts or can be read as fletchings]. Three personified flint knives from Templo Mayor. Skull mask with biface nose and tongue.

Brumm, Adam
2010 The Movius Line and the Bamboo Hypothesis: Early Hominin Stone Technology in Southeast Asia. *Lithic Technology* 34(1):7-24.

Brumm, Adam
2010 ‘The Falling Sky’: Symbolic and Cosmological Associations of the Mt William Greenstone Axe Quarry, Central Victoria, Australia. *Cambridge Archaeological Journal* 20(2):179-196.

“In parts of northern Australia, tool-stone is considered to be a sentient, and often dangerous, ritual substance formed from the bodily matter (e.g. blood, fat, and flesh) of Ancestral Beings deposited onto the landscape and transformed into rock.”
(SE Australia) Mt W axes travelled farther than similar axes, suggesting symbolic values beyond economic

Brumm, Adam
2011 Power tools: Symbolic considerations of stone axe production and exchange in 19th century south-eastern Australia. In *Stone Axe Studies III*. Vin Davis and Mark Edmonds, ed., pp. 85-98. Oxbow Books, Oxford.

Brumm, Adam, and Andrew McLaren
2004 Some Stone Knapping Traditions of Aboriginal Australia. *Chips* 16 (2): 6-13.

Stone axes, uniface and biface points (pirri and Kimberley), macroblades, microliths, tula adzes, grindstones. Symbolic importance of stones and tools. [Good quick summary with pictures. Unfortunately Chips did not print their bibiliography.]

Brumm, Adam, Nicole Boivin, and Richard Fullagar
2006 Signs of Life: Engraved Stone Artefacts from Neolithic South India. *Cambridge Archaeological Journal* 16(2): 165-90.

In dumps of waste from axe manufacture, engraved dolerite flakes “draw on natural features in and on stone, suggest an appreciation for patterns of nature and lack of distinction between anthropogenic and natural markings...response to percieved life-force” in stones. Produced, then broken by knapping, suggesting symbolic control of power in stones. Ethnographic info on beliefs about stones as living or powerful.

Bryan, Alan L.
1960 Pressure Flaking – The Problem of Identification. *Tebiwa* 3(1):29-30

Bryan, Alan
2005 Robson Bonnichsen 1940-2004. *Mammoth Trumpet* 20 (2): 1-3.

Obituary, followed by tributes from others. Learned to knap from Crabtree.

Bryan, Alan L. and Donald R. Tuohy
1960 A Basalt Quarry in Northeastern Oregon. *Proceedings of the American Philosophical Society* 104(5):485-510

Bryant, Douglas D.
1982 Lithic Analysis of Projectile Points from Yerba Buena, Chiapas, Mexico. *Lithic Technology* 11(2):21-28

Over-applies a typology to ~30 points from one house. No analysis of manuf process, etc. Suggests possible reasons for variation [no conclusions – weak job]. Late classic Maya

Bryce, Byl
2010 East Meets West: An Analysis of Style in Basketmaker II Flaked Stone Technology. Unpublished MA thesis, Northern Arizona University.

If W BM were migrants from S bringing agric, which was then adopted by more E BM pops developing from in situ Archaic folk, there ought to be social diffs reflected in technology like biface manufacture. Geib showed Archaic used sharp pressure flakers, produced small flake scars, serrated but straight edges, relatively thicker points, while BMII favored punching, with wide, spaced flake scars, more sinuous edges with little pressure finish, and thinner flatter points.

Useful background on BM research. Experiments with direct percussion vs short punch and pressure, can't distinguish direct vs indirect perc from flakes or scars. Pressure flakes smaller - distinction is in diameter of tool end.

W-E distinction only partial - similar tools but different production methods. Notching, and point cross section similar, but diffs in width of flaking tool (affects flake scar + flake widths). E more randomly flaked, lower W/T ratios, more likely to use pressure finish, points more like Archaic. W more high W/T ratios, with horizontal flake scar patterns, pressure mostly for rejuvenation, excurvate or straight based points with wide corner notches. Three regions (Rainbow Plateau and Cedar Mesa W and Durango E) show more complexity, which he interprets as one overarching culture reflected in wide similarity (eg pref for wide corner-notched points) with localized regional "ethnic" based isochrestic variation, eg in prefs for base form + flaking patterns. So Cedar Mesa debitage differs from Durango and Rainbow P which are more similar. In points, CM and DR most similar. RP most likely to use horizontal flaking, DR random flaking, thicker points, with pressure finish so points look more Archaic. All 3 preferred excurvate bases but straight bases common in RP and CM.

[Variability in pts interpreted in terms of isochrestic variation caused by different enculturation into regional ethnic groups, using points to show affiliation a la Weissner. There are some problems with looking at large regions over long spans of time, with assemblages that are not closely dated and probably reflect mixtures. I also wonder how much point styles actually are used to show affiliation. Certainly hunters do compare gear. But levels of individual variation in the samples may swamp such things as regional preferences for a particular flaking pattern, while the overall similarity of points across BMII is hard to see as reflecting intentional signaling.]

Bryce, William D.
2012 Projectile point manufacturing methods and morphological diversity: A case study from Antler House Village. In *Prehistoric Cultures of the Perry Mesa Region: Proceedings of the Perry Mesa Symposium*, edited by Will G. Russell and Michael J. Hoogendyk, pp. 63-83. Friends of Agua Fria National Monument, Phoenix.
EcoPlan excavations 2008, sequential pithouse occupationfrom c. AD 700-1150. 82 points, 58 typable. 7 pre-ceramic dart pts, rest Hohokam related arrow pts. Pre-Ceramic (Archaic) forms made mostly by percussion, diverse forms of ceramic era pts all exclusively pressure flaked.

Bubel, Shawn
2014 The Fincastle Site: A Late Middle Prehistoric bison kill on the Northwestern Plains. *Plains Anthropologist* 59(231):207-240.

Alberta, 2500 BP, large kill site, single event with upright bone ceremonial features. Much lithic material including 118 pts; 75% of lithic material is Knife River Flint. Of debitage, 94% is small tertiary flakes of non-local material = finishing and sharpening tools brought to the site. Cores of local materials for ad hoc flakes used in butchering. Point lengths variable from 18-58 mm, mean 36 mm, while W much less variable. [Form is notched Archaic, excurvate blade edges, wide side/corner notches, look clunky, but photo is poor.] Some on minimally shaped flakes. "Invasive retouch along the blade edges, a characteristic of resharpening [unclear what he means] was noted for 43% of pts". Figure: selected pts illustrating change in length + blade form with resharpening while base remains same. Point form like those called Besant, Outlook, Sandy Creek, Sonota. Whole assemblage matches Outlook sites best, but difficult to classify or id specific affiliations. [Is there really any difference among these types?]

Buchanan, Briggs, Eileen Johnson, Richard E. Strauss, and Patrick J. Lewis
2007 A Morphometric Approach to Assessing Late Paleoindian Projectile Point Variability on the Southern High Plains. *Plains Anthropologist* 52(203):279-299.

Plainview and related forms from a number of sites.

Buchanan, Briggs, and Marcus J. Hamilton
2009 A Formal Test of the Origin of Variation in North American Early Paleoindian Projectile Points. *American Antiquity* 74(2):279-298.

Examine fluted Clovis and other point types across continent in relation to late Pleistocene regional variability; find little correlation, arguing that drift, not functional adaptation to local conditions best explains variability. Also variation in pt shape reflects distance among sites suggesting not enough time for local selection to affect pt shape.

Buck, Bruce A.
1982 Ancient Technology in Contemporary Surgery. *The Western Journal of Medicine*136:265-269.

Crabtree surgery; some healing experiments with rabbits

Buck, Paul E., Daniel S. Amick, and William T. Hartwell
1994 *The Midway Valley Site (26NY4759): A Prehistoric Lithic Quarry Near Yucca Mountain, Nye County, Nevada*. Las Vegas: University System of Nevada.

Uses our Lake Mead typol of reduction clusters (pp. 79-86); notes diff btwn SW and Aust – sites are not for expedient immediate tools, but to procure material to use elsewhere

Budinger, Fred. E.
2004 Middle and Late Pleistocene Archaeology of the Maniz Basin, San Bernardino County, California. In *New Perspectives on the First Americans*. B. T. Lepper and R. Bonnichsen, eds., pp. 13-25. Center for the Study of the First Americans, College Station, TX.

[Another feeble attempt to promote the Calico site. Photos of some apparent tools, plus some dreadful weathered natural fractures – the usual mishmash of stuff. Untruths like "stream transport abrades…it does not dislodge artifact-like flakes by percussion." Supposed] artifacts at some localities "5 m below 185,000 year old Long Canyon ash."

Bulletin of Primitive Technology
1994 Readers Survey Results. *Bulletin of Primitive Technology* 7(1): 79

(30% return, 45% blue collar)

Bullock, Peter Y.
1995 A Clovis Point from the Upper Pecos Valley, New Mexico. *Kiva* 61(1): 71-82.

Burker, Alex W. , Craig E. Skinner, M.S. Shackley, M D Gliscuck & J D Rogers.
2002 Mesoamerican Origin for an Obsidian Scraper from the Precolumbian Southeastern United States. *American Antiquity* 67(1):103-108.

From Spiro Craig Mound. Energy Despersive X-Ray Fluorescence – Pachuca source in Hidalgo, Mexico (green/gold obsidian) scraper recovered after looters left.

Burkitt, M.C.
1944 Flint Knapping. *Nature* 11(3915): 618-619.

Review of Knowles Manuf of Flint Arrowhead; mentions Coutier work w/ Breuill. [No value]

Burrill, Richard
2009 Ishi Discovered. *Bulletin of Primitive Technology* 37:40-52.

Excerpts from Ishi Rediscovered, The Anthro Company 2001. The artifacts taken from Ishi's camp, illustrations, including flaker and arrows.

Burrill, Richard
2013 "Rock to Which Legend Attaches": Flintknapping and Gaming. *Bulletin of Primitive Technology* 45:15-22.

Ishi, info on his knapping, photos of tools, photos of points in private collections. Info on hand game.

Burriss, Robert P.
2009 Symmetry is Sexy: A Reply to Hodgeson's 'Symmetry and Humans.' *Antiquity* 83(322):1170-1175.

Hodgeson says 'symmetry is not connected to health and thus cannot have served as signal of genetic worth' but this is wrong. Kohn + Mithen are right that sym handaxes can signal skill, thus is "the most parsimonious explan for level of sym in handaxes." [Another dope who doesn't know the archaeology.]

Burrow, Steve
2011 The Mynydd Rhiw quarry site: Recent work and its implications. In *Stone Axe Studies III*. Vin Davis and Mark Edmonds, ed., pp. 247-260. Oxbow Books, Oxford.

Burroughs, Edgar Rice
1916 *The Beasts of Tarzan*. A. L. Burt, New York.
1996 (originally published 1914) *The Beasts of Tarzan/The Son of Tarzan*. Ballantine Books, New York.

Tarzan makes a knife by dropping water on hot flint. [Early appearance of fire and water fallacy, perhaps responsible for its wide spread. And a lot of other rubbish - predatory 'apes', ridiculous fire-making. Not to mention awful writing. See Whittaker 2015]
From (1916:42-44):
"The ape-man was sore from the wounds that Molak had inflicted upon him, but he was inured to physical suffering and endured it with the calm and fortitude of the wild beasts that had taught him to lead the jungle life after the manner of all those that are born to it.

His first need, he realized, was for weapons of offence and defence, for his encounter with the apes, and the distant notes of the savage voices of Numa the lion, and Sheeta, the panther, warned him that his was to be no life of indolent ease and security.

It was but a return to the old existence of constant bloodshed and danger—to the hunting and the being hunted. Grim beasts would stalk him, as they had stalked him in the past, and never would there be a moment, by savage day or by cruel night, that he might not have instant need of such crude weapons as he could fashion from the materials at hand.

Upon the shore he found an out-cropping of brittle, igneous rock. By dint of much labour he managed to chip off a narrow sliver some twelve inches long by a quarter of an inch thick. One edge was quite thin for a few inches near the tip. It was the rudiment of a knife.

With it he went into the jungle, searching until he found a fallen tree of a certain species of hardwood with which he was familiar. From this he cut a small straight branch, which he pointed at one end.

Then he scooped a small, round hole in the surface of the prostrate trunk. Into this he crumbled a few bits of dry bark, minutely shredded, after which he inserted the tip of his pointed stick, and, sitting astride the bole of the tree, spun the slender rod rapidly between his palms.

After a time a thin smoke rose from the little mass of tinder, and a moment later the whole broke into flame. Heaping some larger twigs and sticks upon the tiny fire, Tarzan soon had quite a respectable blaze roaring in the enlarging cavity of the dead tree.

Into this he thrust the blade of his stone knife, and as it became superheated he would withdraw it, touching a spot near the thin edge with a drop of moisture. Beneath the wetted area a little flake of the glassy material would crack and scale away. Thus, very slowly, the ape-man commenced the tedious operation of putting a thin edge upon his primitive hunting-knife.

He did not attempt to accomplish the feat all in one sitting. At first he was content to achieve a cutting edge of a couple of inches, with which he cut a long, pliable bow, a handle for his knife, a stout cudgel, and a goodly supply of arrows. These he cached in a tall tree beside a little stream, and here also he constructed a platform with a roof of palm-leaves above it.

When all these things had been finished it was growing dusk, and Tarzan felt a strong desire to eat."

Burroughs, Edgar Rice
1913 (1963) *The Cave Girl*. Ace Books, New York.

Wimpy Bostonian Waldo Emerson Smith-Jones is cast away on an island inhabited by primitive 'cave men' but taught rudiments of survival by the beautiful Nadara, resolves to make himself into a man and becomes leader of the group.

P 70, prehistoric people as "morose, unhappy community whose savage lives were spent in almost continual wandering from one filthy comfortless warren to another equally foul and wretched." Of course the civilized man throws off his past life for love of the cave girl, and of course he is a more powerful and intelligent savage, and of course she turns out to be the daughter of a missing nobility… Plus the usual Burroughs' sketchy woodcraft and natural history fantasies. The plot annoyingly repeats various favorite motifs from Tarzan: dangerous jungle, unexplored islands, shipwreck and treachery on ship, modern hero transformed but remaining noble, quest for kidnapped heroine, etc. At least his hero and the cavemen use 'sharp stones' without resorting to the fire-and-water nonsense.

Burton, Jeffery F. **pdf**
1991 *The Archaeology of Sivu'ovi: The Archaic to Basketmaker Transition at Petrified Forest National Park*. National Park Service Western Archaeological Center, Publications in Anthropology 55.

Adamana phase, early BM pithouse village, 2 ph excav. Regional + PEFO background. Side-notched BM pts. Petr wood, chalc, local cherts, one Govt Mt obsid. Sullivan + Rosen type anal of debitage, but by using other info, got some useful data. Adamana Brown ware = BM earliest ceramics, plain, brown, paddle + anvil, temper of sand with mica on surface.

Burton, John
1980 Making Sense of Waste Flakes: New Methods for Investigating the Technology and Economics Behind Chipped Stone Assemblages. *Journal of Archaeological Science* 7: 131-148.

Experimental biface debitage classified by [early] multivariate stats and compared to Cissbury Neolithic and Grimes Graves. Concludes C has little manufacture, his one hole at GG has evid of maybe roughing out as well as flake tools, but not "axe factory" bifacial manufacture.

Burton, John
1987 Exchange Pathways at a Stone Axe Factory in Papua New Guinea. In *The Human Uses of Flint and Chert.* G. Sieveking and M. Newcomer, eds., pp. 183-192. Cambridge: Cambridge University Press.

Busby, C., R. Fleming, R. Hayes, and K. Nissen
1978 The Manufacture of Petroglyphs: Additional Replicative Experiments from the Western Great Basin. In *Four Rock Art Studies*, C.W. Clewlow, ed., pp. 89-108. Socorro: Ballena Press.

Direct pecking expers under "field" conditions – lots detail of each – tool wt etc; high blows/min, simple petros; basalt, granite

Butcher, Kevin, and David W.J. Gill
1993 The Director, the Dealer, the Goddess, and her Champions: The Acquisition of the Fitzwilliam Goddess. *American Journal of Archaeology* 97:383-401.

Cretan marble goddess statuette; excellent story of dangers of expert opinion in absence of arch context; Evans and Wace supported, others dismiss, generally agreed now to be forgery

Butler, B. M. and E.E. May (editors)

1984 *Prehistoric Chert Exploration. Studies from the Midcontinent Center for Archaeological Investigations*. Occasional Papers No. 2. Southern Illinois University: Carbondale.

Butler, B. Robert
1963 An Early Man Site at Big Camas Prairie, South-Central Idaho. *Tebiwa* 6(1):22-33.

Simon site – a cache of large bifaces including Clovis points and preforms

Butler, B. Robert
1983 The Significance of Large Numbers of Fluted Point Finds: A Different View. *Archaeology of North America* 11:12-14.

[speculative model of origins of Clovis – unlikely, no evidence, and largely irrelevant to the title]

Butler, Chris
2001 A Polished Flint Arrowhead from Tilgate Lodge, West Sussex. *Lithics* 22:37-38.

Barb and tang – polishing is unique, possibly ritual.

Butler, Chris
2005 *Prehistoric Flintwork*. Tempus Publishing Ltd, Stroud.

Specifically intended for British material, popular + professional audience. Basic materials and principles of knapping, extended typology + description of British tool types. Generally good, but a few weak definitions. Well illustrated, although the tool pics are better than the diagrams of knapping. Final chapter on analysis is cursory.

Byers, A. Martin
1999 Communication and Material Culture: Pleistocene Tools as Action Cues. *Cambridge Archaeological Journal* 9(1): 23-41.

"gesture call" as non-language (nonverbal) communication in primates, often accompany verbal and reinforce it as language developed, may have usurped and reduced gesture/call systems, so early hominid communication diff from both ape and modern; Tool-Cue Model = artifacts for 1) utilitarian tools, 2) iconic media for communication "action cues" point at cookie jar not only means "cookie" but also "want" but we priviledge the cookie part but "expressive signing of a want = "action cue". Tools serve as action cues too, but unlike other primate communic, are context free. Tool as "framing device" signaling "intention to represent" as picking up axe may indicate intention to mimic cutting to show plan of action, indicates "intention" or desire – in conjunction with other vocal or gestural context-bound communication to specify more precisely; Tool-cue would be purposive, intrinsicly future oriented, and concrete (context bound). Tools could act as "warrants" indicating an actor and right to act – requires normative rules = "style"; i.e. artifact meaning must be recognizable so assemblages w/ normative style imply symbol- using population. Acheul and Moust = natural icons for non-symbolic action cue practices – tools reflect util funct and iconic action cueing. Up Paleolithic is symbolic, warranting. Initial random choice of isochrestic (functionally equiv.) style becomes habit, socialized = social tradition thus the normative rules become symbolic. So ought to be a period before stabilization of an isochrestic style – Oldowan vs. Acheul. Wynn: Acheul handaxes manifest spatial relationships, non-random form choices not seen in Oldowan are "trial and error" tools; this is "surplus" = style in h-axe, needed for action-cueing, while Oldowan axes are "trial and error" tools. Pseudo-bifaces [crude h-axe] made by trimming flakes, not really fully symmetrical – a representation or facsimile hand axe – shared form for communication. Could be "practice" or symbolic because bilateral symmetry is not necessary for utilitarian function of these artifacts. So tools are 1) Oldowan – purely functional, created randomly, 2) Acheul/Moust – stabilized insochrestic variation that implies social norms, uses of tools as "action cues", framing action mimicry as intended action; 3) Up Pal – fully symbolic, tools are "warrants" for individs to perform actions; [Interesting ideas but hideous jargon – also 3 main problems: 1) no evidence that any of these tools were actually used as action cues and plenty of evidence that they were used as functional tools, 2) "facsimiles" may be functional – testable by use-wear, 3) No arch contexts that allow test of model]

Byers, David A., Craig Picka, and Jack H. Ray
2014 Heat treatment, Ozarks cherts, and prehistoric toolstone use in southwest Missouri. *American Antiquity* 79(3):507-521.

Burlington and Jefferson City cherts. 'Technological investment' model and experimental ht trt to argue that cost-benefit of treating the chert types was different at Big Eddy site. Ht test on cut blanks, then flakes measured. Ht to 400C [why so high?] but JC chert often heat fractured at that, better at 350C. Flakes produced with mechanical hammer device, 100 blanks.

Cabrol, A. and C. Coutier
1931 L'utilisation du bois en guise de percuteur pour tailler la pierre. *Bulletin de la Société Préhistorique Française* 28: 170.

One if 1st discussions of soft hammer. (cf Johnson)

Cackler, Paul, Michael Glascock, Hector Neff, Beverly Chiarulli
1999 Effects of Weathering on the Coloration of Chert and its Implications for Provenance Studies. *Lithic Technology* 24(2): 81-90.

Black Belize flint – usually brown – black = weathering – surface coloration of some lithic artifacts <u>not good</u> for sourcing comparisons

Cackler, Paul R., Michael Glascock, Hector Neff, Harry Iceland, K. Anne Pyburn, Dale Hudler, Thomas R. Hester, Beverly Chiarulli
1999 Chipped Stone Artefacts, Source Areas, and Provenance Studies of the Northern Belize Chert-bearing Zone. *Journal of Archaelogical Science* 26: 389-397.

Chert specimens analysed by Neutron Activation are similar all over the CBZ. Chalcedonies [not defined] differ chemically from the chert but are also probably all similar. Black chert from several localities eg Chau Hix is a weathering phenomenon, not geologically distinct. [no useful specifics on sources that would help relocate]
Lots of sourcing studies cited

Cahen, Daniel
1987 Refitting Stone Artefacts: Why Bother? In *The Human Use of Flint and Chert*, G. Sieveking and M. Newcomer, eds., pp. 1-10. Cambridge: Cambridge University Press.

Caldwell, Duncan
2013 A Possible New Class of Prehistoric Musical Instruments from New England: Portable Cylindrical Lithophones. *American Antiquity* 78(3):520-535.

Refs world lithophones, including ‘bifaces’ in sequence as xylophone in Asia, ‘kiva bells’ suspended cylinders in SW, ethnog Santo Domingo Pueblo

Cylindrical lithophones of homogeneous rock, laid on cushions or across thights at acoustical dead zones can produce 2 tones when struck, known in Africa. Most similar artifacts in N Am considered as “pestles” but New England specimens show no wear, 70+ cm long.

Callahan, Errett
1976 A Lithic Workshop Symposium. *Newsletter of Lithic Technology* 5(1-2):3-4.

Callahan, Errett
1978a Editorial. *Flintknappers' Exchange* 1(1):2-4.

Callahan, Errett
1978b "Synthetic Billet Material" *Flintknappers' Exchange* 1(1):9-10.

Callahan, Errett
1978c "On Identifying and Documenting Replicas" *Flintknappers' Exchange* 1(1):10-11.

Callahan, Errett
1978d "Editorial" *Flintknappers' Exchange* 1(2):2-3.

Callahan, Errett
1978e "The Ginsburg Experience: A Mammoth Task" *Flintknappers' Exchange* 1(2):31-32.

Callahan, Errett
1979a From the Editors. *Flintknappers' Exchange* 2(3):1.

Callahan, Errett
1979b Review of *The Art of Flint Knapping*. *Flintknappers' Exchange* 2(3):11.

Callahan, Errett

1979c The Basics of Biface Knapping in the Eastern Fluted Point Tradition: A Manual For Flintknappers and Lithic Analysts. *Archaeology of Eastern North America* 7(1):1-180. (reprinted 2000).

Clovis and related point manufacture, material quality grades, staging concepts, failures. [Important].

Callahan, Errett
1979d Comments on Patten's Analysis of the Clovis from Clovis. *Flintknapper's Exchange* 2(3): 17.

Percussion, not pressure more likely

Callahan, Errett
1981 Danish Dagger A-10198. *Flintknapper's Exchange* 4(2): 11-14.

Illustrates a very fine huge dagger, discusses techniques

Callahan, Errett
1984 I hate to Bicker, But…: A Study of Microblade Cores with Obtuse Platform Angles. *Lithic Technology* 13(3): 84-97.

>90 degree platform angle is possible – Maglemosian cores and elsewhere, comments by others on how possible – [mostly pressure – thus vector approach]

Callahan, Errett
1985a Flintknapping Flash Cards: Pressure Flaking of Flakes. Lynchburg: Piltdown Productions.

Callahan, Errett
1985b The Flintknapping Industry of Eben-Emael. *Quarterly Bulletin, Archaeological Society of Virginia* 40(2-3): 108-111.

Modern knappers in Belgium, making large flint blocks to line grinding mills

Callahan, Errett
1986 A Thinking Man's Flintknapper: The Errett Callahan Story. *Flintknapping Digest* 3(2): 4-11.

Callahan, Errett
1987a Metallic Powder as an Aid to Stone Tool Photography. *American Antiquity* 52(4): 768-772.

Brush on dry Al powder – simple, cheap, effective

Callahan, Errett
1987b Piltdown Productions: Flint Replicas and Flintknapping Supplies (Catalogue). 3412 Plymouth Pl, Lynchbury, VA 24503.

[see also Warner 1986 on Callahan's knives]

Callahan, Errett
1989 Dear D.C. *Chips* 1(2): unpaginated letter inserted in newsletter.

Callahan, Errett
1990 *Piltdown Productions Catalog # 4*. Piltdown Productions, Lynchburg.

Callahan, Errett
1992 Flintknapping, Elitism, and Fracture Geometry: A Cautionary Note. *Bulletin of Primitive Technology* 4:16-19.

Callahan, Errett
1993 *Sword in the Stone Supplement to Our 1990 Catalog #4*. Piltdown Productions, Lynchburg.

Callahan, Errett
1993a Danish Neolithic Boat Project. *Bulletin of Primitive Technology* 1(6): 42-43.

[mostly photos]

Callahan, Errett
1994a A Pause for Thought: Traditionalism vs Modernism. *Bulletin of Primitive Technology* 8:9.

A bit confused – wants to call himself "traditional" and restrict the term to use of primitive techniques, but he also promotes knappers being "neolithic" and going beyond point replication to "art". But "masters" are only those who do so using traditional tools.

Callahan, Errett
1994b A Mammoth Undertaking. *Bulletin of Primitive Technology* 7(1): 23-39.

Ginsburg experiment – elephant butchering, Clovis pt tests; focus on spear tests. Need atlatl for sufficient penetration. Extensive discussion of hafting possibilities. [Not very good description of results – doesn't live up to potential]

Callahan, Errett
1994c The Holmegaard Bow: Fact and Fiction. *Bulletin of Primitive Technology* 8: 52-58.

Mesolithic bow described and reconstructed

Callahan, Errett

1995a A Pause for Thought: An Ongoing Discussion. *Bulletin of Primitive Technology* 10:7-8.

Callahan, Errett
1995b What is Experimental Archaeology. *Newsletter of Primitive Technology*. 1:3-5.

Callahan, Errett
1995c Blades from Middle Neolithic Battle Axe Culture Graves in Sweden. Appendix 2 in Knuttson, Helenn *Slutvandrat? Aspekter på övergången från rörlig till bofast tillvaro.* Societas Archaeologica Upsaliensis, Uppsala.

Callahan, Errett
1995d A Memorial to JB Sollberger. *Bulletin of Primitive Technology* 10: 76-77, 95.

Callahan, Errett
1995e To Whom it May Concern (Using Stone Tips). *Bulletin of Primitive Technology* 10:80.

Guidelines and promotion for hunting with stone points.

Callahan, Errett
1996a A Review by Errett Callahan: *Flintknapping: Making and Understanding Stone Tools*, by John C. Whittaker. *Bulletin of Primitive Technology* 11:82-85.

Critical but positive, some legitimate points but snooty and irritating

Callahan, Errett
1996b State of the Society – The First Five Years 1990-1995. *Bulletin of Primitive Technology* 11:8-9.

Callahan, Errett
1996c The Bipolar Technique: The Simplest Way to Make Stone Tools for Survival. *Bulletin of Primitive Technology* 12: 16-20.

Chimps, etc.; probably pre-Oldowan, describes, illustrates bipolar technique.

Callahan, Errett
1996d The Preface from The Basics of Biface Knapping in the Eastern Fluted Point Tradition: A Manual for Flintknappers and Lithic Analysts. *Bulletin of Primitive Technology* 11: 56-60.

New preface to old pc, with ad, bit of boasting, reaffirms his stage concepts. Likes “spall” contra me

Callahan, Errett

1997 Back to the Stone Edge: How to Identify and Use the Best Stone Knives. *Blade Magazine* May 97:16-19.

Callahan, Errett
1999a *Piltdown Productions Catalog #5*. Piltdown Productions, Lynchburg.

Same statements on “masters” and “traditionalism” as SPT 2000

Callahan, Errett
1999b Ishi Sticks, Iceman Picks, and Good-for-Nothing Things: A Search for Authenticity in Pressure Flaking Tools. *Bulletin of Primitive Technology* 18: 60-68.

Promotes abo tools, criticizes modern alternatives; refs Whittaker & Romano 1996. Discusses single piece flakers vs composite – but would not have been crude, at least in eg Denmark. Figures and descrip of ethnos and prehist and own. Try wood with thin platforms.

Callahan, Errett
2000a What is Traditional Flintknapping? *Bulletin of Primitive Technology* 20:11.

Callahan, Errett
2000b Experiments with Danish Mesolithic Microblade Technology. *Bulletin of Primitive Technology* 20: 62-68.

Callahan, Errett
2000c Mastery: A Reconsideration of Standards. *Bulletin of Primitive Technology* 20: 9-10.

Defines master (= world-class level traditional work in all lithic technologies) but adds “character” as necessary trait. Won’t call self a master because you need “humility”. Only a master can designate masters. Only living masters are Titmus and Pelegrin. [A tedious masterpiece of self-blind irony.]

Callahan, Errett
2000d What is Traditional Flintknapping? *Bulletin of Primitive Technology* 20: 11.

[Hypocritical companion to “mastery” article – why does he write this junk when some of his other work is so good?] “Traditions perpetuate values. Innovations undermine values.” No copper, ground preforms, etc. are acceptable. “Contemporary knapping” only “allows use of modern materials and tools if they are based on prehistoric counter parts” (e.g. no copper billets!). Calls anyone who disagrees an “anti-traditional”.

Callahan, Errett
2001a Craft or Art? *Bulletin of Primitive Technology* 22:85-86.

More of usual stuff, same as his catalog. Whittaker and Stafford estimate of 5000 knappers and 1.5 million pts/yr is "fallacy" and "wishful thinking by respondents"

Callahan, Errett
2001b Regarding Bryon Rinehart. *Bulletin of Primitive Technology* 22:5-6.

Correct spelling of name, some detail corrections of Harwood article

Callahan, Errett
2001c Archaeological Evidence of Rotator Cuff Injury? *Bulletin of Primitive Technology* 21: 44-47.

Edge to edge pressure flaking w/ opposing bevels to prevent overshoot didn't work well when his rotator cuff was damaged, but after surgery now fine. [I'm not convinced that you can use this to diagnose archaeological injuries as he implies]

Callahan, Errett
2006 Neolithic Danish Daggers: An Experimental Peek. In *Skilled Production and Social Reproduction*. Jan Apel and Kjel Knutsson eds., pp. 115-129. Societas Archaeologica Upsaliensis, Uppsala.

Callahan, Errett
2006 From - Three Levels of Investment in Reconstruction: Therapy, Experience, and Experiment. *Bulletin of Primitive Technology* 32:11-12.

Excerpt from The Cahokia Pit House Project "recently completed book". Projects need to consider objectives, attitudes, and level of reconstruction desired. Level 1: "Therapy" (formerly "play") = non-authentic + non-scientific. Functional failures done correctly, and blatantly non-authentic simulations for film backdrops or fun. Inclusion of "just in case" material like plastic "pretty well guarantees that relevant prehistoric problems are not being faced." Houses at living history Indian villages usually laughable. Play-acting bad for serious experiment.

Callahan, Errett
2011 Final Journey: The Passing of Thorbjorn Petersen, a Gentle Giant. *Bulletin of Primitive Technology* 41:91-92.

Non-academic experimental flintknapper, influenced EC and many others.

Callahan, Errett
2011 Flake Removal Sequence and Cultural Inference: A Solutrean Example. In *Experiment and Interpretation of Traditional Technologies: Essays in Honor of Errett Callahan*, Hugo Nami, ed., pp. 561-659. Ediciones de Arqueología Contemporánea, Buenos Aires.

Detailed documentation of Volgu and other S bifaces, plus some comparisons from elsewhere. Replicative experiments. Apparently written around 1975.

Callahan, Errett and Robson Bonnichsen
1978 "Craftsman: Rob Bonnichsen" *Flintknappers' Exchange* 1(2):16-24.

Callahan, Errett, and Don Crabtree
1979 Craftsman: Don Crabtree. *Flintknappers' Exchange* 2(1):27-34; 2(2):8-13; 2(3):22-26.

Callahan, Errett and Jacqueline Nichols
1979 The Wyoming Knap-in. *Flintknappers' Exchange* 2(2):1.

Callahan, Errett and J.B. Sollberger
1978 Craftsman: J.B.Sollberger. *Flintknappers' Exchange* 1(1):12-17.

Callahan, Errett, and Gene Titmus
1980 Craftsman: Gene Titmus. *Flintknappers' Exchange* 3(1):18-25.

Callahan, Errett, and Gene Titmus
1999 Flintknapper's Syndrome: A Caution to Flintknappers. *Bulletin of Primitive Technology* 17: 66-70.

Extended whining about stress injuries, not all clearly related to knapping. Info on ages of C and T: 61, 62, and yrs knapping 43, 42. Callahan had operation using obsidian scalpels on shoulder for torn rotator cuff (possibly a knapping injury) and eye problems (not knapping). [Subtext is "see how long we've been knapping"]

Callow, P.
1994 The Olduvai Bifaces: Technology and Raw Materials. In *Olduvai Gorge 5: Excavations in Beds III, IV, and the Masek Beds*, 1968-71. Mary Leakey and D. Roe, eds., pp. 235-253. Cambridge U Press: Cambridge.

[Crude data recording = problems]. Examine shape, raw material, scar count, length, % unflaked. [Like Roe, too many useless manipulations, not enough interesting interp]. Acheulean larger, narrower, more scars than Developed Oldowan, regardless of material. Forms differ some by material, but much overlap. Acheul used flake blanks, D Oldowan only cobbles.

Calvert, Philip J.
2003 *A Little of What Makes This Frog Jump, According to Nine Fingers*. Privately published, Nine Finger Publications, Kirkland, AZ.

Short booklet of knapping tips, specifically oriented toward the modern copper-using knapper.

Calvin, William H.
1983 The Throwing Madonna: Essays on the Brain. New York: McGraw Hill Book Company.

Theories of handaxe as throwing weapon stimulating human mental and social evolution. They are designed to spin and fly like a frisbee, and tend to strike with edges and points. This developed out of throwing branches at animals at water holes, where if you hit one, it might startle, fall down, and be hindered by herd so you could catch it. Then *Homo erectus* figured out that rocks were better, and handaxes even more so. [Absurd fantasies that stereotype and misinterpret the archaeological record and are disproved by tendency of handaxes not to fly as claimed, see Whittaker and McCall]

Calvin, William H.
1990 The Ascent of Mind: Ice Age Climates and the Evolution of Intelligence. New York: Bantam Books.

like 1983

Calvin, William H.
1993 The Unitary Hypothesis: a Common Neural Circuitry for Novel Manipulations, Language, Plan-Ahead, and Throwing? In *Tools, Language, and Cognition in Human Evolution*, Kathy R. Gibson and Tim Ingeld, eds.; pp. 230-250. New York: Cambridge University Press.

like 1983

Calvin, William H.
2002 Rediscovery and the Cognitive Aspects of Toolmaking: Lessons from the Handaxe. *Behavioral and Brain Sciences* 25:389-438.

[Commentary on Wynn, Archaeology and Cognitive Evolution. Calvin's hand-axe throwing fantasies again, now expanded to include a new just-so story where *Homo erectus* forgets how to throw handaxes, but repeatedly rediscovers the use by finding old ones in the river beds.]

Cambron, James W. and David C. Hulse
1964 *Handbook of Alabama Archaeology: Part 1, Point Types.* Huntsville, Alabama Archaeological Society.

Campbell, Paul D.
1999 *Survival Skills of Native California*. Gibbs Smith Publisher, Salt Lake City.

Well illustrated, info on all sorts of stuff including bow and arrow, atlatl, foods; Ethnographic knapping accounts.

Campbell, Paul D.
2013 *The Universal Tool Kit: Out of Africa to Native California*. Privately published, La Crescenta, CA.

The 'kit' is really the principles of simple stone tool making, held in the mind. Simple flake, chopper, handax type tools common everywhere, simple, effective. Reuse, recycling old material is efficient source. Endscrapers and adzes - ethnog examples in Africa, variability in use, manufacture, material, hafting. Alaskan, Plains, Australian examples. San stone arrows. Scraper-planes. Blades (photo G Nunn making Mesoam obsid blade).
Practical Applications: short illustrated articles on making bows, arrows, atlatls, darts with simple flake and core tools.

Canaday, Tim and Todd Swain
2005 Operation Indian Rocks: Conducting Interagency ARPA Investigations. *The SAA Archaeological Record* 5 (4): 26-32.

Successful prosecution of a group of Nevada looters and a tour company. Tips for archaeologists involved in such investigations. Overstreet and Hotham books used to estimate values. Points dominated looted material, but also perishables.

Canales, Elmo Leon, Rodrigo Esparza Lopez, Phil C. Weigand, Eric O. Moore, Cach Avendano, and Efrain Cardenas Garcia
2006 Folsom Points from Los Guacimontones Site, Jalisco, Mexico. *Current Research in the Pleistocene* 23: 58-60.

Two preform frags from cache or burial contexts in site of Teuchtilan Tradition, 350BC to 500 AD. So symbolic use of old points.

Cane, Scott
1992 Aboriginal Perceptions of their Stone Tool Technology: A Case Study from the Western Desert, Australia. *Australian Archaeology* 35:11-31.

[Important excellent ethnographic study]. W. Aust, last nomads ca 1984 from Gugadja, Pintubi, Ngaanyatjara tribes. Stone hatchet replaced by steel 1950s, (by 1899 in central Aust), so worked with 8 old men who left desert life in 1950s, remembered much. Focus on what Aborigines know about own arch [although this means a mix of recollections and their interps so some problems, and not always clear which is involved. Actually his interest is more ethnomemory of stone tool types, not attitudes toward past or sites]. Care of sites – informants replace tools, emotional memory. Language problems – took long to learn details, some subtlety prob missed, e.g. djimarri = chalcedony, but used generically, so Gould thought it was a tool type. Quarrys located in desert, some near ephem water, but often remove stone to camps to knap. Direct perc, no bipolar. Lots of detailed specific terms for knapping, tools, stone. Recognize but did not do pressure flaking on points. Different kinds of cores not distinguished except some thought to have been used for heavy scraping. Unretouched flakes mostly called "waste" but consider some suitable for cutting, eg small sharp chalced for scarification. But mostly consider only retouched pieces as tools, contra many arch expectations of expedient tools. Some flakes transported as blanks for spare tools. Notched flakes for spear manuf, edge damage suggests tula adze use or small nibbled flakes for fine scraping. [Problem with all of this is in accepting Ab interps without supporting data on actual tool use – Abs may have interpretive myths and stereotypes just as does arch]. Arch terms “tula” adze flake + slug (= used up) = discoidal flake w unifacial stepped wear/retouch, “burren” adze flake = thick blade w stepped margins – Both called djimarri langgarru = chalcedony spearthrower ie hafted woodworking tool. “Tula” wear – first heavy work, as worn goes to light scraping, some to point used for decorative engraving (and thus sacred because nature of designs) or discard. Blades as knives. Unifacial points: 8 = woodwork, 4 = spear tip, 3 = sorcery, 3 = rubbish, 5 = ? Kimberley pts known but traded, used for prestige and sorcery. Recycling of arch specimens. Burins identified as engraving tools. [Another problem – how many informants, did they agree, etc. Some problems of informant knowledge. Hayden used poor informants, got unreliable info.]

Emphasizes general agreement between arch and Ab classifications. Ab types based on function and raw material. Arch types based on functional guesses which are often pretty good. Unretouched flakes may not be as important as most archs think.

Caneva, Isabella, M.R. Iovino, C. Lemorini, A. Özdoğan, and D. Zampetti
disk
2001 A Combined Analysis of Lithic Assemblages from Çayönü. In *Beyond Tools: Redefining the PPN Lithic Assemblages of the Levant*. Isabella Caneva, Cristina Lemorini, Daniela Zampetti, and Paolo Biagi eds., pp. 165-181. ex oriente, Berlin.

Caneva, Isabella, Cristina Lemorini, Daniela Zampetti, and Paolo Biagi disk
2001 *Beyond Tools: Redefining the PPN Lithic Assemblages of the Levant*. ex oriente, Berlin.

Cann, J.R., J.E. Dixon, and Colin Renfrew
1970 Obsidian Analysis and the Obsidian Trade. In *Science in Archaeology*, D. Brothwell and E. Higgs, eds.; pp, 578-591. New York: Praeger Publishers.

Cannell, Alan
2014 Proboscidean Resources and the Engineering of Acheulean Lithic Technology. *Lithic Technology* 39(1):39-45.

Handaxes as ‘foot-cutters’, ‘Structured Placement’ model: set along pathways leading to water to injure feet of animals that can then be tracked and killed. Timing of Acheulean technology mirrors dispersal of *Palaeoloxodon antiquus* elephants – both end at ‘Movius Line’ in Asia. Natural punctures to cushioned feet of elephants are common and incapacitating. Handaxes to be effective on elephant feet need to be 10-16 cm long. They have greater surface area than a round stick, so bigger wound; with one convex side, they curve in wound for max damage. Hard to remove. If butchery tools, should be more, with flakes, at elephant kills. Most fit size requirement. Assoc with fluvial sediments. Very numerous in right layers – needed if Structured Placement strategy is to work. Elephant too large to consume all, but brain not; a couple examples of [possible] brain use. [Another silly idea supported by stereotyping and exaggerating the archaeological record].

Cannon, Bob
2007 The Stoneworker. *Chips* 19(4):8-16.

Bio of Don Crabtree, b.1912, began knapping age 7, self-taught. 1930s to CA, dropped out of Long Beach Jr Coll, worked at UC Berkeley as paleontological preparator, demo'd knapping, knew Kroeber, saw Ishi's work. Used what he called "reverse" pressure flaking, because scars oriented opposite of Ishi's. Survived cancer 1939. Invited to demo in OH, hired by H. H. Ellis 1941, advised Howard at Blackwater Draw and Roberts analysis of Lindenmeier. WW II back to CA to build ships, married, post-war to ID as real-estate and USDA supervisor. Retired with heart problems 1962, as Swanson got him Res Asst at Pocatello Mus, began publishing experiments. Les Eyzies conference 1964. Died 1980. Major contributions in heat treatment, pressure flaking, Folsom points, chest pressure blades. Good photos of DC.

Cannon, Dale, Dane Martin, D.C. Waldorf, and Val Waldorf
2000 *Flake Over Grinding with Dale Cannon*. VHS. Flintknappers Corner, Washburn, MO.

Carballo. David M.
2011 *Obsidian and the Teotihuacan State: Weaponry and Ritual Production at the Moon Pyramid*. University of Pittsburgh Memoirs in Latin American Archaeology No. 21.

Obsidian "was a central component in political rituals and essential for arming the city's military." (17). 1998-2005 excavation in pyramid and plaza. Militaristic state, organized army, possibly rank by merit with personal incentive for success. Changes in technology from Formative include proliferation of atlatl (33), cotton quilted helmets, smaller lighter shields, use of battle standards for organization. Bow use possible, but no depictions of bows, many of atlatls, obsid pts are large. Atlatl range ca 70 m, declining accuracy after 46m (Hassig1992). No macahuitl, so shock attack after missile (atlatl) would be clubs, spears, knives. Human sacrifice common, including heart extraction, assoc w military conquest.

Aztec obsidian industries - cities didn't monopolize sources, obsid used for tribute, weapons stored in state warehouses, rich obsidian lore in myth and ritual use. *Itztli* symbolically linked to powerful forces: volcanoes, divination w mirrors, regenerative power of blood + sacrifice. Prismatic blades, bifacial dart points. Dart = *tlacochtli,*assoc w Toltec, more noble weapon than arrows assoc w Chichimec hunter tribes to N.

Formative (pre-Teo) obsid industries: prismatic blade developed mid-4th millenium BC. Specialist production, independent or attached. Long continuity of basic types from Formative thru Classic (Teo) to Post-Classic (Aztec). Intro of arrowheads possibly during Late Classic or EpiClassic. Formative mostly utilitarian; bloodletters + only a few eccentrics are exceptions. Eccentrics, ritual, ornamental use more later.

At Teo - dense obsid scatters, early model of obsid as critical resource (manuf, export) in rise of mercantile state. But Clark (1986) argues that importance exagerated, data only from unclear surface contexts, need excav of real workshops.

Three workshop deposits, Xolalpan phase (AD 350-550) in plaza, on earth floor, debitage and microdebitage from intense event of production of dart pts and miniature eccentrics. Pits with debitage, pot offerings, and one with 53 bodies dismembered and used for making bone artifacts - all with obsidian debitage as well. Scavenging of offering deposits by later Teotihuacanos. Wkshp deposit ca 1/3 excav, with 170 kg of debitage, 136 kg/cubic meter.

Dart points were stemmed, ca 7 cm long. No large game, so for war and offering. Some too large for projectile use. Finished by regular pressure flaking. Also making pressure prismatic blades. Small eccentrics from flat flakes + blades - mini pts, crescents, trilobes, anthropomorphs, serpents, canids, bipointed knives, and bloodletters. [There are drawings of representative specimens of all, but photos are far too few and too small.]

Analyzed 40,000 artifacts from Deposits 1 to 3, 30 kg worth. Debitage typology [technological types, but a bit too elaborate]. D3 has bigger debitage. Obsidian from Tulancingo, Pachuca, Otumba. All 3 making mostly bifaces, D3 has ca 42% blade deb. Points made by percussion shaping diamond or stemmed form, then pressure finish. Uses flakes, broken bifaces to estimate 1,836-11,760 pts produced for D1. Larger deb in D3 from larger source pieces, making larger bifaces, wasteful discard - suggests state-patronized production, not individual economization.

Iconography. Depictions of dart + shield, probable atlatls [including some carried by warriors with dart+shield, with a bleeding heart on hook of atlatl, or these may be curved obsidian knives with impaled hearts.] Dart pts not shown realistically. Eccentrics depict predatory animals (canid, snake) assoc with warfare. Trilobe = blood droplets. Undulating bipoint knife = lightning. Anthropomorphs appear to = bound captive/sacrifice. Predatory animals and birds buried at Moon Pyramid. Conflation of dart/serpent on some eccentrics.

Carballo, David M., Jennifer Carballo, and Hector Neff
2007 Formative and Classic Period Obsidian Procurement in Central Mexico: A Compositional Study Using Laser Ablation-Inductively Coupled Plasma-Mass Spectrometry. *Latin American Antiquity* 18(1):27-43.

Carmody, Michael L.
2003 Tools of Contact: A Functional Analysis of the Cameron Site Chipped-Stone Assemblage. In *Stone Tool Traditions in the Contact Era*. Charles Cobb, ed., pp.59-77, University of Alabama Press, Tuscaloosa.

Carnegie, David W.
1898 *Spinifex and Sand: A Narrative of Five Years' Pioneering and Exploration in Western Australia*. C. Arthur Pearson Ltd, London. Reprinted Hesperian Press, 1982.

p 340-341: Kimberley district spears of superior manufacture, with heads of glass, quartz or insulator from telegraph line. "Spears will pass right through a cattle-beast, and which are themselves unimpaired unless they strike on a bone." Telegraph damaged, attempt to reduce by leaving bottles at poles. Spear heads fixed in lump of gum. "Up to a distance of 80-100 yards the spears can be thrown with fair accuracy and great velocity." L from 10-15'. Woomera held as in sketch [shows flat decorated N Desert form held edge up, spear across fingers, pinned by thumb.] Central desert forms cruder. In Kimberley use light board throwers 2.5-3.5' long.

Carneiro, Robert L.
1979 Tree Felling with the Stone Axe: An Experiment Carried Out Among the Yanomamö Indians of Southern Venezuela. In *Ethnoarchaeology: Implications of Ethnography for Archaeology,* C. Kramer, ed.; pp. 21-58. New York: Columbia University Press.

Ethnographic and experimental info, [but not very good].

Carper, Raven G.
2005 On the Use of Symmetry to Assess Biface Production Goals. *Lithic Technology* 30(2):127-144.

Quantifying symmetry with index helps to show difference between Paleoindian cores and point preforms.

Carr, Dillon H. and Robert F. Boszhardt
2003 The Kriesel Cache: A Late Paleoindian Biface Cache from Western Wisconsin. *Plains Anthropologist* 48 (187): 225-235.

Agate Basin preforms (74) of Cataract Silicified Sandstone, source near find spot.

Carr, Phillip J. and Andrew P Bradbury
2001 Flake Debris Analysis, Levels of Proclution and the Organization of Technology. In *Lithic Debitage: Context, Form, Meaning*. William Andrefsky, jr. ed. pp 126-146. Salt Lake City, The University of Utah Press.

Carr, Kurt W., Christopher Bergman, and Christa M. Haag
2010 Some Comments on Blade Technology and Eastern Clovis Lithic Reduction Strategies. *Lithic Technology* 35(2):91-125.

Blade industries rare in N. Am. Compares E C to more standardized blade-dependent early European industries. E C does have blades, but much rarer, less regular than Euro Upper Paleolithic and Epipaleolithic, and use less high quality material, more expedient, variable, inconsistent core preparation. EC also makes fewer tools on blades, and almost never projectile points. EC points are bifacial, curated + resharpened, while Euro points are on blades, discarded when damaged. Clovis blades occur where large material is available. Clovis adaptation more mobile, less dense population than Europe.

[Although Solutrean industries are not discussed, this applies - one reason why they are not reasonable ancestors for Clovis industries,]

Carr, Phillip J. and Andrew P Bradbury
2010 Flake Debris and Flintknapping Experimentation. In *Designing Experimental Research in Archaeology: Examining Technology Through Production and Use*, Jeff Ferguson, editor., pp. 71-92. University Press of Colorado, Boulder.

[OK, some good consideration of design variables - aggregate analysis vs flake attributes, controls, skill problems, control vs coverage, sample size, observer variance, but too abstract in part - more detailed case studies would help.]

Carter, C. Barry, and M. Grant Norton
2007 *Ceramic Materials: Science and Engineering*. Springer, New York.

Massive text for materials science engineers. Ceramics = "nonmetallic, inorganic solids". [Shows differences in definitions between scientific fields, which leads them to include stone tools, gems, glass, and other things that no archaeologist would ever call ceramic. Book's focus turns out to be on glass and relatives and modern "ceramic" materials. Archaeol background of hominid evolution with stone tools is good, info on what archs call ceramics not so good, geological background for rocks and minerals often so brief as to be misleading.] Masses of physical and chemical info on materials of all sorts, economic and production stats. Glass colors include Cu for blues + greens, cobalt Co for intense blue, Fe for yellows, bluish green, and dark amber, Au for ruby red.

Carter, Tristan, S. Dubernet, R. King, F-X. Le Bourdonnec, M. Milic, G. Poupeau, and M. Steven Shackley
2008 Eastern Anatolian Obsidians at Catalhoyuk and the Reconfiguration of Regional Interaction in the Early Ceramic Neolithic. *Antiquity* 82(318):900-909.

At C, mostly Cappadocian obsidian (200 km). Now also peralkaline obsid from Bingol or Nemrut Dag (600 km), 5 prismatic blades, from intentional deposit. Change in trade patterns, or new means of signalling status.

Cartledge, Thomas R.
1986 Obsidian Hydration dating of the Desert Culture on the Coconino Plateau. *Kiva* 52(1): 3-22.

C. Jennings dates and phases, dismissed; all available obsid hyd dates unreliable

Caspar, J.P., and Cahen, D.
1987 Emmanchement des outils Danubiens de Belgique: Donées Techniques et tracéologiques. In *Le Main et l'Outil: Manches et emmanchements préhistoriques*, D. Stordeur, ed.; pp. 185-196. Lyon: Maison de l'Orient.

Caspar, Jean-Paul and Marc DeBie
1996 Preparing for the Hunt in the Late Paleolithic Camp at Rekem, Belgium. *Journal of Field Archaeology* 23(4): 437-460.

Azilian "arch-backed pieces" [microlithic backed bladelets] identified as projectile points by breakage and wear; archery experiment-weak impact traces = light arrows and bow speed; tight binding increases fracture, loose lateral slotting less; base fractures suggest forced against hard medium in shaft = reed nodes; Larger elements traces of butchering, not hafted. Production areas = few use wear, waste frags from backing, snap fractures. Also retooling loci = dense lithics lots burned rock, lg pieces to outskirts, cooking and other activities too, projectile use wear, manuf waste and refits, basal frags [peer reviewed 1994]

Cassell, Mark S.
2003 Flint and Foxes: Chert Scrapers and the Fur Industry in Late Nineteenth and Early Twentieth Century North Alaska. In *Stone Tool Traditions in the Contact Era*. Charles Cobb, ed., pp.151-164, University of Alabama Press, Tuscaloosa.

Cassen, Serge and Pierre Petrequin
1999 La Chronologie des Hache Polies dites de Prestige dans la Moitié Ouest de la France. *European Journal of Archaeology* 2(1): 7-33.

Cassidy, Jim
2006 A Possible Chipped-Stone Boat Effigy from the Early-Holocene Component of the Eel Point Site (CA-SCLI-43), San Clemente Island, California. *Current Research in the Pleistocene* 23:82-83.

[perhaps symbolic boat shape - but could be just a tool]

Castiñeira, Carola, Marcelo Cardillo, Judith Charlin, and Jorge Baeza
2011 Analisis de morfometría geometría en puntas cola de pescado del Uruguay. *Latin American Antiquity* 22(3): 335-356.

Morphometric analysis of Fishtail points of Uruguay. Paleoindian. Analyzed 24 pts [way too few] finding no correlation with geography.

Castiñeira Carola, Judith Charlin, Marcelo Cardillo, and Jorge Baeza sic
2012. Exploring Morphometric Variations in Fishtail Projectile Points from Uruguay, Pampa and Patagonia. In *Current Research in the Pleistocene, Special Edition: Southbound, the late Pleistocene Peopling of Latin America*, eds. Laura Miotti, Mónica Salemme, Nora Flegenheimer and Ted Goebel, 57-61. College Station:Texas A&M University.

Cataldo, Charles
1998 Of Trickery, Thieves, and Scoundrels. *Central States Archaeological Journal* 45(4): 172-173.

artificial ageing techniques discussed
favorite fakes – paleo, espec, Beaver Lake and Cumberland – in TN

Catlin, George
1973 (1844) *Letters and Notes on the Manners, Customs, and Conditions of the North American Indians*. Dover Publications, New York.

Arrows, I: 33 - “headed with flints or with bones, of their own construction (Plate 18 [crude drawings of arrows and flint heads]), or with steel, as they are now chiefly furnished, by the Fur Traders quite to the Rocky Mountains.” … “The one to be drawn upon an enemy, generally poisoned, and with long flukes or barbs, which are designed to hang the blade in the wound after the shaft is withdrawn, in which they are but slightly glued:-- the other to be used for their game, with the blade firmly fastened to the shaft, and the flukes inverted; that it may easily be drawn from the wound, and used on a future occasion.” Buffalo hunting on horseback with bow, arrow sometimes passes through buffalo.

Catlin, George
1975 *Letters and Notes on the North American Indians*, edited by M.M. Mooney. New York: Clarkson N. Potter, Inc.

Pipe stone quarry – painting shows digging in trench

Caton-Thompson, G. and E.W. Gardner
1934 *The Desert Fayum.* London: The Royal Anthropological Institute of Great Britain and Ireland.

Old fashioned but detailed decript and illust of many sites and artifacts, focus on stone tools, Neolithic, but other periods too. Cite for hafted sickle found in basket lined granary pit, Neolithic.

Cauvin, Jacques
1998 La Signification Symbolique de l’Obsidienne. In *L’Obsidienne au Proche et Moyen Orient: Du Volcan á L’Outil*, edited by M.-C. Cauvin, A. Gourgaud, B.Gratuze, N. Arnaud, G. Poupeau, J.-L. Poidevin, and C. Chataigner, pp. 379-382. BAR International Series 738. Archaeopress, Oxford.

Cauvin, J. and Stordeur, D.
1987 Quelques réflexions sur l’évolution préhistorique des emmanchemants. In *Le Main et l’Outil: Manches et emmanchements préhistoriques.* D. Stordeur, ed.; pp. 331-336. Lyon: Maison de l’Orient.

‘Some reflections on the prehistoric evolution of hafting’

Cauvin, Jacques, Olivier Aurenche, Marie-Claire Cauvin, and Nur Balkan-Atli
1999 The Pre-Pottery Site of Cafer Höyük. In *Neolithic in Turkey: The Cradle of Civilization, New Discoveries*. Edited by Mehmet Özdoğan and Nezih Başgelen, pp. 97-103. Arkeoliji ve Sanat Yayinlari, Istanbul.

E, on Euphrates. Taurus PPNB, original Anatolian tradition modified by southern elements at end of 9th mil BC. Early mud-brick houses on stone base cf Cayonu, burials missing skulls. Flint + obsidian, obsid increases thru time. Microliths, pressure bladelets, blades for pts. C14 dates end 9 mil BP/8 mil BC. Middle phase houses of groups of cells built of mudbrick supporting a 2nd story. Microliths decrease, obsid incrs. Clay figurines, 1 M, 3 F.

Dates 9000-8500 BP/8000-7500 BC. Late phase more variety in houses - large + small cells [but since these are understory, so what?]. Obsid dominates, naviform cores appear, microliths decrease. Marble bracelets. Flint mostly local, obsid from Bingol 200 km [N?] or Nemrut Dag near Lake Van [E]. Other than obsid, shows affinity w Levant PPNB in pts, naviform cores etc as well as rest of culture. Differs in obsid use, pressure blades, persistence of microliths, use of marble.

From beginning, einkorn, emmer, lentil + hunting; no domest animals.

Cauvin, Marie-Claire
1994 La Circulation de l'Obsidienne au Proche-Orient Neolithique. In *Neolithic Chipped Stone Industries of the Fertile Crescent*. H. G. Gebel and S. K. Kozlowski eds., pp. 15-22. Berlin, Ex Oriente.

Cauvin, Marie Claire
1998 L'Obsidienne au Proche et Moyen Orient: Presentation et Historique. In *L'Obsidienne au Proche et Moyen Orient: Du Volcan á L'Outil*, edited by M.-C. Cauvin, A. Gourgaud, B.Gratuze, N. Arnaud, G. Poupeau, J.-L. Poidevin, and C. Chataigner, pp. 7-11. BAR International Series 738. Archaeopress, Oxford.

Cauvin, Marie Claire
1998 L'Obsidienne: Données Récentes Provenant de Site-Habitats Néolithiques. In *L'Obsidienne au Proche et Moyen Orient: Du Volcan á L'Outil*, edited by M.-C. Cauvin, A. Gourgaud, B.Gratuze, N. Arnaud, G. Poupeau, J.-L. Poidevin, and C. Chataigner, pp. 259-271. BAR International Series 738. Archaeopress, Oxford.

Economic interpretations of role of obsidian, discusses Catalhoyuk, Asikli Hoyuk, and Cayonu + Cafer Hoyuk.

Cauvin, Marie Claire and Christine Chataigner
1998 Distribution de l''Obsidienne dans les Sites Archéologiques du Proche et du Moyen Orient. In *L'Obsidienne au Proche et Moyen Orient: Du Volcan á L'Outil*, edited by M.-C. Cauvin, A. Gourgaud, B.Gratuze, N. Arnaud, G. Poupeau, J.-L. Poidevin, and C. Chataigner, pp. 325-350. BAR International Series 738. Archaeopress, Oxford.

Cauvin, M.C., Deraprahamian, G., and Helmer, D.
1987 Grattoirs à pans coupés convergents de Mureybet (Syrie) du 8e millénaire: définition essai de fabrication et emmanchement. In *Le Main et l'Outil: Manches et emmanchements préhistoriques*. D. Stordeur, ed.; pp. 257-268. Lyon: Maison de l'Orient.

'Cut-corner convergent end scrapers at Mureybet, Syria, 8th millennium, fabrication and hafting]

Cave-Browne, Patrick
1992 The Use of Iron Pyrites for the Creation of Fire. *Lithics* 13: 52-60.

Back to Mesolithic at Star Carr, pyrite, flint, and fungus tinder. Tinder can be punk, preferably powdered, fungus – describes prep, charred linen cloth. Flint on pyrite, or pyrite on pyrite works, so do other rocks – a flint strike-a-light not necessary. Ca 20 min for first success.

Cessford, Craig, and Tristan Carter
2005 Quantifying the Consumption of Obsidian at Neolithic Çatalhöyük, Turkey. *Journal of Field Archaeology* 30(3):305-315.

Obsidian = 90% of chipped stone, but sources 190 km distant. Mellart argued for "monopoly" "control of sources" and "trade as source of income". Measure weight of recovered obsidian per volume excavated sediment. At C, sample program weighing all material from flotation, reliable dating, and good survey that allows mound volume to be accurately calculated. [They minimize other sample problems like small overall sample fraction and differences between areas (some unsampled) of the site.] Total density of all fractions combined is 185.6 g/cubic m. Mound volume = 677,700 cubic m + 5% to compensate for erosion. So est 132,070 kg of obsidian discarded at C, or 105-160 tons. Occupation span 550-1000 yrs [pretty broad range for their claims of precise dating], so 105-291 kg obsidian consumed per year. Plus some caches of large pieces (cortical flakes, big scrapers, bifaces) from quarry, and area of off-mound trash deposition. So now 116-318 kg/yr, plus some prob removed from site.

Obsidian not scarce, in all buildings, often as unused knapping debris. No evidence of central manuf or storage. Relatively expedient technology of small blades and flakes, but also projectiles and prismatic blades (non-locally made).

No pack animals, 10-13 day trip. If individuals carried 10 kg loads, then 12-32 loads/yr. Ave 900 buildings occup at one time, est 3500-8000 pop. So very few need be involved in obsid procurement, so probably some sort of communal structure to trade. Different forms and modes of consumption imply multiple mechanisms of procurement from different neighbors. Expeditions might be related to status or pilgrimage, not just procurement. C is too far to control sources, high obsid because of large pop "magnet" effect.

[Some tenuous speculations, but interesting and useful, good refs].

Chabot, Jacques, and Patrick Eid
2003 Le phénomène des lames cananéennes : état de la question en Mésopotamie du Nord et au Levant sud. In *Le Traitement des Récoltes: Un Regard sur la Diversité du Néolithique au Présent*. P. C. Anderson, L. S. Cummings, and T. K. Schippers, eds., pp. 401-416. APDCA, Antibes, France.

'The phenomenon of Canaanean blades: status of the question in N Mesopotamia and S Levant.' Bronze Age. Large regular flat blades, probably made by lever pressure. New technique end 4th millennium to 2500 BC, specialized manufacture, specialized use in threshing sledges.

Chaffey, Don dir.
1966 *One Million Years B. C.* Twentieth Century Fox.

Film, now DVD, fictional prehistory with Raquel Welch in fur bikini. Tumak (John Richardson) is driven out of his tribe of Neanderthals (?) and rescued by Welch's tribe of blonde beach bunnies, who appear to be Upper Paleolithic - they have poor copies of the Altamira bison on the wall. They battle stop-action dinosaurs, giant iguanas, and other absurdities, before returning to beat the bad guys and unite the tribes. In good American style, new technology helps: Welch's tribe introduces Tumak to stone tipped spears, some of the worst ever on screen - the men are frequently to be seen lashing the huge hand-axe like heads on crooked poles, while the women sit and demurely sew skin clothing or ineffectively scrape already tanned hides. A film this bad could only become a cult classic.

Chambers, Nick
1999 Intuitive Physics and Abstract Modules: Flintknapping as the First Art. *Bulletin of Primitive Technology* 18: 74-77.

Mental connection to past = intuitive, almost memory; h-axe as requiring imagination, "intuitive physics" = knapping knowledge; fluting and other elaboration as symbol or ritual; Aztec flint knife symbolism

Chandler, James M.
2004 Use Wear: A Hands-on Study. *Mammoth Trumpet* 19(2):6-9.

Jim Weiderhold studies Paleoindian scrapers by working hides, using Leica computerized microscope. Claims better experiments by "trying to produce a product" and looking at the wear, rather than trying to make the use-wear under artificial circumstances.

Chandler, James M.
2004 Assault on Gault. *Mammoth Trumpet* 20 (1): 17-19.

Waters, Bonnichsen, Shafer and students excav. Abuse by looters and commercial knappers exploiting Edwards Plateau chert source. Current studies focus on tools from two Clovis layers, including bifaces, blades, use-wear.

Chandler, R. H.
1917 Some Supposed Gun Flint Sites. *Proceedings of the Prehistoric Society of East Anglia* 2: 360-365.

Illustrates the early type of gunflint and its cores [= gun spall type]

Chapman, Carl H.
1975 *The Archaeology of Missouri, Volume 1*. University of Missouri Press, Columbia.
1980 *The Archaeology of Missouri, Volume 2*. University of Missouri Press, Columbia.

Basic text. Photos of many lithic specimens, espec Archaic points; Vol 1 includes typology.

Chapman, Carl H. and Roland Pangborn
2011 The Broyles Cairn 23CE123. *Missouri Archaeologist* 72:5-20.

Stone cairn, excav 1961, Woodland mound with inserted Mississippian child with nice Cahokia and Scallorn points.

Charlton, T. H.
1978 Teotihuacan, Tepeapulco, and Obsidian Exploitation. *Science* 200: 1227-1236.

Cite for Teotihuacan sourcing study

Charpentier, Vincent and Marie-Louise Inizan
2002 Fluting in the Old World. The Neolithic Projectile Points of Arabia. *Lithic Technology* 27(1): 39-46.

Chase, Philip G.
1985 Illustrating Lithic Artifacts: Information for Scientific Illustration. *Lithic Technology* 14(2): 57-70.

[Best short source. Used some of my pts]

Chase, Philip G.
1986 Relationships Between Mousterian Lithic and Faunal Assemblages at Combe-Grenal. *Current Anthropology* 27: 69-71.

Chase, Philip G.
1990 Tool-Making Tools and Middle Paleolithic Behavior. *Current Anthropology* 31(4): 443-447.

Tools shaped by repeated retouch rather than “mental template” – bone frags from Quina w/ retouch marks – sparse, on mid part – retouch use rather than extensive. Motor pattern different, more retouchers than stone tools in deposit = resharpening

Chase, Philip G. and Harold L. Dibble
1987 Middle Paleolithic Symbolism: A Review of Current Evidence and Interpretations. *Journal of Anthropological Archaeology* 6: 263-296.

Chase, Tom
The Range of Authenticity in Ancient Chinese Bronzes and Criteria for Detection of Forgeries. In Pernicka, Ernst, Silke von Berswordt-Wallrabe, and Hilke Wagner eds, *Original - Copy - Fake? Examining the Authenticity of Ancient Works of Art - Focusing on African and Asian Bronzes and Terracottas*. pp., 51-69. Verlag, Philipp von Zabern, Mainz.

Est 3 million collectors in China. Many shops [photos]. Range of authenticity from totally genuine to repaired, to improved surfaces to reconstructed from parts to pastiche composed of old parts + fakes, to totally fake.

Chataigner, Christine
1998 Sources des Artefacts du Proche Orient d'apres leur Caracterisation Géochimique. In *L'Obsidienne au Proche et Moyen Orient: Du Volcan á L'Outil*, edited by M.-C. Cauvin, A. Gourgaud, B.Gratuze, N. Arnaud, G. Poupeau, J.-L. Poidevin, and C. Chataigner, pp. 273-324. BAR International Series 738. Archaeopress, Oxford.

Chatters, James C.
2014 Geography, Paleoecology, and Archaeology. In *Kennewick Man: The Scientific Investigation of an Ancient American Skeleton*. Owsley, Douglas W., and Richard L. Jantz, eds., pp. 30-58. Texas A&M Press, College Station.

Two distinct ancient traditions: Western Stemmed Tradition, with finer large points, atlatl, bola stone assoc with lots of birds, primarily hunters. Old Cordilleran Tradition, mostly along rivers, focus on fish, small game, more plant use, more generalized and less diverse artifact assemblage. Context of discovery site and chronology of find. Nearby finds of W Stemmed pts.

Chatters, James C., Sarah K. Campbell, Grant D. Smith, and Phillip E. Minthorn
1995 Bison Procurement in the Far West: A 2,100-Year-Old Kill Site on the Columbia Plateau. *American Antiquity* 60(4):751-763.

Tsulim site, deflated site of entrapment in sand dunes, teeth and lithics primary remains MNI 8 bison, one event. C14 ca 150 BC. On basis of point stem measurements, most points dart, but some arrows too. Other cited work shows atlatl retained for at least 1000 yrs after bow adopted on C Plateau. "It is possible that during the first centuries after the bow's adoption, it lacked the impact power necessary to penetrate the hide of larger or thick skinned species..." [But all based on point size, other site reports.]

Chauhan, Parth R.
2009 The Lower Paleolithic of the Indian Subcontinent. *Evolutionary Anthropology* 18(2):62-78.

Chazan, Michael
2000 Flake Production at the Lower Paleolithic site of Holon (Israel): Implications for the origin of the Levallois Method. *Antiquity* 74 (285): 495-499.

Chazan, Michael
2001 Bladelet Production in the Aurignacian of La Ferrassie (Dordogne, France). *Lithic Technology* 26 (1): 16-28.

Chazan, Michael
2013 Butchering with small tools: the implications of the Evron Quarry assemblage for the behaviour of *Homo erectus*. *Antiquity* 87(336):350-367.

Israel, pre 780,000. Flake tools stratified with elephant and hippo, also [crude] handaxes. Evidence of behavioral flexibility and conceptual thought that allowed H.e. to solve the problem of buthering elephant with only the materials at hand.

Chelidonio, Giorgio
2013 Recent Findings and Observations on Firestones and Gunflints between Craftsmanship, Expedient Strategies, and Warfare Conditions. In *Ethnoarchaeology: Current Research and Field Methods*, eds. Francesca Lugli, Assunta Alessandra Stoppiello and Stefano Biagetti, pp.36-41. BAR International Series 2472, Information Press, Oxford.

Between 16-19C 3 main gunflint traditions: Fr, Eng, andVerona/Monte Lessini, with diff chaines operatoires, oriented to standardizing flints to military gunlocks. Also less specialized/expedient production and commerce, including some for strike-a-lights lasting to 1940s in peasant Euro + later in Africa and marginal societies.

Bifacial gunflints in Albania, native N. Am., bought some from Morocco.

Cà Palui site in limestone hills E of Verona w flint outcrops, open air and rockshelter contexts, estab ca late 18 C. Made large prismatic cores for medium blades, rect gflints. Material not documented outside production area despite impressive waste. One find of Fr style musket size flint of local material. Occupation by French 1796-1814, to prevent production for Austrian empire? After 1815 collapse of industry.

Cherry, John F.
1982 A Preliminary Definition of Site Distribution on Melos. In *An Island Polity: The Archaeology of Exploitation on Melos*. Colin Renfrew and Malcolm Wagstaff, eds., pp. 10-23. Cambridge University Press, Cambridge.

Cherry, John D., Elissa Z. Faro, and Leah Minc
2010 Field Survey and Geochemical Characterization of the Southern Armenian Obsidian Sources. *Journal of Field Archaeology* 35(2):147-163.

N and E of Turkish obsid sources around Lake Van. High altitude, >3200m, snow covered, remote. Bazenk, Satankar, Sevkar, Syunik sources. Sevkar most used, nodules found way to major river.

Cherry, John F. and William A. Parkinson
2003 Lithic Artifacts from Surveys: A Comparative Evaluation of Recent Evidence from the Southern Aegean. In *Written in Stone: The Multiple Dimensions of Lithic Analysis*. P. N. Kardulias and R. W. Yerkes, eds., pp.35-57. Lexington Books, Lanham.

Cherry, John F. and Robin Torrence
1982 The Earliest Prehistory of Melos. In *An Island Polity: The Archaeology of Exploitation on Melos*. Colin Renfrew and Malcolm Wagstaff, eds., pp. 24-34. Cambridge University Press, Cambridge.

Melos “sole source” of high quality Aegean obsidian.
Melos obsidian in Upper Paleolithic and Meso at Franchti Cave = early seafaring.

Typology described from surface collections, illustrations all of Neolithic.
Neo = small bifacial points (leaf, tanged), percussion blades from mostly conical cores (some very small), no pottery, ground dacite celts. Interp as resource exploitation visits.
Early Bronze = no points, pottery, prismatic (pressure) blades and cores. Interp as settled agric communities.

Cheshier, Joseph and Robert L. Kelly
2006 Projectile Point Shape and Durability: The Effect of Thickness:Length. *American Antiquity* 71(2):353-363.

Triangular, notched obsidian points (N= 50) long (5cm) + thin, long + thick, short (2.5 cm) + thick, short + thin shot with bow into deer carcass at 15 feet until they broke. Hardness of material struck was significant predictor of point durability, but controlling for that, high thickness:length ratio points were slightly more durable. Half of pts broke on first use. Only 2 broke thru notches, but 48% lost one or both ears. Length alone did not predict survival.
Knapper Allen Denoyer, archer Dan Wolf.

Chiarulli, Beverly A.
2012 Producers, Consumers, and Traders Lithic Industries at Cerros and Chau Hiix, Belize. *Lithic Technology* 37(2):95-110.

Variability among households - producer, consumer, middle man all present in a site, not just distinction between sites.

Chiotti, L., H. Dibble, D. Olszewski, S. McPherron, and U. Schurmans
2009 Middle Paleolithic Lithic Technology from the Western High Desert of Egypt. *Journal of Field Archaeology* 34(3):307-318.

3 types of Levallois cores result from variation in same practice

Christenson, Andrew L.
1986 Projectile Point Size and Projectile Aerodynamics: An Exploratory Study. *Plains Anthropologist* 31(112): 109-128.

“projectile points are only the partial remnants of complex projectile delivery systems.” [one of my favorite pieces of jargon, but true.] So what can we infer about the whole system from the point? Weight and neck width relate to accuracy, flight stability, range and killing power of the projectile. Model used to interpret size trends for bifaces in central Illinois.

Surface collected points from Sangamon Valley IL, assigned temporal types. Assumed points because of impact damage on some specimens; but knife use also likely as shown by beveling – over half the E and M Archaic bifaces have alternate beveled edges and edge-ground hafting elements. Serration also common in Archaic and L Woodland. Such indications of multi-use and long life tools suggest conditions of mobility. L Woodland serration could indicate warfare.

Weight (N = 168) declines thru Archaic, increases in E/M Woodland, sharp decrease in L Woodland and Mississippian. Neck width (N = 312) shows same patterns.

Weight used to separate darts and arrows, Kidder hafted SW material, Browne archery experiments. Fenenga, Baereis bimodal distributions. Evans, Van Buren experiments show heavy points work on arrows; VB suggests 20g as division between dart and arrow. Fenenga bimodal distribution suggests 1.1g mode for arrows, 9.0g for darts, experiments show light dart pts and untipped forshafts work well on darts. Thomas (1978) linear regression.

Accuracy: requires flight stability, a function of center of mass, center of pressure, and weight. C of P must be behind C of M; greater distance between them = greater stability. Van Buren experiments. Mau (1963) experiments – unfletched darts with c of m at 31% from tip, heavy stone pts (28 g). Hickman (1947) unfletched arrows need c of m .36 or less the length of arrow, so for a shaft of 20 g, need point of 6.7g or more.

Projectile killing power: size + depth of wound – function of shape of point, force of impace, location of wound. Archers find mass more important than velocity in penetration (Beauchamp 1957; Klopsteg 1939, 1943). Limited experiments – penetration affected by tip sharpness, inverse function of point cross-sectional area.

Projectile Range: max range is not best measure. Add fletching decreases max range but improves effective (accurate) range.

Projectile durability: secondary to accuracy, power, range, but heavier darts break more points (Van Buren).

Optimizing a projectile is problem of compromises because aspects of above may be in conflict.

Point interpretations. Clovis more likely thrust than dart point, but some impacts. Folsom more likely dart, but ambiguous. Atlatl by 9000 BP E Archaic – hooks known. E Archaic pts large, need heavy shaft, prob unfletched. Resharpening suggests pt weight change not a problem for use [right, change of only a few g often doesn't have much effect]. L Archaic smaller pts may reflect introduction of fletching, rarely resharpened. But Leonard Rockshelter tangentially fletched dart from 7000-8000 BP deposits shows fletching earlier in W at least. Rise in E/M Woodland pt size is a problem: could be many reasons. M to L Woodland change to small pts prob represents intro of bow, but no unequivocal evidence. Advantages of bow [with citations]: higher velocity, more accurate, longer effective range, easier in woods, carry more shots, more rapid fire, arrow pts and shafts require less material to make, bow easier to master (Frison 1978), less movement. Disadvantages: need 2 hands, harder to make and maintain than atlatl, arrow has lower impact force than dart. But bow prob reduced cost of hunting only 15% or less, perhaps warfare more important reason for adoption.

Christenson, Andrew L.
1986 Reconstructing Prehistoric Projectiles from their Points. *Journal of the Society of Archer-Antiquaries* 29:21-27.

"A pointed-tip projectile is principally a device to kill by introducing the tip, carried through the air on the end of a shaft, into the prey." [Mr. Point, meet Mr. Prey]. Point traits provide clues about rest of projectile: Size, form, breakage, and wear.

Size attributes - Weight: Center of gravity must be in front of center of pressure, either heavy point, or fletching to rear. Affects impact force + penetration. Neck Width: reflects shaft diameter. Graphs of weight show decrease thru time 8000-1000 BC, then increase 1000 BC – 600 AD, then decrease again 600-1700 AD. [But his figure of point types is not grouped by those times.] Early points on atlatl darts; atlatl "has the effect of lengthening the arm of the thrower". Reduction in size should reflect smaller shafts and addition of fletching, thus greater range, but less shock-force and penetration. Increase in size in middle sequence is an enigma. Late reduction in size = bow and arrow. B+A advantages in stalking and espec war: projectile range, more shots per time.
Form attributes: barbs suggested as war arrows, but early metal points usually not barbed. Barbs allow greater length cutting edge per weight. Late SW atlatl pts side-notched, similar size early arrow pts basal notched + barbed. Serration probably associated with cutting use, but also on small late arrow pts.
Breakage: impact fluting unique to projectiles. Burination usually impact too, but like snaps can occur on knives. Wear usually indicates knife use, sometimes impact striations on obsidian.
[Somewhat simplistic discussion aimed at European archers.]

Christenson, Andrew L.
1987 Projectile Points: Eight Millennia of Projectile Change on the Colorado Plateau. In *Prehistoric Stone Technology on Northern Black Mesa, Arizona*. Edited by William J. Parry and Andrew L. Christenson. Southern Illinois University Center for Archaeological Investigations, Occasional Paper No. 12, Carbondale.

Dismal state of SW proj pt studies – emph on ceramics, provenience details usually ignored. Functional effects of point attributes on killing power (diagram): Width + thickness affect cross-sectional area > wound size/bleeding. X-sect area also > penetration. Weight + velocity > impact force > penetration. Blade edge length, point sharpness, shaft diam all > penetration.
Barbs increase cutting edge per weight. Base grinding to reduce splitting, edge grinding to reduce cutting seizing. Resharpening usually indicates knife use, often results in beveling which conserves material. Various kinds of breakage from impact, most also can be from knife use, tip fluting unique to projectiles.

19 hafted knives from literature: only 3 with distinct stem. 9 hafted with pitch only, 6 combine pitch + sinew, 3 sinew alone. 36 illustrated hafted dart pts: L from 33-62 mm, almost all have shoulder or stem, all hafted with seizing. 15 arrows: all but one side-notch or unnotched triangular, L 14-31 mm, all hafted with sinew, sometimes + pitch.

Analysis here – 334 artifacts, 188 assoc with well-dated site components, 6 temporal groups: E Archaic 6000 BC, L Archaic 1300-900 BC, Basketmaker II 800 BC – 300 AD; E/M Ceramic 800-950 AD; L Ceramic 1050-1150 AD; Navajo 19-20th C.

Most bifaces multi-purpose – pts with both knife wear and impact. Only one too large for proj use. Sees three major temporal trends: Fauna remains same, so not a cause of change. Shift from atlatl to bow. Decrease in mobility leads to reduction in multifunctional bifaces, increase in single function proj pts. [But that last is also affected by size change to small arrow points, independent of mobility, which he does admit.]

BMII pts “surprisingly light for dart points” mostly 1.8-2.2 grams. E/M Ceramic pts 20% lighter, usually 1.0-1.45 grams, neck widths smaller [but actually although more smaller points, they cover same range as BMII in both weight and neck W.] Blade edge length distribution is essentially the same. Little differences in breakage patterns. Resharpening, espec beveling, declines from BMII. Size, neck width/shaft diam, and tip cross-sectional area decline with change to bow. Point cross-sectional area also a measure of durability – declines, as does base grinding, indicating less multi-purpose use.

Recycling points for use or ritual common – here BMII sites have probably Archaic pts. Most BMII pts side-notched, resemble San Pedro type, some corner-notche resemble Elko. Side-notch = standard atlatl dart pt, on wood foreshaft 6-8 mm diam. Drawing Fig 5-5 shows Broken Roof Cave, Sand Dune Cave, and White Dog Cave specimens. Often wear shows use as detached knife. One atlatl weight on Black Mesa from mass burial at D:7:3141: calcite, loaf-shaped, groove across convex upper surface, simple incised line decoration. Multifunction point an advantage to traveling hunter, but relatively short blade edges, resharpening reduces symmetry + penetration. 10 dart pts show burning, presume intentional, ritual.

E/M Ceramic points: some probably Archaic collected. Small points fit Rosegate type, indicate arrival of bow. Arrival dates poor – Morris claims BMII woman killed by arrow at Battle Cave, Canyon de l Muerto, and Prayer Rock district caves have primarily arrow remains, 430-670 AD but provenience poor. Tularosa Cave suggests shift 700-900 but mixing problem. Bow advantages: range – atlatl 20-30, max 80, bow 30-45, max 140m. Reduced proj size, espec weight, reduces impact force and thus less penetration of arrow compared to dart. Blk M arrow pts same cutting length as earlier darts, but reduced weight and x-sect, thickness, and neck width. Barbed = stay in wound. 80% show light wear = used as knives on detatchable foreshafts. Presume simple self-bow. Neusius and Phagan (1983 SAA paper) suggest stone pts for small game are heavier, less labor, so more durable than pts for big game in Dolores area sites.

Late Ceramic pts: more side-notch + unnotch triangular, return to heavier shafts, perhaps stronger bow. In some PIII sites hafted with pitch only to stay in wound. High freq light edge wear but resharpening rare = still used as knives.

Navajo collect old pts for ceremonial gear, use, and interest. N used sinew backed bow and heavy wooden arrows with metal points.

Christenson, Andrew L.
1997 Side-Notched and Unnotched Arrowpoints: Assessing Functional Differences. In *Projectile Technology*, H. Knecht, ed., pp. 131-142. Plenum, NY.

Concludes no good explan – considers war vs hunt, temporal differences, unfinished vs finished, diff game, better hafting and penetration. Looks at a small set of US sites [not GH] with both. Then analyzes 89 Numic (Paiute) arrows collected by Powell – wood, and cone w/wood foreshafts, does not find signif diffs, maybe 3 types arrow: short range high power reusable wood, medium range medium power wood and cane, long range fragile cane only. Narrow pts may increase penetration, be used w/ heavier wood arrows. Notched pts hafted with sinew (but also most unnotched). No diff in pt among types of arrow.

Church, Tim

1994 *Lithic Resource Studies: A Sourcebook for Archaeologists*. Department of Anthropology: University of Tulsa, Tulsa.

Church, Tim
1994b Ogalalla Orthoquartzite: An Updated Description. *Plains Anthropologist* 39(147): 53-62.

Bijou Hills silicified sediment. N Missouri River, Nebraska, S. Dakota, also a geol source in KS; main outcrops in SD, 2 procurement sites described – surface and pry out of outcrop, shallow

Church, Tim
1996 Lithic Resources of the Bearlodge Mts, Wyoming: Description, distribution and implications. *Plains Anthropologist* 41(156): 135-164.

Church, Tim and Carlos Caraveo
1996 The Magnetic Susceptibility of Southwestern Obsidian: An Exploratory Study. *North American Archaeologist* 17(4): 271-286.

Magnetic differences between obsidian sources

Churchill, Steven E.
2001 Hand Morphology, Manipulation, and Tool Use in Neandertals and Early Modern Humans of the Near East. *Proceedings of the National Academy of Sciences* 98(6):2953-2955.

Niewoehner compares Shanidar Neanderthal and Qafzeh + Skhul early modern hands - diffs in grip strength and habitual manipulative repertoires - ie moderns like us adapted to withstand forces during oblique power grip (eg hammer handle), while Ns suited to forceful transverse power grip (eg hammerstone). Evidence that both used hafted tools exists, but more for moderns. Greater use of hafted tools “not itself a competetive edge, but part of emerging modern adaptive system that involved greater use of task-specific tools, more complex composite tools, greater planning depth... increased social complexity.”

Clark, Caven P. and Susan R. Martin
2005 A Risky Business: Late Woodland Copper Mining on Lake Superior. In *The Cultural Landscape of Prehistoric Mines*. P. Topping and M. Lynott eds., pp. 110-122. Oxbow Books, Oxford.

Clark, Grahame
1975 *The Earlier Stone Age Settlement of Scandinavia*. Cambridge: Cambridge University Press.

Cite for illustration of microlithic projectile point p. 174

Clark, J. Desmond
1975 Africa in Prehistory: Peripheral or Paramount? *Man* 10(2): 175-198.

Reviews African stone age prehist. Oldowan = first meat tools, Acheuleanl = range of new activities, perhaps especially plant foods. P.190 “symmetry and refinement of some of the earlier Ach handaxes which surely go beyond the basic utilitarian need, may reflect the first appearance of an aesthetic appreciation of form”

Clark, J. Desmond
1977 Interpretations of Prehistoric Technology from Ancient Egyptian and Other Sources: Part II: Prehistoric Arrow Forms in Africa as shown by surviving examples of the traditional arrows of the San Bushmen. *Paleorient* 3:127-150.

Iron late in Africa, forms often resemble stone predecessors. Types of San arrows: 1) stone or glass microliths mounted in pairs in mastic to make triangular head, on foreshaft inserted into reed mainshaft 2) blunt headed bird arrows 3) bone bodkin head joined to ‘linkshaft’ [=foreshaft] with a reed collar, foreshaft inserted into main reed shaft [this is the form most closely resembling the later metal ones described by Weissner] 4) same with lashed on barb of quill. Shafts always Phragmites, usually unfletched, some fletched with single tangential feather. Comparative accounts and specimens [lots of variability]. p 136: quartz segments not deep in mastic, “expected that they would become dislodged on impact” [does he have any real testimony to that intent? Seems unlikely]. Brit Museum specimens with usual microlithic heads, slate + metal triangular barbed + stemmed heads.
Poisons of plant and animal, including snake venom and beetle grub. Diamphidia beetle poison said to be active for 2 yrs; tests on some 50-80 yr old arrows with plant poisons showed still effective. Simple bows, ca 20 lb pull, accurate to ca 25 m though will carry 100 m. Review of archaeol sites with microliths or other b + a evidence. Earliest bow frag from S Af Scotts Cave date 760-1590 AD; earliest San bow collected by Sparrman 1775. *[Interesting that the small iron pts described by Weissner are not in evidence at this time]*

Clark, J. Desmond
1984 Old Stone Tools and Recent Knappers: Late Pleistocene Stone Technology and Current Flaking Techniques in the Zaire Basin. *Zimbabwe* 1: 8-22.

Gunflint knappers in 1960s – bifacial gunflints made by indirect perc retouch, resemble late Pleistocene tool technology [he hopes to argue continuity, but no real good evidence] [Very detailed description of manuf techniques, but no cultural context]

Clark, J. Desmond and Hiro Kurashina
1981 A Study of the Work of a Modern Tanner in Ethiopia and its Relevance for Archaeological Interpretation. In: *Modern Material Culture: The Archaeology of Us,* R. Gould and M. Schiffer, eds., pp. 303-321, New York: Academic Press.

Describes tanning, obsidian scrapers, usewear, manuf, waste patterning in modern site [Important ethnographic lithic study]

Clark, J. Desmond, James L. Phillips, and Preston S. Staley
1974 Interpretations of Prehistoric Technology from Ancient Egyptian and Other Sources: Part 1: Ancient Egyptian Bows and Arrows and their Relevance for African Prehistory. *Paleorient* 2(2):323-388.

Egyptian specimens same as earlier Epipaleolithic forms – bone, stone, fish mandibles. General continuity.
Specimens from Naga-ed-Der early Dynastic cemeteries in Upper Egypt near Abydos. Records poor, dates supposed to be VI-XII Dyn (2341-1991 BC). Reed shafts, hardwood foreshafts inserted with mastic. Microliths in mastic to make a transverse chisel head. Some foreshafts possibly with poison, some 'bodkin' bone points with poison, [sim to Bushman pts see 1977]. Multi-barbed bone pts, blunts. Some arrows fletched with 3 feathers. Wooden self bows 1.5-1.8 m long.
Tutankhamen tomb: self and composite bows: small self bows, and bows made by joining two wooden limbs to a handle may be child bows. Composite bows 1.1-1.2 m, 'double dips' [does he mean recurved? Usual archery terminology not used, suggesting they didn't have any practical knowledge of archery. Little detail on bows, much more on arrows]
Other arrow specimens; wood, microlith, flaked stone biface and chisel heads

Clark, J. Dylan
2014?? Life Stone, Death Stone: Animate Power and Representations in Natural Material of the Mogollon Culture Region. IN ??? off Academia.edu without full refs

Obsidian has superior qualities of knapping and sharpness, important in symbolically + functionally useful weapons, and thus in pre-scientific culture ascribed spiritual powers, "projects agency and animate power." Blackness. Washed from sources in Jemez Mts into Rio Grande gravels, rarity compared to other stones also important. Black, shiny, distinctive. Transforms as worked, gaining translucence, color and imagery revealed in rock. Bloodshed + killing as means of power transference. Killing as ritualized transformation. Black associates with death, decay, burning. Blade tools are ascribed agency, accidents = intent to cut. Mesoam knives are hungry for blood.
Cottonwood Spring Pueblo. Obsid rare: 1% of lithic assemblage, but obsid proj pts are %21 of pts. High rate damage = reuse and curation. [good ideas, too jargon]

Clark, Jeffrey T.
1981 Glass Scrapers from Historic North America. *Lithic Technology* 10(2-3): 31-34.

Reese site, 19th c. Illinois farmstead; edge-damaged glass frags – wood scraping, cites a few ethnog accounts

Clark, John E.
1982a An Ethnographic Note on "Water Treatment of Flint." *Lithic Technology* 11(1): 2-3.

Lacandon Maya Indians make pts for tourist trade in traditional manner. Chert used is supposed to have certain moisture content – [real effects not clear]

Clark, John E.
1982b Manufacture of Mesoamerican Prismatic Blades: An Alternative Technique. *American Antiquity* 47(2): 355-375.

A hooked lever rather than Crabtrees chest crutch fits the literary evidence better, works well in experiments.

Clark, John E.
1982c Modern Lacandon Lithic Technology and Blade Workshops. Paper presented at the Second Conference on the Study of Stone Tools and the Development of Ancient Maya Civilization, San Antonio, TX, 1982.

Excellent ethnographic description – blades by indirect perc, pressure flaked pts, disposal of waste; [see also Nations and Clark]

Clark, John E.
1983 Mesoamerican Blade Workshops and Craft Specialization. Paper presented at Annual Meeting SAA 1983.

Oaxaca. Experiments to produce characteristic debitage patterns and distribs – compare from sites, argue stages at which material reached them. [Some jargonization about diff degrees of specialization, some useful theoretical considerations]

Clark, John E.
1984 Counterflaking and the Manufacture of Mesoamerican Prismatic Blades. *Lithic Technology* 13(2): 52-61.

Counterflaking experimentally produced using his Aztec lever system, not result of vise because also get while holding with feet

Clark, John E.
1985 Platforms, Bits, Punches, and Vises: A Potpourri of Mesoamerican Blade Technology. *Lithic Technology* 14(1): 1-15.

Argues for Aztec lever with wooden tip. Probably no indirect perc or vises. [good article]

Clark, John E.
1986 Another Look at Small Debitage and Microdebitage. *Lithic Technology* 15(1): 21-33.

Most useful for ID primary knapping areas. Mesoam ethnoarch compared. Kinds and ratio of sizes of debitage as indicators of primary vs. 2ary knapping deposits – also affected by knapping technique. Use of space affects locus of discard.

Clark, John E.
1986 From Mountains to Molehills: A Critical Review of Teotihuacan's Obsidian Industry. *Research in Economic Anthropology,* Supplement 2: 23-74. Greenwich, JAI Press, Inc.

Spence's model of obsid industry crushed! Scale estimated from assumptions, "workshops" not adequately identified – most have lots used tools = consumption for other activity, and not manuf waste. Location of trash should be away from wkshp [not a good assumption], so proximity model of state control is flawed, some 'wkshp' material post-dates the ceremonial precincts, so not state levy. Not enough waste exists to support supposed scale of industry; Calculates expected waste from local consumption – closer to reality [but still huge]. Discusses workshops and specialists in theoretical terms. Discusses experiments, what products expected at exporter and consumer sites. Cumulative curves of biproducts from exper compared to arch assemblages. Santley model of 'big business' obsid foreign exchange attacked – Teo obsid elsewhere seems to be small scale elite exchange. Teo as center of an elite "world system" (Blanton and Feinman) rather than an economic world system (Wallerstein) that depended on extracting goods and labor from foreign contacts. Teo prob had control of Pachuca green obsid source, small grp specialists mined and produced cores for Teo and trade, which were reduced to blades by few specialists at each importer site, not distrib from Teo where a few spec made blades for domestic use while elite goods for elite exchange were made by a few specialists attached to elites. [So in the end he does not dismiss Spence model, just scale of production].

Clark, John E.
1987 Politics, Prismatic Blades, and Mesoamerican Civilization. In *The Organization of Core Technology*. J.K. Johnson and C.A. Morrow, eds.; pp. 259-284. Westview Press, Boulder.

Discusses why need specialists for prismatic blade manuf, with ethnog analogs – complex chiefdoms needed to support blade making because without specialists and economy of scale in manuf, expedient tools much cheaper – need organiz to obtain obsidian, support specialists, negotiate distrib and exchange. Early devel as elite goods, bloodletting, and distrib = wealth, elite reification. [Good article]

Clark, John E.
1989 La Technica de Talla de los Lacandones de Chiapas. In *La Obsidiana en Mesoamerica*. M. Gaxiola and JE Clark, eds., pp. 443-448. Instituto Nacional de Antropologia e Historia, Mexico D.F.

Clark, John E.
1991 Flintknapping and Debitage Disposal Among the Lacandon Maya of Chiapas, Mexico. In *The Ethnoarchaeology of Refuse Disposal*, E. Staski and L.D. Sutro, eds., pp. 63-78. Arizona State University Anthropological Research Papers 42, Tempe.

Quarry reduction waste left in situ, blade and pressure waste removed from houses if large – hindrance principle. Some comparative info on other cultures.

Clark, John E.
1991 Modern Lacandon Lithic Technology and Blade Workshops. In *Maya Stone Tools: Selected Papers from the Second Maya Lithic Conference*. T. R. Hester and H. J. Shafer eds, pp. 251-266. Prehistory Press, Madison.

Clark, John E.
1994 A Maya Grass Axe or Corn Sickle. *Lithic Technology* 20(2): 128-134.

Use wear and ethnohist art show use of a biface (axe form) as a sickle

Clark, John E.
1999a Review of <u>Lithics: Macroscopic Approaches to Analysis</u> by William Andrefsky. *Lithic Technology* 24(2): 141-149.

Doesn't like it much – "misses lesson of 4 decades lithics: 1) can link artifacts and attributes to behavior by experiment, 2) and thus design typologies according to questions"; criticizes lack of practical knowledge as basis of analysis

Clark, John E.
1999b Review of <u>Stone Tools: Theoretical Insight into Human Prehistory</u> by George Odell. *Lithic Technology* 24(2): 126-135.

Generally favorable; complains of current lack of theory, decline of middle range studies, espec experiment

Clark, John E.
2002 Failure as Truth: An Autopsy of Crabtree's Folsom Experiments. In *Folsom Technology and Lifeways*, J. E. Clark and M. B. Collins, eds., pp. 191-208. Lithic Technology Special Publication No. 4. University of Tulsa, Tulsa.

[Excellent, although could have been half as long.] Uses critique of Crabtree to discuss nature of replicative experiments.
"by focusing on final forms and ignoring early steps C failed to understand F fluting or retouch." "C tried to duplicate the ultimate aesthetic forms, and when he saw the clunkers and rejects from early stages he did not associate them with the finished product." Replic expers can state that something is a possible manuf technique, but failure does not mean proof that a technique is impossible. C did not produce very good F replics, and the techniques he ruled out have been used successfully by others. Need better goal setting (more representative and complete assemblages), evaluation of experimental results by multiple evaluators, for which need adequately detailed reporting. What kind of simplifying substitutions can be made in experiments?

Clark, John E.
2003 A Review of Twentieth-Century Mesoamerican Obsidian Studies. In *Mesoamerican Lithic Technology: Experimentation and Interpretation*, K. G. Hirth ed., pp. 15-54. University of Utah Press, Salt Lake City.

Major review with massive bibliography. Discusses themes + trends through time, crits interpretive leaps from experimental evidence.

Clark, John E.
2003 Craftsmanship and Craft Specialization. In *Mesoamerican Lithic Technology: Experimentation and Interpretation*, K. G. Hirth ed., pp. 220-233. University of Utah Press, Salt Lake City.

Clark, John E.
2003 Statecraft and State Crafts: Some Lessons in State Control from the Obsidian Industry at Teotihuacan, Mexico. In *Written in Stone: The Multiple Dimensions of Lithic Analysis*. P. N. Kardulias and R. W. Yerkes, eds., pp.125-135. Lexington Books, Lanham.

Clark, John E. and Michael B. Collins
2002 The Folsom Workshop Conference. In *Folsom Technology and Lifeways*, J. E. Clark and M. B. Collins, eds., pp. 1-10. Lithic Technology Special Publication No. 4. University of Tulsa, Tulsa.

Clark, John E. and Douglas D. Bryant
1982 The Production of Chert Projectile Points at Yerba Buena, Chiapas, Mexico. Paper presented at XVII Mesa Redonda de la Sociedad Mexicana de Antropologia, San Cristobal de las Casas, Chiapas, Mexico.

1 house mound, much chert, tools, dart pt production. Suggest not specialists – low level of consistency and quality, not more made than household would use.

Clark, John, and Donne Bryant
1991 The Production of Chert Projectile Points at Yerba Buena, Chiapas, Mexico. In *Maya Stone Tools: Selected Papers from the Second Maya Lithic Conference*. T. R. Hester and H. J. Shafer eds, pp. 85-102. Prehistory Press, Madison.

Clark, Rainbird
1935 The Flint-Knapping Industry at Brandon. *Antiquity* 9: 38-56.

Clarke, Ann
2011 Does size matter? Stone axes from Orkney: their style and deposition. In *Stone Axe Studies III*. Vin Davis and Mark Edmonds, ed., pp. 309-322. Oxbow Books, Oxford.

Clarkson, Chris, and Peter Hiscock
2008 Tapping into the Past: Exploring the Extent of Palaeolithic Retouching Through Experimentation. *Lithic Technology* 33(1):5-16.

Clay, RCC
1925 A Gun-flint Factory Site in South Wilts. *Antiquaries Journal* 5: 423-426.

Old “French” style gun spalls; not prehistoric tools, but waste cores from gunflints.

Clement, E., and J. D. E. Schmeltz **[plates missing]**
Ethnographical Notes on the Western-Australian Aborigines, by Clement, with a Descriptive Catalogue of a Collection of Ethnographical Objects from Western Australia, by Schmeltz. *Internationales Archiv für Ethnographie* 16(1 + 2):1-28.

NW Australia, W of Kimberley along coast and inland. Eight tribes. p2: Emus and kangaroos speared from ambush at waterholes, 15-20 yards distance. [Plates missing from copy]. p4: flint and glass spearheads [Kimberley type] roughly shaped by striking, finished with serrations by pressing against edge of broken kanga bone (sketch). Empty bottles… “are eagerly picked up by the Blacks and traded into the interior where they are highly prized…Telegraph insulators form splendid material for spear-heads… and it is not uncommon that these are knocked off the poles and thus interrupt communication.” Spear-heads fastened to shafts with gum obtained by burning green Spinifex, mainly used for fighting. Wooden fighting spear heads multi-barbed, hunting only one large barb. In tribal duels, spearing in legs is only allowed. Hunting spear shafts 10-15 feet long, wooden heads attached by double-bevel joint. Leiden Museum collection includes lots of spears, Kimberley points and manufacture material, several mihra or woomera, flat, elongate broad leaf shaped, gum at handle, incised ornament.

Clemente Conte, Ignacio
2005 The Manufacture and Use of Leather Consumption Goods by the Yamana of Tunel VII, Northern Coast of Beagle Channel (Argentina):An Ethnographic Evaluation and its Archaeological Comparison. In *Lithic Toolkits in Ethnoarchaeological Contexts,* edited by Xavier Terradas, pp. 41-45. BAR International Series 1370.

Clements, Forrest E.
1945 Historical Sketch of the Spiro Mound. *Contributions of the Museum of the American Indian, Heye Foundation* 14:48-68. New York.

Clements, Forrest E. and Alfred Reed
1939 "Eccentric" Flints of Oklahoma. *American Antiquity* 5(1):27-30.

Tussinger’s fakes and circumstances described.

Clewlow, C. William Jr.
1967 Time and Space relations of some Great Basin projectile point types. *University of California Archaeological Survey Report* #70: 141-149, UC Berkeley.

Close, Angela E.
1978 The Identification of Style in Lithic Artefacts. *World Archaeology* 10(2): 223-236.

Close, Angela E.
1991 On the Validity of Middle Paleolithic Tool Types: A Test Case from the Eastern Sahara. *Journal of Field Archaeology* 18(2): 256-264.

Despite heavy material use, tools can still be seen as desired types; Dibble rebuts, Close rejoins in same issue

Close, Angela
1999 Distance and Decay: An Uneasy Relationship. *Antiquity* 73(279): 24-32.

Artifact size expected to decrease w/distance from source, espec simple flakes, but example given of Neolithic Egypt shows size of even simplest pieces tightly constrained, presumably by intended function/use

Close, Angela E.
2000 Reconstructing Movement in Prehistory. *Journal of Archaeological Method and Theory* 7(1): 49-77.

Refits Egyptian Neolithic lithics over 15 sq km to look at movement [good]

Close, Angela E.
2002 Backed Bladelets are a Foreign Country. In *Thinking Small: Global Perspectives on Microlithization,* edited by Robert Elston and Steven L. Kuhn, Archeological Papers of the American Anthropological Association 12, pp. 31-44.

Cobb, Charles R.
2003 Introduction : Framing Stone Tool Traditions after Contact. In *Stone Tool Traditions in the Contact Era*. Charles Cobb, ed., pp. 1-12, University of Alabama Press, Tuscaloosa.

Cobb, Charles R. and Melody Pope
1998 Sixteenth-Century Flintknapping Kits from the King Site, Georgia. *Journal of Field Archaeology* 25(1): 1-18.

11 knapper burials with sets at a Coosa site, encountered DeSoto. Sets with burials, including richest at site, which also had 27 pts. Some burials w pt groups and large bifaces [photos of some tools, but not of pts or bifaces].
Kits: all w adult males, mostly older. All w hammerstones; debitage, bifaces (6 STP preforms, 3 lg early bifaces), cores or scrapers; a few w beaver incisors, celts, abrader, polishing stones [fails to list other assoc not in kit but in burial – e.g. at least 2 have pt groups]. No antler – absence of pressure tools odd given many well made bifaces. Bone rods in some burials but not in knap kits maybe flakers [can't tell if he thinks they really are, not described] Limited kits (no antler); generalized, not just knapping tools, possible woodwork = shafts and bows. No correlation between elite status and knapping – kits in burials from rich to poor [can't tell how many other "kit" types in burials – doesn't look like most goods are utilitarian] [Interesting but too many unanswered questions]

Cobb, Charles R. and Dino A. Ruggiero

2003 Lithic Technology and the Spanish Entrada at the King Site in Northwest Georgia. In *Stone Tool Traditions in the Contact Era*. Charles Cobb, ed., pp. 13-28, University of Alabama Press, Tuscaloosa.

Cobb, Charles R. and Paul L. Webb
1994 A Source Area Perspective on Expedient and Formal Core Technologies. *North American Archaeologist* 15 (3): 197-219.

both expedient amorphous core and formal biface core orientation at same L. Archaic site

Cobean, Robert H.
2002 *A World of Obsidian: The Mining and Trade of a Volcanic Glass in Ancient Mexico*. Instituto Nacional de Antropologia e Historia/University of Pittsburgh, Pittsburgh.

Monograph cataloging Mexican obsidian sources. Info on mining techniques and products, quality of obsidian. Some detailed quarry site descriptions. Lots of photos. Many mines produced macrocores for blade production elsewhere.

Cochrane, Grant W. G.
2003 On the measurement and analysis of platform angles. *Lithic Technology* 28(1): 13-25.

Visual measurement preferred over Dibble (1997, D + Whittaker 1981) trigonometric method. Strong negative correlation between EPA and IPA when EPA >55 degrees. Low EPA often has bending initiation with IPA close to 90. No support for effect of high EPA on terminations.

Cochrane, G.W.G.
2003 Artefact attribute richness and sample size adequacy. *Journal of Archaeological Science* 30(7):837-848.

Cochrane, Grant W. G.
2004 Lithic Artefacts, Diversity, and the Evolution of Semiotic Behaviour. In *Lithics in Action: Papers from the Conference 'Lithic Studies in the Year 2000'*. E. A. Walker, F. Wenban-Smith, and F. Healy eds., pp. 65-72. Oxbow Books, Oxford.

[Research plan, no results, hard to see how he will sort out the multiple factors of flake variation.] Hypothesizes that diversity in unretouched Middle Stone Age African blades will reflect behavioural diversity, diversity in the theoretical and practical abilities of hominids.

Cochrane, Grant W. G.
2008 A Comparison of Middle Stone Age and Later Stone Age Blades from South Africa. *Journal of Field Archaeology* 33(4):429-448.

Coe, Michael D.

1993 from Huaquero to Connoisseur: The Early Market in Pre-Columbian Art. In *Collecting the Pre-Columbian Past*. Elizabeth H. Boone, ed., pp. 271-290. Dumbarton Oaks, Washington D.C.

1900-1960, 3 major dealers in pre-C art, then the 1960's saw quantum jump in commercial looting and abuse of US tax laws about charitable donations by US dealers and collectors. Cross-cultural collecting is rare - only late Western culture does it.
"Connoisseurship" – an "eye" = good visual memory and ability to see patterns – choose good, recognize fakes. Faking = "one of arts' by-products" and inevitable when demand exceeds supply.
"There is hardly a public or private collection in the world without fakes."

Coffey, Brian P.
1994 The Chemical Alteration of Microwear Polishes: An Evaluation of the Plisson and Mauger Findings Through Replicative Experimentation. *Lithic Technology* 19(2): 88-92.

Coggins, Clemency Chase, ed.
1992 *Artifacts from the Cenote of Sacrifice, Chichen Itza, Yucatan: Textiles, Basketry, Stone, bone, Shell, Ceramics, Wood, Copal, Rubber, Other Organic Materials, and Mammalian Remains*. Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge.

[under individual chapter authors]

Coggins, Clemency Chase, and John M. Ladd
1992 Wooden Artifacts. In *Artifacts from the Cenote of Sacrifice, Chichen Itza, Yucatan: Textiles, Basketry, Stone, bone, Shell, Ceramics, Wood, Copal, Rubber, Other Organic Materials, and Mammalian Remains*. Edited by Clemency Chase Coggins, pp. 235-344. Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge.

pp. 244-259 "Weapon Assemblage" includes atlatls, parts, and foreshafts. Atlatl, almost complete, 53.5 cm L, integral hook, groove, two large finger holes with outer sides of loops broken off, and surprisingly long grip proximal to holes, no decoration remains. Atlatl, 4 frags, est L 58 cm, lighter, painted decoration, integral hook, narrow groove, notches for lashing on finger loops, "too light to be functional" [probably wrong]. Two grip frags of a similar form. Two distal frags with integral hooks, painted, carved on underside into serpent head, both hook ends curve so groove is not straight [Coggins thinks makes non-functional but I think she is wrong]. These could be handles of scepter forms. Another distal hook + groove frag [Coggins says "serpentine" but it is not, and it is straight]. Three proximal frags with finger holes and loops carved of the wood. Three more small frags: prox end, hook end, grip area. Apparently there are 2 more serpentine ones in Mexican collections from the cenote.

Atlatl depictions show "invariable bilobal adjunct element" probably fur ornament, no evidence of weights, but maybe similar purpose. Identifying weapon of important men, espec central Mexican affiliation. At CI, probably from phase of "Toltec" influence, AD 800-1000.

Three foreshafts: 40.5 cm L, found with chalcedony corner-notched pt hafted with thread and resin. 45 cm L, light, maybe arrow, notched for pt. 31 cm L, incomplete. 31.4 cm L, self pointed. A number of wooden arrow or dart shaft frags.

Almost all of these materials have been cut, bashed, broken and/or burnt before deposition.

Several fragmentary grooved sticks, flattened and curved, similar to Hopi rabbit sticks and Basketmaker fending sticks. Depicted carried in place of shields; probably used as fending sticks.

pp. 260-263 the fabulous serpent handled chert knife.

Coggins, Clemency Chase and Orrin C. Shane III
1984 *Cenote of Sacrifice: Maya Treasures from the Sacred Well at Chichen Itza*. Austin: University of Texas Press.

Hafted sacrificial knife (p51) drawn from their photo used for Fig in Flintknapping.
Chert pts, atlatls illustrated

Cohen, Larry S.
1978 A Guide to Knapping Strategy. *Flintknappers' Exchange*1(2):12-15.

Basic info on bifacing for beginners, [ok but nothing new].

Cole, Sonia
1970 *The Neolithic Revolution, 5th Ed*. London: British Museum.

(source for Fayum sickle from Caton-Thompson, p 15, drawn as Fig in Flintknapping)

Coles, John
1973 *Archaeology by Experiment*. Charles Scribner's Sons, New York.

Coles, John
1979 *Experimental Archaeology*. Academic Press, New York.

Collie, George L.
1928 *The Aurignacians and Their Culture*. Logan Museum, Beloit College, Beloit, WI.

Chapter on lithic technology interesting for old ideas – flint has grain that influences size of flake, eoliths probably human, but dismisses fire and water.

Collina-Girard, Jacques
1993 Feu par percussion, feu par friction: les données de l'expérimentation. *Bulletin de la Société Préhistorique Française* 90(2):159-176.

In French: Fire by percussion, fire by friction: results of experiments. Matches, first chemical 1810 wood impregnated with potassium + sulphur, ignited in sulphuric acid. 1830

Charles Sauria friction matches, 1852 white phosphorus replaced by less dangerous red phosphorus, first factory 1844.

Flint and steel - observed in 20th C. Exist by Gallo-Roman and Merovingian times. 14 + 15th C form was B. 1642 Pope Urbain VIII banned smoking in church because of noise. Survived in France up to WWI. Flint and pyrite earlier; still used in 18 + 19 C by Eskimos + Fuegians. Neolithic lake dwelling, Bronze age tombs, but pyrite decomposes rapidly. Finds from Magdalenian Trou-du-Chaleux with groove from use.

Amadou = tinder - fungus or charred linen. Amadou with pyrite at Star Carr Mesolithic. Improved in 19 C by adding potassium nitrate; can also be carbonized. Boiled in ash and then sheep fat. Charred linen or cotton cloth, other materials, charring necessary. Flint on flint probably doesn't produce hot enough sparks.

Experiments with fire drill (bow) described in detail.Archaeological examples: Krapina Middle Paleolithic but too short a drill unless hafted in something longer [also 1919 report], and wrong wood - reject. Upper Paleolithic claims of stones with cupules as hearths - experiments failed to produce a cinder, so probably not. Likewise claim of bone hearth from Perigordian. Good examples from Neolithic Swiss lakes. Possible depiction on menhirs. N. American cliff dwelling finds, Bat Cave. S. Am., elsewhere. N. Africa: possible bone palm-pieces for bow drill from Morocco Pleistocene site Bouknadel.

Experiments show can be rapid; best woods are soft to produce dust quickly, and woods that have long fibers. Working against an amadou is useless; you need the hot dust.

Collins, James M.
1995 Lithic Technology and Temporal Variation at a Chert Workshop in Central Iowa. *Journal of Iowa Archaeological Society* 42: 8-20.

Marshall Co. Maynes Creek and Warsaw cherts; change in heat treat, biface stages, bipolar cores

Collins, Michael B.
1974 A Functional Analysis of Lithic Technology Among Prehistoric Hunter-Gatherers of Southwestern France and Western Texas. Ph.D. dissertation, University of Arizona, Tucson.

Good quote countering S+R, cited Shafer 1979: p. 290 "In the case of debitage, it is abundantly clear to anyone who has flaked stone, a small percentage of flakes produced in a given activity will either lack the characteristic attributes expected from the activity or will exhibit attributes presumably characteristic of another activity. Thus the lipped flake ordinarily produced with soft hammer percussion flaking will sometimes be found among the debitage produced with a hard hammer and will not be found in all soft hammer debitage. "

Collins, Michael B.
1975 Lithic Technology as a Means of Processual Inference. In *Lithic Technology: Making and Using Stone Tools*, E. Swanson, ed., pp 15-34. The Hague: Mouton.

Staging concept

Collins, Michael B.
1999 *Clovis Blade Technology: A Comparative Study of the Keven Davis Cache, Texas*. University of Texas Press, Austin.

Knapping basics, blade basics + definitions. Clovis blade replication by Glenn Goode - indirect percussion works, but seems to prefer direct soft hammer. Core needs to be supported firmly but with a little bit of give. However (63) some conical cores develop 'knot' on top of platform that would interfere w percussion swing, so probably these are punched. [Many of the TX cores he shows are surprisingly regular and conical].
Review of C lithic technol, focus on TX sites.
Details of cache and its blades. [to me, typical of C blades - large, relatively thick and 'clunky' but with good parallel scars, considerable curvature, small platforms]
Chapter on microwear by Marvin Kay. Metalic marks and residue from machine damage at discovery. Comparisons of blades from other caches + sites, including Gault. Caching behavior as strategy.

Collins, Michael
2000 Words Without the Music: A Response to Patterson. *Lithic Technology* 25(1): 65-68.

Defends his Clovis Blade Technol book from Patterson's (2000) review

Collins, Michael B.
2002 The Gault Site, Texas, and Clovis Research. *Athena Review* 3 (2):31-41.

[Useful summary of Gault with long discussion of Clovis/pre-C arguments. Gault site, points, engravings illustrated.]
Gault 800x200m, burnt midden Archaic destroyed by looters, Clovis under, with bits of Folsom and late Paleoindian stuff over C, and possible pre-Clovis under C. Discovery by Olmstead of C pts with engraved stones. "Clovis first" failures: too widespread to be specialized big-game hunters, assoc with broad spectrum resources, Gault implies not all mobile, growing pre-Clovis evidence, disputed glacial chronology and Beringia/Ice-free Corridor entry. S. American Paleoind and well adapted Clovis that looks sim to Archaic also imply long familiarity with local environments. C similarities to Solutrean and Magdalenian invite speculation but do not show direct connection.

Collins, Michael B.
2005 Comparing Clovis and the Western European Upper Paleolithic: What are the Rules of Evidence? In *Paleoamerican Origins: Beyond Clovis*, edited by R. Bonnichsen, B. Lepper, D. Stanford, and M. Waters, pp. 43-50. Center for the Study of the First Americans, Texas A+M University, College Station, Texas.

Bradley + Stanford Solutrean origins of Clovis hypothesis vs Strauss rebuttal. "S + C bifaces manufactured using remarkably similar knapping techniques... not characteristic of other bifacial industries." And some other shared traits, but what is best explanation? Both Up Pal and C suffer incomplete archaeol understanding, both more diverse than usually

characterized. C blades and cores similar to Up Pal, but C lacks microblades, and tools on blades are rare. Other arguable connections: osseous rods, petroglyphs (Utah mammoths dubious), ocher, plaquette engraved stones. Problems with temporal gaps, not enough consideration of tool functions, mode of transport and route etc. Specific debate not as important as issues it illuminates. [Thoughtful but inconclusive, good refs]

Collins, Michael B. and Jason M. Fenwick
1974 Heat Treating of Chert: Methods of Interpretation and their Application. *Plains Anthropologist* 19(64): 134-144.

Collins, Michael B., Dennis J. Stanford, Darrin L. Lowery, and Bruce A. Bradley
2013 North America before Clovis: Variance in Temporal/Spatial Cultural Patterns, 27,000-13,000 cal yr BP. In *Paleoamerican Odyssey*. Kelly E. Graf, Caroline v. Ketron and Michael R. Waters ed., pp. 521-540. Tops Printing, Inc., Texas.

Collins, Michael B., Michael R. Waters, Robin B. Barnes, M. Sam Gardner, C. Andrew Hemmings, John Lohse, Elton R. Prewitt, Marilyn B. Shoberg, Cinda Timperley, and D. Clark Wernecke
2007 Excursion Guidebook: Texas Archaeological Research Laboratory (TARL), Gault Site Lab, and Gault Site. Society for American Archaeology 72nd Annual Meeting, Austin, Texas.

Brief explan and photos of what we saw. Collins bought 34 acres of center site for preservation 2007.

Collins, Wilkie
1988 The White Wonder – Arkansas Novacalite. *20th Century Lithics* 1: 66-69.

Described, w photos, quarrying

Commons, Howard R.
2007 The Modern Art of Making Arrowheads. CD, privately distributed.

[No original date given, but apparently some 20-30 yrs old, now on CD by family. He starts by apparently accepting other methods including “dropping cold water on hot stones through a straw, using hot pointed sticks, and various pressure methods...” So fire and water lives on in the minds of the ignorant! Hideously pixillated photos show adequate (but can’t see flake scars to judge pattern) stereotyped points and effigies. Suitable for ages 8 to 80, easier than “antler and leather in hand method.” Uses cut blanks of glass or thin slabs, cut to shape with tile cutter, all edges kept right angled and roughed with sand paper. Blanks are flaked by pressing them against copper tubes set upright on a board, flakes fly upward - a really bad idea for kids!. This device does work - someone, perhaps even HC himself, showed me at Fort Osage knap-in ca 1995 and I tried it. But it doesn’t produce anything that looks aboriginal.]

Conard, Nicholas J.
1990 Laminar Lithic Assemblages from the Last Interglacial Complex in Northwestern Europe. *Journal of Anthropological Research* 46(3): 243-262.

Describes assemblages, argues that pre-modern humans produced variety of lithics, not just Mousterian = Neanderthals, blade industries = modern humans

Condon, Peter C.
2006 Paleoamerican Stone Selection at Blackwater Locality No. 1: Alibates Silicified Dolomite and Edwards Plateau Chert Frequency Analysis. *Current Research in the Pleistocene* 23:83-85.

Condon, Peter C.
2014 Examining context and association at the Clovis type-site: Interpreting the 1963-1964 spring conduit excavations, Roosevelt County, New Mexico. *Plains Anthropologist* 59(231):241-260.

Depositional environments, assemblage diversity. Illustrations some Clovis and Folsom points and blade tools.

Conkey, Margaret and Christine Hastorf (editors)
1990 *The Uses of Style in Archaeology*. Cambridge University Press: Cambridge.

Conolly, James
1999 *The Çatalhöyük Flint and Obsidian Industry: Technology and Typology in Context*. BAR International Series 787. Oxford.

Places Catalhoyuk at 6200-5500 BC [uncal? - Hodder says 7400 BC cal] with Asiklihoyuk 7000-6660 BC as the earliest Neo (PPNB) in central Anatolia. Used >15000 artifacts from Mellaart excavs 1961-65 (not sieved), and early Hodder work 1993-96. 96% obsidian, <4% flints, <1% cortical on obsid. 94 cores, mostly blade, and mostly single plat prismatic bullet cores of obsid, but also "multi-plat, multi-sequence flake cores" [=amorphous] and other flake cores, and some piece esquillees [anvil or bipolar] cores. Blades = 28% assemblage, from 44-9% in diff samples. Small "punctiform" butts [platforms] and "linear" butts with lips = pressure and soft perc, prob press for small blades. Larger blades include blanks for daggers, from single platform cores, and "bipolar" [No, these are bidirectional opposed platform] naviform-like core obsid blades. Tools [referred to incorrectly as "retouched debitage"] = 26% of sample. Flint more retouched than obsid. 675 points + bifaces, 97% are obsid. Mid size pts w triangular section often on "bipolar" blades with minimal retouch, also small bifacial points on flakes. Fondness for stems. [his illustrations don't include any of the really nice stemmed blade points in the museum]. Daggers - 8: 100-219 mm long, made on translucent flint blades, no evid of cores so imported as blade blanks or finished pc. Very fine retouch [apparently mostly unifacial, his photos including of the famous one with the snake handle are not good enough to tell much]. Obsidian mirrors - 7: plano-convex form, face 69-80 mm diam, ave 38 mm thick, unique to Catal, some in burials.

Small pieces esquilees with edge damage, possibly wood work wedges (Ataman wear anal at Can Hasan). Misc retouched blade and flake tools [seems little formality to me] including scrapers, burins, lots of retouched blades, 4 "stone carving" tools with ground edges. [He notes no microliths, although noting that Balkan-Atli considered them 7% of the assemblage.]

Catal as regional obsidian distrib center. Acquisition by down-the-line trade unlikely because regional pop not dense enough. [Do we really know that?] Direct access unlikely - long distance, relatively small needs [but not if it's a distrib center?] but maybe access embedded in other travel activity. So [prefers] itinerant traders or lithicists because obsid less intensively used than local flint (so cheap) = easy mechanism, and largely preworked when reaches C.

Early Catal sim to earlier Suberde + Can Hasan, but less so later - because only site to show shift from flake-based industry to blade based, with prismatic pressure blades especially dominating later levels. [But this contradicts evidence from Asikli - which is earlier, and very much blade oriented.] Later p109 notes that pris blades in use elsewhere before adoption at C.

Agree with Mellaart that tools and weapons preferentially found in "shrines," hoards under floors (often in SE corners), on floors, and in burials. [does extensive analysis of location and strat position of lithics].

Neolithic brings change from community to household-based production and sharing, but institutionalized hierarchies not until end of Neo. C = small kin based society, some social diff, but not "ranking", maybe beginnings of production for exchange and extra-household specialization. Early levels debitage in all houses, later more concentrated, especially cores and blades suggests "nucleation of some production". Prismatic blades require special skills. Should avoid capitalist economic implications of specialization [he takes a rather extreme substantivist pose], in favor of social uses of production and products. Specialized production and social/symbolic import apply to pressure prismatic blades, large daggers, obsid mirrors, and some points [too bad he has no good illustrations of points]. Prismatic blade increase could be economic - need more efficient use of material, or tied to need more agric tools, or personal use - art shows shaven men. Flake tools remain sim in frequency, so blades may have more social/symbolic value. Flake tools in household; symbolic assoc of women with household. Points + bifaces beyond domestic context, prob assoc w men, prob not made on site (no cores for them), in hoard/ritual deposits. Large deposits on floors of shrines may assoc pts with shamanic practices in these hunt-related contexts.

Converse, Robert N.
1973 *Ohio Flint Types*, 6th ed. Archaeological Society of Ohio.

[Ok but brief, outdated, uses collector terms a lot.]

Cook, Harold J.
1927 New Geological and Paleontological Evidence Bearing on the Antiquity of Mankind in America. *Natural History* 27(3): 240-247.

Geological circumstances of Folsom find and 2 others – see Figgins

Cook, Jill and John Dumont
1987 The Development and application of Microwear analysis since 1964. In *The Human Uses of Flint and Chert*, G. Siveking and M. Newcomer, eds., pp. 53-62. Cambridge: Cambridge University Press.

Cook, S.
1973 Stone Tools for Steel Age Mexicans. *American Anthropologist* 75(5).

Ethnographic metate making

Cooney, Gabriel
1985 Stone Axes of County Louth: A First Report. *County Louth Archaeological and Historical Journal* 21(1): 78-99.

Cooney, Gabriel
2005 Stereo Porphyry: Quarrying and Deposition on Lambay Island, Ireland. In *The Cultural Landscape of Prehistoric Mines*. P. Topping and M. Lynott eds., pp. 14-29. Oxbow Books, Oxford.

Cooney, Gabriel, John Freehan, Eoin Grogan, and Christ Stillman
1990 Stone Axes in County Tipperary. *Tipperary Historical Journal*, pp. 197-203.

Cooney, Gabriel and Stephen Mandel
1995 Petrological results from the Irish Stone Axe Project. *Antiquity* 69(266): 969-980.

Cooney, Gabriel, Stephen Mandal, and Emmett O'Keeffe
2011 The Irish Stone Axe Project: Reviewing progress, future prospects. In *Stone Axe Studies III*. Vin Davis and Mark Edmonds, ed., pp. 427-442. Oxbow Books, Oxford.

Cooper, Christopher C.
2002 A Study of the Morphological Changes in Tiger Chert Resulting from Heat Treatment. *Lithic Technology* 27(2) 153-160.

Cooper, Eugene
1980 *The Wood-carvers of Hong Kong: Craft Production in the World Capitalist Periphery*. Waveland Press, Prospect Heights.

Cooper, Judith R.
2006 A Possible Clovis-age Quartzite Workshop (5GN149) in Gunnison County, Colorado. *Current Research in the Pleistocene* 23:85-88.

bifaces, overshot flakes, blades

Coqueugniot, Éric
1998 L'Obsidienne en Méditerrranée Orientale aux Époques Post-Néolithiques. In *L'Obsidienne au Proche et Moyen Orient: Du Volcan á L'Outil*, edited by M.-C. Cauvin, A. Gourgaud, B.Gratuze, N. Arnaud, G. Poupeau, J.-L. Poidevin, and C. Chataigner, pp. 351-362. BAR International Series 738. Archaeopress, Oxford.

Cordell, Linda S. and Maxine E. McBrinn
2012 *Archaeology of the Southwest, 3rd edition*. Left Coast Press, Walnut Creek, CA.

Solid overview fairly well detailed and up-to-date, generally readable. But lithic drawings are all pretty poor (Marjorie Leggitt), atlatl diagram too simple and bad, and many typos and sloppy statements like "Paleoindian spears are believed to have been thrown with an atlatl or spearthrower, which provides extra leverage and increases the power behind the throw, rather than having been thrust javelin-style into an animal at close range, which would have been extremely dangerous." (111). Discussion of pre-Clovis is naïve citing discredited info on Sandia and Pendejo Caves, both of which are rubbish, even with the disclaimer that they are "disputed." P. 156 "Appearance of smaller stemmed or side-notched projectile points at about 500 CE signals the arrival of bows and arrows… more efficient than atlatl for ambush hunting in wooded areas." Annoyingly pc in places: use of CE dates, stupidly sunny view of NAGPRA.

Corliss, David W.
1980 Arrowpoint or Dart Point: An Uninteresting Answer to a Tiresome Question. *American Antiquity* 45(2): 351-352.

Response to Thomes 1978; pt neck width can be useful attribute marking temporal/cultural change whether or not it says anything about hafting

Corn, Joseph J.
1996 Object Lessons/Object Myths? What Historians of Technology Learn from Things. In *Learning from Things: Method and Theory of Material Culture Studies*, ed. by W.D. Kingery, pp 35-54. Washington, Smithsonian Inst Press.

survey of lit in major journal Technology and Culture – most writing about technol is document based, not based on learning directly from the objects although 5 possible approaches: 1) ordinary looking 2) technical analysis 3) simulation (math) 4) testing them for use 5) archaeol science
writing on technol minimizes whatever experimental leaning there was

Corn, Tyrone Lane
2006 Timber Butte Obsidian Source Survey: Geology, Prehistory, Chemical Sourcing and Debitage Analysis. Unpublished MA thesis, University of Idaho.

Sourcing studies over the last thirty years, Timber Butte obsidian source - the predominant obsidian source for southwest and west central Idaho. On private property, physical and topographic details about the source, including a definitive characterization based on

primary deposits, were lacking. Now the source areas completely described, mapped, and chemically characterized. Analysis of surface debitage and artifacts made in recent past.
Talus slopes, rolling grassland hills [looks some similar to Gov't Mt.]. Eroded from rhyolite, 1-30 cm frags, black to clear in thin edges, some vaguely banded, glassy high quality. Surface of quarry areas sampled. Debitage and 15 quarry biface frags. Yohe flake categories. High % cortex.

Corruccini, JoAnn
1985 Moisture and the Formation of Obsidian Striations. *Lithic Technology* 14(1): 33-36.

Moisture and grit produce striations; experiment w leather

Cortina, Manuel and Javier Preysler
1995 Reproduction of Prehistoric Sickles. *Bulletin of Primitive Technology* 10: 46-49.

Corvinus, Gudrun
2006 Acheulian handaxes from the Upper Siwalik in Nepal. In *Axe Age: Acheulian Toolmaking from Quarry to Discard*. Naama Goren-Inbar and Gonen Sharon, eds., pp. 415-428. Equinox Publishing, London.

Cosgrove, C.B.
1947 *Caves of the Upper Gila and Hueco Areas in New Mexico and Texas*. Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University 24(2). Cambridge.

Info on arrows, notching technique for foreshaft manufacture. Atlatls and darts, some foreshafts with points. Info on hafting of points on darts + arrows.

Costa, Laurent J., Farina Sternke, and Peter C. Woodman
2005 Microlith to Macrolith: The Reasons Behind the Transformation of Production in the Irish Mesolithic. *Antiquity* 79 (303): 19-33.

Ca 7000 BC mid Meso change from microliths to broad blade technol attributed to need for multi-purpose tools made from variety of materials, serving smaller and more mobile communities. Early - small bladelet tools + flake axes. Late, large retouched flake tools [often look roughly Mousterian] polished axes, usewear evid of lots wood work. Pop replacement - prob not, localized forms = local develop. Envir + game change - no evid, similar faunal assembs.
Early - small conical cores, direct perc w soft hammerstone, very regular small blades. Later Meso - large flakes, hard hammer traits like big bulb, large platforms, more diff materials used. Hoard of blades shows same traits, flat faced, less prepared core. E Meso - limited by use of good flint which was transported to settlements. L M - blanks made at source. Evolving from specialized composit tools, perhaps related to hunting, to more general multipurpose tools, with a more flexible production system.

Cotterell, Brian and Johan Kamminga
1990 *The Mechanics of Pre-Industrial Technology*. Cambridge: Cambridge University Press.

Cotterell, B., B. Hayden, J. Kamminga, M. Kleindiensf, R. Knudson, and R. Lawrence

1979 The Ho Ho Classification and Nomenclature Committee Report. In *Lithic Use Wear Analysis*, ed. B. Hayden, pp. 133-135. New York: Academic Press.

Defines feather, step, hinge, snap, and variations of these terminations

Cotterell, Brian and Johan Kamminga
1979 The Mechanics of Flaking. In *Lithic Use Wear Analysis*, B. Hayden, ed., pp. 97-112. New York: Academic Press.

Cotterell, B. and J. Kamminga
1986 Finials on Stone Flakes. *Journal of Archaeological Science* 13: 451-461.

Hinging and stepping – from excessive outward force = bending

Cotterell, Brian and Johan Kamminga
1987 The Formation of Flakes. *American Antiquity* 52(4): 675-708.

[Useful but some problems] Pressure and percussion flakes are similar because velocity is similar. Conchoidal flk vs bending flk vs compression flk. Hertzian cone diam = 1.5x ring crack, cone angle = 136 degrees. Wedging initiation [= split cone?]. Soft hammer = bending initiation. Terminations and reasons for them.

Cotterell, B., J. Kamminga, and F.F. Dickson
1985 The Essential Mechanics of Conchoidal Flaking. *International Journal of Fracture* 29: 205-221.

Couch, Jeffrey S., Tracy A. Stropes, and Adella B. Schroth
1999 The Effect of Projectile Point Size on Atlatl Dart Efficiency. *Lithic Technology* 24(1): 27-37.

Pt size makes a diff in throw distance [Weak exper design (small sample human throws) and incorrect theory (Perkins 1992) but conclusion reasonable. However, human variability should be expected to outweigh pt diffs – useful info is that all pts sizes work, so not good variable to distinguish atlatl and bow].

Coues, Elliott **pdf**
1866 Some Notes on Arrow-Wounds. *The Medical and Surgical Reporter* 14(17):321-324. Philadelphia, April 28, 1866.

Surgeon at Ft Whipple, AZ, fighting Apaches. Arrows are light reed, ca 3' L, 3-fletch, painted. Wood foreshaft 8-10" L, "thickly besmeared with a black gummy substance." "Head is apparently a small and trifling affair… made from some species of quartz, chalc, obsid, etc, and is always either white or black in color." 1" or less L, 1/3" W, narrow isosceles triangle. Thin, sharp, fine point, 1-3 jagged notches near base. "Its bulbs [sic, = barbs?] are generally long and sharp." Base notched. "In the end of the hard-wood shaft… is a slight notch, not so deep as that which receives the bow string; on which is dropped a little very tenacious gum; and then the stone head is lightly pressed into place. There is no projecting handle for insertion into the wood. No thongs or wrapping of any sort are used; and so frail is the connection between the head and shaft, that the Inds themselves are obliged to carry their arrows with great care." Strong bow 4-6' L, almost straight but "abruptly curved" near ends [= recurved?].

Quite diff from Plains short, stout, heavy arrow with large triangular metal head bound by sinew. "both make very ugly wounds." Apache less penetrative force, characteristics of head: 1. minute size, 2. jagged edges 3.friability 4. ready separation from shaft 5. probable poisoning in some instances.

Case: shot in thigh, shaft pulled out, small wound, probe could not find small arrowhead, no abscess or infection, patient recovered. Jagged edges "must decrease rather than aid the penetrative force of the arrow." Extra laceration not serious, but jagged makes it hard to encyst without abscesses, working of head toward surface.

"Extreme friability" [fragility] - "when the head impacts on bone – and it generally transverses soft tissue until halted in this way – the chances of its shivering into bits vastly preponderate over the probability of its becoming fixed or glancing." Enlarging the wound may be necessary to find point, allow exit of pus and pt fragments, dress wound without blocking orifice.

Occasionally and arrow-head… on striking bone in an exposed situation, e.g., tibia, ulna, etc, will rebound with great force." Case, superficial wound to arm. Head connection to shaft "frail" - can't pull out shaft with head, victim usually jerks out shaft alone when hit.

Poison - "reported that they dip the heads in a deer's liver, after forcing a rattlesnake to bit it, and then allowing it to putrify. I reply most unhesitatingly that as a general rule they *do not*, no other than the consequences of mechanical violence following in the vast majority of instances." Can't say never - case: neck wound superated unnaturally, muscles disintegrated, no head found. "Constitutional disturbances following arrow-wounds, even when the injury is confined to bone or muscle, are liable to be out of all proportion to the apparent amount of damage done." Almost always fever, anorexia, sleeplessness, "derangement of secretions", irritability and pain, despondence. [Sounds like infections to me, and he is not claiming poison here.]

Treatment conclusions: 1. explore wound even if have to enlarge 2. extract all frags, clean thoroughly 3. dress lightly and openly, clean any abscesses as the develop 4. Make light of wound to patient 5. Attend to "constitutional symptoms" by normal means.

Coutier, L.
1929 Experiences de taille pour rechercher les anciennes techniques paleolithiques. *Bulletin de la Société Préhistorique Française* 26: 172-174.

Cite as first info on soft hammer (in Johnson)

Cowan, Frank L.
1999 Making Sense of Flake Scatters: Lithic Technological Strategies and Mobility. *American Antiquity* 64(4): 593-607.

Relations btwn mobility and stone tool design and production technol allow testing hypoths about functional and organizational role of small sites. 3 NY periods, with diff settlement models imply diff roles for small sites. Diffs in tools reflect this, but better info from tool production methods revealed by flakes.

Crabtree, Don
1966 A Stoneworker's Approach to Analyzing and Replicating the Lindenmeier Folsom. *Tebiwa* 9(1):3-39.

Crabtree, Don
1967a Notes on Experiments in Flintknapping 3 – The Flintknapper's Raw Materials. *Tebiwa* 10(1): 8-24.

Crabtree, Don
1967b Notes on Experiments in Flintknapping 4 – Tools Used for Making Flaked Stone Artifacts. *Tebiwa* 10(1): 60-73.

Crabtree, Don
1968 Mesoamerican Polyhedral Cores and Prismatic Blades. *American Antiquity* 33(4):446-478.

Crabtree, Don
1970 Flaking Stone with Wooden Implements. *Science* 169: 146-153.

Use of wooden flakers of possible import in arch. Replicates Australian Kimberley points, Chile pts; Good quotes on replication vs copying, replic of manuf sequence, replic as eliminate some techniques, distinction between preform vs. blank. Heat treating basalt, wooden billets.

Crabtree, Don
1972a *An Introduction to Flintworking*. Occasional Papers no. 28. Idaho State University Museum, Pocatello.

Crabtree, Don
1972b The Cone Fracture Principle and the Manufacture of Lithic Materials. *Tebiwa* 15(2): 29-42.

Cones = interior platform angle and directly reflect angle of blow. [One of Crabtree's mistakes].

Crabtree, Don
1973a Experiments in Replicating Hohokam Points. *Tebiwa* 16(1): 10-45.

Crabtree, Don E.
1973b The Obtuse Angle as a Functional Edge. *Tebiwa* 16(1): 46-53.

Burins and fractures as tool edges, especially planing.

Crabtree, Don E.
1974 Grinding and Smoothing of Stone Artifcats. *Tebiwa* 17(1): 1-6.

Crabtree, Don E.
1975 Comments on Lithic Technology and Experimental Archaeology. In *Lithic Technology: Making and Using Stone Tools*, E. Swanson, ed., pp. 105-114. The Hague: Mouton.

[rambling "yay for lithics experiments" approach – useless]

Crabtree, D.
1982 see obituary by Knudson

Crabtree, Don
1992 *The Tools of Early Man Series with Flintworker Don Crabtree*. VHS. Idaho Museum of Natural History. (original 5 films produced by Earl Swanson with Informational Materials Incorporated, 1972).

Crabtree, Don E. and B. Robert Butler
1964 Notes on Experiments in Flint Knapping: 1 – Heat Treatment of Silica Materials. *Tebiwa* 7(1): 1-6.

"Certain effects of heat and cold on stone material, such as crazing, pot-lid fracturing, and frost-pitting (Watson 1950:18 and Oakley 1957:15-17), are well known to archaeologists. Also familiar is the belief that prehistoric people produced flaked stone implements by dripping water on heated stones (e.g. Lehman 1927:93-94 as quoted in Wallace and Hoebel 1952:105).

Probably because of the almost certainly mistaken nature of this belief, and its appeal to the lay public, archaeologists have shown a markedly negative interest in the possibility that prehistoric peoples may have treated certain stone materials at some stage in the manufacture of flaked stone implements."

Most volcanic rocks workable in native state. Improvement by heating of chalcedony, jasper, chert, flint - ½" pressure flake unheated to 2" heated; from recrystallization. Change in texture and luster, sometimes color.

Early experiments in OH [with Ellis], his own in coal stove, later kiln. Some evidence of prehistoric heat treatment.

Crabtree, Don and Errett Callahan
1979 Craftsman: Don Crabtree. *Flintknappers' Exchange* 2(1):27-34; 2(2):8-13; 2(3):22-26.

Interview w/ biographical intro. Injuries and surgery; learning as a boy; rambles on about diff techniques; heat treatment; vast quantities of material wasted; H. Ellis WPA project criticized

Crabtree, Don E. and E. L. Davis
1968 Experimental Manufacture of Wooden Implements with Tools of Flaked Stone. *Science* 159: 426-428.

[Some loose experiments reported, not too useful]

Crabtree, Don and Earl H. Swanson
1968 Edge-Ground Cobbles and Blade-Making in the Northwest. *Tebiwa* 11(2): 50-54.

Crace, Jim
1988 *The Gift of Stones*. Ecco HarperCollins, Hopewell, NJ.

Novel. Knappers' village is industrious, boring, sheltered, relatively safe because everyone needs their tools. Injured boy, unable to knap, wanders outside and becomes storyteller, witnesses end of industry with sudden arrival of bronze tools. A very poetic novel, also about the nature of story telling, more or less set in prehistoric Britain, but with little attempt at realistic reconstruction. The allegories and symbolism, while skillfully done, would have played just as well if Crace had taken the trouble to really understand prehistory and especially knapping instead of using a lot of nonsense like starting a fire with hair as tinder, and needing to heat the flint so it was hot when struck in knapping.

Cranmer, Christian
2004 *Treasure is Where You Find It: The Thirty-year Quest to Save the Royal Armory of Nepal*. Tharston Press, Godstone.

Brief history of Nepal arms, story of the find, a few pics of context, more of guns [nice but superficial]. P. 18 "found a large pile of stones taking up a recessed area about equal to the size of a single-car garage. Walking on these stones, in places up to 4 feet deep, was accompanied by a noise that sounded almost like walking on coins… these 'stones' were in fact original British musket flints from the time of the Napoleonic wars." Accompanying DVD shows brief scene of walking on flints. Sieved and bagged in 40 kg sacks, estimated 1.3 million flints. Also 4 tons of musket balls in sewer system under floor.

Crawford, F. Scott
2013 *How to Make Your Own Stone Arrowhead*. Self-published on-line, F. Scott Crawford, Carrollton, Texas.

Simple instructions, pressure flaking a flake. [Too brief and not very clear – I don' think you could learn to pressure flake well from this] Step-by-step photos of one point [better, well-photographed] and of some prehistoric examples. Rather commercial tone, self-referencing list of other books in back pages, including an online guide to buying arrowheads on the web, www.StoneBreaker.

Crawford, O. G. S.
1935 A Primitive Threshing-machine. *Antiquity* 9(35): 335-339.

Threshing sled with flint blades, Cyprus

Cresson, Jack
1978 Further Comments on Hard Hammer Percussion. *Flintknappers' Exchange* 1(2):7-8.

Cresson, Jack
1994 Platforms to Prehistory. *Bulletin of Primitive Technology* 7(1): 70-76.

Flake types and info from them, illustrated. [OK info but badly written]

Cresson, Jack
1996 What's In a Knap Kit? Mobility and Prehistoric Flintknappers. *Bulletin of Primitive Technology* 12: 79-80.

Describes his own kit, ways of reducing weight.

Cresson, Jack
2001 The State of Flintknapping: Traditional or New Age. *Bulletin of Primitive Technology* 21:8-10.

Condemns most modern flake-over-grinding and other innovations, knapping for money or art, denies that most knapping is art, but admires Silsby, ends by saying, "confining works to ancient derived forms shortchanges the artistic intent." Condemns Warren and Reinhardt, but admires Silsby even as he claims Silsby "cracked the code" of Warren's FOG work and demonstrated it at Fairview Hts 1987, starting the current fad of "New Age" knapping. "He alone was the major influence that ultimately gave rise to this diverse/perverse chapter in flintknapping today." [which is not true.]

Cresson, Jack
2001 Wooden Billet Notes. *Bulletin of Primitive Technology* 22: 67-69.

Only wood works well for thin bifaces of hardcoarse stone like ihyolite
Strong mid-line platforms, slow landing of force
Flakes have very wide plat, diffuse erraslure- free bulbs
Dogwood, persimmon, hickory best, oak ok

Cresson, Jack
2004 Experimental Arrow Durability and Impact Test 1994 Oregon Ridge Prehistoric Technology Workshop. *Bulletin of Primitive Technology* 28: 68-70.

Variety of points by diff knappers shot into variety of diff materials. [Good example of interesting experience but uncontrolled experimentation].

Cresson, Jack
2006 Another Use for Sumac. *Bulletin of Primitive Technology* 32:56-57.

Hafting mastic on experimental foreshafts with stone points. Can only collect fresh, takes long to dry, used without filler, but waterproof + insoluble, his specimens have lasted since 1987.

Cresson, Jack
2006 Simple Experiment with Fire and Wood: Assessing Fire-Hardening Wooden Pressure Flakers. *Bulletin of Primitive Technology* 32:63-65.

Found no diff between fire hardened and unhardened tips of wooden pressure flakers in effect or needed maintenance.

Cresson, Jack
2011 Environmental Variables, Surface Displacement and Deposition of Lithic Artifacts: A Backyard Experiment. In *Experiment and Interpretation of Traditional Technologies: Essays in Honor of Errett Callahan*, Hugo Nami, ed., pp. 365-380. Ediciones de Arqueología Contemporánea, Buenos Aires.

Flake shapes anchor more quickly and are less likely to be disturbed than biconvex bifaces. Six bifaces of different size mapped at month intervals on backyard surface over course of a couple years. Most movement in winter – lack of vegetation, freeze-thaw. Bird dust bathing major disturbance. Heavier objects moved more laterally, lighter subsided more quickly. Squirrels and dogs also moved, insect/worm activity helped anchor/subside. [Interesting observations, very detailed records, but sample is very small.]

Crombe, Phillipe, Yves Perdaen, Joris Sergant, and Jean-Paul Caspar
2001 Wear Analysis on Early Mesolithic Microliths from the Verrebroek Site, East Flanders, Belgium. *Journal of Field Archaeology* 28 (3-4): 253-269.

Fractures and microscopic linear wear traces show non-geometrics used as tips and geometrics used as barbs. Experiments shooting carcasses with arrows.

Crosby, Alfred W.
2002 *Throwing Fire: Projectile Technology Through History*. Cambridge University Press, Cambridge.

Extended essay, reasonably well written, mostly accurate although superficial on details. Early sections favor Calvin's theory of throwing as critical mental development [thankfully he only hints at Calvin's handaxe nonsense], and Bingham's idea of group enforcement by throwing as promoting social development. Ethnographic accounts of remarkably accurate stone throwing. First spears at Schoningen 400,000 years ago. Upper Paleolithic - throwing stick or atlatl, adequate description and diagram. Mentions Perkins' spring theories, but correctly explains atlatl in terms of lever arm. Australian annecdotes, Aztec darts "pass through armored man", Frison experiment on elephants. Beginnings of fire use also discussed. Possible human causes of Pleistocene extinctions.

Cross, John R.
1983 Twigs, Branches, Trees, and Forests: Problems of Scale in Lithic Analysis. In *Archaeological Hammers and Theories*, ed. By James Moore and Arthur S. Keena. NY: Academic Press.

Critique of individual variation studies. Motor patterns subject to too many variables, "template" ideas don't recognize role of flaws and motor skill, or deal well with change. [He seems to dislike mostly because "assume that documentation of particulars will generate theory" i.e. be theoretical enough!]. Points out individ var studies look at level of maximum noise [true] so is there any useful variation to study after individual is factored out? [silly]. Require much effort, so not cost effective; Should look instead at organiz of technol (social), articulation with social and natural envir, and style [all of which are sometimes approachable through individ variation, despite his doubts. Not very useful.]

Crowley, John T.
1988 Archaeological Conflict on the Internet *Prehistoric American* 32(4): 12.

"Arch forum" news/discussion group- responds to anti-collector statements: we save, document, shouldn't leave to be destroyed!
Archaeologists find sites by asking collectors [You dumb archys, how dare you criticize us!]

Cruxent, Jose M.
1979 Stone and Bone Artifacts from Taima-Taima. In *Taima-Taima: A Late Pleistocene Paleo-Indian Kill Site in Northernmost South America, Final Reports of 1976 Excavations*. Edited by Claudio Ochsenius and Ruth Gruhn, pp. 77-89. South American Quaternary Documentation Program.

[Mastodon kill, C 14 dates 12,980-14,200 BP (uncal) on twigs assoc with skeleton - Bryan and Gruhn] El Jobo point midsection in cavity of R pubis of young mastodon. Probably used as dart point with atlatl. A second frag also in pelvic cavity of mammoth, and another surface find [illegible photos only]. Pressure retouch, knife use as well as point use likely. Two flake tools with bones, one on surface. "Tools of expediency" of limestone embedded in layer of limestone pebbles [apparently very crude damaged edges interpreted as retouch, he claims "expert eye" but it doesn't sound convincing, no illustration.]

Crystal, Breck
2009 Buffalo Penetration Test. *Bulletin of Primitive Technology* 37:89-90.

65 lb bow, killed with dacite point which stopped on inside of opposite rib; steel point and antler point also made shots that would kill.

Cunnar, Geoffrey, William Schindler, Anne Underhill, Fengshi Luan, and Hui Fang
2009 Hunting with Talc? Experiments into the Functionality of Certain Late Neolithic Ground Projectile Points from the Site of Liangchengzhen, People's Republic of China. *Ethnoarchaeology* 1(2):185-211.

Longshan Period (2600-1900 BC Neolithic), points of flaked chert (small triangular) and ground chlorite schist and talc schist (larger, elongate triangle with stem). All worked in replic exper shot into ballistic gelatin, but talc very soft, broke easily, cs better, chert most effective. Shattering of soft ts pts may be intentional in war, perhaps for infection or carry poison. Some ethnog comparisons [but fragility makes them ineffective against any armor and impractical to carry, distribute etc]. Size variation suggests some arrows, also spear, atlatl dart, but crossbow not evidenced until later [and NO evidence at all for atlatls – no reason to suggest them here]. Green color of symbolic importance, imitating jade for lower status folk.
[Interesting but small N experiment, talc pts really poor functionality, no context evidence such as burials offered.]

Cupillard, Christophe, and Jehanne Affolter
1995 La minière de silex néolithique de Blanc-Saule à Étrelles-et-la-Montbleuse (70) et l'exploitation du silex lacustre Oligocene inférieur de Haute-Saône durant le néolithique. In *Les Mines de Silex au Néolithique en Europe: Avancées Récentes*. J. Pelegrin and A. Richard, eds, pp. 179-239. Comité des Travaux Historiques et Scientifiques, Vesoul.

Curwen, E. Cecil
1930 Prehistoric Flint Sickles. *Antiquity* 4: 179-186.

Early experiment replicating sickle sheen.

Curwen, E. Cecil
1935 Agriculture and the Flint Sickle in Palestine. *Antiquity* 9(33): 62-66.

Review and summary of paper by Neuville on sickles, experiments with sickle gloss

Cushing, F.H.
1879 Curious Discoveries in Regard to the Manner of Making Flint Implements by the Aborigines and Prehistoric Inhabitants of America. *The Engineering and Mining Journal* 28: 91.

Actually by someone in Scientific American, describing a lecture by Cushing on his experiments. Hammerstone = "chipping," pressure = "flaking." He pressure flakes upward [!]; Thinning = most difficult. Diff techniques – hammer, punch, pressure leave diff marks – e.g. cache blades only hammer, so intended for further work by press or punch. Tools and technol relate to material toughness; "Bell shaped" [concave edge] outline of pts = trying to thin away a flaw, later intentional and copied in bronze. “Arrow flaking is accompanied by great fatigue and profuse perspiration. It had a prostrating effect upon the nervous system, which showed itself again in the directions of fracture [so that] on an unimpressionable substance like flint, even the moods and passions of centuries ago might be found thus traced and recorded”

Cushing, Frank H.
1883. *Zuni fetiches*. *Second Annual Report of the Bureau of Ethnography for 1880-1881*, pp. 1-45. Washington D.C.:Government Printing Office.

“Although fashioned by man, it (arrowhead) is regarded as originally the gift or “flesh” of lightning and rendered more effective by connections with the dread element” (1883:9)

Cushing, Frank Hamilton
1895 The Arrow. *American Anthropologist* 8(4):307-349.

[Fascinating early article by one of the first experimental archaeologists.]
Arrow used before bow invented.
Study specific for general laws of man’s development. Good quotes on above, personal and individual nature of anthro, philosophy of study and need for replication. His discovery of arrowmaking. Arrows described (SW example) "Knapping" - direct, indirect, pressure described, but all quite incoherently, claims small points made in a couple minutes. Arrow making - includes straight and smooth w/stone, grooved grinder for foreshafts, wrenches. Lots of info on magic and symbolism of arrow, [but can’t tell how much is from Zuni and how much made up, e.g. repeated distinction between war and hunting arrows.] [Wild] speculations on human and arrow beginnings. Proposes development of spear thrower through some weakly documented forms of spear sling, spear palm, etc. - short throwers with rope for end - [some require propel spear from extreme distal end, which I doubt possible]. “Survivals” [vestigial features] as evidence. Springy atlatl of cliff dwellers - claims his works. Reconstructs a "spear crook or flinging bow" [combination atlatl and bow] from Zuni war paho, and "Bow crotch" [an even more absurd idea], from which derives reflex bow.

Frank Hamilton Cushing
1897 A Case of Primitive Surgery. *Science* New Series, 5(130): 977-981 .

Zuni priests lance an infected leg, using scalpels of obsidian and glass. Flakes made by indirect percussion with a dull knife as punch, from bottle bottom and obsid cores, lashed to split twigs. Wound opened, cleaned out, disinfected with willow bark broth and pinon pitch. However, not understood in practical medical terms, but symbolic, e.g. willow represents water, infusion turns red, thus replacing bad infected old blood with new. Use of a “worm” fetish in wound is not a deception, but a “decoy” that draws out the worm of infection for removal.

Custer, Jay F., Karen Rosenberg, Glenn Mellin, and Arthur Washburn

1990 A Re-examination of the Island Field Site (7K-F-17), Kent County, Delaware. *Archaeology of Eastern North America* 18:145-212.

Skeletal info: Middle and Late Woodland hunter-gatherers with lots of carbohydrates in diet. Goods: egalitarian adaptation. Museum with exposed burials on display, this work of mapping, analysis, completing excavation prompted by imminent reburial [as science once more thrown away to appease Indian activists even before NAGPRA]. Burial "caches" include ceramics, bifaces, points, and pipes. Diagnostic large pentagonal bifaces [one could be mistaken for paleo lanceolate] date 600-900 AD. Jack's Reef point types.

Low levels of non-dental pathology, caries rates in range of agriculturalists.

Knapping-related goods common in burials - debitage, points, hammerstones, antler tools. Three burials with large knapping kits - antler tine pressure flakers, punches and billets, distinguished by wear, also hammerstones. Another 5 smaller caches include knapping tools, mostly pressure flakers. One small kit assoc with adult male, one with child, three with women, including 2 of the large ones. Kits vary, thus are probably personal gear rather than stylized offerings, and "no reason why they could not belong to the females with which they are associated."

Cziesla, E.
1990 Artefact production and spatial distribution on the open air site 80/.14 (Western Desert, Egypt), in *The Big Puzzle: International Symposium on Refitting Stone Artefacts*, E. Cziesla, et al., Editors. Verlag: Bonn. p. 583-610.

Dabill, Joseph
2001 How a Chumash chert knife was constructed. *Bulletin of Primitive Technology* 21: 22-23.

Hafted stone to wood w/ asphaltum/pine pitch mix; step by step photos

Dag, Doron, and Naama Goren-Inbar
2001 An Actualistic Study of Dorsally Plain Flakes: A Technological Note. *Lithic Technology* 26 (2):105-117.

Daniel, H.T.
1941 Catalog and Price List. Hot Springs (reprint 1996, Hothem House, Lancaster).

The old artifact market, when looted goods were cheap

Daniel, I. Randolf
2001 Stone Raw Material Availability and Early Archaic Settlement in the Southwestern United States. *American Antiquity* 66(2): 237-266.

Daniel, I. Randolf, and Albert C. Goodyear
2006 An Update on the North Carolina Fluted-Point Survey. *Current Research in the Pleistocene* 23:88-90.

Dansie, Amy J. and Wm. Jerry Jerrems
2004 Lahontan Chronology and Early Human Occupation in the Western Great Basin: A New Look at Old Collections. In *New Perspectives on the First Americans*. B. T. Lepper and R. Bonnichsen, eds., pp. 55-63. Center for the Study of the First Americans, College Station, TX.

Ivory rod beveled point, mammoth rib barbed point, dates 10,340 ± 40 RCYBP

Dapena, Jesus, William J. Anderst, and Nicholas P. Toth
2006 The Biomechanics of the Arm Swing in Oldowan Stone Flaking. In *The Oldowan: Case Studies Into the Earliest Stone Age*. Nicholas Toth and Kathy Schick eds., pp. 333-338. Stone Age Institute Press, Gosport IN.

Darmark, Kim
2006 Flaked Rhyolite from Jettböle: Attempts at an Experimental Explanation. In *Skilled Production and Social Reproduction*. Jan Apel and Kjel Knutsson eds., pp. 399-408. Societas Archaeologica Upsaliensis, Uppsala.

Darling, J. Andrew
1999 Mass Inhumation and the Execution of Witches in the American Southwest. *American Anthropologist* 100(3): 732-752.

Alternate explanation [or excuses] for evidence of cannibalism
Ritual use of ashes and arrowheads to protect against witches – refs

Darvill, Timothy
2011 Misty mountain hop: Prehistoric stone working in south-west Wales. In *Stone Axe Studies III*. Vin Davis and Mark Edmonds, ed., pp. 131-146. Oxbow Books, Oxford.

Darwent, John
1998 *The Prehistoric Use of Nephrite on the British Columbia Plateau*. Simon Fraser University, Burnaby, B.C.

Mostly celts of various forms, some use for trade, symbol, prestige, and warfare. Compiles ethnog refs, but mostly after technology had been lost. Manufacture extensively discussed, lit review and some experimental sawing with sandstone + grit. Useful diagrams, distribution maps [but incredibly, no photos of any artifacts except poor one on cover - how can you discuss manufacture and use of a major tool type without showing readers what they look like?]

Darwish, Izzat Rushdi
1986 Threshing Sledge Use and Variablity in Palestine: an Ethnographic Classification and Use Wear Analysis. Unpublished MA, U of Texas at Austin.

Use of metal teeth, also stone, but mostly as lumps set into drilled holes - basalt, dolomite, and flint used, including re-use of some prehistoric cores and debris. If flint, users seek

gravel-sized pieces that can be used without modification. Also perforated metal sledges. [Typology not useful, not enough ethnographic information.]

Davies, Danielle
2014 The Projectile Point in Perspective: A review of classification systems, consistency, and context regarding the dart-arrow dichotomy in North American archaeology. Unpublished PhD dissertation, University of Exeter.

Davies, Robert, and Simon Underdown
2006 The Neanderthals: A Social Synthesis. *Cambridge Archaeological Journal* 16(2):145-164.

Assume Ns 120,000-28,000 a diff species from anatomically modern humans. Morphology + development rate - detailed table of diffs, defends homogenized comparisons. Ns 8.6% chance survival 35+ yrs, AMH 50%. Ns 28.5% suffered serious trauma, mod hunt-gaths 5.1%. Age + growth studies contradictory, don't know when modern pattern achieved. Anatomy doesn't permit assessing speech capabilities.
Gamble 1999: N incapable of separating tool from body mentally, had no cultural typology of tools, so tools have no social meaning, and Ns could not think "problem solving" about tools = N technology static. Also implies no symbolic thought or language. But unpreserved technol may be more complex, eg we know wooden spears, lithic wear from woodworking. Lack of bone tools typical, Mithen 1996: N brains separated nature + technol, could not see natural things like bone as tools [utter bullshit - aren't stones natural too?]. But artifacts just don't support this level of inference of intellect capabilities.
No N art, but some possibly symbolic artifacts - ochre, incised + pierced bone. Burials debated: cultural/ritual or social bond = protect from decay, or just taphonomic processes.
Subsist emph on hunting leads to suggestions of social cooperation + communication. Most now dismiss obligate scavenging, but questions remain about how effective hunters.
Gives essentially middle of road summary of "average" N life. [Interesting mostly for its review of biases implicit in study of Ns].

Davis, C. Alan, and Gerald A. Smith
1981 *Newberry Cave*. San Bernardino County Museum Association, Redlands.

Cave in Mojave Desert near Barstow, S CA, excav 1950s. Mostly Archaic material with nice series of Elko and Gypsum points, only one Eastgate (so little late use at all). Best known for split twig figurines, but also one possible atlatl frag [can't tell from picture] and 1066 frags of compound dart shafts.

Davis, Carl M. and James D. Keyser
1999 Mckean Complex Projectile Point Typology and Function in the Pine Parklands. *Plains Anthropologist* 44(169): 251-270.

Archaic contemporary pt types with diff functions suggested: Duncan-Hanna = atlatl dart, Mckean lanceolite and Mallory = thrusting spears. Rock art, ethnog evidence, breakage, design

Davis, Dave D.
1993 Archaic Blade Production on Antigua, West Indies. *American Antiquity* 58(4): 688-697.

Industry of percussion blades. Direct perc indicated by large platforms and cones. Sequence of manufacture described.

Davis, Emma Lou, ed.
1978 *The Ancient Californians: Rancholabrean Hunters of the Mohave Lakes Country*. Los Angeles: Natural History Museum of LA County.

Silly quote used in *Flintknapping*: "Contents of the A bags from a stake were spread on the table and slowly inspected, turning each piece to all angles and holding it obliquely to the sunlight. It was a rapt study in which we established a mystical bond with these worn fragments. We used to talk to them like an Eskimo carver holding a block of livery and searching for its *inna*, its spirit. 'Who are you who dwells in there?' Through such absorbed, complete immersion, we began to see a host of new qualities so that the stone, a surrogate for a person, a Spirit, became a living entity in itself. In this way we participated in an experience far transcending mere sterile detail – a deeply enjoyable experience." (p. 34)

Davis, Vin and Mark Edmonds, eds.
2011 *Stone Axe Studies III*. Oxbow Books, Oxford.

Interspersed between the many interesting articles in this book are fascinating quotations on axe finds, mostly 19 C [and unfortunately not attributed]. Axe magic, symbolism, collecting.

Davis, Vin and Mark Edmonds
2011 A time and place for the Belmont Hoard. In *Stone Axe Studies III*. Vin Davis and Mark Edmonds, ed., pp. 167-186. Oxbow Books, Oxford

Davis, Watson
1930a Stone Age Tools Being Made Now. *Science News-Letter* 18(487): 85 (August 9, 1930).

1/2 page on Barbieri, mentions also red glass flakes sold in west

Davis, Watson
1930b 84-Year Old Man is Master Maker of Stone Age Tools. *Science News-Letter* 18(500): 295 (November 8, 1930).

1/2 page on Halvor Skavlem

Dawe, Bob

1997 Tiny Arrowheads: Toys in the Toolkit. *Plains Anthropologist* 42(161): 303-318.

Late prehistoric pts (several 1000) at Head Smashed In Buffalo Jump, Alberta. Points from processing areas at several sites smaller (av.) than at adjacent kill sites, and not very functional. Ethnographic accounts of boy's training bows & arrows – but almost never ID in sites. Optimum arrow shaft size standardized – arch gauges and ethnog specimens; so neck width reflects shaft size. 8mm = lower end adult pt neck widths; some overlap, but L and neck width show 2 diff pops (child pts ca. 1.0 cm L) also child pts just trimmed flakes or poorly worked; low neck width correlates w/ minimal flaking. Earlier example Besant pts – often classif as dart pt, small crude versions as Samantha type arrow pt, but small flake pts also variable in neck width, not same range as tool pts, prob toy dart pts. Other explans of tiny pts – ritual (but why use them? and some have impact damage) arrow vs dart, limited stone resources. [Good article, but doesn't discuss makers enough – toy pts = training in knapping too]

Dawson, Brian
1998 *Flint Buildings in West Sussex*. Chichester, West Sussex County Council Planning Department.

Brief geologic info on S coast of England, profiles of notable buildings with color photos.

Deal, Michael and Brian Hayden
1987 The Peristence of Pre-Columbian Lithic Technology in the Form of Glassworking. In *Lithic Studies Among the Contemporary Highland Maya*. B. Hayden, ed., pp. 235-331. Tucson: University of Arizona Press.

DeBeaune, Sophie
1994 Multifunctionality of Pebbles Used in the Upper Paleolithic: An Ethnographic Approach. *Bulletin of Primitive Technology* 8: 64-67.

Hammers and other uses of pebbles; Ethnographic example from modern Tuareg

Debénath, André and Harold L. Dibble
1994 *Handbook of Paleolithic Typology, Volume One: Lower and Middle Paleolithic of Europe*. University of Pennsylvania University Museum: Philadelphia.

Good intro comments on nature of typol and uses and problems with Bordes' types

DeBoer, Warren
1993 Like a Rolling Stone: The Chunkey Game and Political Organization in Eastern North America. *Southeastern Archaeology* 12(2):83-92.

Roll the chunkey stone, throw the pole, score by closeness to end point of stone. Gambling game related to universal N. American hoop and pole game. Data from 97 archaeological discoidals or chunkey stones from Cahokia area suggest started Late Woodland as popular game with stones found in middens and child burials, but during rise and peak of Cahokia center, stones are standardized and in burials of elite males. Suggests elite took over as symbol (sun, earth, directions, woodhenges) used to legitimate rulers, and also to control economic exchange and distraction represented by chunkey gambling.

DeBoer, Warren R.
2004 Little Bighorn on the Scioto: The Rocky Mountain Connection to Ohio Hopewell. *American Antiquity* 69 (1): 85-107.

Effigy pipe and copper horn at Mound City interpreted as bighorn. Plots Middle Woodland obsidian and Knife River Flint finds. Ca 300 lbs, thousands of pieces of obsidian at Hopewell, many other sites all over Midwest have a piece or two. Suggests "zone of extraordinary travels" in west, contrast to "panpipe zone" of closer exotica.
Bulk of obsidian from Hopewell site (eg. Mound 25 Ross bifaces) and other ext zone goods probably from single expedition around 200 AD. After this hoarding episode, obsidian scarce, bifaces elsewhere much smaller, coal imitations retain size. Discusses possible iconography; copper horn and bifaces as part of costume in burial with shamanic and leaderly properties.

Decourt, Jean-Claude
1998 L'Obsidienne dans les Sources Anciennes: Notes sur l'Histoire du Mot et l'Utilization de la Roche dans l'Antiquité. In *L'Obsidienne au Proche et Moyen Orient: Du Volcan á L'Outil*, edited by M.-C. Cauvin, A. Gourgaud, B.Gratuze, N. Arnaud, G. Poupeau, J.-L. Poidevin, and C. Chataigner, pp. 363-377. BAR International Series 738. Archaeopress, Oxford.

Deeringer, Martha
2014 Hogeye Secrets. *Mammoth Trumpet* 29(3):10-13.

Texas cache of Clovis points and bifaces (52) possibly chert from Gault site. Sand mining discovery, disturbed context, sold around several owners. M Waters and T Jennings investigating.

Deetz, James
1967 *Invitation to Archaeology*. The Natural History Press, Garden City.

Seriation – concept of battleship curves

Delagnes, A.
1995 Variability Within Uniformity: Three Levels of Variability within the Levallois System, in *The Definition and Interpretation of Levallois Variability*, H.L. Dibble and O. Bar-Yosef, Editors. Prehistory Press: Madison. p. 201-211.

Del Bene, Terry A.
1979 Untitled letter. *Flintknappers' Exchange* 2(1):4-5.

Deller, D. Brian and Christopher J. Ellis
2001 Evidence for Late PaleoIndian Ritual from the Caradoc Site (AfHj – 104) Southwestern Ontario, Canada. *American Antiquity* 66(2): 267-284.

Smashed lithics, including bifaces

Deller, D. Brian, Christopher J. Ellis, and James Keron
2009 Understanding Cache Variability: A Deliberately Burned Early Paleoindian Tool Assemblage from the Crowfield Site, Southwestern Ontario, Canada. *American Antiquity* 74(2):371-397.

Pit, fluted pts and bifaces, other stuff N=182+ pc, burned in place, still functional but purposely destroyed = sacred ritual.

de Labriffe, Pierre Arnaud, and Dominique Thébault
1995 Mines de silex et grands travaux, l'autoroute A5 et les sites d'extraction du Pays D'Othe. In *Les Mines de Silex au Néolithique en Europe: Avancées Récentes*. J. Pelegrin and A. Richard, eds, pp.47-67. Comité des Travaux Historiques et Scientifiques, Vesoul.

Delage, Christophe, and Jun Sunseri
2004 Lithic Heat Treatment in the Late Epipaleolithic of Southern Levant: Critical Review of the Evidence. *Lithic Technology* 29 (2): 161-173.

Natufian et al, heat used in assoc w pressure flaking to improve flint, but also perhaps for esthetic qualities and symbolism assoc w fire.

Dellinges, Mark
2009 Instructions for the Fabrication of a Horseshoe Nail Holding Tool for 'Narrow Entry' Notching. *Chips* 21(3):23.

de Lotbiniere, Seymour
1977 The Story of the English Gunflint: Some Theories and Queries. *Journal of Arms and Armour Society* 9: 18-53.

de Lotbiniere, Seymour
1980 English Gunflint Making in the Seventeenth and Eighteenth Centuries. In *Colonial Frontier Guns*, T.M. Hamilton ed., pp. 154-159. The Fur Press, Chadron, NB. Reprinted 1987, Pioneer Press, Union City, TN.

Probably the first 100 yrs of flintlocks, until 1660s, were "do-it-yourself" gunflints, then Board of Ordinance would have stimulated craft industries around London with readily available local flint. Late 1600s/early 1700s some gunflint makers, distinct from gunmakers, supplying flints of carbine, musket, and pistol sizes. By 1740s knappers at Erith and Swanscombe and Northfleet (all near London), and probably more around Salisbury. Later intro of French technique to make "blade type" or "platform type" gunflints, last quarter of 18th C, Brandon developed as center ca 1790 and through

Napoleonic Wars became major supplier. Exports by late 1600s by B of O, E India Co, and Hudson Bay Co. N. Am. flints from UK from wedge period (1660-1775) should be black w brown translucency + occasional white spots, from ca 1740 more grey-brown, duller, more opaque, after 1790 grey flints should begin to disappear [probably way too simple a model]. French probably gave up wedge technique by 1740, but continued to round the heel of their flints cut from blades, while Brits made more square flints, even double edge or very lightly trimmed heel after adopting Fr technique. Fr heels cut steeply by multiple flakes “gnawing” while Brit heels and sides cut cleanly with demicone of percussion at top. Steep robust Fr heel butted against cock screw, flint wrapped in leather or lead [but so were Brit ones].

de Lotbiniere, Seymour
1984 Introduction : Updating Skertchly. Pp. v-viii In **Skertchly, Sydney B. J.** 1879 *On the Manufacture of Gun-Fints, the Methods of Excavating for Flint, the Age of Palaeolithic Man, and the Connexion Between Neolithic Art and the Gun-Flint Trade*. Memoirs of the Geological Society of England and Wales. London. Reprinted 1984, Museum Restoration Service, Bloomfield, Ontario.

Change in gunflint techniques in Britain ca 1775 from early ‘wedge’ form (semi-circular flake flat on one surface, bulb on other) to ‘platform gunflint’ (segment of narrow double-ridge flake). Skertchly knew only latter. Rather vague info that ‘long-flake’ method introduced from France ca 1775. Early form needed only small material ; Brandon not knapping village until after 1793, by 1813 many knappers recorded, probably took advantage of available large material needed for new technique, and war economy. L suggests that Skertchly’s ‘Old English Gunflint’ type is hybrid between wedge and platform – ‘rectangular wedge’ struck as wedge flake but trimmed on stake as platform type – showing demicone on upper face and ‘undercutting’ trim. Similar forms from Earl of Abergavenny wreck 1805. On French work, any undercutting eliminated by steep retouch of heel and different way of working. [I think his dating of the change is weakly documented, and I would like to see more convincing evidence that earlier Fr work was using blades.]

Del Rey, Benito, and José-Manuel Benito Alvarez
1994 La Taille Actuelle de la Pierre a la Manière Préhistorique: L’example des pierres pour Tribula á Cantalejo (Segovia-Espagne). *Bulletin de la Société Préhistorique Française* 91:214-222.

Threshing sledge flints manufactured in central Spain by ancient technique of direct percussion differing from prehistory only in use of iron tools. Cortical flakes preferred from fine grained quartzite, interior flakes for flint.
Observed early 1970s, revisited 1990, at which time only one family still working but could demonstrate techniques. No local flint, imported from the S.
Make stereotyped flakes with several sizes of hammer. Cores conical, or on flakes, or bifacial resembling paleolithic implements

DeLumley, Henry
1969 A Paleolithic Camp at Nice. *Scientific American* 220(5): 42-56.

de Morgan, Jacques
1926 *La Préhistoire Orientale: Tome II: L'Égypte et L'Afrique Du Nord*. Paul Geuthner, Paris.

Gerzean knife, illust w/ handle p. 144, used in American Flintknappers. Numerous other good old engravings of stone tools and other artifacts

de Mortillet, A.
1908 Les Pierres à fusil : leur fabrication en Loir-et-Cher. *Revue de l'École d'Anthropologie* 18 : 262-266.

Dennell, Robin and Wil Roebroeks
2005 An Asian Perspective on Early Human Dispersal from Africa. *Nature* 438:1099-1104.

Densmore, Julie A.
2007 A Detailed Analysis of the Variation in Morphology of the Gary Dart Point. *Lithic Technology* 32(1):7-16.

Contracting stem, triangular blade, Archaic period all over E US and S into TX and AR. [sim to some Gypsum pts] Resharpening affects form, especially shortening blade and reducing shoulder.

DePradenne, A. Vayson
1935 « Fossil Tradition » in Stone Implements. *Antiquity* 9(33) : 74-83.

Reuse of old stone tools – rebirth of old types. Discussion of Aterian and IboMaurecian sties. [Not very useful]

Deraprahamian, G.
1987 Quelques réflexions à la lumière des emmanchements modernes. In *Le Main et l'Outil : Manches et emmanchements préhistoriques*, D. Stordeur, ed., pp. 319-322. Lyon : Maison de l'Orient.

DeRegnaucourt, Tony, and Jeff Georgiady
1998 *Prehistoric Chert Types of the Midwest*. Upper Miami Valley Archaeological Research Museum, Occasional Monograph 7., Western Ohio Podiatric Medical Center, Greenville, Ohio.

List of chert types for E Midwest, with color plates of artifacts made of each type, details of age, distrib, geology, etc. [Serious amateur study, pretty good: useful info although better on some than others, needs better org and needs maps].

Desrosiers, Pierre M.
2007 Palaeoeskimo Lithic Technology: Constraints and Adaptation. *Lithic Technology* 32(1):17-38.

DeSimone, Barney
1991 Use Those Points. *Chips* 3(3):7-8.

De Wilde, David, and Marc De Bie
2011 On the origins and significance of microburins: an experimental approach. *Antiquity* 85(329):729-741.

Mesolithic, bi-products of gradual technol development by knappers trying to make arrowheads without bulb of percussion, thus easier to haft.

Diamond, Joseph, and Tom Amorosi
2006 A Middle-Archaic Reutilized Clovis Projectile Point from the Mid-Hudson Valley, New York. *Current Research in the Pleistocene* 23:91-92.

Onondaga chert Neville [stemmed] point on fluted section of Clovis, from multi-component site.

Dias, Adriana Schmidt and Lucas Bueno
2013 The Initial Colonization of South America Eastern Lowlands: Brazilian Archaeology Contributions to Settlement of America Models. In *Paleoamerican Odyssey*. Kelly E. Graf, Caroline v. Ketron and Michael R. Waters ed., pp. 339-358. Tops Printing, Inc., Texas.

Dillehay, Tom D.
2013 Entangled Knowledge: Old Trends and New Thoughts in First South American Studies. In *Paleoamerican Odyssey*. Kelly E. Graf, Caroline v. Ketron and Michael R. Waters ed., pp. 377-396. Tops Printing, Inc., Texas.

Dibble, Harold L.
1981 Technological Strategies of Stone Tool Production at Tabun Cave, Israel. PhD. dissertation, Department Anthropology, U of Arizona.

Dibble, H.
1982 Variability and Change in the Middle Paleolithic. Paper presented at Symposium in Cultural and Biological change at the Middle to Upper Paleolithic Transition, Annual Meeting, SAA, Minneapolis, 1982.

Dibble, H. L.
1983 Variability and Change in Middle Paleolithic of Western Europe and the Near East. In *The Mousterian Legacy: Human Biocultural Change in the Upper Pleistocene*, Eric Trinkaus, ed., pp. 53-71. Oxford: BAR.

Dibble, Harold L.

1984a Interpreting Typological Variation of Middle Paleolithic Scrapers: Function, Style, or Sequence of Reduction? *Journal of Field Archaeology* 11: 431-436.

Dibble, H.L.
1984b The Mousterian Industry from Bistian Cave (Iran). *Paléorient* 10(2): 23-34.

Dibble, Harold L.
1985a Raw-Material Variation in Levallois Flake Manufacture. *Current Anthropology* 26(3): 391-393.

Size of material affects size of flakes

Dibble, Harold L.
1985b Technological Aspects of Flake Variation: A Comparison of Experimental and Prehistoric Flake Production. *American Archaeology* 5(3): 236-240.

Relationships seen in our experiment also observed on Paleolithic flakes from Tabun

Dibble, Harold
1986 Description et Historique du Site de Combe-Capelle. *Société d'Études et de Recherches Préhistoriques, Bulletin* 35: 7-22.

Dibble, Harold L.
1987a Comparaisons des séquences de réduction des outils Moustériens de la France et du Proche-Orient. *L'Anthropologie* 91(1): 189-196.

Dibble, Harold L.
1987b The Implications of Stone Tool Types for the Presence of Language During the Lower and Middle Paleolithic. Paper presented at Symposium on Origins and Dispersal of Modern Humans, Cambridge, England.

Language approach is through throat reconstruction. Tool manuf leads to handedness > brain re-org > pre-adapt for L-side speech, etc. Holloway: tools = arbitrary standards imposed on nature = symbolic thought and learning. But much of tool morphol reflects typol and use, not arbitrary. Scraper reduction sequence produces diff "types". Biface types are arbitrary modern partitions of continuum, thus not linguistic categories, and not necess learned linguistically. Tools are not evid for language and symbol.

Dibble, Harold L.
1987c The Interpretation of Middle Paleolithic Scraper Morphology. *American Antiquity* 52(1): 109-117.

Resharpening produced different forms or "types" of scrapers, thus they are not likely to be templated types that are good markers of ethnicity or temporal change

Dibble, Harold L.

1988 Typological Aspects of Reduction and Intensity of Utilization of Lithic Resources in the French Mousterian. *University Museum Symposium Series* 1(54): 181-197. In *Upper Pleistocene Prehistory of Western Eurasia*, Harold L. Dibble and Anta Montet-White, eds., University Museum, University of Pennsylvania.

Dibble, Harold L.
1989 The Implications of Stone Tool Types for the Presence of Language during the Middle Paleolithic. In Mellars, Paul and Stringer, Christopher B., editors, In *The Human Revolution:Behavioural and Biological Perspectives on the Origins of Modern Humans*. Edinburgh:Edinburgh University Press, pp. 415-432.

Dibble, H.L.
1995 Middle Paleolithic scraper reduction: background, clarification, and review of evidence to date. *Journal of Archaeological Method and Theory* 2(4):299-368.

Dibble, Harold L.
1997 Platform Variability and Flake Morphology: A Comparison of Experimental and Archaeological Data and Implications for Interpreting Prehistoric Lithic Technological Strategies. *Lithic Technology* 23(2): 150-170.

Dibble, Harold L., Chase, Philip G., McPherron, Shannon P. and Tuffreau, Alain
1997 Testing the Reality of a "Living Floor" with Archaeological Data. *American Antiquity* 62:629-651.

Dibble, Harold L. and Ofer Bar-Yosef
1993 Definition and Interpretation of Levellois Technology. *Evolutionary Anthropology* 2(3): 77.

Reports on Levallois Conference – problems of definition, diversity; need to look at entire production sequence. [not much substance]

Dibble, H., S. McPherron, P. Chase, W. Farrand, A. Debénath
2006 Taphonomy and the Concept of Paleolithic Cultures: The Case of the Tayacian from Fontéchevade *PaleoAnthropology* 2006:1-21.

Dibble, Harold L. and Andrew Pelcin
1994 The Effect of Hammer Mass and Velocity on Flake Weight. *Journal of Archaeological Science*.

[Peer reviewed] Neither mass nor velocity nor momentum (= MxV2) had much effect – flake weight almost all (>81%) determ by Plat Thickness (P depth) and EPA. Momentum only increases max size possible w/ given platform but does not in itself affect flake size. Raises possibility of reconstructing flake mass if only the platform survives.

Dibble, Harold L., Shannon P. McPherron, and Barbara Roth
2003 *Virtual Dig: A Simulated Archaeological Excavation of a Middle Paleolithic Site in France, second edition*. McGraw-Hill Mayfield, Boston.

cite for virtual flaking model in Am. Flintknappers

Dibble, Harold L., Teresa P. Raczek, and Shannon P. McPherron
2005 Excavator Bias at the Site of Pech de l"Aze IV, France. *Journal of Field Archaeology* 30(3):317-328.

Little missed by Bordes not screening, but biases in choice of artifacts to point provenience. Variability in choice, and in plotting between Bordes + Dibble projects, and between individ excavators on site.

Dibble, H.L., B.J. Roth, and M. Lenoir
1995 The Use of Raw Materials at Combe-Capelle Bas, in *The Middle Paleolithic Site of Combe-Capelle Bas (France)*, H.L. Dibble and M. Lenoir, Editors. The University Museum Press: Philadelphia. p. 259-287.

Dibble, Harold L., Utsav A. Schurmans, Radu P. Iovita, and Michael V. McLaughlin
2005 The Measurement and Interpretation of Cortex in Lithic Assemblages. *American Antiquity* 70 (3): 545-560.

Cortex used to indicate reduction levels and transport, but measures not consistent or comparable with expectations. Solid geometry approach to measurement, less affected by degree of core reduction, technol variation, rock type, and retouch, but sensitive to study behavioral biases assoc with import/export at diff stages.

Dibble, Harold L. and John C. Whittaker
1981 New Experimental Evidence on the Relation Between Percussion Flaking and Flake Variation. *Journal of Archaeological Science* 8: 283-298.

Using mechanical flaker dropping ball bearings on glass cores, we examined a number of variables of flakes, and demonstrated the importance of the exterior platform angle - the closer to 90 degrees the longer the flake. Interior platform angle proved unimportant, while platform thickness and the angle of the blow also affected flake dimensions. [The basic insight that there must be regular geometric "laws" controlling variables in knapping was mine, stimulated in part by Speth's experiments, and discussions Harold and I had as we learned to knap and taught a class at the U of Arizona. Dibble and his later collaborators took this idea much farther, both in mechanical experimentation, and in showing that it can be applied to archaeological materials.]

Dickson, Don
1996 The Production of Modern Lithic Scatters and Related Problems. *Lithic Technology* 21(2):155-156.

Notes that knappers now numerous and organized, ethics variable. Estimates 1/2 ton debitage at typical knap-in; gives guess 20 pickups of stone for sale, prices $1-5/lb – lots money involved. Testing and knapping at source sites, depletion of stone = contamination of prehist sites, production of new sites; depletion of sources – hard to obtain samples of some sources.

Dickson, Don R.
2002 *Prehistoric Native Americans in the Ozarks*. Ozark Resources and Historical Publications, Fayetteville.

General prehistory of the region with some emphasis on stone tools.

Dickson, Don R.
2009 Peoria Quarry Geology. *Chips* 21(2):7-8.

Peoria quarry, OK, [Ron Fuller and now owned by Craig Ratzat] material is member of massive bedded cherts of Keokuk formation, denser than most K chert and lacking fossils. Varieties: 1. light color homogeneous with metallic ring 2. distinctive splotches 3. yellow web patterns that turn red when heated. Mostly late prehistoric use, since has to be heated.

Dickson, Jim
1992 Stone Age Knives Today. *Gun Digest Book of Knives, 4th ed*.

Glossy, glamorous, lots of misstatements or exaggeration about how stone compares to steel. Features work and photos many knappers, including Bob Hunt who gave it me, plugs for lots of knappers.

Dietz, Dewey
2014 Wealth or Prestige vs Sacred or Ceremonial. *Indian Artifact Magazine* 33(2):3-5.

Museums funded by government are relinquishing collections, "wouldn't be disturbing if it were for curation and preservation. The fact is many of these artifacts are destroyed, gone for ever. Too sacred to even preserve it seems… You may say "This doesn't affect me, I'm a private collector." … Laws are invented every day, many without grandfather clauses."
Large obsidian bifaces occasionally found cached [He found one 1968, incentive to write. Good photos of 6 examples.] Anthropologists describe these as wealth/prestige, not ritual items. Kroeber cited: "wholly unsymbolic and in no sense regarded as sacred". Displayed at dances.
Ted Orcutt made into 1920s-1940s, occasionally turn up.

Diethelm, Inge
2004 Sourcing the Flint Raw Materials found at the Acheulian Site of Nadaouiyeh Ain Askar in the El Kowm Basin, Syria. In *Lithics in Action: Papers from the Conference 'Lithic Studies in the Year 2000'*. E. A. Walker, F. Wenban-Smith, and F. Healy eds., pp. 89-92. Oxbow Books, Oxford.

Diez-Martin, Fernando

2006 After the African Oldowan: The Earliest Technologies of Europe. In *The Oldowan: Case Studies Into the Earliest Stone Age*. Nicholas Toth and Kathy Schick eds., pp. 129-152. Stone Age Institute Press, Gosport IN.

Dina, James
1996 In Search of the Dugout Canoe. *Bulletin of Primitive Technology* 12: 50-54.

Worked with stone tools and fire; poplar log, 12" long, 19" across, 11" deep finished, ca. 20 burns @ 1-4 hours. [Good]

DiPeso, Charles C. **parts**
1956 The Upper Pima of San Cayetano del Tumacacori. *Amerind Foundation* 7.

Dixon, Don R.
1996 More Data on Silicosis. *Chips* 8(2): 8.

Novaculite more dust than others; lungs can recover if not too bad; should warn all

Dixon, E. James and Richard Marlar
1997 A New Discovery at the Folsom Type Site. *Plains Anthropologist* 42(161): 371-374.

Alibates F point frag from backfill surface with impact fract. Residue analysis w/ blood antibodies showed reaction to bison

Dixon, JE, J.R. Cann, and Colin Renfrew
1968 Obsidian and the Origins of Trade. *Scientific American* 218(3). Also in *Old World Archaeology: Foundations of Civilization Readings from Scientific American*, C. Lamberg-Karlovsky, ed., pp. 80-88. San Francisco: WH Freeman and Company.

Dobres, Marcia-Anne
2006 Skilled production and social reproduction in prehistory and contemporary archaeology: A personal exegesis on dominant themes and their psychosocial significance. In *Skilled Production and Social Reproduction*. Jan Apel and Kjel Knutsson eds., pp. 25-33. Societas Archaeologica Upsaliensis, Uppsala.

Contrast at conference between "white-collar" theoretically oriented academics and "blue-collar" hands-on replicators, parallels theoretical division between "knowledge" and "skill." Replicative experience was seen as more authoratative and referred to in order to trump theoretical discussions. [Good sociology of science and interesting theoretical issues.]

Dockall, John E.
1994 Oval Biface Celt Variability During the Maya Late Preclassic. *Lithic Technology* 19(1): 52-68.

Breakage – at Colha from manufacture, at Santa Rita from use

Dockall, John E.
1997 Wear Traces and Projectile Impact: A Review of the Experimental and Archaeological Evidence. *Journal of Field Archaeology* 24(3): 321-333.

Summary lit and terminology: Abrasive wear: linear polish, striations, surface or edge rounding or dulling (also from hafting), fatigue wear types [bad term] = cone and bending initiation micro fractures along edges (also from cutting), longitudinal macrofracture [bad term, = impact flute], lateral macrofracture [= impact burination], transverse fracture [snap](less diagnostic of impact), spin-off fracture [unclear – I think pressure-initiated flakes pushed off by compression in bending fractures]. [Mediocre paper – useful compilation but missed some, eg. me, Flenniken; dull writing, his terminology is not good and should not be used, his conclusions are ok]

Dockall, John E.
2001 A Perspective on Research Trends in Pacific Lithic Studies. *Lithic Technology* 26 (1): 4-17.

With useful bibliog, including ethnographic lithic info.

Dockall, John E. and Harry J. Shafer
1993 Testing the Producer-Consumer Model for Santa Rita Corozal, Belize. *Latin American Antiquity* 4(2): 158-179.

Specialization involves interactions among production, exchange, and consumption. Late PreClassic; separation between specialist biface makers at Colha, and users at Sta Rita. Value of tools is derived from indirect evidence. Fracture pattern and part distribs, more recycling and secondary use at consumer sites

Dodge, Richard Irving **Burling**
1959 (1882) *Our Wild Indians: Thirty-three Years' Personal Experience among the Red Men of the Great West*. Archer House, New York.

Reprint of original. Accounts of arrows and bows. Doubts power of bow to penetrate bison rib.
Cited, quoted by Gelo (2013) "The Comanches place the blade of the hunting-arrow in the same plane with the notch for the string, so that it may more surely pass between the ribs of the animal, which are up and down; for this same reason, the blade of the war-arrow is perpendicular to the notch, the ribs of the human enemy being horizontal (Dodge 1882:418-419)." And
"The shape of the iron arrow-head indicates the use to which it is expected to be put. Hunting-arrows have long, tapered blades, the rear shoulder sloping backward. The blade is firmly fastened to the shaft, and can easily be withdrawn from the wound. The war-arrow has a short, sharp blade, like a lancet; the rear shoulder slope forward, forming barbs; their attachment to the shaft is very slight, as it is intended that he head shall remain in the

wound, and kill eventually, if not immediately (Dodge 1882:419)." [Heads] "of late years exclusively of iron, stone of the necessary hardness being difficult to work." (419)

Short range, Indians not good target shots, but "Put a 5-cent piece in a split stick, at 5- or 60 yards, and by giving a dexterous twist he will make the arrow fly sideways, and knock down the money almost every time; but put an inch-square piece of paper on a board or tree, at the same distance, and he will hardly hit once in a day's practice. [What the heck does he mean about flying sideways?].

Rapidity of shots, protects L arm with deerskin. Each tribe own style of bow + arrows. Lances 8-12' with Mexican sword blades. Shields of hide "no rifle ball can penetrate unless it strikes squarely." Now all have guns, but retain bow because better with it, guns get broken or out of ammo, but often reload shells.

As if two different writers: lengthy descriptions of torture, cruelty 'natural to Indians' and other barbarisms, but also treatment of Indians is almost as bad a blot on US as slavery. "There is no future for Indians as Indians" they need to be incorporated as citizens, i.e. forcefully acculturated, but some tribes as ready for citizenship as many new imigrants, if we had treated Irish or Germans this way, denying them citizenship, would we be a great nation?

Doelman, Trudy E.
2005 Tool Time: The Influence of Tool Manufacture, Use, and Discard on the Formation and Composition of a Quarry Assemblage. *Lithic Technology* 30(1): 13-28.

Domanska, Lucyna
2004 The Origin of the Funnel-Necked Beaker Culture Flint Industry on the North European Plain. In *Lithics in Action: Papers from the Conference 'Lithic Studies in the Year 2000'*. E. A. Walker, F. Wenban-Smith, and F. Healy eds., pp. 206-214. Oxbow Books, Oxford.

Domanski, Marian and John A. Webb
1992 Effect of Heat Treatment on Siliceous Rocks Used in Prehistoric Lithic Technology. *Journal of Archaeological Science* 19: 601-614.

Heat treatment = reduction in fracture toughness, because recrystalization of poorly ordered interlocking cryptocrystalline fabric makes it more equigranular and better crystallized, so fractures propagate more readily. Visual changes discussed. Mechanical changes – elastic constant, tensile strength, compressive strength, fracture toughness. Obsidian used as the standard of good flaking qualities to compare heated stone. Fracture toughness decreases with heat for all materials; macrocrystalline need more heat [but they heat to 300C = 572F, and then 400C = 752F, 500C = 932F, so way too high temp for real heat treatment.] Fracture toughness makes good objective measure of improvement in stone. Modulus of elasticity – heat makes stiffer, so easier to flake. Fracture toughness = resistance to fracture propagation – reduced, so easier flaking. [Sources of stone types tested are not given] Discusses 5 theories of what happens to microstructure. What happens, according to electron micro examination of etched surfaces – recrystallization with smaller, more ordered crystals

Domanski, Marian and John A. Webb
2000 Flaking properties, petrology, and use of Polish flint. *Antiquity* 74(286): 822-832.

"Fracture toughness (= resistance to fracture propagation) as best objective measure of flaking quality – low = good, eg. obsidian. Mid Paleolithic to EBA, S Poland Holy Cross Mts had 3 types flint. Chocolate flint – small, med blade tools, not polished axes, lowest fract toughness. Grey white spotted – long blades, large partly polished axes. Banded flint – poor flaking, highest fract toughness – small completely polished axes; All mined for different tools in Neolithic and EBA

Domanski, Marian and John A. Webb
2007 A Review of Heat Treatment Research. *Lithic Technology* 32(2):153-194.

Used to enhance color + hardness in beads (and maybe symbolic meanings), fracture some tough stone, and improve flaking. [Extensive survey of literature with large bibliography, very useful, but below makes me worry about other parts].
P. 156, "Ethnographic accounts indicate that intentional heating of stone was also used to split rocks into fragments. Water dripping from a feather, reed or stick was applied to hot stone so that it would be fragmented by the shock of the sudden drop in temperature (Mandeville 1973; Gregg and Grybush 1976; Schindler et al. 1982). **This method was used for breaking up water-rolled boulders and for shaping axe blades by the New Guinea tribes of Irian Jaya (Stout 2002), for fracturing white quartz pieces by the indigenous people of the Andaman Islands (Man 1833), for breaking up quartzite boulders by the Alyawara people of central Australia (Binford and O'Connell 1984), for fracturing chert cobbles in the Victoria River region of northern Australia (Elkin 1948), for breaking up boulders by the Nyasaland tribes of Zimbabwe (Robinson 1938), for fracturing pieces of jasper, chert or obsidian by the Viard Indians of California (Powers 1877:104),** and for shaping chert arrowheads by the Apaches (Lehman 1927) and the Athapascan Indians of the Great Bear Lake region of northern Canada (Nagle 1914)." [WHAT! They believe this?! Do they have any background in knapping? In fact, most of the passage (highlighted) is closely paraphrased from Gregg and Grybush 1976:190 who are noting that heat in these ethnog contexts was probably to break up cobbles. The bullshit about feathers was added, as was the rubbish about arrowheads. Very poor scholarship!]
P 161, reviewing arch evidence, accept Mousterian intentional ht at 120kya [but their descriptions note heat induced changes and cracking, not usable evidence of intentionality]. Table of US finds with refs. Australian ethnog summarized. 166 - Clovis frequently used heat treatment.

Dominguez-Rodrigo, Manuel, and Travis Rayne Pickering
2003 Early Hominid Hunting and Scavenging: A Zooarchaeological Review. *Evolutionary Anthropology* 12 (6): 275-282.

Olduvai and other Plio-Pleistocene sites show hunting or "power scavenging" i.e. early access to fleshed carcasses, not just passive scavenging or marrow use. Many stone tool cut marks on long-bone main shafts, which only occur when defleshing, not when scavenging carnivore leavings. [Reviews previous work, useful, but a bit too much jargon.]

Donahue, Randolph E. and Daniela B. Burroni

2004 Lithic Microwear Analysis and the Formation of Archaeological Assemblages. In *Lithics in Action: Papers from the Conference 'Lithic Studies in the Year 2000'*. E. A. Walker, F. Wenban-Smith, and F. Healy eds., pp. 140-148. Oxbow Books, Oxford.

Neolithic Upper Ninepence site, England. Use-wear reflects formation processes. Pits with Grooved Ware have lithics with variety of domestic activities, pits with Peterborough Ware mostly hide processing; both show other wear probably from primary discard in houses.

Donahue, Randolph E., Michael L. Murphy, and Lawrence H. Robbins
2004 Lithic Microwear Analysis of Middle Stone Age Artifacts from White Paintings Rock Shelter, Botswana. *Journal of Field Archaeology* 29 (1+2): 155-163.

Kalahari, Later and Mid Stone Age deposits 7 m deep. Sampled 78 artifacts, 15 show usewear, on meat, maybe fish, bone, hide, and wood. Untanged MSA points - 5 of 10 show impact damage. Broad pt could cause large wound, remain in prey, probably thrown spear rather than thrust. Consistent with large mammal faunal remains.

Dönmez, Ahmet and W.C. Brice
1951 A Flint Blade Workshop near Gaziantep, South Turkey. *Man* 51(125): 76-77.

Undatable site – threshing sledge blades? Keeled cores, lame a crête techniq

Donta, Christopher L.
2006 Michaud-Neponset-Phase Finds from Canton, Massachusetts. *Current Research in the Pleistocene* 23:93-94.

Dorwin, John T.
1966 *Fluted Points and Late-Pleistocene Geochronology in Indiana*. Indiana Historical Society, Indianapolis.

Dothager, Myrtle May
1989 Flint Knapper's Dream. *Chips* 1(3):14.

Douglas, Matthew J., Simon Holdaway, Patricia Fanning, and Thomas Windes
2008 An Assessment and Archaeological Application of Cortex Measurement in Lithic Assemblages. *American Antiquity* 73 (3):513-526.

Dove, Michael R.
The Transition from Stone to Steel in the Prehistoric Swidden Agricultural Technology of the Kantu' of Kalimantan, Indonesia.

Doyle, James A.
2012 Regroup on 'E-Groups': Monumentality and Early Centers in the Middle Preclassic Maya Lowlands. *Latin American Antiquity*23(4):355-379.

El Palmar - pyramid fill includes layer of early biface debitage: plaza could have been work area, deposit may have symbolic significance. [doesn't cite our El P]

Dragoo, Don W.
1975 The Trimmed-Core Tradition in Asiatic-American Contents. In *Lithic Technology: Making and Using Stone Tools*, E Swanson, ed., pp. 145-158. The Hague: Mouton.

[Unconvincing effort to track cobble tools and large core tools across world, would like to claim pre-Clovis but can't]

Drake, Eric, Charles R. Cobb, and Brian M. Butler
2005 Diversity Indices and Intrasite Variability at at Mississippian Hoe Workshop. In *The Cultural Landscape of Prehistoric Mines*. P. Topping and M. Lynott eds., pp.155-170. Oxbow Books, Oxford.

Draper, Neale
1985 Back to the Drawing Board: A Simplified Approach to Assemblage Variability in the Early Paleolithic. *World Archaeology* 17(1): 4-19.

Druart, Chloe
2010 Production and function of stone arrowheads in the Mycenean civilization: A technomorphological and functional approach. In *Lithic Technology in Metal Using Societies*, B. V. Eriksen ed., pp. 143-155. Arhus, Arhus University Press.

Mycenean lithics are abundant, including points. Study of 650 arrowheads, mostly triangular/ovate with hollow bases and barbs. Some from shaft graves at Mycenae. [No decent drawing or any photographs]. 30-40% of obsidian, but geographically variable. Fine bifacial parallel pressure flaking. Weigh 1.8 to mean of .8 grams - very light, very thin and fragile. Hafting would cover barbs and flake patterning. Not as functional as some more robust points [not described] or bronze arrowheads. No residues, so maybe never hafted or really used, also not broken in funerary contexts.

DuBois, Gaylord
2009 *Turok, Son of Stone*, vol 1. Dark Horse Books, Milwaukie.

Comic, compiled issues from 1954-1956. Two 'Mandan' Indian lads get lost in caves near Carlsbad, NM, and find lost worlds inhabited by cavemen, dinosaurs, and other prehistoric dangers. Pretty silly stuff. Dino pics lifted recognizably from Charles Knight illustrations and Zallinger murals in Peabody. The heros are dressed in stereotyped Plains garb, carry bows and arrows and spears and axes, supposedly stone, but no attempt is made to depict them accurately or even in any detail.

Dubuc, M. and J. Nichols
1978 "An Experiment in Recovery" *Flintknappers' Exchange* 1(1):7-8.

Duke, Daron

2015 Haskett spear weaponry and protein-residue evidence of proboscidean hunting in the Great Salt Lake Desert, Utah. *PaleoAmerica* 1(1):109-112.

Western Stemmed Tradition points, surface sites and isolated finds, loosely assoc with ‘black mat’ bulk organic dates 13-12,000 cal BP. Lanceolate, ground stem edges, rounded base, broad collateral flaking, up to 23 cm long. Fine grained volcanics preferred to obsidian. Bending fractures, impact fractures, reworking. Antiserum tests on one specimen, multiple animals negative, elephant positive. Form and size consistent with throwing/thrusting spear. A second point tradition oriente toward proboscidean hunting contemp with Clovis? Or later, contemp with Agate Basin/bison, but with late survival of mammoth?

Dumont, John V.
1987 Mount Sandel Microwear: A Preliminary Report. In *The Human Uses of Flint and Chert*, G. Sieveking and M. Newcomer, eds., pp. 97-110. Cambridge: Cambridge University Press.

Dunbar, James S.
1991 Resource Orientation of Clovis and Suwannee Age Paleoindian Sites in Florida. In *Clovis: Origins and Adaptations*, edited by R. Bonnichsen and K. Turnmire, pp. 185-213. Center for the Study of the First Americans, Corvallis.

Dunbar, James S. and C. Andrew Hemmings
2004 Florida Paleoindian Points and Knives. In *New Perspectives on the First Americans*. B. T. Lepper and R. Bonnichsen, eds., pp. 65-72. Center for the Study of the First Americans, College Station, TX.

Dunbar, James S., C. Andrew Hemmings, Pamela K. Vojnovski, S. David Webb, and William M. Stanton
2005 The Ryan/Harley Site 8Je1004: A Suwannee Point Site in the Wacissa River, North Florida. In *Paleoamerican Origins: Beyond Clovis*, edited by R. Bonnichsen, B. Lepper, D. Stanford, and M. Waters, pp. 81-96. Center for the Study of the First Americans, Texas A+M University, College Station, Texas.

Suwannee pts = waisted basally thinned lanceolates, “middle-Paleoindian,” prob evolved from Clovis predecessor. Assoc with extinct fauna including mammoth prob dating 10,500 RCYBP, indicating SE megafauna survived longer than SW, where extinction prior to 11,000. Fragment of beveled mammoth ivory shaft or point. Lithic assemblage including points, preforms, tools, debitage. Bone too mineralized to date.

Dunnell, Robert C.
1978 Style and Function: A Fundamental Dichotomy. *American Antiquity* 43: 192-202.

Definitions of style

Dunnell, R.C. and P.T. McCutcheon
1994 Heat Treatment of Mill Creek and Dover Cherts on the Malden Plain, Southeast Missouri. *Journal of Archaeological Science* 21: 79-89.

Electron spin resonance = semi-quantitative measure of ht trt and temp, non-destructive. Hoe requirements – tough rock, in tabular form – limits sources. Not heated in manuf of hoes, but sometimes when recycled for less demanding use. ESR looking at formation and destruction of organic radicals, using microwaves. Hoe trade described – Mill Creek in S IL, Dover quarries in N TN. Cobb denies much occupational specialization, no manuf debris away from quarries. Mill Crk hoes begin ca. 1000 AD, Dover later, but dominates by 1350. Malden Plain has little good stone, so hoe frags and sharpening flakes were recycled.

Dybowski, Daniel
2006 Stone Projectile Point Replications: Research on Authentic and Fakes. *Bulletin of Primitive Technology* 32:89-91.

Dybowski, Daniel
2007 Experimental Archaeology in Europe: A Flintknappers' Travels to Germany and Denmark. *Bulletin of Primitive Technology* 33:87-90.

Oakland U Anthro grad, Stafford student. Collecting flint, visiting monuments, comments on emphasis on experimental archaeol in Europe.

Dybowsky, Daniel
2011 Bipolar Flakes: Crazy Methods for Primitive Practices. *Bulletin of Primitive Technology* 41:50-54.

Hohokam obsidian points made on S AZ sources, small "Apache tear" nodules of marekanite reduced by bipolar percussion. Rest anvil on sand or other soft surface, hold nodule between fingers, produces flat flakes suitable for pressure finish.

Eames, Frank
1915 The Fashioning of Flint. *Twenty-Seventh Annual Report of the Ontario Provincial Museum*, 1915, pp. 63-70. Toronto: A.T. Wilgress.

Fire and water knapping technique defended, uses as evid letter by Nagle (claims witnessed?) to Godsal, sent to Eames; Claims own success – "succeeded in forming a very fair specimen" argues against flaking by perc – can't remove flakes except from edges; analogy for fire and water in quarrying. [Might seem reasonable to the ignorant, but there's no evidence he did as claimed, and the "witness" is third hand hearsay. A fool or a fraud.] [Godsal was a prominent rancher in Canada, involved in setting up park system.] See Whittaker 2015.

Earls, Bo
2007 Back to the Basics: Some Words from a Decent Knapper. *Chips* 19(2):18-20.

Trials of a beginner, with good basic advice, origin of Utah Valley Knappers Association.

Easton, Charles
2004 (1911) The Soul of the Indian. In *The Mammoth Book of Native Americans*. Jon E. Lewis ed., pp. 363-417. Carroll and Graf Publishers, New York.

[A strangely Europeanized account of Sioux-based religion and stereotyped Indian philosophy by a Carlyle trained Sioux.] In the creation story, Little Boy Man fights the animals (led by Spider) for supremacy, using flint tipped arrows. "Our people have always claimed that the stone arrows which are found so generally throughout the country are the ones that the first man used in his battle with the animals. It is not recorded in our traditions, much less is it within the memory of our old men, that we have ever made or used similar arrow-heads. Some have tried to make use of them for shooting fish under water, but with little success, and they are absolutely useless with the Indian bow which was in use when America was discovered. It is possible that they were made by some pre-historic race who used much longer and stronger bows, and who were workers in stone, which our people were not. Their stone implements were merely natural boulders or flint chips, fitted with handles of rawhide or wood, except the pipes, which were carved from a species of stone which is soft when first quarried, and therefore easy to work with the most primitive tools. Practially all the flint arrowheads that we see in museums and elsewhere were picked up or ploughed up, while some have been dishonestly sold by trafficking Indians and others, embedded in trees and bones." (404-5). [A good demonstration that native peoples and traditions don't always provide accurate information!]

Eaton, Charles
2005 Hard-Hammer Edge-initiated Bending Fractures. *Chips* 18(1):20-21.

[Sent me his video of this] - biface thinning flake traits mostly from non-marginal fracture initiation on bifaces, hard hammer will do it as well as soft. [cf. Bradley 1978]

Eaton, Jack D.
1991 Tools of Ancient Maya Builders. In *Maya Stone Tools: Selected Papers from the Second Maya Lithic Conference*. T. R. Hester and H. J. Shafer eds, pp. 219-228. Prehistory Press, Madison.

Ebell, S. Biron
1988 The Dunn Site. *Plains Anthropologist* 33(122): 505-530.

Firstview [Eden] points. Uses flaking pattern variations to suggest 3 style groups. Sees some diff forms as results of sequential damage and reflaking.

Ebert, James I.
1979 An Ethnoarchaeological Approach to Reassessing the Meaning of Variability in Stone Tool Assemblages. In *Ethnoarcaheology: Implications of Ethnography for Archaeology*, C. Kramer, ed., pp. 59-74. Columbia University Press, New York.

Edens, C.
1999 The Chipped Stone Industry at Hacinebi: Technological Styles and Social Identity. *Paléorient* 25 (1): 23-33.

Uruk expansion 4th Mill BC – S. Mesop culture into N: migration or emulation? Chipped stone not elite, utilitarian, so less useful for displays and symbolic appropriation. Diffs between Late Chalcolithic and Uruk period "technological style" (patterned sequence of operations) of lithics, which are "passive markers of identity, the habitus of ethnicity". Flake tool industry crude, household. Blade industry = 15-20% total assemblage. Evidence of local production. Two techniques: Canaanean = large facetted plats w obtuse angles, lg bulbs, blades c 3 cm wide, lg blocky cores. Simple: small plain plats at lower angle, <2cm wide, conical cores, probably pressure flaked. Overlap but diff uses: Canaanean more often with gloss and bitumen = reaping + threshing. Bitumen preserves form of sickle on some, and they lack striations of threshing sledge use. Blades assoc w Uruk and LC pottery diff distribs of treatments, suggesting two diff social/ethinic groups. LC knappers made Canaanean blades which were used by Uruk group, implying specialist production for local exchange Uruk made only simple blades, and reversed and denticulated them, a habit of conservation from S no longer needed where material common in N. Both groups used sickles, implying movement of Uruk farmers, not just merchants. [see Otte et al 1990 for similar situation]

Edholm, Steven
1995 Making a Reduced Antler Flaker. *Bulletin of Primitive Technology* 10: 30-32.

Edmonds, Mark
1987 Rocks and Risk: Problems with Lithic Procurement Strategies. In *Lithic Analysis and Later British Prehistory: Some Problems and Approaches*, A.G. Brown and M.R. Edmonds, eds., pp. 155-180. *B.A.R. British Series* 162: Oxford.

Edmonds, Mark
1995 *Stone Tools and Society: Working Stone in Neolithic and Bronze Age Britain*. BT Batsford Ltd, London.

[Very nice well-written and well-illustrated book. Decidedly post-processual approach – social and symbolic aspects of later British stone tools are emphasized, especially themes of identity and authority, but Edmonds is rather weak in discussing technology and functional issues, and even seems rather disdainful of them. This leads to some silliness like the depiction of mines as more important symbolically than as sources of needed tools, and too many vague statements about stone tools symbolically representing ideas and people. Nevertheless, many good ideas and a good representative of the more interesting current British social archaeology.]

Edmonds, Mark
2014 n.d. Biographies and afterlives. In ?? volume related to Richard Bradley??

[excellent] Neolithic stone axes in Britain have 'afterlives' in recent times - excavated, collected by scholars and farmers, they get used as "pieces of places" and markers of identity, expressions of sophistication and prestige in 18-19 century collections, transformed from "thunder stones" to specimens affecting the development of archaeological science as they were recognized as tools similar to ethnographic items. Also exchanged between collectors and museums, reflecting important relationships and social connections, attempts to leave named legacy, just as in past some axes had 'biographies' and names and associations with known or mythological individuals. Evidence of such use in past, Neo axes in Bronze Age or I A burials. [good sources on changing ideas of science about axes, superstitions, fakes, past + prehistoric uses of past]

Edmonds, Mark, and Rose Ferraby
2014 *Stonework*. Group VI Press, [no location given].

Poem, illustrated with abstract woodcuts, attempting to evoke the experience of mining and knapping axe blanks at Langdale quarries.

Edmonds, Mark and Thomas, Julian
1987 The Archers: An Everyday Story of Country Folk. In *Lithic Analysis and Later British Prehistory: Some Problems and Approaches*, A.G. Brown and M.R. Edmonds, eds., pp. 187-198. *B.A.R. British Series* 162: Oxford.

Changing pts = change in warfare and symbolism. All assoc w/ males.

Edwards, Phillip C.
2007 A 14,000 Year-Old Hunter-Gatherer's Toolkit. *Antiquity* 81(314):865-876.

Wadi Hammeh, Natufian, Jordan. Cache of 36 objects: sickle, bone haft, 5 gazelle podial bones - bead blanks, 7 pebbles, 21 lunate flint proj pts, flint bladelet core. On floor of one of 2 oval huts, prob in bag, cal BC 12,000. Sickle of caprid horn core, split longitudinally, each piece grooved to accept 5 bladelets, then rejoined to make tool with 2 parallel cutting edges. One row of brown flint, one of grey. [Very odd- why split it? - and blades are on the exterior (convex) curvature of the horn core. Would this even work as sickle?] Many other sickles from site, but without bladelets, and loose bladelets with sickle sheen [but doesn't say if this one has it]. Is this kit for off-site use? Gender of activities - harvest, hunting, bead making, knapping - all one individ or multiple? Extra lunates for quick rehafting [or more likely already in points], either spear or arrow [doesn't consider atlatl]. One pebble is knapping tool. Damaged handle may be "percussor for transforming blades into lunates by pressure flaking" [which is at best terminological confusion!]

Eerkens, Jelmer W., Jeffrey Ferguson, Michael Glascock, Craig Skinner, and Sharon Waechter
2007 Reduction Strategies and Geochemical Characterization of Lithic Assemblages: A Comparison of Three Case Studies from Western North America. *American Antiquity* 72(3):585-597.

Bone Cave OR, Mohawk Valley and Sherwin Summit CA sites using different obsidian sources. Distance to source patterns and geochem compositions differ for assemblages of small flakes, large flakes, and tools. Small flakes and tools have greater source diversity and come further, lg flks from fewer + closer sources. Ignoring microdebitage may bias results of source analyses.

Egeland, Charles P.
2003 Carcass Processing Intensity and Cutmark Creation: An Experimental Approach. *Plains Anthropologist* 48 (184): 39-52.

Experiment butchering beef limbs with stone flakes. Number of strokes doesn't translate well to number of cutmarks, intensity of use of joints.

Egloff, M.
1987 Emmanchements du Néolithique à l'Age du Bronze dans les palafittes d'Auvernier (Lac de Neuchâtel). In *Le Main et l'Outil : Manches et emmanchements préhistoriques*, D. Strodeur, ed., pp. 229-245. Lyon : Maison de l'Orient.

[Haftings from the Neolithic to the Bronze Age in the Auvernier lake dwellings.]

Eigeland, Lotte
2007 Pride and Prejudice: Who Should Care About Non-flint Raw Material Procurement in Mesolithic Southeast Norway? *Lithic Technology* 32(1):39-49.

Gap between areas with tradition of reduction/chaine op analyses and those without, partly caused by lack of good stone sources producing clear sequences. In Norway, no good flint, late Meso axes of poorer basalt, diabase, etc look "crude." Experienced Danish knapper H Paulsen replic diabase axe, tough, need non-flint experience. Sites with competent non-flint axes + few mistakes = specialized axe production sites; site with variety of materials + many mistakes = testing unfamiliar stone.

Eisele, J.A., D.D. Fowler, G. Haynes, and R.A. Lewis
1995 Survival and Detection of Blood Residues on Stone Tools. *Antiquity* 69(262): 36-46.

Describes various methods. 159 tools from W Archaic sites in NV and OR immunoassayed to attempt blood species ID. Results "dissappointing:" 152 negatives, 7 possible reactions, all equivocal. Experiments with buried preservation of modern bloody tools showed no survival of immunologically meaningful blood residues, even under dry conditions less than a year.

Eiseley, Loren C.
1954 Man the Fire-Maker. *Scientific American* 191(3): 52-57.

Elgood, Robert
1995 *Firearms of the Islamic World in the Tareq Rajab Museum, Kuwait*. I.B. Taurus, London.

Nice, lots of pictures, relatively readable but the flood of dates and obscure names gets tiring. Organized by areas of the Muslim world. Many of the examples discussed to make points about development of arms are not in this museum and thus not illustrated. Collection also of course focused on fine decorated arms. Coverage stops with flintlocks, though later history in some areas is discussed. Little info on flints, and most specimens lack them. Does mention some sources of flint in India being used for guns.

Elkin, A.P.
1948 Pressure Flaking in the Northern Kimberley, Australia. *Man* 48(130): 110-.

Early recognition of importance of platform, platform grinding, describes making Kimberley pts by hammerstone percussion and pressure with wood, with photos of knapper.
Reducing rock to suitable flakes: "In the Victoria River region of the Northern Territory, flint is said to be used. To obtain it, a fire is made on the rock, after which water is thrown on the heated rock, causing flakes to come off." (110)[but ambiguous - breaking nodules, or quarrying?]

Elkin, Mike
2009 The Veleia Affair. *Archaeology* 62(5):18, 58-60, 65-66.

Recent excavations at Roman Veleia in Basque Spain by E. Gil recovered sherds with odd inscriptions, including misspelled names of emperors, Egyptian heiroglyphs and words, Basque words etc. Almost certainly fakes, although some physical tests suggested antiquity. Author of fraud unclear.

Ellen, Roy and Angela Muthana
2013 An Experimental Approach to Understanding the "Eolithic" Problem: Cultural Cognition and the Perception of Plausibly Anthropic Artifacts. *Lithic Technology* 38(2): 109-123.

Ellis, Christopher
1994 Miniature Early Paleo-Indian Stone Artifacts from the Parkhill, Ontario Site. *North American Archaeologist* 15(3): 253-267.

Miniature points and scraper, no use-wear, suggest ritual. 1 pt made on channel flake.

Ellis, Christopher
1997 Factors Influencing the Use of Stone Projectile Tips: An Ethnographic Perspective. In *Projectile Technology*, H. Knecht, ed., pp. 37-74. Plenum, NY.

Ethnog data >100 societies, variable quality on material of tips and uses. Factors influence cather than determine choice of material: stone more effective – used on large game, other (wood) used for small, stone more common in warfare. No evidence change form of stone pt for diff same of similar size, but some diffs in war vs game pts. Where spears important, light sprs tend to have stn pts because need to compensate for less weight, war sprs tend to be stn tip too. Stone better than even metal because: sharper, brittle-breakage cuts. Small game often hunted with non-stone blunt tips. Stn pts sometimes also used as knives. Bamboo less breakable, longer sharp edges, preferred some areas. Poisons probably not real effective – widely used with and without stone, not replace it. Fragility of stn pt may help effects, but makes projectile less maintainable and reliable, so stone less used in repeated thrust spear hunting – sees other circumstances in exceptions – e.g. use slate or basalt, use for show or single attack. [Good article, nice compilation of ethnog data, good consideration of many +/- factors in use of stone tips and alternatives]

Ellis, Christopher and James H. Payne
1995 Estimating Failure Rates in Fluting Based on Archaeological Data: Examples from NE North America. *Journal of Field Archaeology* 22(4): 459-474.

Uses various counts of fluting flakes to biface ratio

Ellis, H. Holmes
1939 (1965) *Flint-Working Techniques of the American Indians: An Experimental Study*. Reprint. Ohio Historical Society, Columbus, 1965.

[A classic, still of great value.] Early experimentation, includes many techniques – eg shoulder crutch later familiarized by Crabtree. Much ethnog ref, Ellis tried to replicate all techniques described in ethnographic literature. [Couldn't make some things work because didn't understand platforms. Someone should examine his specimens.] p 42-43 dismisses fire and water knapping, mentions experiments [but give no details, and can't quite bring himself to say it's impossible]. Notes that Eames, Godsal, and Nagle who claimed it were all working together [to create a hoax?]. Use in quarrying.

Ellis, H. Holmes
1940 A Study of the Oklahoma Eccentric Flints. *Ohio State Archaeological and Historical Quarterly* 49(2):120-127.

Tussinger's work shown to be fake; supposed circumstances described.

Elston, Robert
2008 Tosawihi Quarries and Sacred Sites. In *The Great Basin: People and Places in Ancient Times*, Catherine S. Fowler and Don D. Fowler, eds., pp. 54-59. School for Advanced Research Press, Santa Fe.

N Great Basin, NV. Volcanic tuff replaced by chalcedony to form chert. BLM land. Shoshoni, Tosawhihi = "white knife." RE excavated as mining destroyed sites. Chert source of identity, spiritual qualities, protecting, healing, hunt + war power. Widely traded in ethno + arch time. Tool caches owned, not taken by others, also avoid old points because someone owns them, perhaps shaman or Coyote. Quarry work with hammerstone, antler/bone tools, fire. Experimental work-time estimates. Biface blanks were goal. Tosawihi oral trad says both men + women knapped. Knapping was valued skill, competitions and betting, women more competitive than men and more dependent on use of knives, had female destructive power while menstruating. [But this is no doubt from moderns who don't knap or remember those who did.] Current use of "pointed tools" of white chert in piercing skin for Sun Dance.

Elston, Robert G.
2005 Flaked and Battered Stone Artifacts pp. 92-119
2005 Lithic Assemblage Variability pp. 120-135
In Schmitt, Dave N. and David B. Madsen, eds. *Camels Back Cave*. University of Utah Anthropological Papers 125. U of Utah Press, Salt Lake City.

Stratified rock shelter with Fremont and Archaic material, good point series. Lots of obsidian use, Topaz Mt source, small nodules. Only obsid and chert for later pts, also basalt and quartzite in early layers. Debitage analysis.181 pts and frags. Only 12 intact. Bending fract, impact, rejuvenation

Elston, Robert, and P. Jeffrey Brantingham
2002 Microlithic Technology in Northern Asia: A Risk-Minimizing Strategy of the Late Paleolithic and Early Holocene. In *Thinking Small: Global Perspectives on Microlithization*, edited by Robert Elston and Steven L. Kuhn, Archeological Papers of the American Anthropological Association 12, pp. 103-116.

Elston, Robert, and Steven L. Kuhn, eds
2002 *Thinking Small: Global Perspectives on Microlithization*. Archeological Papers of the American Anthropological Association 12.

Emerson, Thomas E., R. E. Hughes, M. R. Hynes, and S. U. Wisseman
2003 The Sourcing and Interpretation of Cahokia-Style Figurines in the Trans-Mississippi South and Southeast. *American Antiquity* 68 (2): 287-313.

Red flint-clay from near Cahokia, [claystone] of interlocking kaolinite crystals w conchoidal fracture. Spiro and other figures are same source as Cahokia ones. Significance, distribution, and movement discussed.

Emery, K. O.
1980 The Geology of the Gun Spall. In *Colonial Frontier Guns*, T.M. Hamilton ed., pp. 148-153. The Fur Press, Chadron, NB. Reprinted 1987, Pioneer Press, Union City, TN.

Emy, Jean, and Bernard de Tinguy
1964 *Histoire de la Pierre à Fusil*. Musée de la Pierre à Fusil, Meusnes, Loir-et-Cher, France.

French gunflints.

Engelbrecht, William
2014 Unnotched Triangular Points on Village Sites. *American Antiquity* 79(2):353-367.

Madison points in NY proto-historic Iroquois area nucleated sites. Eaton site, Iroquoian village of mid-16 C, excav 12 m of palisade, parts 3 longhouses, midden areas.
"on village sites where only triangular unnotched points, must have been used for both war and hunting" so try to test for both. "Stone points break easily" p 360 [not exactly true]. If war, should be all around houses (volleys of arrows attested ethnohist) and at palisade, but actually more in houses and in 'middens'. [However, the palisade sample is actually too small, and the whole site has been plowed, these are mostly from plowsoil, so while general patterns may have survived, they may not have, and the 'midden' areas in his plots do not show high point density] Hunting as well as war sees value of detachable points - recoverable shafts. Calculates a huge possible deer consumption for his pop est of some 445 people, which would require even more points than the est for entire site (given ca 12% excav with 2115 points recovered). [I agree with his conclusion: probably hunting deer, not warfare, explains most of high density of points in site. Did they have metal points or firearms? Apparently not, no mention.]

Enloe, James G.
2010 Refitting Bones: Negative Evidence, Site Structure, and Social Organization. *Lithic Technology* 34(1):63-71.

Entwistle, Roy, and Julian Richards
1987 The Geochemical and Geophysical Properties of Lithic Scatters. In *Lithic Analysis and Later British Prehistory: some problems and approaches*, A.G. Brown and M.R. Edmonds, eds., pp. 19-38. B.A.R. British Series 162: Oxford.

Epstein, Jeremiah F.
1979 Flint Technology and the Heating of Stone. In *Early Technologies: Invited Lectures on the Middle East at the University of Texas at Austin*, D. Schmandt-Besserat, ed., pp. 27-38. Malibu: Undena Publications.

Summarizes work of others – ok but nothing new

Eren, Metin I.
2006 The Paleo Crossing (33-ME-274) Non-Projectile Point Biface Assemblage. *Current Research in the Pleistocene* 23:95-97.

Eren, Metin I.
2014 Review of From the Yenisei to the Yukon: Interpreting Lithic Assemblage Variability in Late Pleistocene/Early Holocene Beringia, edited by Ted Boebel and Ian Buvit. *Lithic Technology* 39(1):70-71.

Eren, Metin I., and Bruce A. Bradley
2009 Experimental Evaluation of the Levallois "Core Shape Maintenance" Hypothesis. *Lithic Technology* 34(2):119-125.

Eren, Metin I., Bruce A. Bradley, and C. Garth Sampson

2011 Middle Paleolithic Skill Level and the Individual Knapper: An Experiment. *American Antiquity* 76(2):229-251.

Look for individ by separating learner from skilled knapper products. Compared 100 Levallois core reductions by intermediate knapper to 25 by highly skilled instructor. Measures: total stone used in initial core prep; consumption from upper + lower surfaces; symetry of first detached L flake; failure rate by overshoot. These do discriminate, but 30% misclassified. "Learning trajectory is more complex than mere honing of skills through practice" and punctuated by increasing numbers of good reductions, making it hard to discriminate. Need personal markers other than just skill level to find individuals. [That should be obvious, but otherwise good experiment].

Eren, Metin I., Mark Kollecker, Christopher Clarkson, and Bruce Bradley
2011 Dynamic Approaches to Teaching Lithic Technology: Using YouTube in the Classroom. *Ethnoarchaeology* 2(2):223-234.

Potential teaching use, ethical considerations, some gaps (ie emphasis on MesoAm blades and espec biface manufacture, lack of Paleolithic examples). Archy's could tailor toward education and science with more experimental approach.

Eren, Metin I., Robert J. Patten, Michael J. O'Brien, and David Meltzer
2013 Refuting the technological cornerstone of the Ice-Age Atlantic crossing hypothesis. *Journal of Archaeological Science* 40:2934-2941.

Overshot flaking is largely accidental and inconsistent, thus just "a convergence in the use of the same simple solution for thinning bifaces that produces analogous debitage." Patten + Eren made Clovis size bifaces, thinned intentionally by overshot to test supposed efficiency of technique. Exper examples were more efficient and much more common than limited sample of overshot from C sites. 39 bifaces, 666 thinning flakes that crossed median of piece - 17% overshot, but overshots do not contribute more to thinning than other btf. 'Ultrashot' (pass median to close to opposite edge without removing it) flakes more effic than overshot. The few specimens of os flakes from Gault removed more edge W than the exper examples, thus more likely accidental, thus can't support os as C strategy. Actually os is not common or in similar frequency on either C or S assemblages. Now Stanford +Bradley want to use pre-Clovis sites to bridge the 5000 yr gap between C and S, but the few pre-C sites are of disputed age, and lack much evidence of overshot.

Eren, Metin I., Robert J. Patten, Michael O'Brien & David J. Meltzer
2014 More on the Rumor of "Intentional Overshot Flaking" and the Purported Ice-Age Atlantic Crossing. *Lithic Technology* 39(1):55-63.

Reply to Lohse, Collins, and Bradley 2014

Eren, Metin I., Matthew T. Boulanger, and Michael J. O'Brien

2015 The *Cinmar* Discovery and the Proposed Pre-Late Glacial Maximum Occupation of North America. *Journal of Archaeological Science: Reports* http://dx.doi.org/10.1016/j.jasrep.2015.03.001

Bipointed biface dredged up 1970 from continental shelf, along with mastodon bones dating 22,760 + 90 RCYBP (2000 yrs before reported Solutrean anyway), used as evidence of Solutrean hypothesis of Stanford and Bradley. Inconsistent accounts of discovery, location not really known, only info from Capt Shawn 40 yrs after find. Contradictory accounts of Cinmar scallop dredge - actually large and powerful, thus likely to collect mixed haul from long transect. Thus no reason to believe connection between biface and dated bone, or even find spot of biface.

Erickson, John R.
2004 *Discovery at Flint Springs*. Viking Penguin, New York.

Youth novel. Two boys and their mother on a Depression era ranch assist archaeologists and foil looters. Well-written and reasonably amusing. The archaeology is accurate enough, and the “discovery” is evidence, rather than a fabulous find. It is only jarring to an archaeologist that techniques, information, and especially attitudes have been transplanted from the 1990s back to the setting in 1927 Texas. Erickson knows this (author’s note), and to be fair, it enables parts of the story and allows him to educate young readers.

Ericson, Jonathon E.
1977a Prehistoric Exchange Systems in California: The results of obsidian dating and tracing. PhD dissertation, UCLA. University Microfilms, Ann Arbor.

Ericson, Jonathon E.
1977b Egalitarian Exchange Systems in California: A Preliminary View. In *Exchange Systems in Prehistory*, Timothy Earle and J.E. Ericson, eds., pp. 109-126. New York: Academic Press.

Ericson, Jonathon E.
1978 Obsidian Hydration Dating in California. *Society for California Archaeology Occasional Papers in Method and Theory in California Archaeology* No. 2: 44-52.

Discusses different models and problems with hydration rate

Ericson, Jonathon E.
1981 Exchange and Production Systems in Californian Prehistory: The Results of Hydration Dating and Chemical Characterization of Obsidian Sources. *British Archaeological Reports, International Series* 110.

Cite for sourcing, cited in Hughes 1986

Ericson, Jonathon E.

1976 Prehistoric Obsidian in CA II: Geologic and Geographic Aspects. In *Advances in Obsidian Glass Studies*, RE Taylor, ed., pp. 218-240. Noyes Press: Park Ridge.

Reviews structure and location of sources, gives eruption dates for some; More sources than Jack.

Ericson, J.E., J.D. MacKenzie, and R. Berger
1976 Physics and Chemistry of the Hydration Process in Obsidians I: Theoretical Implications. In *Advances in Obsidian Glass Studies*, RE Taylor, ed., pp. 25-45. Noyes Press: Park Ridge.

Diffusion of water into SiO2 leads to [to me] complex bonding - $\underline{=}$ Si – O – Si $\underline{=}$ + water = 2 $\underline{=}$ Si-OH.
Alkali in glass (Li, Na, K) increases viscosity and causes more bonded OH (there are also free OH groups). Rhyolitic obsid – acid igneous rock family – obsidian is glass, rhyolite is finely grained, granite coarse. > 10% modal quartz, alkali feldspars (sodium and K): total feldspars ratio >66%, Magma viscous, impeding crystalization, extrudes at temp 600 – 800 degrees C, mechanism prob expansion of dissolved gasses, water; Many flows' surface is pumice, then vesicular glass, then nonvesic glass. Most water driven off, leaves .1-.3 wt % which only driven off by > 800 degrees C. Water content affects hydration. Perlite is hydration product with 2-5 wt % water.

Ericson, Jonathon E. and Barbara A. Purdy, eds.
1984 *Prehistoric Quarries and Lithic Production*. Cambridge University Press: Cambridge.

Eriksen, Berit Valentine
2010 Flint Working in the Danish Bronze Age: The decline and fall of a master craft. In *Lithic Technology in Metal Using Societies*, B. V. Eriksen ed., pp. 81-93. Arhus, Arhus University Press.

differing degrees of specialization, decreasing through time

Erlandson, Jon M.
2013 After Clovis-First Collapsed: Reimagining the Peopling of the Americas. In *Paleoamerican Odyssey*. Kelly E. Graf, Caroline v. Ketron and Michael R. Waters ed., pp. 127-132. Tops Printing, Inc., Texas

Erlandson, Jon M., Torben C. Rick, Todd J. Braje, Molly Casperson, Brendan Culleton, Brian Fulfrost, Tracy Garcia, Daniel A. Guthrie, Nicholas Jew, Douglas J. Kennett, Madonna L. Moss, Leslie Reeder, Craig Skinner, Jack Watts, and Lauren Willis
2011 Paleoindian Seafaring, Maritime Technologies, and Coastal Foraging on California's Channel Islands. *Science* 331: 1181-1185.

Early sites, contemporary with Clovis/Folsom, 13000-11000 cal BP. One exploiting birds, other a shell midden. Variable Paleo adaptations. Small Channel Island Barbed points assoc with bird and perhaps fish or sea mammal hunt, also Amol pts (unbarbed, serrated version of these stemmed forms) and finely worked crescents, abraded bone tools and sawn pc of ochre. Very different from inland fluted point traditions, link to Western Pluvial Lakes Tradition inland, and NE Asia and Pacific NW, to stemmed pt tradition of S America. [news coverage suggests without attribution that the small points could be arrow points, meaning earlier bow.]

Escobedo, James T. Jr
1979 Excavations at Operation 2002: Lithic Workshop and Plazuela Group. In *The Colha Project 1979: A Collection of Interim Papers*. T. R. Hester ed., pp. 118-125. University of Texas, San Antonio.

Escobedo, James T. Jr.
1980 Excavations at Operation 2008. In *The Colha Project Second Season, 1980 Interim Report*, T. R. Hester, J. D. Eaton, H. J. Shafer eds., pp. 105-120. Center for Archaeological Research, University of Texas, San Antonio.

A housemound in a plazuela complex. Floors of packed cobbles covered with 10-15 cm limestone rubble and lithic debris (as much as 85%), then 5-10 cm marl plaster finished with lime.

Escobedo, James T. Jr.
1980 Notes on Test Excavations at Operation 4026: A Debitage Mound. In *The Colha Project Second Season, 1980 Interim Report*, T. R. Hester, J. D. Eaton, H. J. Shafer eds., pp. 221-224. Center for Archaeological Research, University of Texas, San Antonio.

Deb mound 4 m diam, test 2 x 2 m. Low platform at base covered over 1 m deep with debitage from tranchet, bifaces, and high concentration of blades. A few sherds, L Classic.

Esin, Ufuk, and Savaş Harmankaya
1999 Aşıklı. In *Neolithic in Turkey: The Cradle of Civilization, New Discoveries*. Edited by Mehmet Özdoğan and Nezih Başgelen, pp. 115-132. Arkeoliji ve Sanat Yayinlari, Istanbul.

Tell on Melendiz R., salvage for dam, pre-pottery Neo [apparently earlier than Catal Huyuk]. Three levels, 16 m deep, L1 plowed up, L3 little exposed, areal excav of Level 2 (multi building phases) densely packed mudbrick houses mostly one-room, with stone built "temple" and partial enclosure wall. Obsidian industry naviform cores making blades on site, material from Kayırlı and Nenenzi near Göllü Dağ. Scrapers on thick flakes, arrowheads on the blades, microliths on tiny blades from core prep.

Estes, Rose
1987 *Saga of the Lost Lands I: Blood of the Tiger*. Bantam Books, New York.
1988 *Saga of the Lost Lands II: Brother to the Lion*. Bantam Books, New York.

1988 *Saga of the Lost Lands III: Spirit of the Hawk*. Bantam Books, New York.

Novel. In Pleistocene America, Emri, displaced son of the Tiger Clan chief, rescues Hawk, a boy of the despised Toad Clan, from lions, and is expelled from his home by the evil shaman. Together the heroes face the boringly predictable dangers of a tooth and claw, man against nature vision of prehistory. Writing is competent but uninspired, and Estes hasn't bothered to learn anything about early American prehistory or hunter-gatherer peoples. Emri's tribe keeps domestic goats (not native to N. Am.), the heroes tame a lion cub and are taken in by a pride of lions, the technology and woodcraft are vague and inaccurate, there is a long but incoherent and incorrect description of knapping p 166-169, etc etc. The first of these was all I could stand to read.

Evans, Christopher
2009 Small Agencies and Great Consequences: Darwin's Archaeology. *Antiquity* 83(320):475-488.

Darwin had archy friends, espec Lubbock, and corresp with many, but developed Origins and ideas with little archy support, although began to incorporate evidence of early man as went along. Interest in worms led to recognition of archy implications - rapid burial of objects, sinking of stones at Stonehenge, did some digging to demonstrate, worm molds in Roman floors.

Evans, Arthur J.
1887 On the Flint-Knapper's Art in Albania. *Journal of the Anthropological Institute of Great Britain and Ireland* 16: 65-68.

Strike-a-lights and flint holders, bifacial gun flints, iron hammer knapping.

Evans, Sir John
1866 On the Worked Flints of Presigny le Grand. *Archaeologia* 40:381-388.

Evans, Sir John
1872 *The Ancient Stone Implements, Weapons, and Ornaments of Great Britain*. Longman, Green, Reader, and Dyer, London. [original]

Celts as thunderbolts p 50-58. Chapter 2, 13-49 = On the Manufacture of Stone Implements in Prehistoric Times. Methods of manufacture of stone tools best seen in gunflint manuf, still ongoing at Brandon. Formerly also at Icklingham in Suffolk, and small numbers at Catton, near Norwich. Brandon 1868 had 20 workmen, exporting to Africa. In 1890, 35 workmen. Flint fire struck before iron by using pyrite. Flint strike-a-lights still for sale in UK, France, Germany. Brandon still makes, export to East and Brazil. Gunflint manuf probably "a modification and extension of a pre-existing art" i.e. strike-a-lights and facing stone for buildings "which reached great perfection at an early period." Basic process described. Flint core with flakes replaced on it (Figure 2) [but no gunflint figs]. His own experiments show can do same as metal knapping hammer with rounded pebble; Nilsson also. Brandon knappers can make 16000-18000 gunflints in a week.

Torquemada on Mexican blades by 'sudden pressure.' Tyler and Catlin describe use of bone wedge [indirect percussion]. Evans tried small pebbles as punches. Baines account of Eskimo. Livre de beurre cores from France show the necessity of forming a 'backbone' for a long flake, this ridge "regulates the course of the fissure by which the flake is dislodged from the parent flint." British axes made by percussion, but Danish probably used punch. Grimes Graves briefly described, and other mines. p 33 more of his experiments, shaping a flake to a scraper by percussion on a rest. Nice figures of Eskimaux pressure flakers. Belcher, Peale, other accounts paraphrased. He can do pressure shaping, but "the method of producing the even fluting, like ripple-marks, by detaching parallel splinters uniform in size, and extending almost across the surface of a lance- or arrow-head, is at present a mystery to me." Grinding, sawing, boring. [NO mention of fire and water at this time].

Evans, Sir John
1897 *The Ancient Stone Implements, Weapons, and Ornaments of Great Britain*, 2nd edition. London: Longman, Green, and Co. [reprint]

Successive stages of civilization: Stone, Bronze, Iron ages. Religion + superstition often preserve old forms: stone tools used in Egypt, Israel in rituals of embalming, circumcision. Methods of manufacture [some differences from 19872] of stone tools best seen in gunflint manuf, still ongoing at Brandon. Formerly also at Icklingham in Suffolk, and small numbers at Catton, near Norwich. Brandon 1868 had 20 workmen, exporting to Africa. In 1890, 35 workmen. Flint fire struck before iron by using pyrite. Flint strike-a-lights still for sale in UK, France, Germany. Brandon still makes, export to East and Brazil. Gunflint manuf probably "a modification and extension of a pre-existing art" i.e. strike-a-lights and facing stone for buildings "which reached great perfection at an early period." [His discussion of Brandon gunflint manuf is very similar to that in Stevens (Wyatt 1870)]. Basic process described. Flint core with flakes replaced on it (Figure) [but no gunflint figs]. Other early archs have done this [refitting] with Paleolithic and Egyptian implements. Brandon knappers can make 300-1500 gunflints in a day. Albanian gunflint figure – "shows great skill in surface flaking" [i.e. it is bifacial].

Personal experiments – a hand-held pebble works as well as steel hammer to make flakes. Prehistoric hammerstones found in flaking sites. Very small cores may have been flaked with punch as in Mexico, accounts of Aztec pressure blades. Ethnographic accounts of knapping in N. Am, Australia. Presigny cores shaped to make long flakes. Greenwell's excavations at Grimes Graves. Scrapers – personal experiment making with hammerstone. Arrowhead making – pressure flaking. Nice figures of Eskimo flakers. Cushing claimed in 1875 to be first civilized man to flake arrowhead with horn tools "but I had already done so 1868." Personal experiments with flake as flaking tool, and bone, with arrowhead resting on wood. Fine surface chipping as on Danish daggers is a "mystery" but appears to be done after grinding. Grinding and drilling processes for axes etc.

P 56- folk belief of celts as thunderbolts. Medical uses, prevent cattle disease, purifying water, protection against lightning. Belief all over Europe, also in Asia – Japan and China, Burma, etc, also Africa. Egyptian celt with Greek inscriptions. Some European scholars maintained that axes are thunderbolts long after obvious that they were man-made. Then lengthy sections on different types of stone tools, lots of figures, including hafted specimens from various sources.

p261: If long in use, the sides of the blade become rather polished by wear... If the flake has been used for scraping a surface ... of bone or wood, the edge will be found to wear away, by minute portions chipping off nearly at right angles to the scraping edge... varying in accordance with the amount of pressure used and the material scraped..." [Earliest recognition of use-wear?]

P 284 flakes in Roman sites – probably from tribulum. Figure of threshing sledge from Aleppo in Christy collection.

Evans, Robert K.
1978 Early Craft Specialization: An Example from the Balkan Chalcolithic. In *Social Archaeology: Beyond Subsistence and Dating*, C. Redman, et al., eds., pp. 113-124. New York: Academic Press.

Not bad definitions of specialists and discussion of expected phenomena

Fagan, Brian M.
2005 Ancient North America: The Archaeology of a Continent., 4th ed. Thames and Hudson Ltd, New York.

[An excellent textbook, but the lithic illustrations are rotten, vague and generalized, and not shaded correctly.]

Fagan, John L.
1985 Experimental Archaeology and Public Involvement: A Case Study. In *Stone Tool Analysis: Essays in Honor of Don E. Crabtree*, M. Plew, J. Woods, and M. Pavesic, eds., pp. 166-186. Albuquerque: University of New Mexico.

Building replica Chinook cedar-plank house

Falconer, Steven and Bonnie Magness
1981 The Tell El-Hayyat Project: Research Proposal. MS

Falconer, Steven and Bonnie Magness-Gardiner
1989 Bronze Age Village Life in the Jordan Valley: Archaeological Investigations at Tell el-Hayyat and Tell Abu en-Ni'aj. *National Geographic Research* 5(3): 335-347.

Falkenstrom, Per
2006 A Matter of Choice: Social Implications of Raw Material Variability. In *Skilled Production and Social Reproduction*. Jan Apel and Kjel Knutsson eds., pp. 347-360. Societas Archaeologica Upsaliensis, Uppsala.

Farrand, William R.
2005 Review of Pendejo Cave, by MacNeish and Libby. *Kiva* 70 (3): 309-315.

Meticulous excav, small cave facing N, dolomite bedrock, many strata, C14 350 - >55,000 BP. Exotic rock even in lowest Zone O older than 55k. Rock fall in cave not adequately

analyzed for climate info, some artifacts may not be artifacts. Zone C Archaic, Zone C1 Clovis [presumably Clovis age, no Clovis type artifacts]. Human hair dates 19,800 BP in Zone E, DNA differs from any N. Am. groups. Fingerprints on baked clay, Zones C2, C1, and K, 12,400-35,900 BP. Figurine, may be bird, fingerprinted, 12,970 BP. Stone tools in all levels, (but numbers low) with use-wear, would fit Old World Paleolithic assemblages. Modified bones, including horse phalanx with embedded wedge "point", >37,000 BP. Most edible parts emphasized. Possible hearths with unidentified wood. Perishable artifacts, mostly in C Archaic, but a few in C1 Clovis and C2 pre-Clovis Zones. Should accept hypothesis of humans before 37-55,000. [Review is critical of some details but largely naïve and accepting - on surface Pendejo sounds good, but I remember the pitiful, embarrassing, presentation at SAAs - the most obvious garbage - hair ID was uncertain, fingerprints only visible with imagination, bone point unclear and probably natural, improbable tool assemblages with no diagnostics, etc etc. I don't buy this one for a minute. It's just one more of MacNeish's mistakes in looking for pre-Clovis. An embarrassment to US archaeology.]

Farmer, Malcolm F.
1994 The Origins of Weapons Systems. *Current Anthropology* 35(5):679-681.

Origins of bow in late Paleolithic or Mesolithic, but what is precursor?
Spearthrowers in archaeology by Magdalenian, similar mechanics of spring and flexing projectile. Atlatl weights serve to time separation of dart from thrower [This is not correct, nor does atlatl flex do much; atlatl and bow work by totally different principles.].
Similar distributions of early bow and spear thrower: NW Africa, W Europe, Mid E, so probably both originated in Maghreb, where spearthrower appeared in Aterian Culture 40,000 b.p. [no evidence offered, dubious conclusion - Aterian has stemmed projectile points, but no evidence of atlatl]

Farnsworth, Kenneth B.
1973 An Archaeological Survey of the Macoupin Valley. *Illinois State Museum Reports of Investigations No. 26*.

Faulkner, Alaric
1972 Mechanical Principles of Flintworking. PhD dissertation, Washington State University. Ann Arbor : University Microfilms.

Faulkner, Alaric
1984 Examining Chipped Stone Tools. *Wisconsin Archaeologist* 65: 307-332.

Low-level summary for amateurs.

Faulkner, Alaric
1986 Maintenance and Fabrication at Fort Pentagoet 1635-1654: Products of an Acadian Armorer's Workshop. *Historical Archaeology* 20(1):63-94.

Maine, French trade fort, Pentagoet I 1635-54, English neglect 1654-70, return to Fr 1670 (Pent III), burned by Dutch raid 1674. Excav in 1980s. Interior structures include 3 room Workshop (later Barracks) with armorer's living room, shop with forge, storage room. Iron debris shows versatile smith, lots of axe head repair, straps, wedges, saws. Firearm maintenance includes lock parts for wheellock, snaphance, and flintlock guns, including making internal parts like sears, and repairing splitting barrels [suggesting not high quality guns]. Knapping – gunflint debris, flake refuse and simple cores of grey flint [source not mentioned – European?] and spall type gunflints of same. Later levels produced imported blade type flints of blond flint, so Fr blade manuf began by PIII 1670 though some later Fr sites like Michilimackinac (1715-1760) have mostly gunspall type flints. Lead shot and balls. Lacking evidence of horse gear (expensive, and boat travel more efficient), armor (except a couple sword parts, not useful and obsolete with guns), and traps (Indians engaged in fur trade used spears and arrows with Euro metal points, though English had traps by 1650s).

Faulkner, Charles H.
1961 *An Archaeological Survey of Marshall County*. Indiana Historical Bureau, Indianapolis.

Fauntleroy, Gussie
2012 To the Point: Flint Knapping and Stone Technology. *Native Peoples* Nov/Dec 2012: 28-33.

Interviewed me for contacts and arch background. Profiles Ron Kennedy (Cherokee/Cree, claims learned from uncle who learned from gt-gdfa), Don Chavarria (E. Pueblos), Paul Fourhorns Tenoso (Lakota, good quotes, inspired by prayer + dream), Dale Cannon (Potawatomi/Cherokee art knapper). Names 11 others, including Mike He Crow, Cliff Carney, Stan "Spirit of the Rock" Piersa, others I don't know. Nice article, silly photo of buff model holding point, photos pts by profiled knappers.

Fauvelle, Mikael, Erin M. Smith, Sean B. Brown, and Mathew R. Des Lauriers
2012 Asphaltum Hafting and projectile point durability: an experimental comparison of three hafting methods. *Journal of Archaeological Science* 39:2802-2809.

Ethno analogs from California: 1) Sinew cross hatched 2) Adhesive at base 3) "to-the-tip" asphaltum adhesive. Authors knapped 60 triangular obsid pts, 15 each hafting, on short wooden foreshafts. La Brea asphaltum tempered with agave charcoal. Aluminum arrows, 30 lb fiberglass bow. "Composite animal target": pig skin covering side of pig ribs, backed by camping pads, pinned to hay bale – easily disassembled after each shot. Points shot until they broke. 20/45 broke on first shot. Tip fractures most common.To-tip hafting lasted best, average 3.3 shots before breakage (at base adhesive 2.5, sinew 1.8). Statistically significant [but still small sample]. To-tip mostly tip breaks, sinew hafted more likely midsection breaks, so to-tip more durable, and more reworkable if break. Cottonwood Triangular pts worked with all haftings but may have been intended for adhesive hafting. Sinew hafting more convenient in field. Asphaltum trade and symbolic value may have affected use.

Fawcett, William B., Jr.
1980 Projectile Point Variability in Late Prehistoric Sites on the Northwestern Plains. Unpublished MA Thesis, Dept. of Anthropology, University of Wyoming.

Tries simple classif of flk scar patterns that mostly agrees with what I found for R handed knappers. [Rather shallow and simplistic]

Fawcett, William B.
1998 Chronology and Projectile Point Neck-Width: An Idaho Example. *North American Archaeologist* 19(1): 59-86.

Typology/cross dating has problems – accuracy, require whole pts, foster appearance of stasis within periods and then sudden change. Single variable – neck width change over time, only partly bow vs atlatl. Decrease in neckwidth (and general pt size) may result from economizing raw material as populations grow. Published data from C14 dated sites. Multimodal distrib of NW – 12 mm, 7-10 mm, 14-16 mm, expect <10 mm = arrow. Sites dating last centuries BC to first AD tend to have bimodal distrib, suggesting long coexistence 2500-1500 BP. Derives a formula from regression to calc age in yrs from neck width [but looks to me like there's too much variability for this to be reliable, just like Naroll's floor space idea] Types tested with this formula fall into correct order [but again much variability].

Feder, Kenneth L.
1981 Waste Not, Want Not – Differential Lithic Utilization and Efficiency of Use. *North American Archaeologist* 2(3): 193-205.

Efficiency and value of material, diff use as distance and value increase. Measure efficiency as size (weight) of flake, % of edge used. Effic index = % use/weight for different materials. Results fit model [probably right, but lots of uncontrolled variables]

Fedick, Scott
1991 Chert Tool Production and Consumption among Classic Period Maya Households. In *Maya Stone Tools: Selected Papers from the Second Maya Lithic Conference*. T. R. Hester and H. J. Shafer eds, pp. 103-118. Prehistory Press, Madison.

Debitage from 12 hshlds btwn Tikal and Yaxha. Test models: Distance Decay – T + Y as central places, close sites involved in late stage reduction, farther make own tools and have more early stages. Density Dependent – pop density at centers might dwindle resources, lead to high curation and recycle, thus pop centers more late stages than sparse pop areas. Social Hierarchy – higher hshlds (more labor measured by mound size) have more access to preformed or finished tools, lower have more early stages.

8911 pc deb from 23 pits in 13 residential units, Mid PreC to Term Classic. Weight, cortex, flake plan area, scars/area, thinness, and variance used to assess early or late stage manuf. Random sample 100 pc per site. Rank order sites in terms of early or late reduction by average of above measures. Also used 3 grades of chert quality.

Pooled reduction stage data not correlated with social distance, correlated with distance from center and density of occup. Distance decay best – early stages most prevalent at households far from centers. [Actually his graph shows strong correlation among all variables if sites grouped – top 4 sites for close to center, labor invest, density of pop, and late reduction are almost all same – high status with little knapping. After that, less order, but a middle group in proximity has low labor, low density, and early reduction – suggests low status knappers mod close to center. But of course this is all so highly abstracted and distant from data it's hard to tell.] Centers as redistrib of some local goods, but not as centers of production. "Polit econ of C Maya based on organiz of exchange in situation of dispersed residence and production, rather than centralized control of production."

Feinman, Gary M., Linda M. Nicholas, and Helen R. Haines
2006 Socioeconomic Inequality and the Consumption of Chipped Stone at El Palmillo, Oaxaca, Mexico. *Latin American Antiquity* 17(2):151-176.

Status differences within site - better quality stone assoc with other markers.

Fenenga, Franklin
1953 The Weights of Chipped Stone Points: A Clue to their Functions. *Southwest Journal of Anthropology* 9: 309-323.

Weighed 884 pts, mostly CA sites, found bimodality: small pt tradition, <3.49 gm = arrow, late site; large pt tradition, >4.5 gm = atlatl, earlier sites. Only 3.7% fell between

Fenn, Forrest
2001 The Infamous Woody Blackwell Fakes. *Prehistoric American* 35(1):40-41.

Nice color photo of 12 pts, claims he paid $150,000. Obvious similarity to Drake Cache in Smithsonian, and supposed find spot similar. Fenn mostly just wants to boast: "W claimed I was an easy mark. I got my money back, exposed his fraud, and kept all 12 pts. Some mark!"

Ferguson, Jacqueline A. and Robert E. Warren
1992 Chert Resources of Northern Illinois: Discriminant Analysis and an Identification Key. *Illinois Archaeology* 4(1): 1-37.

Ferguson, Jeffrey R.
2003 An Experimental Test of the Conservation of Raw Material in Flintknapping Skill Acquisition. *Lithic Technology* 28(2): 113-131.

"Embedded learning" uses novices for parts of sequence they can do, while training them, and would be a way of conserving raw material. Experiments with students each making 30 obsidian points. Group I instructed and supervised only, Group II "embedded learning" - JF fixed their problems and did much of difficult work on early points as they learned. GI usually broken or too thick, GII usually successful point. GI 2/4 knappers self-sufficient at end, GII 3/4, and showed more improvement. [But some inherent ability or lack is shown in his small sample too.] Children lack basic strength for some skills and may be excluded from using valuable material. [Good experiment + discussion, and useful to consider in training student knappers.]

Ferguson, Jeffrey R.
2008 The When, Where, and How of Novices in Craft Production. *Journal of Archaeogical Method and Theory* 15:51-57.

Now calls embedded learning "scaffolding," summarizes experiment and main points of 2003. Factors influencing novice participation in craft: raw material access and value, raw material recyclability, danger, child's physical and mental development level – real young kids just not strong enough to knap. [Good article, good experiment].

Fewkes, Jesse Walter
1911 Antiquities of the Mesa Verde National Park: Cliff Palace. Smithsonian Institution Bureau of American Ethnology Bulletin 51. Washington, Government Printing Office.

Cliff Palace report. plate 20 hafted full grooved axe

Fiedel, Stuart J.
2005 Rapid Clovis Colonization of the Americas: Chronological Evidence and Archaeological Analogues. In *Paleoamerican Origins: Beyond Clovis,* edited by R. Bonnichsen, B. Lepper, D. Stanford, and M. Waters, pp. 81-96. Center for the Study of the First Americans, Texas A+M University, College Station, Texas.

Clovis colonization in 600 yrs or less (ca 13,500-12,9000 cal YBP), replacing any pre-C folk [he seems skeptical of early sites]. Thule Inuit replacement of Dorset between 900-1050 is analogous, showing fast colonization possible.

Fiedorczuk, Jan, Bodil Bratlund, Else Kolstrup, and Romuald Schild
2007 Late Magdalenian Feminine Flint Plaquettes from Poland. *Antiquity* 81 (311): 97-105.

Site of Wilczyce, probably camp alongside icewedge water source, artifacts preserved in wedge cast. Typical Late Magdalenian artifacts including perforated fox teeth necklace, bone needles and beveled points, dates 15,300 cal BP. Very simple sihouette outlines of buttock and headless body, done by abrupt retouch as on tools, but no wear, equivalent to ivory and bone examples from site and elsewhere. Earliest anthropomorphic eccentrics in flaked stone.

Field, David
2005 Eighteenth and Nineteenth Century Gunflint Mines at Brandon, England, and their Implications for Prehistoric Mining in Europe. In *The Cultural Landscape of Prehistoric Mines*. P. Topping and M. Lynott eds., pp.171-180. Oxbow Books, Oxford.

Compares Lingheath gunflint mines to nearby Neolithic Grimes Graves [interesting but conclusions are arguable.] L more widely spaced as result of mining laws, GG tightly packed with no protection of each mine's effort, implies communal work [or long time with no record keeping, or free competition, or simply no rules] GG larger shafts require more workers and reflects Neolithic complexity.

Field, David
2005 Excavations at the Cissbury Flint Mines during the 1950s: An Interview with Ken Suckling. In *The Cultural Landscape of Prehistoric Mines*. P. Topping and M. Lynott eds., pp.198-214. Oxbow Books, Oxford.

Field, David
2011 Neolithic ground axe-heads and monuments in Wessex. In *Stone Axe Studies III*. Vin Davis and Mark Edmonds, ed., pp. 325-332. Oxbow Books, Oxford.

Figgins, J.D.
1927 The Antiquity of Man in America. *Natural History* 27(3): 229-239.

Recounts earlier TX find of bison w/ paleo points [looks Folsom, but Xerox so dark I can't really tell] and one other NM find. Describes first finds at Folsom – 2 pts w/ bones = 3rd instance. Plus rept of sim w/ mammoth sources in OK – describes quarry stratigraphy. What may be fluted pt w/ mammoth, also a later looking pt and metates, [but out of gravel context so assoc w/ mammoth poor]

Figgins, J.D.
1934 Folsom and Yuma Artifacts. *Proceedings of the Colorado Museum of Natural History* 13(2): 2-6, plate I and II.

F&Y definitely different, can't establish relative ages yet. Crits Cook 1931; describes F pts [pretty much as we know it] and variations; Yuma different [thin diagonal parallel pressure flaking much finer than Folsom.] 4 glacial advance/retreat sequence unlikely – not enough time. "Climate drove bison and mammoth S and resulted in extinction" - also Folsom, since not assoc w/ modern fauna

Figgins, J.D.
1935 Folsom and Yuma Artifacts Part II. *Proceedings of the Colorado Museum of Natural History* 14(2): 2-7, plates 1-5.

Def of "Yuma" too vague, too much variation to understand relation to Folsom [that was plainly the question at the time] Evidence does not support view that Folsom developed from Yuma. Most Yumas were knives, many are reworked, none assoc w/ extinct mammals, so no way to est age other than comparative. Frederick City OK find probably a hoax. Persistent traits of F and Y: squared and parallel edges or taper from base in Yuma vs. concave base and mid width max for F; Y – fine "side chipping" extends across, F – fluted but not similar side chipping [he means fine retouch]. Y- grinding on bases, some on

F. Y – thin, or 2nd type w/ diamond x-sect, with large alternate flakes instead of fine parallel flakes. Conclude – Yuma not related to F, probably later.

Findlow, Frank J. and Marisa Bolognese
1980 An Initial Examination of Prehistoric Obsidian Exchange in Hidalgo County New Mexico. *The Kiva* 45(3): 227-252. [same as 1982]

Findlow, Frank J. and Marisa Bolognese
1982 A Preliminary Analysis of Prehistoric Obsidian Use within the Mogollon Area. In *Mogollon Archaeology: Proceedings of the 1980 Mogollon Conference*, ed. P. Beckett, pp. 297-316.

2 New Mexico sources, fall off models, suggest change from direct access to down-the-line trade after AD 700, closer to 1150.

Findlow, Frank J. and Marisa Bolognese
1982 Regional Modeling of Obsidian Procurement in the American Southwest. In *Contexts for Prehistoric Exchange*, edited by J.E. Ericson and T.K. Earle, pp. 53-81. Academic Press, NY.

Finlay, Nyree
1997 Kid Knapping: The Missing Children in Lithic Analysis. In *Invisible People and Processes: Writing Gender and Childhood into European Archaeology*. J. Moore and E. Scott, eds., pp. 203-212. Leicester University Press, London.

Retouched tools are priviledged by arch and assumed male; women expected to make only simple expedient tools. Children assoc w crude or small tools, but no real info on how or when children acquire knapping skills. Previous studies of arch child knapping (Pigeot, Bodu, Fischer) all assume male knappers. Access to lithic knowledge likely to change thru life-span. Learning expectable at resource-rich sites. Mesolithic Coulererarch, Islay, Hebrides, Scotland – flawed material and badly worked pieces among assemblage near sources – children are one explanation. [This is also a situation with small cobble material likely to produce poor knapping, but no site details. OK theoretical discussion, good refs].

Finlay, Nyree
2006 Manifesting Microliths: Insights and Strategies from Experimental Replication. In *Skilled Production and Social Reproduction*. Jan Apel and Kjel Knutsson eds., pp. 299-314. Societas Archaeologica Upsaliensis, Uppsala.

Finlayson, Bill and Steve Mithen
1997 The Microwear and Morphology of Microliths from Gleann Mor. In *Projectile Technology*, H. Knecht, ed., pp. 107-129. Plenum, NY.

Tiny island site 10 m diam dense lithic scatter, no organics, date 7-8000 B.P.
30,000 pc stone, mostly knap debris, prob short term, possibly hunt camp. Continuous variability in microlith form with a few clusters. Did consistency tests in classification.

High and low microscopy – 280 microliths, 120 suitable, of which 74 no sign of use. Motion – 15 longitudinal, 6 transverse, 6 rotary (boring). No traces of projectile use. “Microliths are not a single function tool form and do not equate with hunting.” No consistent assoc of form with wear, so probably little meaning to “types”

Fischer, Anders
1985 *På Jagt med Stenalder-Våben*. Lejre: Historisk-Arkaeologisk Forsøgscenter.

Hunting with stone age weapons…in Danish; illust experiments with stone tip arrows, wounds, breakage

Fischer, A.
1990 On Being a Pupil of a Flintknapper of 11,000 Years Ago. In *The Big Puzzle: International Symposium on Refitting Stone Artifacts.* E. Cziesla, S. Eickhoff, N. Arts, and D. Winter eds, pp. 447-464. Holos Verlag, Bonn.

Trollesgave, Late Glacial, [epipaleolithic?] Denmark. Debitage in 2 concentrations around stone seat; differ in core prep and quality of blades, interp as teacher and child.

Fischer, Anders, Peter Vemming Hanson, and Peter Rasmussen
1984 Macro and Micro Wear Traces on Lithic Projectile Points: Experimental Results and Prehistoric Examples. *Journal of Danish Archaeology* 3: 19-46.

Tests w/ transverse arrowhds and Brommian blade pts at Lejre. Carcasses of sheep, pig, pike, and trees, soil, reeds. Freq of diagnostic fractures ca. 40%, mostly bending and related fractures, often with “spinoff” fract [=2ndary compression]. Micro polish and striations – from contact with detached chips of pt

Fishel, Richard L.
2005 The Gill Site (23RY102): An Early Woodland Encampment in Northwest Missouri. *Journal of the Iowa Archeological Society* 52(2):1-19.

Near Kansas City. Lithics Burlington Chert 65%, local Westerville and Winterset cherts, bit of KRF. Most heated, most small flakes. Contracting stem Dickson or Waubesa points. 2240± 40 BP = 360-260 B.C. cal, Fishing River Phase.

Fishel, Robert L.
2003 Lithics. In The Archaic Occupations of the Allen Fan Site (13HA385) in the Iowa Valley of Central Iowa., R. Fishel, R. Mandel, J. Collins, M. Dunne eds. *Plains Anthropologist* 48 (185): 31-56.

Fisher, Daniel C.; Lepper, Bradley T.; and Hodge, Paul E.
1991 Taphonomic Analysis of the Burning Tree Mastodont. *Current Research in the Pleistocene* 8:88-92.

Fisher, Daniel C.
2004 Mastodons, Mammoths, and Humans in the North American Mid-continent. In *New Perspectives on the First Americans*. B. T. Lepper and R. Bonnichsen, eds., pp. 81-86. Center for the Study of the First Americans, College Station, TX.

Subaqueous caching of meat, experiments. Preserves well first winter, but by spring becomes more acidic, accumulates CO_2, floats. Result from coloniszation by lactobacilli which inhibit pathogenic bacteria without compromising human use.

Fitzpatrick, A. P.
2002 'The Amesbury Archer': a well-furnished Early Bronze Age burial in southern England. *Antiquity* 76 (293): 629-630.

Wrist guard, bone pin, copper knife, 2 Beakers, boars tusks, gold earings,other artifacts, 15 barbed and tanged arrowheads [photo of points].

Fitzpatrick, Andrew
2004 The Boscombe Bowmen: Builders of Stonehenge? *Current Archaeology* 193: 10-16.

Unusual mass burial with 3 adult M, 1 teen M, 3 children, 8 Beakers, bone toggle, boar tusk, 5 barb and tang pts. Individs prob related, dates contemp w Stonehenge, dental isotopes show origin prob Preseli area, source area for bluestones. "Amesbury Archer" from continental Euro, his "Companion" and other Stonehenge area burials are local.

Flannery, Kent V. ed.
1976 *The Early Mesoamerican Village*. New York: Academic Press.

Fleckinger, Angelika, and Hubert Steiner
1999 *The Fascination of the Neolithic: The Iceman*. Bolzano: Folio Verlag.

Large picture book in German, Italian, and English, excellent detailed color photos of Iceman finds, brief text descriptions. His knapping appears mediocre: the small knife and two arrow points are bifacial, rather unsystematically flaked and not very symetrical, and the knife hafting is crude. Flint blade apparently is just held in with sinew, although the axe has birch pitch as well as hide. His belt pouch contained a crude drill, a flake [not pictured] and a scraper made on a thick blade that apparently shows traces of pyrite [not found] and was a fire striker used with fungus also in the pouch. Pressure tool of fire-hardened stag antler inserted into wooden "pencil," also rather crude.

Experiments showed the axe to be perfectly functional, not just wealth object.

Quiver: chamois, hair outside, hazel rod stiffener. Twelve unfinished shafts of viburnum with notches for points, and two complete arrows with stone points and radial fletching, self nocks. Fletching (3) attached with birch tar and lashing. Bow of yew, 1.82 m long, "clearly unfinished, not yet functional…ends lack the necessary chucks to attach the loops of the string." [A straight self-bow/long bow. Not enough photos - surface shows tool marks, perhaps axe as suggested, but is not smoothed, but not all bows have nocks for string, so I am not sure it really is unfinished.] [Published before the arrowhead in his back was noticed.]

Fleckinger, Angelika, and Hubert Steiner
2000 *The Iceman*. Bolzano: Folio Verlag.

Shortened version of above, most of same English text, smaller format, smaller photos, mostly same, but some others, for instance sheath for flint knife. Refers to it as “Tisenjoch find.” Drawn x-ray view of the 2 flint points still on arrows shows both to be triangular or ovoid blades with long straight tang, neither very symmetrical or well flaked. Birch tar and string lashing. [Intro in both books ignores the disgustingly incompetent process of recovery by perhaps the stupidest forensic examiner on record, Henn, who failed to notice that the artifacts meant the body was prehistoric and damaged it severely. Even if it was modern, he shouldn’t have bungled the recovery as badly as the photos show.]

Flegenheimer, Nora
1995. The Hilltop of Cerro El Sombrero, Argentina, Revisited. *Current Research in the Pleistocene* 12: 11-13.

Flegenheimer, Nora
2001. Biface Transport in the Pampean Region, Argentina. *Current Research in the Pleistocene* 18: 21-2.

Flegenheimer, Nora
2003. Cerro El Sombrero, a locality with a view. In *Where the South Winds Blow. Ancient Evidence of Paleo South Americans*, ed. Laura Miotti, Mónica Salemme and Nora Flegenheimer., pp. 51-6. Texas: Center for the Study of the First Americans, Texas A&M University.

Flegenheimer, Nora, Laura Miotti, and Natalia Mazzia
2013 Rethinking Early Objects and Landscapes in the Southern Cone: Fishtail-Point Concentrations in the Pampas and Northern Patagonia. In *Paleoamerican Odyssey*. Kelly E. Graf, Caroline v. Ketron and Michael R. Waters ed., pp. 359-376. Tops Printing, Inc., Texas.

Fleming, Andrew
1995 St. Kilda: Stone tools, Dolerite Quarries, and Long-Term Survival. *Antiquity* 69 (262): 25-35.

Flenniken, J. Jeffrey
1978 Reevaluation of the Lindenmeier Folsom: A Replication Experiment in Lithic Technology. *American Antiquity* 43(3): 473-479.

Updates and criticizes Crabtree on manufacture of Folsom points, especially stages of preparation and fluting, offers alternatives, suggests efficiency measure.

Flenniken, J. Jeffrey
1981 Replicative Systems Analysis: A Model Applied to the Vein Quartz Artifacts from the Hoko River Site. *Washington State University Laboratory of Anthropology Reports of Investigations* No. 59, Pullman.

Good example of bipolar technique for small flake tools, simple split stick hafting, use for fish cleaning among others. [Concept of "replicative systems analysis" is largely an exaggerated assertion that replication is the only way to study stone tools, but correct in that the whole system should be explored, not just any part.]

Flenniken, J. Jeffrey
1984 The Past, Present, and Future of Flintknapping: An Anthropological Perspective. *Annual Review of Anthropology* 13:187-203.

[Rather arrogant and misguided, some useful info] More of his nonsense against morphological types. Excessively pushes replication as <u>the</u> way to study stone tools. Problems with using poorly skilled ethno informants. Distinctions between flintknappers, replicator, folk-knapper [garbled]. History – Ellis, Knowles, Pond, Crabtree.

Flenniken, J. Jeffrey
1985 Stone Tool Reduction Techniques as Cultural Markers. In *Stone Tool Analysis: Essays in Honor of Don E. Crabtree*, M.G. Plew, J.C. Woods, M.G. Pavesic, eds.; pp. 265-276. Albuquerque: UNM press.

Killed goats with atlatl darts, noted point breakage and morphological changes when he reworked points. From this he decides that point types are <u>not</u> valid cultural/temporal markers because they can be changed by reworking. [This is one of the dumber conclusions in the literature, see Thomas 1986. Repeated citations of this and F+R below are probably because this period of late 'New Archaeology' saw a lot of people disdainful of chronology and typology. However, there is some useful info buried in this paper]: high damage rate, often from animal motion, much damage to bases, supports "Frison effect."

Flenniken, Jeff and Errett Callahan
1978 Craftsman: Jeff Flenniken. *Flintknapper's Exchange* 1(3): 16-24.

Diff between replic and knapping; uses hammerstone for thinning rather than baton

Flenniken, J. Jeffrey, and Kenneth G. Hirth
2003 Handheld Prismatic Blade Manufacture in Mesoamerica. In *Mesoamerican Lithic Technology: Experimentation and Interpretation*, K. G. Hirth ed., pp. 98-107. University of Utah Press, Salt Lake City.

Flenniken, J. Jeffrey and Terry L. Ozbun
1988 Experimental Analysis of Plains Grooved Abraders. *Plains Anthropologist* 33(119): 37-52.

Discusses shaft abraders (paired), pointed tool sharpeners, knapping abraders. Info on knap abraders assumes long continuous consistent use

Flenniken, Jeff, L.W. Patterson, and Brian Hayden
1979 More on Staging. *Flintknapper's Exchange* 2(1):26.

Individual comments – JF pro staging, LWP cautious, BH negative

Flenniken, J. Jeffrey and Anan W. Raymond
1986 Morphological Projectile Point Typology: Replication Experimentation and Technological Analysis. *American Antiquity* 51(3): 603-614.

Sim to Flenniken 1985, well countered by Thomas 1986

Flenniken, Jeffrey, JB Sollberger, Gene Titmus
1981 Don Crabtree – Obituary. *Flintknapper's Exchange* 4(1).

Fletcher, Charles S.
1970 Escapable Errors in Employing Ethnohistory in Archaeology. *American Antiquity* 35(2): 209-213.

Comment on Crabtree (1968) blade article: C used faulty translation of Spanish account. Better translation changes methods a bit – feet held instead of vice, on ground with perhaps combined pressure and percussion tool [not entirely convincing either]

Flood, Josephine
1983 *Archaeology of the Dreamtime: The Story of Prehistoric Australia and Her People*. Sydney: Collins.

p. 188 use of glass insulators for flaking, other lithic technology discussed too. Kimberley pts, pirri pts. No knowledge of latter, "deemed to be of the Dreamtime."

Fogelman, Gary L.
1988 *Projectile Point Typology for Pennsylvania and the Northeast*. Turbotville: Fogelman Publishing Company.

Mediocre but extensive, poor drawings, good refs.

Fogelman, Gary L.
1988 Some Better Known Flints of Central and Eastern Pennsylvania. *Twentieth Century Lithics* 1:62-65.

Brief descriptions of several sources

Fogelman, Gary L.

1994 *An Identification and Price Guide for Indian Artifacts of the Northeast*. Fogelman Publishing Company, Turbotville.

Fogelman, Gary
1999 Too Good To Be True: The Woody Blackwell Clovis "Cache". *Indian Artifact Magazine* 18(3):8-9.

Fogelman, Gary L.
2001 Upper Mercer Chert. Ohio. Indian Artifaact Magazine 20(3):44.

Fogelman, Gary L.
2006 "Oh, That's Steve's Collection." *Indian Artifact Magazine* 25 (2): 11-13.

State Museum uncooperative as Fogelman and Stan Lantz attempt to compile Pennsylvania fluted point records.

Fogelman, Gary L.
2013 Paleo Odyssey Conference, Santa Fe, 2013. *Indian Artifact Magazine* 32(4):74-79.

Traveling with Gramly. Visit C. McNutt, laser light shows no diff on Sandia pts between surface and presumably doctored edges, McNutt thinks Lucy site confirms Sandia, and Frank Higgens [sic] was not 'up to shenanigans'. [Woody Blackwell]: 'Whom did I see but the person who tried to pull the big con on F Fenn with his made-up Clovis cache… The guy and others like him should be shunned, yet it is amazing how people fawn over him like he is a celebrity or something.' [GF is getting a bit mean-spirited here and elsewhere in his comments about archaeology too.]

Fogelman, Gary L.
2014 COA's (Certificate of Authenticity) Mostly Worthless. *Indian Artifact Magazine* 33(1):20-21.

There are still a few "…worthy people, trying to provide a service in an honest and forthright manner…but most you haven't heard of. The ones you have heard of, the ones with their names on everything floating around today?... The genre has been so polluted with fake papers, and fakes being papered, it's hard to wade through the mess." Same fakes appear again and again at different shows until sold, passed around by buyers who want to recoup their loss when they decide they bought a fake, etc. [Oh what a surprise!].

Fogelman, Gary
2014 Archaeological Ramblings. *Indian Artifact Magazine* 33(2):18-19.

Anzick Clovis Child Burial: genetically mapped, 80% of modern Indian population direct descendants of boy's family. But doesn't explain H2a variant in N Am but not in Eurasia, or E Coast dates older than Clovis. …"Scientific community is kow-towing to Native Americans on stuff that is thousands of years old. You can bet the natives will be picking up the genetic link factor and will begin saying they own everything! But this is

ridiculous… It doesn't seem very scientific to let people today dictate what happens with stuff thousands of years old, and to dictate what we can and cannot study, therefore what we can and cannot know. I guess there are plans to rebury the skeletal remains, another travesty. Sure glad that Ootzi wasn't found in the United States. He would have been summarily reburied…, yet look what the years and additional research have yielded by having the remains available for additional research. What more might we know if the handful of old skeletons that have been reburied were available to newer technologies? [The collectors aren't afraid to say the truth, but the archaeologists are. Pathetic but true].

Mal'ta Boy, Climate Caused Extinctions, Indiana – Another Overblown Raid, Montana – Overblown Raid Artifacts Returned, Florida – Overblown Raids, One Suicide. [In these of course he accepts the looters' tales that they are all sweet clean guys and victims.]

Market Report: PA auction saw Rutz Clovis Point, largest fluted point known to exist at 9 3/4" sold for $276,000, including 20% buyers premium. Largest sum ever paid for an item of chipped flint [obsidian]. Other top pieces: Cumberland point 3.88", TN, $26k, Cache of Turkey Tail points [no source info] 78,500. Pop-eyed birdstone, porphyry [no info] 110k, other bannerstones and birdstones 19-55k. "With prices like these you can see why some of the bottom feeding ilk that inhabit the lower regions of morality make and sell fakes." [So rare to see the collecting world admit it, and they never worry about the lack of provenience, which helps make the problem, or the looting these prices encourage too.]

Fogelman, Gary and Bob Berg
1998 Second Chance Boar. *Indian Artifact Magazine* 17(1): 30-31, 69.

Hunting a boar in NY preserve, GF, BB, and Chris Pappas; Efficiency of atlatl w/ stone pts, stone tool butchery; 2 misses, 3 hits at 5-15 yds to kill boar

Fogelman, Gary, and Stanley W. Lantz
2006 *The Pennsylvania Fluted Point Survey*. Fogelman Publishing Company, Turbotville, PA.

Attempts to document with photos and measurements all fluted points and some related artifacts in PA. Patterns of distribution and temporal change.

Folan, William J., Joel D. Gunn, and Maria del Rosario Dominguez Carrasco
2001 Triadic Temples, Central Plazas, and Dynastic Palaces: A Diachronic Analysis of the Royal Court Complex, Calakmul, Campeche, Mexico. In *Royal Courts of the Ancient Maya, Volume 2, Data and Case Studies*, edited by Takeshi Inomata and Stephen D. Houston, pp. 223-267. Westview Press, Boulder CO.

Palaces have evidence of domestic use - hearths, metates. Also storage, tool use, and some craft, including limited lithic production [altho details unclear - labels "tool production" and "flake reduction" areas on plans, but says mostly looks like use and maintenance]: "lithics the product of use rather than workshop production with one exceptional case...where several kg [24 kg] of flakes were recorded" p 239 [types not specified, nor products] Some "tool kits" suggested by multivariate analysis and functions suggested [but either vague or too specific for "kits" that are really statistical associations]

Interp as showing that some crafts, eg lithic, performed around lower levels of pyramid/palace complexes, presumably by attached specialists or supporting "production class" for "consumption class" who lived at top

Foley, Robert
1987 Hominid Species and Stone Tool Assemblages: How are they Related? *Antiquity* 61: 380-392.

Cladistics – hominid evol = series of adaptive radiations, multiple species or subsp w/ long geographic continuity. Tools similar – correlate w/ major geographic trends and morphological changes. Can treat as traits, imply behav more genetic encoded and less variable than moderns, because tools don't reflect ecol change. [Interesting, but perhaps too simplistic]

Foley, Robert and Marta Mirazon Lahr
2003 On Stony Ground: Lithic Technology, Human Evolution, and the Emergence of Culture. *Evolutionary Anthropology* 12 (3): 109-122.

Paleolithic. Adaptive + functional approach to stone tools vs phylogenetic + cultural marker approach (industries linked to particular hominids). Considering Clark's 5 modes cladistically (1 = chopping + flakes, 2 = handaxes, 3 = prepared core tech, 4 = blades, 5 = microliths). Technological transitions can be related to morphological/phylogenetic transitions.

Follari, Anthoni
1993 Pump-Drills: Their Design, Construction, and Attunement. *Bulletin of Primitive Technology* 1(6): 48-55.

Foradas, James G.
2003 Chemical Sourcing of Hopewell Bladelets: Implications for Building a Chert Database for Ohio. In *Written in Stone: The Multiple Dimensions of Lithic Analysis*. P. N. Kardulias and R. W. Yerkes, eds., pp.87-112. Lexington Books, Lanham.

Ford, Anabel
2004 Integration among Communities, Center, and Regions. In *The Ancient Maya of the Belize Valley: Half a Century of Archaeological Research*. James Garber ed., pp 238-256. University Press of Florida, Gainesville.

Ford, Anabel, and Kirsten Olson
1989 Aspects of Ancient Maya Household Economy:Variation in Chipped Stone Production and Consumption. *Research in Economic Anthropology Supplement 4, Prehistoric Maya Economies of Belize*. P. McAnany and B Isaac eds, pp. 185-211. JAI Press.

Survey transects around El Pilar, central Belize described. 3 chert quarries: Yaxox largest, in valley foothill zone, 2.5 km N of river, debitage density 1,541,600 pc/m3 [How can

anything be 3 times as dense as LDF? If this is the site we saw with AF 5/04, it is nothing like LDF anyway, although there is lots of debitage]
272-229 smaller, same zone, near Pilar, 1 km from river, deb density 6,994 pc/m3
Both using cobbles mined from local exposures
LDF at El Pilar "largest recorded in the area. Evidence of biface reduction over a 50 m2 area approx 60 cm thick, with debitage averaging 550,000 pc/m3"
Discusses her site size and labor estimate distributions over transects. No details on how labor est arrived at. [based on mound size]
Uses density per m3 as unit for comparison among excav sites – mean = 430/m3
range = 13-6994/m3 – much higher than Copan, much lower than Colha with 1-5mil/m3
Yaxox and LDF "approach 1 million/m3" [but data not given] [For our 2 sites:] 272-136 = 1231/m3 and 272-32 = 305/m3 [but how good can this data be – for 136, which units did she use? She does not include it as a site with biface failures, which it clearly has]

Then sampled each collection, size sort 1, 1/2, 1/4" for 42,966 flakes from 48 residential units, compared to debitage from CA exper bifaces, Mojave desert flake manuf, and Colha mixed biface and flake-blade production. Comp by size grade proportions. Shows LDF closest to CA exper biface prod., as are most of the other BRASS sites. [Probably roughly correct, but it's an odd manipulation of data, and much too simplistic – size ranges and proportions are affected by much more than desired product]

272-229 near Alta Vista seems to be producing bifaces also. Conclusions: household production variable. Most mixed strategy of flake and biface prod, but more emph on bifaces, no clear evid of primary flake production. 80% of resid units used and discarded tools, but 55% have such low deb density that they weren't producing them. At El P (upland center) little manuf in hshlds, but LDF. Valley sites have more evid of manuf – homogenous and self-sufficient – 50-60% w evid tool production

Ford, Steve
1987 Flint Scatters and Prehistoric Settlement Patterns in South Oxon and East Berks. In *Lithic Analysis and Later British Prehistory: Some problems and approaches,* A.G. Brown and M.R. Edmonds, eds.; pp. 101-136. B.A.R. British Series 162: Oxford.

Ford, Steve
1987 Chronological and Functional Aspects of Flint Assemblages. In *Lithic Analysis and Later British Prehistory: some problems and approaches*, A.G. Brown and M.R. Edmonds, eds., pp. 67-86. B.A.R. British Series 162: Oxford.

Ford, Stephen, Richard Bradley, John Hawkes, and Peter Fisher
1984 Flint-Working in the Metal Age. *Oxford Journal of Archaeology* 3:157-173.

Forde, C. Daryll
1931 Threshing Sledges in the Bosporous Region. *Man* 30: 144.

Forrest, A. J.
1983 *Masters of Flint*. Terrence Dalton Ltd., Lavenham, UK.

Gunflint makers; badly written but useful and detailed history

Foulds, Frederick W. F.
2013 The enigmatic handaxe: In search of idiosyncrasies in bifacial technology through three-dimensional form. In *Experimental Archaeology and Theory: recent approaches to testing archaeological hypotheses*. F.W.F. Foulds, ed., pp. 101-129. Oxbow Books, Oxford.

"Can we attribute these artifacts to the hominins who made them?" [Of course we can, what he means is can we identify individuals who made more than one specimen]. Early attempts to identify individuals [he cites Gunn but not me] were concerned with style and idiosyncracy, not social relationships [rubbish! Like too many post-processualists, combines jargon concepts with arrogant belief that their ideas are new, past archaeol is ignored or misunderstood.] Art and burial contexts reflect individuals and identity but are special; stone tools reflect common and habitual behavior. Refitting studies good but reflect only a moment in time, and have been used to focus on the group rather than the individual. P 108 If we can 'separate the individual's imprint from the other forms of variation seen in formal tools… the flow of relationships between individuals at sites… may be considered at greater depth, which will provide a broader picture of the exchange and enchainment of identity through material means." [He has confused himself by fixating on 'agency' and 'identity' and forgetting that tools were made to use, not just to express identity. It's hard to tell if he cares about looking at the wider society or not.] But can't do the above in Paleolithic sites "where the individuals who created the tools are unknown to us." So let's try an experiment with known knappers to "assess whether individuals' imprint can be seen in a tool… and traced across other tools and differentiated from the impressions of other actors." Looks at Gunn's ideas of where individ skill differences show [which aren't all good, and he doesn't use them in the end anyway], best seen in late stages of handaxe manuf.

Six knappers made 26 h-a, no restrictions on form, blind test with makers unknown to analyst. 3-D scans of faces analyzed as landscapes in GIS. [the images are very hard to read as stone tools] Principle component analyses of such things as slope and aspect in GIS [I guess aspect sort of reflects patterning in orientation of scars and slope reflects form of surface and abruptness of terminations?] "Shape of the h-a accounts for most of the variation, resulting in the imprint of the individ knapper being hidden." "Cluster analysis was unable to link the tools to their creators." Since his methods fail to identify individuals, because shape of the tool affects them more, he concludes that "the knapper's idiosyncrasies are hidden from the archaeologist's view, which makes tracing their imprint… nigh on impossible." [He even questions whether the knapper intentionally controls the form of the tool!] [Testing a method for id of individ knappers in Paleo h-a is good, but overall, just an example of current jargon and confused thinking, applying an elaborate but opaque methodology to the analysis, and arriving at a flawed conclusion when it doesn't work. No wonder he calls handaxes 'enigmatic.']

Fowke, Gerard
1895 Aboriginal Handicraft in Stone. *The Archaeologist (Ohio State Archaeological and Historical Society)* 3: 199-201 [+ incomplete]

How were stone tools made? Myth of "metal harder than todays" not true [no mention of fire and water myth]. Profusion of specimens = easy to make, primitive minds wasteful and thoughtless of tomorrow, or "superstition" or "childish petulance" if object fails in hunt. Pecking ground stone tools described, finish by polishing. Flint for flaking, mining described. Pressure flaking described [missing pages after 201].

Fowler, William
1991 Lithic Analysis as a Means of Processual Research in Southern Mesoamerica: A Review of Recent Research. In *Maya Stone Tools: Selected Papers from the Second Maya Lithic Conference*. T. R. Hester and H. J. Shafer eds, pp. 1-20. Prehistory Press, Madison.

Fox, Daniel E.
1979 The Lithic Artifacts of Indians at the Spanish Colonial Missions, San Antonio, Texas. *Center for Archaeological Research, University of Texas at San Antonio, Special Report No. 8.*

Fox, William A.
1984 Dhoukani Flake Blade Production in Cyprus. *Lithic Technology* 13(2): 62-68.

Ethnography – manuf, quarry, debitage

Fox W. A. and D. Pearlman
1987 Threshing sledge production in the Paphos District. *in*: D. W. Rupp (ed.), *Western Cyprus: Connections: An Archaeological Symposium*. Goteborg, Paul Astroms Forlag, p. 227-234.

Frahm, Ellery
2013 Is obsidian sourcing about geochemistry or archaeology: A reply to Speakman and Shackley. *Journal of Archaeological Science* 40:1444-1448.

"Contrary to their claims, HHpRF (portable) will improve reproducibility and archaeological results" and make more accessible.

Frahm, Ellery
2014 Characterizing obsidian sources with portable XRF: accuracy, reproducibility, and field relationships in a case study from Armenia. *Journal of Archaeological Science* 49:105-125.

PXRF just as good for characterizing sources as for sorting artifacts, compared in Pokr Arteni source. Resolves problem of excessive variability in previous studies: artifactual pieces, humanly transported, were analyzed as source specimens.

Frahm, Ellery, and Joshua M. Feinberg
2013 Empires and resources: Central Anatolian obsidian at Urkesh (Tell Mozan, Syria) during the Akkadian period. *Journal of Archaeological Science* 40:1122-1135.

Mesopotamian obsidian almost all from E Anatolian sources; central Anatolian sources supplied Levant and Anatolia. Tell Mozan in Khabur (Hurrian ethnic center under Akkadian empire) almost all EA sources, but now 3 artifacts in palace (ca 2260 BC) courtyard of Göllü Dağ obsidian from Kömürcü source on NE flank of mt. Known workshops there are Paleolithic to Chalcolithic; no BA wkshps known. Height of Akkadian power, obsid could come from connections for metal in Anatolia, or prestige gifts, or connections to pastoralists. 1/3 lithic assemblage = obsidian, rest local chert. Ad hoc flake tools, plus prismatic blades, geometric microliths, blade tools. 97/820 obsid artifacts exported for analysis; all debitage. Geochemical sourcing by electron microprobe and portable x-ray fluorescence to ID lava flow. Magnetic analysis distinguish between diff quarries in same flow; affected by diffs in cooling history of specific areas of a flow.

Frahm, Ellery, and Joshua M. Feinberg
2013 Environment and collapse: Eastern Anatolian obsidians at Urkesh (Tell Mozan, Syria) and the third-millenium Mesopotamian urban crisis. *Journal of Archaeological Science* 40:1866-1878.

Early to Mid Bronze Age transition - concurrence of aridification, de-urbanization, and end of Akkadian empire around 2200 BC. Sourced 97 obsid artifacts from Urkesh. Before crisis, 6 sources in E Anatolia - high diversity = cosmopolitan city, wide range of contacts or visitors. During crisis, only 2 sources, closest. Two to 3 centuries after, more sources used, but material from different collection spots.

Frank, F.C. and B.R. Lawn
1967 On the Theory of Hertzian Fracture. *Proceedings of the Royal Society of London, Series A* 299: 291-306.

Frank, Ted
1991 Edward Simpson, Alias 'Flint Jack'. *Flint Knapper's Exchange* 1(2):13-17.

Frank, Ted
1992 Flint Knapping Indirect Percussion. *Chips* 4(2): 8-9.

Describes how he invented his odd technique: punch is copper bar laid across his knees [essentially same story he told me at Ft Osage knap-in Fall 1991].

Frank, Ted
1992 Untitled Letter. *Chips* 4(2): 1.

Describes “rotary cup inflamation” shoulder injury attributed to flaking with “Ishi stick”.

Franco, Nora Vivianna, Alicia Castro, Natalia Cirigliano, Marilana Martucci and Austin Acevedo
2011 On cache recognition: An example from the area of the Chico River, Patagonia, Argentina. *Lithic Technology* 36(1):39-55.

82 artifacts, mostly mid stage bifaces, some unifacial tools. On surface, emanating from rock shelter.

Fraser, Thomas H.
1908 Touching Aboriginal History. *Sports Afield* 40: 67-69.

Fire and Water nutcase. Claims he owns a point – MicMac; claims watched Seri and gives detailed descrip. "possibility of implement of bone or horn making such marks upon a flint surface would be simply amazing". Debunks super strength AmInd archery sensibly [but must be a liar about the rest].

A more normative description of knapping that appeared in *Forest and Stream* "is at variance with the facts as known to this writer," and to criticize some exaggerated accounts of the power of Indian bows. His description of how knapping was really done is also worth quoting in its entirety:

"Some years ago, this writer was informed by Chief Paul, the head of a remnant of the Mic-mac tribe, resident on the northern coast of Nova Scotia, that in his grandfather's time, flint arrow-heads were made by the systematic application of fire and water, and I still have in my possession an arrow-head made according to the process described by him. As late as 1905, while on a trip through Sonora, Northwestern Mexico -- in a remote district inhabited by the Serin Indians -- I had the satisfaction of observing an artist of that sullen and unfriendly race fashion an arrow-head in the same manner as described by my old friend, the Mic-mac chief. These Indians still use the bow and arrow, and nothing else in hunting game, and the clever bow and arrow maker is an important personage among them. I watched this particular artist for several hours until he had completed an arrow-head that now reposes in my desk, and here is a description of the manner of his labor. Putting three small pieces of flint among the coals of a hot fire on the ground, he places a small stone basin within his reach; beside this are placed several straws or reeds of different sizes, together with a few smaller stems of native grass. Presently the first piece of flint placed in the fire is dragged out upon a flat stone by means of a hooked stick, and as the end of the larger straw or reed is dipped in the basin, it will be observed that a drop of water clings thereto; this is lightly touched to the thoroughly heated stone and a small chip flies from the surface. This performance is repeated with astonishing rapidity, until the stone refuses to respond to the touch, when it is returned to the fire, and the second stone is treated in the same way, the chips always flying fast and furious. As the work progresses and the stones are reduced in size and begin to assume the required shape, smaller straws are used, until the final pointing, sharpening, and smoothing is done with the small grasses that pick up a very tiny drop of water and safely remove a very diminutive chip. All the arrow-head that I have ever seen bear some evidence of this simple process. The little saucer-like declivities upon the surface indicate some such application, and the possibility of any implement of horn or bone making such marks upon a flint surface, would be simply amazing."

Frederick, Terry
1989a Archaeology and Flintknapping in a Stormy California Winter. *Chips* 1(1):8-9.

Frederick, Terry
1989b Ramblings from California. *Chips* 1(3):2.

"Free, Lance"
1994 Castile Knap-in. *Chips* 6(4):5.

Frere, John
1800 Account of Flint Weapons Discovered at Hoxne in Suffolk. *Archaeologia* 13: 204-205. Also in *The Archaeologist at Work: A Sourcebook in Archaeological Method and Interpretation*, R. Heizer, ed; pp. 216-218. New York: Harper and Row, 1959.

[Acheulean hand axes] 12" below surface w/ bones extinct fauna "weapons of war, fabricated and used by a people who had not the use of metals"… "the situation in which these weapons were found may tempt us to refer them to a very remote period indeed; even beyond that of the present world" found 1797, pub 1800, reprinted in 1959.

Freudenberg, Mechtild
2010 Stone Age or Bronze Age? Cushion Stones and Other Stone Tools Used for Early Metalworking in Schleswig-Holstein. In *Lithic Technology in Metal Using Societies*, B. V. Eriksen ed., pp. 25-32. Arhus, Arhus University Press.

appearance of stone metalworking tools in Neolithic signals beginnings of Bronze Age. Hammers, anvils. Elaborate flint imitations of metal tools.

Friedman, Irving, and William Long
1976 Hydration Rate of Obsidian. *Science* 191: 347-352.

Friedman, Irving, Robert C. Smith, and Donovan Clark
1970 Obsidian Dating. In *Science in Archaeology*, D. Brothwell and E. Higgs, eds., pp. 62-75. New York: Praeger Publishers.

Frieman, Catherine
2010 Imitation, Identity, and Comunication: The Presence and Problems of Skeumorphs in the Metal Ages . In *Lithic Technology in Metal Using Societies,* B. V. Eriksen ed., pp. 33-44 . Arhus, Arhus University Press.

Theoretical critique of imitative theories in context of Scandinavian bronze and stone daggers.

Friis-Hansen, Jan
1990 Mesolithic Cutting Arrows: Functional Analysis of Arrows Used in the Hunting of Large Game. *Antiquity* 64(244): 494-504.

Width is most important dimension – cuts shaft free for penetration. Cutting efficiency index based on width and penetrating ability, ratio of head width/shaft circumference = wound width; ratio cross-section of head/ cross-section of shaft indicates penetrating ability. Cutting arrows are just as effective as pointed arrowheads. Hafted arrows illustrated.

Frink, Lisa, Brian W. Hoffman, and Robert D. Shaw
2003 Ulu Knife Use in Western Alaska: A Comparative Ethnoarchaeological Study. Current Anthropology 44 (1): 116-122.

Salmon cutling exper using Alaskan women, slate us steel ulus, steel 3x more efficient.
Processing prob liroots catch
Refs to taboos against use of metal, pref for stone, and gendered tools

Frison, George C.
1968 A Functional Analysis of Certain Chipped Stone Tools. *American Antiquity* 33: 149-155.

Concept that reworking likely to change final form of stone tools = “Frison effect”; refitting sharpening flakes and broken tools

Frison, George C.
1978 *Prehistoric Hunters of the High Plains*. New York: Academic Press.

Detailed summaries of many sites, espec kill sites, including Paleoindian. Colby, Hanson, Agate Basin, Casper, Horner, Finley sites. Cultural chronology and projectile points. [Good point illustrations] Photos Late Archaic (200-500 AD) atlatl and foreshafts w corner notched pts from Spring Creek Cave. Comments on hunting and butchery with stone tools and bone expedient tools. Lots of experiments with stone points and foreshafts, but mostly with thrusting spears. [Atlatl experiments mentioned in passing, and he seems to feel that Paleoindian hunting would be with thrusting spears].

Frison, George C.
1982 A Probable PaleoIndian Flint Knapping Kit from the Medicine Lodge Creek Site 48BH499, Wyoming. *Lithic Technology* 11(1): 3-5.

Antler hammer, sandstone abrader, core, 2 flakes; red ochre lump. Red ochre associated with knapping at other PaleoInd sites.

Frison, George C.
1987 The Tool Assemblage, Unfinished Bifaces, and Stone Flaking Material Sources for the Horner Site. In *The Horner Site: Type Site of the Cody Cultural Complex,* G. Frison and L. Todd, eds., pp. 233-278. Orlando: Academic Press.

Frison, George C.
1989 Experimental Use of Clovis Weaponry and Tools on African Elephants. *American Antiquity* 54(4): 766-783.

Clovis points used on culled elephants, observations on hafting and effectiveness, herd behavior and strategy. Hafted on wooden foreshaft socketed into mainshaft, spear weight 358-432 grams [very heavy for atlatl - were they flexible or more like harpoon?], but

heavier got better penetration. Penetration ends when larger shaft reaches hole, so long foreshaft better, but longer breaks more easily. A taper to socket fit for foreshaft worked well if tight; shoulder + plug broke, taper + plug ok but hard to make. Sinew and pitch in slotted foreshaft held points well, tight fit reduces breakage. Hafting needs to be thin for entry; Clovis flutes help. Points survived remarkably long use, one of five did not break (12 shots), others damaged and repaired. Tip damage most common. *Rhus trilobata* atlatl, with groove and integral hook, 62 cm long, rigid, no weight, 225 gm. Claims "3 decades of experimentation with atlatl and dart," but reports problems with accuracy and trajectory in this experiment. [Wish he would write up his other atlatl experience.]
Atlatl thrown spear proved capable of inflicting mortal wounds on elephants: multiple successful hits, although lots that would not have killed too. Successful penetration of rib cage, 9-12 mm thick hide, into lung cavity at 15-20 m. Thrusting spear also successful. Hunter movement necessary in atlatl use might startle animal; other hunters to distract would help.
Butchering with biface thinning flakes. Main effort is cutting hide, quartzite more durable than chert. Dismembering is easy and may leave no marks on bone.
Elephant family groups are formidable; cooperative stalking of individuals most likely.

Frison, George C.
1991 *Prehistoric Hunters of the High Plains, Second Edition*. New York: Academic Press.

Some of same material as 1978, but different book. Includes more info on atlatls and weapons, stone tool chapter by Bruce Bradley. [Quality of production is disgraceful - line drawings and text slightly murky, photos look like something printed in 1950s India.] [See Kornfield, Frison, and Larson 2010 for 3rd edition.]

Frison, George C.
2004 *Survival By Hunting: Prehistoric Human Predators and Animal Prey*. University of California Press, Berkeley.

Plains area, Paleoindian to historic, all major animal species, behavioral and hunting technique discussions from experience as hunter, rancher, archaeologist. Info on experiments with atlatls, Clovis pts and culled elephants, butchering w stone tools. Stresses importance of knowing animal behavior for hunter and for arch trying to interpret past. It was easier to improve stalking and get close to animals, working with limitations of weapons than to make major technological improvements. Considers metal pts and tools major improvement over stone. Lots of animals taken in drive and trap systems.

Frison, George C. and Bruce A. Bradley
1980 *Folsom Tools and Technology at the Hanson Site, Wyoming*. Albuquerque: University of New Mexico Press.

Folsom pt manufacture. Radial fractures on bifaces used as tools.

Frison, George C. and Bruce A. Bradley
1981 Fluting Folsom Projectile Points: Archaeological Evidence. *Lithic Technology* 10(1): 13-16.

Elk antler tine from Agate Basin considered as part of lever fluting device.

Frison, George, and Bruce Bradley
1999 *The Fenn Cache: Clovis Weapons and Tools*. One Horse Land and Cattle Company, Santa Fe.

Magnificent color photos documenting Fenn cache, discussion of archaeology and Clovis in general. [Nice enough archaeology for public and professional, but risks of collaborating with a rich collector are illustrated by overemphasis on esthetic quality of points, and the fact that Fenn subsequently sold the collection, having enhanced its value by having real archaeologists publish it. Everyone seems to accept pieces as genuine, and there is no real reason to think any are fakes, however, it should NOT be considered good data for some things - like the association of a crescent with Clovis points - there is no real reason to believe that all of the pieces were found together, although there are convincing similarities among many of them.] No evidence of Clovis heat treatment. Large overshot flakes thin rapidly, are good tools.

Fuji, Sumio
1986 Indentification of Threshing Sledge Blade, especially in contrast to Sickle Blade. *Bulletin of the Okayama Orient Museum* 5: 1-35.

In Japanese so not useful to most scholars, short Eng summary. Uses Turkish sledge blades, more intense wear on both faces vs sickles [experimental?] less wear, one face dominates, usually toothed.

Fullagar, R., B. Meehan, and R. Jones
1992 Residue Analysis of ethnographic plant-working and other tools from North Australia. In *Préhistoire de l'Agriculture; nouvelles approaches experimentales et ethnographiques*, Patricia C. Anderson, ed., pp. 39-54. Centre National de la Recherche Scientifique, Paris. and in 1999 *Prehistory of Agriculture: New Experimental and Ethnographic Approaches*. Patricia C. Anderson ed., Monograph 40, Institute of Archaeology, University of California, Los Angeles, pp. 15-23.

Fullagar, Richard, Judith Furby, and Bruce Hardy
1996 Residues on Stone Artifacts: State of a Scientific Art. *Antiquity* 70: 740-745.

Optimistic view – blood etc. survives well under some conditions; don't need to excavate with gloves, but survives only in protected parts of tool – e.g. step fractures. There should be microscopic ID of blood before attempt extract. Species id difficult as yet. Plant residues not as well studied yet. DNA studies by PCR – easy to contaminate because so sensitive, but getting better. Recommend: skepticism but optimism, more microscopy used with chemical analyses, more conjuction with info on use-wear and position on tool.

Gaertner, Linda M.
1994 Determining the Function of Dalton Adzes from Northeast Arkansas. *Lithic Technology* 19(2): 97-109.

Gagliano, Dawn Walter
2009 Chipped Stone Assemblages from the 1971-1977 Excavations. *Midcontinental Journal of Archaeology* 34(1):93-108.

Seip Earthworks, Hopewell, Ohio. A few points, blades, cores, not very exciting but clustered by house.

Gaines, Edmund P., Guadalupe Sanchez, and Vance T. Holiday
2009 Paleoindian Archaeology in Northern Sonora, Mexico: A Review and Update. *Kiva* 74(3):305-336.

Clovis and related points, surface finds and tested sites. Large sites with multiple components, long occup.

Gallagher, James P.
1977 Contemporary Stone Tools in Ethiopia: Implications for Archaeology. *Journal of Field Archaeology* 4(4): 407-414.

ethnographic

Gamble, Clive
1982 Animal Husbandry, Population, and Urbanization. In *An Island Polity: The Archaeology of Exploitation on Melos*. Colin Renfrew and Malcolm Wagstaff, eds., pp.161-171. Cambridge University Press, Cambridge.

Gamble, Clive, and Robert Kruszynski
2009 John Evans, Joseph Prestwich and the stone that shattered the time barrier. *Antiquity* 83(320):461-475.

Prestwich + Evans, geologist and prehistorian, visited St Acheul + Boucher de Perthes 1959, documented find of handaxes + extinct animals, convinced Brit scientists. The original axe still in museum, but not used much as illustration because not symettrical and convincing. However, photo documentation also (30 yrs after invention of photog) and recorded stratig + axe in situ. Situation also made possible by “social technologies” of steam and railway allowing rapid communication and gravel pits for rail beds.

Gamble, Lynn H.
2002 Fact or Forgery: Dilemmas in Museum Collections. *Museum Anthropology* 25(2):3-20.

[Good, readable, methodological and ethical issues]. Chumash soapstone effigies from S California, in NMAI and CA museums, derived from excavations in 1930s + 40s. Material associated with Sanger differs from pieces with secure archaeological provenience - more elaborate, unusual forms, anachronistic use of shell beads, metal drills, etc. However, some fakes, eg smiling whale effigy, have become iconic images of Chumash culture. Both descendants and archys need to know; "repatriation" and destruction by reburial would prevent resolution.

Gardiner, Julie
1987 Tales of the Unexpected: Approaches to the Assessment and Interpretation of Museum Flint Collections. In *Lithic Analysis and Later British Prehistory: Some problems and approaches*, A.G. Brown and M.R. Edmonds, eds.; pp. 49-66. B.A.R. British Series 162: Oxford.

Gaudzinski, Sabine, and Wil Roebroeks
2000 Adults Only: Reindeer Hunting at the Middle Paleolithic Site Salzgitter Lebenstedt, Northern Germany. *Journal of Human Evolution* 38:497-521.

Site of furthest N. Neanderthal remains, early bone tools. Faunal evidence confirms that Neanderthals actively hunted prime game (contra Binford), preferring adults for complete butchering and marrow processing. Reviews others to argue that earlier hominids did too, at least H. e. relatives. But may have had "niche oriented" animal like landscape use, rather than modern human pattern of "created landscape" with multiple site types and home bases.

Gaxiola, Margarita and John E. Clark (eds.)
1989 *La Obsidiana en Mesoamerica*. Instituto Nacional de Antropologia e Historia, Mexico, D.F.

Gebel, Hans Georg
1981 Eine rezente Abschlagindustrie in der Region Hilvan/Südost türkei. In *5000 Jahre Feuersteinbergbau: die Suche nach dem Stahl der Steinzeit*, Gerd Weisberger, ed.; pp. 396-401. Bockum: Deutschen Bergbau-Museum.

Gehlbach, D. R.
2002 Hourglass Bannerstones of the Mississippi Valley. *Indian Artifact Magazine* 21(3): 46-47, 79.

reviews theories, nice color photos, warns of fakes
describes- usually made of qtz

Gehlbach, D.R.
2009 Of Archaeological Schemes, Frauds, and Dupes. *Indian Artifact Magazine* 28(3):10-12.

mentions a bunch of old stuff back to 19 C, [but too vague, photos without enough labeling]

Geib, Phil R.
1995 Two Fluted Points from the Kaibito Plateau, Northeastern Arizona. *Kiva* 61(1): 89-98.

Geib, Phil R.
1996 The Early Agricultural Period: Transition to Farming. In *Glen Canyon Revisited*, edited by Phil R. Geib, pp. 53-77. University of Utah Press Anthropological Papers No. 119.

Early dates on SW corn, some from preceramic sites - maize not in northern Colorado Plateau until first centuries AD, up to 1000 yrs earlier southern CP, and Glen Canyon area fills gap, with southern part using maize by 300 BC, assoc with White Dog Phase Basketmaker II culture, northern part not until 100 AD, assoc with preceramic Fremont culture. So early farming BM intrusion in S, while terminal Archaic adaptation in N of GC, possibly with competition, territorial defense and markers, and warfare in BM sites.
BM and Elko series dart pts similar.but potentially distinguishable, side + corner notched forms. White Dog BM generally curvilinear lanceolate profile (see Sand Dune Cave Cache 1 pts), Elko straight edged, triangular. BM wide deep notches, tight bind to foreshaft, often break across notch, but that prevents foreshaft damage and leaves reworkable point.
Northern earlier bow and arrow represented by Rose Spring or Rosegate pts and arrow shafts at Cowboy Cave by 100-250 AD, but atlatl continues in southern, represented by many finds of dart pts, foreshafts and atlatls but lacking arrow pts in Basketmaker II sites. [The shafts at Cowboy are most important, but he says not directly dated - I consider points alone poor evidence.] Sunny Beaches site in center GC area, close to sites with BM remains has arrow pts early 1st mil AD. [They are small, but in form look sim to what he calls Sand Dune Cave pts (Archaic) - long ovoid to triang w wide side or corner notches]. Suggested atlatl = BM, early bow = ancestral Fremont, but other finds suggest arrow pts also assoc w Obelisk Grey (BM) pottery and turkeys. [So still not clear what's what.]

Geib, Phil R.
2002 Basketmaker II Horn Flakers and Dart Point Production: Technological Change at the Agricultural Transition. In *Traditions, Translations, and Technologies: Themes in Southwest Archaeology in the Year 2000*, S. H. Schlanger ed., pp. 272-306. University of Colorado, Boulder.

Experiments and microwear show that horn rod "gaming pieces" in Sand Dune Cave Basketmaker II cache are actually knapping punches for manuf of dart pts. SDC cache included hafted and unfinished pts. Similar punches from Obelisk Cave. Similar horn pieces also hafted as composite pressure flakers. Punches used to finish points produce broad collateral flaking with bending initiations, differs from Archaic style pressure with antler tines, leaving narrow finishing scars.

Geib, Phil R.
2004 AMS Dating of a Basketmaker II Hunter's Bag (Cache 1) from Sand Dune Cave, Utah. *Kiva* 69(3):271-282.

A.D. cal 80-330, late BM II. Cache includes dart points, some hafted on foreshafts, unfinished points, knapping tools including mt sheep horn punches.

Geib, Phil R. and Stanley A. Ahler
2002 Considerations in Folsom Fluting and Evaluation of Hand Held Indirect Percussion. In *Folsom Technology and Lifeways*, J. E. Clark and M. B. Collins, eds., pp. 249-272. Lithic Technology Special Publication No. 4. University of Tulsa, Tulsa.

Geib, Phil R. and Peter W. Bungart
1989 Implications of Early Bow Use in Glen Canyon. *Utah Archaeology* 2(1): 32-47.

Usual view: Glen C occup +AD 400 by BMII using atlatl, only 7thCAD did BMIII start b+a but Sunny Beaches site and others have early b+a (Rose spring pts); 9 Rose Spring pts, 2 almost complete, C14 of AD 150; propose that this is late Archaic/proto Fremont occupation, using b+a; earlier than any Anasazi, who stuck with atlatl, perhaps because intergroup competition prevented technol transfer [I consider a handful of pts poor evid of b+a]

Geib, Phil R., Winston Hurst, and Stanley A. Ahler
2006 Use Wear and Folsom Hafting as Illustrated by a Point Base from Southeast Utah. *Current Research in the Pleistocene* 23:97-99.

Reused point excav in P I pithouse. Linear striations in flute show backward movement in hafting system acting as shock absorber when striking hard object.

Geib, Phil R., and Michael R. Robins
2008 Analysis and AMS Dating of the Great Gallery Food and Tool Bag. *Kiva* 73(3):291-320.

Antelope hide bag contained *Iva* (marsh elder) seeds, three small bags, one with 40 biface thinning flakes collected from an older site, one of which partly worked into biface arrow point form, short antler pressure flaking rod, small hammerstone. Dates 770-970 AD. "Insurance gear" - caches improve quality of environment and add security - caloric value of seeds not great, but enough to help in crisis; equip to quickly repair critical tools.

Geier, Clarence E.
1974 Notes on Lithic Micro-tool Industry from the Plains Periphery. *Plains Anthropologist* 19(66) pt 1: 272-286.

Gelo, Daniel J.
2013 A Metal Arrowhead from Coryell County, Texas. *Plains Anthropologist* 58(226):79-95.

On Ft Hood, tries to id Comanche ethnic markers [but started with goal of id Com traditional properties, so initial bias evident]. Ethno sources - C knew stone pts, but after contact used almost only metal. Two forms claimed in historic sources: barbed for war, un-barbed for hunt, but not supported by finds - all unbarbed. No foreshafts, contrast to Navajo arrows. Historic wound accounts. Compares specimen to others - variability may be meaningful, or not, perhaps other parts of arrow more expressive of individual or group.

Georges, Emmanuel
1995 L'exploitation minière à Saint-Mihiel (Meuse). In *Les Mines de Silex au Néolithique en Europe: Avancées Récentes*. J. Pelegrin and A. Richard, eds, pp.27-45. Comité des Travaux Historiques et Scientifiques, Vesoul.

Gerke, Tammie L., Sharon R. Stocker, Jack L. Davis, J. Barry Maynard, and Craig Dietsch
2006 Sourcing Volcanic Millstones from Greco-Roman Sites in Albania. *Journal of Field Archaeology* 31(2) :137-146.

Gero, Joan
1989 Assessing Social Information in Material Objects: How Well Do Lithics Measure Up? In *Time, Energy, and Stone Tools*, edited by R. Torrence, pp. 92-105. Cambridge University Press: Cambridge.

Cited in Tacon 1991; cite for general ref stone tools as symbolic

Gero, Joan M.
1991 Genderlithics: Women's Roles in Stone Tool Production. In *Engendering Archaeology*, edited by Joan M. Gero and Margaret W. Conkey, pp. 163-193. Basil Blackwell Ltd, Cambridge.

[Good!] Points out loading of terms and biased expectation that men make stone tools, argues no reason women should not – scheduling, strength, material access and control, social values as arguments against women refuted; Ethographic examples, women espec likely to use expedient household lithics; Inconclusive Peruvian case study

Gero, Joan M.
2002 Phenominal Points of Folsom. In *Folsom Technology and Lifeways*, J. E. Clark and M. B. Collins, eds., pp. 333-343. Lithic Technology Special Publication No. 4. University of Tulsa, Tulsa.

Geyer, Bob
1988 Heat Treating in a Roaster Oven (or Lithics in the Kitchen). *Twentieth Century Lithics* 1: 82-83.

Temps up to 500, materials and temps listed

Gibaja, Juan Francisco, Juan José Ibáñez and Jesús González Urquijor
2014 Neolithic Sickles in the Iberian Peninsula. In van Gijn, Annelou, John C. Whittaker, and Patricia C. Anderson, editors, *Exploring and Explaining Diversity in Agricultural Technology*, pp. 112-117. (EARTH Vol. 2). Oxbow Books.

Some well-preserved haftings with stone blades, different odd forms

Gibbons, Anne
2000 Chinese Stone Tools Reveal High-Tech Homo erectus. Science: 287-1566

see Yame, et al

Gibson, Eric C.
1982 Upper Paleolithic Flintknapping Specialists?: The Evidence from Corbiac, France. *Lithic Technology* 11(3): 41-49.

Documents consistency, although some evidence – eg IPA no good, suggests specialists but speculative – on basis that whole industry is consistent which requires artisans to work together. Note: punch blades ~75% lipped

Gibson, Eric C.
1991 A Preliminary Functional and Contextual Study of Constricted Adzes from Northern Belize. In *Maya Stone Tools: Selected Papers from the Second Maya Lithic Conference*. T. R. Hester and H. J. Shafer eds, pp. 229-238. Prehistory Press, Madison.

Gibson, Kathleen R.
1993 Tool use, language, and social behavior in relationship to information processing capacities. In *Tools, Language, and Cognition in Human Evolution*, Kathleen R. Gibson and Tim Ingold, ed.; pp. 251-278. New York: Cambridge University Press.

Gibson, Kathleen R.
1997 The Biocultural Human Brain, Seasonal Migrations, and the Emergence of the Upper Paleolithic. In Modelling the Early Human Mind, P. Mellars and K. Gibson, eds. Pp. 33-46. McDonald Institute for Archaeological Research, Cambridge.

Gibson, Kathleen R. and Ingold, Tim, editors
1993 *Tools, Language and Cognition in Human Evolution*. Cambridge: Cambridge University Press.

Gifford, E.W.
1936 Northeastern and Western Yavapai. *University of California Publications in American Archaeology and Ethnology* 34(4): 247-354.

Knapping knives p 275: black stone (obsidian?) broke off pieces by throwing. "Knives not flaked in Solutrean technique like arrowheads [i.e. bifacial?], but knocked off in

Magdalenian technique [i.e. flake or blade?] by using hammerstones against end of flaking tool of mt sheep horn. Edge improved by grinding [unlikely].
Weapons pp. 285-288: Self bow, unbacked. Sinew string. Cane arrow w hardwood foreshaft and stone pt. "Same arrow for hunting and war." Source and flaking of obsidian - flaked with antler on hand pad, serrated points, set in notch in foreshaft, with pitch, "tied in place with sinew which did not pass through notches in point" [really?]. Unpointed foreshaft for small game. 3 radial split feather fletching. War poison of snake and other venomous animals, rot. Club, sling, boomerang, lance. War stories.

Gifford, James C.
1980 Archaeological Explorations in Caves of the Point of Pines Region, Arizona. Anthropological Papers of the University of Arizona, Number 36. Tucson: University of Arizona Press.

Excavs 1950s. Red Bow cliff dwelling, late Mogollon/Pueblo. Part of Room 4 considered "ceremonial area" w deposit of mini bows, arrow material. 30 small triangular notched pts from this area considered "ceremonial" [but appear to be normal STPC], some with traces of sinew +/or resin hafting. Pts elsewhere include similar plus some small ovates. Herringbone twill tube frag = poss quiver. Bows all considered miniatures, simple peeled wood, 60-28 cm long. Painted décor mostly red. Painted arrow foreshafts (some notched for stone pt) and shaft nock frags of cane, red, green, black paint. 3 split fletchings.

Gilbert, J., L. Gilbert, A. Iglesias, and E. Maestro
1998 Two "Oldowan" Assemblages in the Plio-Pleistocene Deposits of the Orce Region, Southeast Spain. *Antiquity* 72(275): 17-25.

Oldowan type stuff assoc w/ hippo jaw, human mandible frag, in lacustrine deposits. 1.76-1.98 myo

Gilead, Isaac and Ofer Bar-Yosef
1993 Early Upper Paleolithic Sites in the Qadesh Barnea Area, NE Sinai. *Journal of Field Archaeology* 20(3): 265-280.

Earliest UpPal ~ Auris 40-30 then bp. Retouched and backed blade assembages, scrapers. Illust, technol discussed

Gilead, Isaac, Angela Davidzon, and Jacob Vardi
2010 The Ghassulian sickle blades workshop of Beit Eshel, Beer Sheva, Israel. In *Lithic Technology in Metal Using Societies*, B. V. Eriksen ed., pp. 221-230. Arhus, Arhus University Press.

5th mill BC Chalcolithic. Complete series of tools, waste, and products. Refitted cores by skilled blade knappers and unskilled. Backing sickle blades.

Giligny, François, Françoise Bostyn, Jérémie Couderc, Harold Lethrosne, Nicolas Le Maux, Adrienne Lo Carmine, and Cécile Riquier
2011 Production and diffusion of axes in the Seine valley. In *Stone Axe Studies III*. Vin Davis and Mark Edmonds, ed., pp. 149-166. Oxbow Books, Oxford.

Gill, David W.J. and Christopher Chippendale
1993 Material and Intellectual Consequences of Esteem for Cycladic Figures. *American Journal of Archaeology* 97:601-657.

[Superb article – all kinds of issues]: History of esteem, material consequences – looting, fakes, lack of provenience, false or hidden info which clouds record, art historical studies and language impose misconceptions on prehist Cycladic society, problems with attempts to ID individ artists, ethical conflicts between scholarship and collectorship; mentions Danish axes and other class of goods; relevant to any consideration of market and fakes.

Gill, Ryan
2014 Are you shooting arrow heads or atlatl heads? *Primitive Archer* 21(6):35-40.

Smaller stone points are better, larger don't penetrate as well.

Gisis, Izak, and Avraham Ronen
2006 Bifaces from the Acheulian and Yabrudian layers of Tabun Cave, Israel. In *Axe Age: Acheulian Toolmaking from Quarry to Discard*. Naama Goren-Inbar and Gonen Sharon, eds., pp. 137-154. Equinox Publishing, London.

3 Lower Paleolithic industry sequence: Tayacian, Acheulian, and Yabrudian. A + Y have handaxes, smallest in Levant. A emphasized handaxes, Y emph flake tools.

Glørstad, Håkon
2011 The Nøstvet Axe. In *Stone Axe Studies III*. Vin Davis and Mark Edmonds, ed., pp. 21-36. Oxbow Books, Oxford.

Gnaden, Denis and Simon Holdaway
2000 Understanding Observer Variation When Recording Stone Artifacts. *American Antiquity* 65(4): 739-748.

Gnecco, Christobal
1994 Fluting Technology in South America. *Lithic Technology* 19(1): 35-42.

Goddard, Pliny Earl
1904 Life and Culture of the Hupa. *University of California Publications in American Archaeology and Ethnology* 1(1): 1-88.

Xerox 4 pages on making arrowheads, bow and arrow

Goebel, Ted
1999 Pleistocene Human Colonization of Sibera and Peopling of the Americas: An Ecological Approach. *Evolutionary Anthropology* 8(6): 208-227.

Goebel, Ted
2002 The 'Microblade Adaptation' and Recolonization of Siberia during the Late Upper Pleistocene. In *Thinking Small: Global Perspectives on Microlithization,* edited by Robert Elston and Steven L. Kuhn, Archeological Papers of the American Anthropological Association 12, pp.117-132.

Goebel, Ted, Kelly E. Graf, Bryan S. Hockett, and David Rhode
2003 Late Pleistocene Humans and Bonneville Estates Rock Shelter, Eastern Nevada. *Current Research in the Pleistocene* 20:20-23.

Goings, Chad A.
2003 A Predictive Model for Lithic Resources in Iowa. *Plains Anthropologist* 48 (184): 53-68.

GIS models using outcrop depth etc to predict use of chert resources in SE Iowa. No detail on sources or material.

Goldschmidt, Walter
1951 Nomlaki Ethnography. *University of California Publications in Archaeology and Ethnology* 42(4): 303-443.

Xerox p. 417-421; bow making – specialist. Flaking – specialists, reuse. Arrow making. Knives.

Goldstein, Erik, and Stuart Mowbray
2010 *The Brown Bess: An Identification Guide and Illustrated Study of Britain's Most Famous Musket*. Mowbray Publishing, Woonsocket, RI.

No info on flints.

Goldstein, Joseph
2005 Hobby or Hindrance? Once Limited to Archaeology Buffs, Arrowhead Hunting Now a Growing Trend Among Methamphetamine Users. *The Daily Citizen* (Arkansas) Aug 20, 2005. URL http://www.thedailycitizen.com/articles/2005/08/21/news/top_stories/top01.txt accessed 8/24/05.

Sheriff: "I've never been to a search warrant involving drugs where we haven't found arrowheads or pornography or both." Tedium and focus makes it attractive to stoned meth users. Hunt at night with flashlights [really?]. Trade for drugs, sell for legal defense, steal for drug money.

Goldstein, Steven T.
2014 Quantifying Endscraper Reduction in the Context of Obsidian Exchange among Early Pastoralists in Southwestern Kenya. *Lithic Technology* 39(1):3-19.

Gonsior, Leroy
1992 Lithic Materials of Southeastern Minnesota. *The Platform* 4(1):5-7; 4(2):4-6; 4(3):5-6; 4(4):4-5.

Geology, descriptions, heat treatment info

Gonzáles, Arturo H., Alejandro Terrazas, Wolfgang Stinnesbeck, Martha E. Benavente, Jerónimo Avilés, Carmen Rojas, José Manuel Padilla, Adriana Velásquez, Eugenio Acevez, and Eberhard Frey
2013 The First Human Settlers on the Yucatan Peninsula: Evidence from Drowned Caves in the State of Quintana Roo (South Mexico). In *Paleoamerican Odyssey*. Kelly E. Graf, Caroline v. Ketron and Michael R. Waters ed., pp. 323-338. Tops Printing, Inc., Texas.

Goodall, Jane
1964 Tool-Using and Aimed Throwing in a Community of Free-Living Chimpanzees. *Nature* 201 (4926):1264-1266

Sticks used to collect termites and ants, leaves for drinking, wiping body. Aimed throwing stones, sticks overhead but mostly underarmed – in line with target but rarely far enough – 3-5 m – so not effective, used as aggressive or playful threat display

Goodman, M.E.
1944 The Physical properties of stone tools materials. *American Antiquity* 9:415-433.

Goodrum, Stephen
1999 Learning to Make a Handaxe. Unpublished MA thesis, University of Reading, Department of Archaeology.

Goodwin, A.J.H.
1929 A New Stone Implement Technique from Natal. *Man* 29(127): 166-167.

Flake edges notched or serrated by sawing; Not ethnog – site in Africa [Is it real?]

Goodrich, Kevin T. and Robson Bonnichsen
2004 Frame Analysis: A Fluted Point Preform from Munsungun Lake, Maine. In *New Perspectives on the First Americans*. B. T. Lepper and R. Bonnichsen, eds., pp. 165-172. Center for the Study of the First Americans, College Station, TX.

Elaborate flake-by-flake “cognitive classification” description to analyse diffs in stone tool technology.

Goodyear, Albert C.

1974 The Brand Site: A Techno-functional Study of a Dalton Site in Northeast Arkansas. *Arkansas Archaeological Survey, Publications on Archaeology, Research Series No. 7.*

Goodyear, Albert C.
2005 Evidence for Pre-Clovis Sites in the Eastern United States. In *Paleoamerican Origins: Beyond Clovis*, edited by R. Bonnichsen, B. Lepper, D. Stanford, and M. Waters, pp. 103-112. Center for the Study of the First Americans, Texas A+M University, College Station, Texas.

Summary supporting Meadowcroft, SV-2 Saltville, Cactus Hill, and Topper Sites. Topper (his work) has complete Holocene arch record from Clovis to 18th C in sands 1.4 m deep with pre-Clovis under that to 2.2 m overlying a clay Pleistocene terrace. Pre-C deposits 16-20,000 yo by OSL and sedimentary estimates, no C14. Unusual chert artifacts, no negative bulbs so made by smashing local cobbles [doesn't make sense - you still get bulbs]. Retouched chert cobble tools, small irregular flake tools on smashed stuff. No bifaces or BTF. Utilized flakes and "hundreds" of flakes modified by bend-break fractures for burin or chisel use. Weathering patination prevents microwear study. Emphasis on non-bifacial technol and microlithic size, non-Clovis in character. [Perhaps, but pretty poor stuff, and small photo shows it. Shouldn't even pre-C be doing better, at a quarry site where chert was plentiful? How could early Paleoindians have lost most lithic technology and then reinvented it with Clovis points and blades?]

Goodyear, Albert C.
2006 Recognizing the Redstone Fluted Point in the South Carolina Paleoindian Point Database. *Current Research in the Pleistocene* 23:100-103.

Long narrow trianguloid Clovis with prominent flutes, punch technol of flute suggests post Clovis times.

Goodyear, Albert C. and Kenn Steffy
2003 Evidence of a Clovis Occupation at the Topper Site, 38AL23, Allendale County, South Carolina. *Current Research in the Pleistocene* 20: 23-25.

Gordon, David
1993 Mousterian Tool Selection, Reduction, and Discard at Ghar, Israel. *Journal of Field Archaeology* 20(2): 205-218.

Response to Dibble in part – Moust points are on wrong blanks to be just heavily reduced scrapers

Goren-Inbar, Naama
1988 Too Small to Be True? Reevaluation of Cores on Flakes in Levantine Mousterian Assemblages. *Lithic Technology* 17(1): 37-44.

[Basically small Levallois or discoidal cores made on thick flakes by working edge to make facetted platform allowing removal from (usually) interior flake surface. No big deal, but inconsistently recognized/classified]

Goren-Inbar, Naama and Idit Saragusti
1996 An Acheulian Biface Assemblage from Gesher Benot Ya'aqov, Israel: Indications of African Affinities. *Journal of Field Archaeology* 23(1): 15-30.

Goren-Inbar, Naama, and Gonen Sharon, eds.
2006 *Axe Age: Acheulian Toolmaking from Quarry to Discard*. Equinox Publishing, London.

Goren-Inbar, Naama, and Gonen Sharon
2006 Invisible handaxes and visible Acheulian biface technology at Gesher Benot Ya'aqov, Israel. In *Axe Age: Acheulian Toolmaking from Quarry to Discard*. Naama Goren-Inbar and Gonen Sharon, eds., pp. 111-136. Equinox Publishing, London.

Identify typical handaxe production debris "éclats de taille de biface" (a variety of different thinning, shaping, and finishing flakes) including some often id or used as tools eg backed knives, bladelets. Experiments in handaxe production yield average of 110 flakes (>2cm), so estimate ca 6 handaxes represented in excav.

Goring-Morris, A. Nigel, Donald O. Henry, James L. Phillips, G.A. Clark, C. Michael Barton, and Michael P. Neeley
1996 Pattern in the Epipaleolithic of the Levant: debate after Neely and Barton. *Antiquity* 70(267): 130-147.

Separate responses to Barton and Neely, and Neely and Barton 1994

Goring-Morris, Nigel, and Anna Belfer-Cohen **disk**
2001 The Symbolic Realms of Utilitarian Material Culture: The Role of Lithics. In *Beyond Tools: Redefining the PPN Lithic Assemblages of the Levant*. Isabella Caneva, Cristina Lemorini, Daniela Zampetti, and Paolo Biagi eds., pp. 257-271. ex oriente, Berlin.

Ethnography leads to expectations that raw material use structured and symbolic - examples: exotic raw material in Mid E may be similar. Prestige items and caches, ritual knives at Nahal Hemar, possible ritual breakage, numerical clusters (3).

Gorman, Alice
1995 Gender, Labour, and Resources: The Female Knappers of the Andaman Islands. In *Gendered Archaeology: The Second Australian Women in Archaeology Conference*, edited by Jane Balme and Wendy Beck, pp. 87-91. The Australian National University, Canberra.

Off coast Burma, collections in 1800s – flakes of glass and quartz for shaving, scarring, tattooing – stone not for hunting. Lots of tattoo and scar, both sexes shave heads. Quartz heat treated. Women did all flaking, but men made hunting gear without stone – bamboo and wood shaped with shell tools. Flakes were the only stone tools, so ethnographers discounted culture as “Paleolithic” or “pre-lithic”. Unhafted, un-retouched – no need to conserve material. Perhaps men = hard, women = soft materials in some societies, but not here.

Gould, Richard A.
1980 *Living Archaeology*. Cambridge: Cambridge University Press.

Australian and other ethnoarchaeology, Australian lithics and spear throwers

Gould, Richard A.
1981 Brandon Revisited: A New Look at an Old Technology. In *Modern Material Culture: The Archaeology of Us*, R. Gould and M. Schiffer, eds., pp. 269-282. New York: Academic Press.

Good summary of British gunflint industry, well written, advances “principle of archaisms” = trend to stereotyped, conservative techniques and forms as a technology becomes obsolete

Gould, Richard A., Dorothy A. Koster, and Ann H. L. Sontz
1971 The Lithic Assemblage of the Western Desert Aborigines of Australia. *American Antiquity* 36(2): 148-169.

Important article, one of few ethnographic societies with complete stone technology, although very simple. Typological and functional issues.

Gould, R. and S. Saggers
1985 Lithic Procurement in Central Australia: A Closer Look at Binford's Idea of Embeddedness in Archaeology. *American Antiquity* 50:117-135.

Gould, Stephen Jay
1982 The Importance of Trifles. *Natural History* 91(4): 16-23.

Darwins last work (on worms) as summing up his principles; Good quote on infer past process from preserved results; see Darwin’s work for info on burial by worms, illust of uniformitarian principles, summation of small effects to great change, D trenched to see burial, measured rates.
“The special problems of historical science (as contrasted, for example, with experimental physics) are many, but one stands out most prominently: Science must identify processes that yield observed results. The results of history lie strewn around us, but we cannot, in principle, directly observe the processes that produced them. How then can we be scientific about the past? As a general answer, we must develop criteria for inferring the processes we cannot see from the results that have been preserved.”

Gourgaud, Alain

1998 Géologie de L'Obsidienne. In *L'Obsidienne au Proche et Moyen Orient: Du Volcan á L'Outil*, edited by M.-C. Cauvin, A. Gourgaud, B.Gratuze, N. Arnaud, G. Poupeau, J.-L. Poidevin, and C. Chataigner, pp. 15-29. BAR International Series 738. Archaeopress, Oxford.

Geological explanations. Maps of Turkey, but only general. Doesn't seem to use all the same names I am familiar with.

Gowlett, John A. J.
1984 Mental Abilities of Early Man: A Look at Some Hard Evidence. In *Hominid Evolution and Community Ecology: Prehistoric Human Adaptation in Biological Perspective*. R. Foley ed., pp 167-192. New York: Academic Press.

"Navigation" = local geographic knowledge – evidence from non-local stone tools. Tool-making – "operational chains" of related actions to produce tools of pre-set form – if not a template of form, at least a "procedural template." Stone tool making is learned, for future use, choices made. Fire as early as >1 mya; butchery is a similar skill to knapping

Gowlett, John
1995 A Matter of Form: Instruction Sets and the Shaping of Early Technology. *Lithics* 16: 2-16.

Argues for a more "mental template" view of early stone tools on basis of repeated complexity; 2 strikes to make flake may be natural accident, but complex 'instruction sets' required for hand axe.

Gowlett, John A. J.
2006 The elements of design form in Acheulian bifaces: modes, modalities, rules, and language. In *Axe Age: Acheulian Toolmaking from Quarry to Discard*. Naama Goren-Inbar and Gonen Sharon, eds., pp. 203-221. Equinox Publishing, London.

Handaxe types are archaeological constructs based on repeated attribute clusters. Cluster analysis and Principle Components Analysis explore relevant classifications, and argue that a limited series of "imperatives" of dimension and proportion explain the way Acheulians solved the problems of handling several variables, rather than distinct types of tool. Imperatives in handaxe: glob butt, forward extension, working edge, lateral extension, and thickness adjustment.

Grace, R. ID Graham and MH Newcomer
1987 Preliminary Investigation into the Quantification of Wear Traces on Flint Tools. In *The Human Uses of Flint and Chert*, G. Sieveking and M. Newcomer, eds., pp 63-70. Cambridge: Cambridge University Press.

Graf, Kelly E.
2013 Siberian Odyssey. In *Paleoamerican Odyssey*. Kelly E. Graf, Caroline V. Ketron and Michael R. Waters ed., pp .65-80. Tops Printing, Inc., Texas.

Graf, Kelly E., Caroline v. Ketron, and Michael R. Waters, eds.
2013 *Paleoamerican Odyssey*. Tops Printing, Inc., Texas.

Graham, Dale
2013 Angus Mammoth: Archaeological of Tampered Paleontological Site? *Mammoth Trumpet* 28(1):9-11, 20.

Work by Steve Holen at Denver Mus on old collection - almost complete mammoth skeleton found in 1931, fluted point preform found under scapula, association always in question. New dates on mammoth - too old for C14, OSL on sediment above says ca 75 kya, thus far too old to be assoc with point. Point is genuine, has cutting usewear, considered "crude" at time because it is only fluted preform, not finished [good photo]. But evidently fraudulently introduced into site by unknown person.

Graham, Dale
2014 Elusive Crescentics. *Mammoth Trumpet* 29(4):17-20.

Widespread in W N. Am, Paleo + Archaic, disappear about 8000 yr ago. Work of Madonna Moss and Jon Erlandson: wetland context, a few assoc w bird bones in sites, ethnog similarities to bird spears and arrows [but very weak]. Mike Lenzi UNV Reno expers: "with refined dart designs and more experienced atlatlist I expect them to be fairly accurate" despite twists and irregularities. Intends atlatl test at bullseye for accuracy, then skimming on water [does that really work?]. Moss: bola weights? Could test [but apparently hasn't]. Beth Smith: not enough weight, sharp edges, often evidence that c's were made from reworked old pts.

Gramly, R. M.
1990 *Guide to the Paleo-Indian Artifacts of North America*. Buffalo: Persimmon Press.

[Poor – an illustrated typology, short on points, heavy on E Clovis, some rather bad definitions]

Gramly, R.M.
1992 *Prehistoric Lithic Industry at Dover, Tennessee*. New York: Persimmon Press.

Describes industry – specialist hamlets or quarries. Argues market economy (standard product) and specialist production (small hshld, large output), making knives, hoes, points. Antler billets. Well illustrated, some experiments by DC Waldorf.

Gramly, Richard M.
1993 *The Richey Clovis Cache: Earliest Americans Along the Columbia River*. Buffalo: Persimmon Press.

Small report, nice illustrations by Val Waldorf. [Emphasis on illustrations, short on text and archaeological interpretations].

Gramly, Richard Michael
1997 The Clovis Point and the Fluted Point Tradition. In *The Overstreet Indian Arrowheads Identification and Price Guide*, 5th ed., R. M. Overstreet, pp. 11-33. New York: Avon Books.

Ok summary of Clovis topics with emphasis on points, defines several varieties

Gramly, R. M.
2006 Why Knappers Should Sign All Their Works. *Chips* 18 (2): 5-6.

A record for future collectors and archaeologists, artistic credit, prevent fakes, comments on some unnamed faking incidents including Blackwell, and point given credibility by being sent to casting lab for circulation. [Unusually eloquent].

Gramly, Richard Michael
2008 Frank Hamilton Cushing (1857-1900) Father of Modern Flintknapping in North America. *Chips* 20(4):8-16.

From a typescript of a newspaper article by George Kennan, a Cushing friend, probably between 1900-1923 in Medina (NY) Tribune. Eccentric father, agnostic, evolutionist. Son genius, but sickly child. Boyhood interest in arrowheads and local Indian relics, taught self to flake flint, make baskets + pottery. Scavlem claimed in 1923 article as first modern knapper but C by 1871 or 72. Wrote paper on Medina arch, published + joined Smithsonian 1875. Zuni work, then Hemenway expedition to SW, then Florida.

Gramly, R. M.
2010 Indian Arrowheads, Made in India. *Chips* 22(2):19.

red + green jasper pts from India, average $6, replacing cheap “Apache” points in tourist stores, “gobbling up” N. Am. knapping market – they’ll improve and start making bifaces, pricing knappers’ work out of market [he’s vastly exaggerating! These things have appeared in last several years, not too badly flaked, probably cutting into Mexican pt market for cheap tourist stuff, but not good enough to compete with US knappers working for fake and art markets. Who invented this industry, taught knappers, found material, arranged export? Are these perhaps the existing bead-makers?]

Grasby, Stephen E., Eugene M. Gryba, and Ruth K. Bezys
2002 A Bedrock Source of Swan River Chert. *Plains Anthropologist* 47 (182): 275-282.

S Canadian prairie

Gravelle, Matt
1994 *Early Hunting Tools: An Introduction to Flintknapping*. Pine Orchard Press (no city).

[Little book w/ lots of mistakes, cartoonish illustrations – supposedly based on lectures by Sappington – looks like a doodling student]

Graver, Sally, Kristin Sobolik, and John Whittaker
2002 Cannibalism or Violent Death Alone? Human Remains at a Small Anasazi Site. In *Advances in Forensic Taphonomy: Method, Theory, and Archaeological Perspectives*, W.D. Haglund and M.H. Sorg, eds., pp. 309-320. CRC Press, Boca Raton, Florida.

Graves, Adam C., Leland C. Bement, and Brian J. Carter
2006 The JS Cache: An Early-Paleoindian Tool Cache from the Oklahoma Panhandle. *Current Research in the Pleistocene* 23:103-105.

Graves, William M.
2005 Obsidian Procurement among the Jumanos Pueblos, New Mexico, A.D. 1300-1670s. *Kiva* 71(1):7-36.

Grayson, Charles E, Mary French, and Michael J. O'Brien
2007 *Traditional Archery from Six Continents: The Charles E. Grayson Collection*. University of Missouri Press, Columbia.

Nice photos, catalogue of selections from collection. Introductory essays rather general and bland, overall not enough info for price.

Grayson, Donald K.
1986 Eoliths, Archaeological Ambiguity and the Generation of "Middle-Range" Research. In *American Archaeology Past and Future: A Celebration of the Society for American Archaeology 1935-1985*, ed. By D.J. Meltzer, D.D. Fowler, and J.A. Sabloff, pp. 77-133. Smithsonian Institution Press: Washington, D.C.

Contra Binford and others, "traditional" arch has always done middle-range research, routinely to solve ambiguities in data pattern interp – difference is that contemp arch considers wider range of settings ambiguous.
Theoretical expectations in 19th C of Tertiary man with very crude tools – needed to find criteria for recognizing human work – starting to look at traits like platforms and bulbs; de Mortillet 1880s considered bulb, platform and eraillure scars diagnostic; others responded that nature could duplicate, need to consider context. [Good, but over-thorough summary of Eolith debate, including briefly Calico, and how it spawned mid-range research back at least as far as Lyell].

Grayson, Donald K., and David J. Meltzer
2003 A Requiem for North American Overkill. *Journal of Archaeological Science* 30:585-593.

Martin's model does not work because timing coincidence not as clear now, possible pre-Clovis has been found. Americas were a continent, not an island where extinctions might be expected, mechanisms not clear, Old World megafauna survived humans for millenia but also died out at end Pleist. Martin's claim that should expect no evidence of kill sites is non-scientific. [Generally good but some problems in G + M arguments too: claim only mammoth + mastodon assoc w Clovis in kill sites, but lots human assoc w many fauna in OW - but these are actually habitation, not kill sites, so comparison is deceitful.]

Green, Barbara
1990 *Grimes Graves*. English Heritage. London.

Site guide pamphlet, pretty good.

Green, F.E.
1963 The Clovis Blades: An Important Addition to the Llano Complex. *American Antiquity* 29: 45-165.

Green, H. Stephen
1980 The Flint Arrowheads of the British Isles. *B.A.R. British Series* 75(i). Oxford: British Archaeological Reports.

[Typology with statistical analysis of diff types, good contextual info but lousy illustrations and doesn't pull typol together well]. Leaf pts 3240 bc – 1550 bc but mostly 3000-2000 bc; Transverse pts 2730-1324 bc most 2000-1500 bc; Irish oblique from New Grange, N = 30 at 2017 bc; Oblique really 2000-1800 bc; Barb and tang 2017-930 bc most 2000-1500 bc

Green, H. Stephen
1984 Flint Arrowheads: Typology and Interpretation. *Lithics* 5:19-39.

Simple version of (1980) BAR. Chronol: Leaf pts: 4000-2000 BC, with ogival early, kite late. Transverse pts: 3500-2000 BC with PT and chisel early, oblique late. Barb and tang: 2500-1400 BC

Green, H.S., C. Houlder, L. Keeley **bronze**
1982 A Flint Dagger from Ffair Rhos, Ceredigion, Dyfed, Wales. *Proceedings of the Prehistoric Society* 48: 492-500.

Green, James P.
1975 McKean and Little Lake Technology: A Problem in Projectile Point Typology in the Great Basin of North America. In *Lithic Technology: Making and Using Stone Tools*, Earl Swanson, ed., pp. 159-171. The Hague: Mouton Publishers.

Green, Lee
2006 Dear SPT. *Bulletin of Primitive Technology* 32:7.

Letter from MD comparing steel scalpel + Callahan obsidian for History Channel. Microscopic views of edges + of cut in artificial skin culture show advantage of obsidian. Claims he operates with obsidian.

Greene A.C.
1972 *The Last Captive*. Encino Press, Austin.

Account of Herman Lehmann, assimilated among Apache and Comanche. Captured by Apache 1870 aged 11, reclaimed by military from Comanche (Quanah Parker) 1878.

P. 67 fire-and-water knapping to make arrowheads: "I have often been asked how we made the flint stone arrow spikes, and I will here endeavor to explain the process: We threw a large flint stone, from two to six feet in circumference, into the fire.After the stone became very hot, small, thin pieces would pop off. We selected those pieces which would require the least work to put into shape and picked those hot pieces up with a stick split at the end. While these pieces were very hot we dropped cold water on those places we wished to thin down. The cold water caused the spot touched to chip off, and in this way we made some of the keenest pointed and sharpest arrows that could be fashioned out of stone. Many of these arrows in perfect shape can still be picked up in certain places all over Texas." [Cited in Gelo 2013. But a difficult book for scholarship - According to preface, Greene used two earlier accounts, Jones, Jonathan H. 1899 Indianology: A Condensed History of the Apache and Comanche Indian Tribes, etc. San Antonio: Johnson Brothers Printing Co., and Hunter, J. Marvin 1927 Nine Years Among the Indians 1870-1879. Austin: Von Boeckmann-Jones, plus various other sources, to write a single first person account in which he sometimes gives explanations and quotes other sources and variants of the story in sidebars, but it is frequently unclear which of the sources, written by others from the tales of the illiterate Lehmann more than 20 years after the events, is the source of Greene's text. Did the fire and water knapping come from Lehmann, or his 'editors'? Was Lehmann told this by the Indians, but never saw it, as Greene (75) suggests? Can we trust any of the other info on arrows? Greene on p 75 explains that anthropologists doubt the fire and water story. Lehmann's whole tale is odd and disjointed and filled with exaggerated incidents too.] [The fire and water knapping is a quote from the 1927 Hunter account - reprinted as Lehmann 1993]

Greenfield, Haskel J.
2006 Slicing Cut Marks on Animal Bones: Diagnostics for Identifying Stone Tool Type and Raw Material. *Journal of Field Archaeology* 31(2):147-163.

microscopic examination of cut marks (or casts of them) to show stone tools leave distinctive profiles, not just shallow V-shape, but often one face straight, other w striations parallel, result of retouch or use-wear on face of tool.

Gregg, Michael L.
1987 Knife River Flint in the Northeastern Plains. *Plains Anthropologist* 32(118): 367-377.

Widespread from source in N Dakota by trade and glacial and fluvial action

Gregg, Michael L., and Richard J. Grybush
1976 Thermally altered siliceous stone from prehistoric contexts: Intentional versus unintentional alteration. *American Antiquity* 41(2):189-192.

Reviews current literature on heat treatment. Cites Hester 1972 for info on ethnographic cases. Warning note: some cases probably using heat “to facilitate fracture of small cobbles… so that they could be worked,… and not to improve materials’ workability”

Griffin, P. Bion
1967 A High Status Burial from Grasshopper Ruin, Arizona. *Kiva* 33(2):37-53.

Burial 140, richly accoutered adult male with many pots, fancy hairpins of large mammal bone [possibly bear], shell bracelets, turquoise ear bobs, Cardium shells, two stage burial, 128 arrowheads and 2 bifaces. Plan of burial. A few pts illustrated, description: comment he claims from Crabtree that pts made with sophisticated technique on blades [not correct - no true blades at G], diagonal flaking oriented toward base [also not really correct, see Whittaker 1984]. Many pts too large and fragile for function, cruder obsidian pts show knapper less familiar with material.

Griffiths, D. and P.C. Woodman
1987 Cretaceous Chert Sourcing in North East Ireland: Preliminary Results. In *The Human Uses of Flint and Chert*, G. Sieveking and M. Newcomer, eds., pp. 249-252. Cambridge: Cambridge University Press.

Electron Spin Resonance spectra for sourcing

Griffiths, D.R., C.A. Bergman, C.J. Clayton, A. Ohnuma, G.V. Robins, and N.J. Seeley
1987 Experimental Investigation of the Heat Treatment of Flint. In *The Human Uses of Flint and Chert*, G. Sieveking and M. Newcomer, eds., pp. 43-52. Cambridge: Cambridge University Press.

Supports micro recrystallization model. Low temperatures, no special fire technology needed, some success by setting preforms on ash and ember after fire burns down

Grimm, Linda
2000 Apprentice Flintknapping: Relating Material Culture and Social Practice in the Upper Paleolithic. In *Children and Material Culture*. J. S. Derevenski, ed., pp. 53-71. London, Routledge.

Assume cores usually worked by one individ. Novices show lack of control, poor platform, strike accuracy, maintenance. Tend to be non-productive – debitage may be abandoned unused, goal may be learning, not producing. Novice often peripheral – spatially and access only to poor material. Case of apprentice knapper at Solvieux, Dordogne, chaine operatoire, one core, Perigordian, refitting. Shows hard hammer, large bulbs, bad terminations. First 5 flakes skillful, then abandoned as poor material, taken up by novice. A later crested blade is also carefully done at another locus, then core is used to nub. Perhaps novice got help. Apprentices could be useful in related activities like stone collection, holding, clean-up, hafting, etc.

Grinnell, George Bird
1923 *The Cheyenne Indians: Their History and Ways of Life, Volume II*. Yale University Press, New Haven.

117-118: “Men very commonly wear stone arrowheads tied in the hair or about the neck, and usually to the shank of the arrowpoint is tied a little deersking bundle containing medicine, usually a part of some plant. They wear these stone arrowpoints in order that they may have long life. This is a part of the general belief as to the endurance, permanence, and perhaps even immortality of stone.” Quoted in Owsley et al. 2007.
1962 (1923) Vol I, Cooper Square Publishers, New York.

172-202 Arms. Sinew backed bows. 176-177: estimate extreme range 400 yds. “At most effective range - say from 40 to 70 yds - an Indian could handle a bow and arrows more rapidly and more efectively than the average man could use a revolving pistol of that time.” Men differed in their draw, some just pinching arrow, others with various fingers hooking string. Morse is ‘erroneous’ on 4 types, which are ‘merely methods practiced by individuals’, not tribally significant.

178-184 Arrows. “Arrows were the most precious possessions of the primitive Indians…” 10 arrows for bride. “Men always gathered up their arrows, devoting much time to searching for them and trying never to lose one. They were too hard to get and cost too much effort to be wasted. In the same way, if the points were lost from the arrows, they searched for them long and carefully.” Skill in making valued, often old men. Always made and bought in sets of 10 matched. Pierced bone shaft-straighteners and gauge for standardization of diam, and another with tooth to groove shaft. Grooving “most popular explanation is that they were made for the purpose of permitting the blood to escape, so as to weaken the wounded animal, or that they were symbolic of lightning, and so would be more fatal. What seems quite as probable is that these grooves may have been made to counteract the tendency of the wood to warp or spring and become crooked.”

Early arrows had wood shavings curled up from the shaft instead of fletching [really?]. Then 2 feathers tied on, so one vane of each feather was crushed against the shaft [I don’t think he really knows how to make arrows.] Then with single feather split and spiraled up the shaft, finally 3 split feathers.

Arrowheads fixed in shaft with glue and sinew. 183: “The Cheyennes, like the Blackfeet and the Pawnees, say that wounds made by the old stone arrowpts were more likely to be fatal than those made by the a-pts of later times.” 184: Sioux pts of stone and later iron often had barbs; Cheyenne made no barb, shoulders either straight across or rounded. 184-185 brief descrip of making stone pts by percussion with stone hammer, indirect perc, and pressure finish, refs Holmes.

Grinnell, George Bird **Burling**
1962 [1920] *Blackfoot Lodge Tales: The Story of a Prairie People*. University of Nebraska Press, Lincoln.

Bows of ash, sometimes choke-cherry but it lacks spring, or hazle. Arrows of shoots of sarvis [sic] berry wood, straight, very heavy, not brittle. Smoothed and straightened ‘by a stone implement.' Grooved by pushing through toothed hole in bone tool 'to allow the blood to flow freely.' Individual marking by paint or combo of colored feathers. "The arrowheads were of two kinds, barbed slender points for war, and barbless for hunting."(200).

Knives, originally of stone, 'a stick was fitted to them, forming a wooden handle.' (228): "Now it must be remembered that in early days the hunting weapons of this people consisted only of stone-pointed arrows, and with such armament the capture of game of the larger sorts must have been a matter of some uncertainty. To drive a rude stone-headed arrow through the tough hide and into the vitals of the buffalo, could not have been - even under the most favorable circumstances - other than a difficult matter; and although we may assume that in those days it was easy to steal up to within a few yards of the unsuspicious animals, we can readily conceive that many arrows must have been shot without effect, for one that brought down the game."

Grogan, Eoin and Cooney, Gabriel
1990 A Preliminary Distribution Map of Stone Axes in Ireland. *Antiquity* 64(244): 559-561.

Gronenborn, Detlef
1995 Les haches polies du Lousberg: Traces d'un people inconnu. In *Les Mines de Silex au Néolithique en Europe: Avancées Récentes*. J. Pelegrin and A. Richard, eds, pp. 173-178. Comité des Travaux Historiques et Scientifiques, Vesoul.

Grossman, Lev
2011 *The Magician King*. Viking, New York.

P 302: "We call it 'inverse profundity.' … The deeper you go into the cosmic mysteries, the less interesting everything gets." [His character means that in this magical world, everything is bound by very mechanical rules. But I see a deeper truth in it.]

Gruhn, Ruth
2004 Current Archaeological Evidence of Late Pleistocene Settlement of South America. In *New Perspectives on the First Americans*. B. T. Lepper and R. Bonnichsen, eds., pp. 27-34. Center for the Study of the First Americans, College Station, TX.

Brief summary article. Paleoindian dates at several sites: Taima-taima, Monteverdi, Los Toldos, Tibito, Pikimachay, Pedra Pintada [all essentially Clovis age] with Monteverdi and Pedra Furado suggesting initial entry by 35,000. But PF arguments over nature of "tools".

Gruhn, Ruth
2005 The Other Half of the Story: Paleoamericans in South America. *Mammoth Trumpet* 21 (1): 6-8, 13.

Taima-taima with mastodon and glyptodont, El Jobo proj pts at 13,000 BP. Tibito site in NW S. Am. w mastodon and horse 12,000 BP but no proj pts, very simple stone assemblage. Middle Magdalena Valley 11th mil BP, triangular pts w stems [photo - like

Roosevelt's - she is not mentioned]. San Isidro forest foragers 10,000 BP indicate cultural/ adaptational diversity.

Gruhn, Ruth
2006 Paleoamerican Foragers in the Forests of Brazil. *Mammoth Trumpet* 21 (2): 4-7.

Quick summaries of Pedra Pintada, Toca do Boqueirao da Pedra Furada, Abrigo de Santa Elina, and Abrigo GO-JA-01. Clovis-contemporary foragers. Limace as characteristic tool. Pictographs common.

Gruhn, Ruth and Alan Bryan
1998 A Reappraisal of the Edge-Trimmed Tool Tradition. In *Explorations in American Archaeology: Essays in Honor of Wesley R. Hurt.* Mark Plew, ed., pp. 37-54.

S.Am – Chile, Brazil, Columbia, Ecuador, Peru, minimally worked small unifacial amorphous cutting/scraping tools. Abriense industry sample; Tequendamiense more complex, a few bifaces, beginning pre 11,000 BP, forest environments

Gryba, Eugene M.
1988 A Stone Age Pressure Method of Folsom Fluting. *Plains Anthropologist* 33(119): 53-66.

Interesting – says he does it with hand pressure between his knees, very short antler tool. Claims closer to attributes of arch specimens [but so do they all!]

Gryba, Eugene
1989 A Mousetrap 10,000 Years Too Late. *Plains Anthropologist* 34(123): 65-68.

Defends previous article (1988) from Sollberger; [not too useful]

Gryba, Eugene M.
2002 Evidence of the Fluted Point Tradition in Western Canada. In *Folsom Technology and Lifeways*, J. E. Clark and M. B. Collins, eds., pp. 113-134. Lithic Technology Special Publication No. 4. University of Tulsa, Tulsa.

Gryba, Eugene M.
2002 The Case for the Use of Heat Treated Lithics in the Production of Fluted Points by Folsom Knappers. In *Folsom Technology and Lifeways*, J. E. Clark and M. B. Collins, eds., pp. 309-314. Lithic Technology Special Publication No. 4. University of Tulsa, Tulsa.

Guderjan, Thomas H.
1998 The Blue Creek Jade Cache: Early Classic Ritual in Northwestern Belize. In *The Sowing and the Dawning: Termination, Dedication, and Transformation in the Archaeological and Ethnographic Record of Mesoamerica*. S. B. Mock ed, pp 100-111. University of New Mexico Press, Albuquerque.

Medium center, 500 AD series of caches at one time in several events in shaft inserted in a central structure. Contains broken ceramics, 360+ jade beads and earflares, shell, incense, organics, and an eccentric. At same time [I doubt dates can be that precise] an important burial elsewhere on site, and most other construction ceases. Interpreted as ritual termination of bloodline or political position of center, with elites contributing personal ornaments.

Eccentric is well-made large chert 4-pointed star with central void, oriented to cardinal directions, N + S tips broken off. "Normally considered symbol of creation and World Tree ... relationship between WT and kingship ... broken tips may negate the life-giving aspect."

Guernsey, Samuel J. and Alfred U. Kidder
1921 Basket-maker Caves of Northeastern Arizona. Papers of the Peabody Museum of Archaeology and Ethnology 8, No. 2, Harvard University, Cambridge, Mass.

Compound pressure-flaker, p. 97

Gunn, Joel
1975 Idiosyncratic Behavior in Chipping Style: Some Hypotheses and Preliminary Analysis. In *Lithic Technology: Making and Using Stone Tools*, E. Swanson, ed., pp. 35-61. The Hague: Mouton

Scar orientations on bifaces used to separate knappers. [His method of laser diffraction spectra is clumsy and his idea or explanations of measurement poor, but does show good discrim power among 5 modern and 1 prehist knapper.] Principle components, discriminant functions used.

Gunn, Joel
1977 Idiosyncratic Chipping Style as a Demographic Indicator: A Proposed Application to the South Hills Region of Idaho and Utah. In *The Individual in Prehistory*, J. Hill and J. Gunn, eds., pp. 166-204. New York: Academic Press.

Gunnerson, Dolores
1959 Tabu and Navajo Material Culture. *El Palacio* 64(1): 1-9.

Projectile points in Navajo ceremonial. Robbing ruins.

Gunnerson, Dolores A.
1969 An Unusual Method of Flint Chipping. *Plains Anthropologist* 14(43): 71-72.

3 instances of teeth use cited

Gurfinkel, D.M. and U.M. Franklin
1988 A Study of the Feasibility of Detecting Blood Residue on Artifacts. *Journal of Archaeological Science* 15: 83-97.

Gurova, Maria

2001 Eléments de Tribulum de Bulgarie - Références Ethnographiques et Contexte Préhistorique. *Archaeologia Bulgarica* 5 (1):1-19.

Threshing sledge flints, microwear study on ethnographic specimens.

Gurova, Maria
2005 Eléments de Faucilles Néolithiques en Silex de la Bulgarie: Evidence et Contexte. *Archaeologia Bulgarica* 9 (1):1-14.

Neolithic Bulgarian flint sickle blades. Microwear study. Drawing of Karanovo sickle.

Guthman, William H.
1985 Fakes and the Psychology of Collecting. In *Proceedings of the 1984 Trade Gun Conference, Part II, Research Records No. 18*, Rochester Museum and Science Center, Rochester, pp. 101-103.

Fake early militaria fool experts because they are careless or want to believe

Hack, Brian
2000 Rainbow Bar: Some Observations and Thoughts. *Lithics* 21: 36-44.

Mouth of River Mean, Hampshire, tidal gravels
irregular tools, crude hand axes

Haddock, Gerald
2005 Magnetite Strings in Glass Buttes Obsidian. *Chips* 17 (1): 20-21.

Magnetite and hematite is what makes obsid black or red depending on particle size, concentration of one or other. Photo shows particles aligned in GB obsid. Sheen obsid has microscopic aligned gas bubbles.

Haidle, Miriam Noel, Udo Neumann, and Alfred Pawlik
2010 Variety and Absence: A Cambodian stone tool assemblage at the dawn of the Metal Ages. In *Lithic Technology in Metal Using Societies*, B. V. Eriksen ed., pp. 247-258. Arhus, Arhus University Press.

Ornaments. Lack of stone cutting edges might relate to development of metals at end of Neolithic.

Hajduk, Adan, Ana Albornoz, and Maximiliano J. Lezcano
2006 Levels with Extinct Fauna in the Forest Rockshelter El Trebol, Northwest Patagonia, Argentina. *Current Research in the Pleistocene* 23:55-57.

Burnt + cut ground sloth bones and dermal ossicles = roasting meat with skin, a few flakes, other fauna, ca 10,500 RCYBP. Low intensity occupation.

Hall, Don Alan
2002 A Passion for Ancient Technology: Gene Titmus. *Mammoth Trumpet* 17(2):4-9.

Profile with photos. Experiments with PaleoIndian and Maya.

Hall, Robert L.
1983 A Pan-Continental Perspective on Red Ocher and Glacial Kame Ceremonialism. In *Lula Linear Punctuated: Essays in Honor of George Irving Quimby*, Robert Dunnell and Donald Grayson, eds. Museum of Anthropology, University of Michigan, Anthropological Papers 72, Ann Arbor.

Turkey Tail points as bull-roarers [clever and involved argument] bull roarer and flint both have ice/storm/magic assoc (gives lots ethnog on symbolism of flint and tools – good) probably in medicine bundles, not tools. Sandal-sole gorget of Glacial K culture is equivalent to Turk T, also bull roarer, but with star symbolism that relates to MesoAm gods also related to flint and knives and sacrifice. Differences could reflect boundary maintenance between 2 cultures contemporary

Hall, Roberta L., Donna McCarthy, and Don Alan Hall
2002 How Were North American Sites of the Pleistocene-Holocene Transition Discovered? *North American Archaeologist* 23(2):145-156.

Analyzed 323 sites >7500 BP. Public i.e. collectors, locals responsible for ca 20% of finds, but archaeological survey more, ca 25%, and construction another 20%.

Hallos, Jane
2004 Artefact Dynamics in the Middle Pleistocene: Implications for Hominid Behaviour. In *Lithics in Action: Papers from the Conference 'Lithic Studies in the Year 2000'*. E. A. Walker, F. Wenban-Smith, and F. Healy eds., pp. 26-37. Oxbow Books, Oxford.

Beeches Pit (Eng) and Ferme de L'Epinette (Fr). Refitting and chaine operatoire info on transport and discard decisions show cores + bifaces as transported elements of tool kits, simple dichotomy between curated vs expedient tools is not supported.

Hallowell, A.I.
1960 Self, Society, and Culture in Phylogenetic Perspective. In *Evolution After Darwin, Vol. 2*, Sol Tax, ed., pp. 309-372. Chicago: University of Chicago Press.

Page 324, quoted in Gowlett 1984 "Toolmaking as observed in *Homo sapiens* is a skilled act – learned in a social context where speech exists, and usually performed with reference to a purposeful act at some future time."

Halstead, L. Beverly
1984 Evolution – the Fossils Say Yes! In *Science and Creationism*, Ashley Montague, ed., pp. 240-254. New York: Oxford University Press.

Hambly, Wilfrid D.
1931 Types of "Tronattas" or Stone Implements Used by the Aborigines of Tasmania. *American Anthropologist* 33(5): 88-91.

[Descriptive, dull]. Plates of "Mousterian-like" tools; Quote (p. 91): "One old fellow, with energy surprising for his years, dashed one stone upon another, meanwhile leaping high into the air to avoid the flying splinters."

Hamilton, Cecil
2003 End Scrapers and How They Were Used. *Chips* 15 (3): 10.

Hamilton, Henry W.
1952 The Spiro Mound. *The Missouri Archaeologist* 14:1-276.

Hamilton, Marcus, B. Buchanan, B. Huckell, V.T. Holliday, M.S. Shackley, M. Hill
2013 Clovis Paleoecology and Lithic Technology in the Central Rio Grande Rift Region, New Mexico. *American Antiquity* 78(2):248-265.

Hamilton, T.M.
1960 Additional Comments on Gunflints. In T.M. Hamilton, ed. Indian Trade Guns. *The Missouri Archaeologist* 22: 73-79.

Hamilton, T.M.
1968 Review of A History of Gunflints by John Witthoft. *Historical Archaeology* 2:116-117.

Hamilton, T. M.
1968 *Early Indian Trade Guns: 1625-1775*. Contributions of the Museum of the Great Plains 3. Lawton, OK.

Gun part typology, short synopses of excavated fort sites, no info on gunflints.

Hamilton, T. M.
1980 Barrels, Balls, and Shot. In *Colonial Frontier Guns*, T.M. Hamilton ed., pp. 125-137. The Fur Press, Chadron, NB. Reprinted 1987, Pioneer Press, Union City, TN.

Arch info from 17 + 18 C sites; system of French gun bores and ball sizes; shot manufacture – pre 1665 by rounding cut lead sheet bits, 1665 "Rupert shot" = short drop of molten lead, ovoid with dimple; 1769 Wm Watts patent drop shot (200' into water) round shot.

Hamilton, T. M.
1980 The Gunflint in North America. In *Colonial Frontier Guns,* T.M. Hamilton ed., pp. 138-147. The Fur Press, Chadron, NB. Reprinted 1987, Pioneer Press, Union City, TN.

Concoidal fracture and other terms [the historic archaeologist trying to explain standard lithic terminology and not always very well]. So 2 kinds gunflints: spall [= flake] and flake [= blade segment] but avoids use of 'blade' because knappers used 'flake'. French used smaller nodules and cores, expected single gunflint from a flake, while Brits expected several, trimming techniques different too. Dolomieu says 1000 flakes per day or 500 finished gunflints from flakes; Skertchly says 7-8000 flakes per day, finished flints also more efficient.

Brits learned flake type gunflint from Fr after ca 1780; before which was state secret, not described in Diderot's encyclopedia for instance (1751-77). Witthoft (1966) documented Brit use of Fr flake-type flints in Am Revolution. Fr flake flints in use by 1663 or 1680 but 'not ordinary article of commerce' until after 1740. At 1663 site, a few flake types assoc with majority of Fr spall types (= wedge-shaped, gunspall). Wedge-shaped flints originally called 'Dutch' to disting from Fr and Brit, but term no longer applicable; made in England throughout 18 C., prob developed shortly after first flintlocks around 1600. But earliest form seems to be 'Nordic' bifacial flints, and prob some early flints just unshaped fragments broken by user. No witness accounts of gunspall making, illustrated from finds and replication. Photo of Earl of Abergavenny (1805) flints of both spall and flake type; of Ft Frederica (1736-1749) spalls and ballast core, Ft Michilimackinac (1717-81) – all spall type except intrusive late Brit and distinct Fr flake type flints; variety of material colors, spalls prob all British.

Hamilton, T.M. and K.O. Emery
1988 Eighteenth-Century Gunflints from Fort Michilimackinac and other Colonial Sites. Archaeological Completion Report Series No. 13, Mackinac Island State Park Commission: Mackinac Island.

Massive source, distinguishing diff origins by style and material, tests of use, use-wear forms, etc.
English, French, Spanish, and Indian flints. Spall vs flake [blade segment] gunflints. French flints yellowish translucent flint, usually single edge with rounded heel removing cones of percussion from sides. English dark, double edge or more often shorter bevel is untrimmed heel, little chipping on sides so cones usually survive. Indian flints usually pillow shaped and bifacial. Witthoft first IDd spall gunflints, noted British used French flake gunflints in Revolutionary War sites in preference to Brit spall flints, but Brit flake flints did not appear in America before 1800. Ft Michilimackinac 1715-1781 had only spalls and French flake flints, altho records show Brits were learning from French to make flake flints by 1775. Most of these spalls are of brown flint, presumably French altho some dispute.
Stone materials examined by source, petrography, microfossils in thin section and x-ray analyses. Ignition tests using archaeological flints.

Hamm, Jim
1998 Points of Stone. *Field and Stream* 53 (2): 44-47 (June 1998).

Callahan and Mike Cook mentioned, stone pts legal for hunting in some states, effective, need heavy pts for large game (tips for bowhunters)

Hammond, Norman
1976 Maya Obsidian Trade in Southern Belize. In *Maya Lithic Studies,* T.R. Hester and N. Hammond, eds, pp. 71-82. Center for Archaelogical Research: University of Texas at San Antonio, Special Report 4.

Hampton, O. W.
1999 *Culture of Stone: Sacred and Profane Uses of Stone among the Dani*. Texas A & M University Press, College Station.

[Large splendid book with detailed documentation including fine photos of New Guinea axe and adze manufacture, use, and culture. Writing is rather weak. Confusing typology of axes makes it difficult to consider regional variation.]

Hanson, Chris
1996 Selected Topics: Flint Knapping. Handout at Fort Osage, Missouri, and his other historic sites.

Brief explan, ethical statements about looting and signing

Hanson, Lee H., Jr.
1970 Gunflints from the Macon Plateau. *Historical Archaeology* 4: 51-58.

Dating in central Georgia, contact site on Ocmulgee R. by 163 gunflints. [Find sources not specified – surface, excav?] Four Witthoft types: Aboriginal (N=15), Dutch (81) (gunspalls), French (14), and English (4).

Rechipping – to reduce from musket to rifle size. Reuse as strike-a-lights. Most specimens show heavy use. Accept Witthoft date scheme [which produces battleship curves lacking an overlap between blade and spall types. Gap 1760-1800 filled by Fr, which only makes sense if the spalls were indeed Dutch and manuf locations changed, which they did not]. One burial has early 17th C doglock with Abo type flint in cock. No stratig diffs in distrib of types. Dutch type dominates, indicated major occup no later than mid 18th C, say 1680-1730. Second component brief, around 1800, produced all the Eng and most of the Fr flints. Dates of two trading posts agree. [But mix of types could equally be produced by only later fort with correct dating now.] Small flints, so using light hunting guns, not muskets.

Hanson, Lee H., Jr.
1971 A Reply to Gunflints and Chronology at Ocmulgee National Monument. *Historical Archaeology* 5: 109-110.

Hanson, Lee and Dick Ping Hsu
1975 *Casemates and Cannonballs: Archeological Investigations at Fort Stanwix National Monument*. National Park Service Publications in Archeology 14, Washington D.C.

Built at portage by British 1758, disrepair 1760s, reuse by Americans 1776, unsuccessfully besieged by St Leger + Oneida 1777, burned down 1781. Disturbed by subsequent town of

Rome, NY, cleared and excav for Nat Mon 1970s. [Thorough excav and report but quite boring.]

Misc gun parts, mostly musket. Gunflints (3,826) mostly from cache in burnt barracks. Dutch 62.9%, French 37.1%, one English post 1781 context. [The “Dutch” flints are all of early spall type, grey or black or brown - are they really from Holland? Flint color not impossible, but isn’t it more likely that these are early British flints? See Hamilton 1980. The “French” flints blond, on blades, and with rounded steep heels, so probably are Fr.] [Lengthy and boring descriptive details to sort into numbered types, not very useful. Considers notching evidence of strike-a-light use. Inconclusive table with dates + D/F % from other forts interpreted to claim Fr replacing D in last half of 18C, but not good evidence.]

Hardaker, Chris
1979 Dynamics of the Bi-Polar Technique. *Flintknapper’s Exchange* 2(1): 13-16.

Describes, applic to LaJollan and pre-Clovis[!] CA.

Hardaker, Chris
1980 The Little Lake Knap-In. *Flint Knapper’s Exchange* 3(3): 3-18.

Various experiments described; 1) boulder reduction 2) knappers evaluate Calico “tools” – all negative

Hardaker, Terry and R.J. MacRae
2000 A Lost River and Some Paleolithic Surprises: New Quartzite finds from Norfolk and Oxfordshire. *Lithics* 21: 52-59.

Crude tools. Notes hammer marks on platforms- problems of resistant material, but one core w. 5 good removals = “master craftsman”
Claims to see see sequence of test blows to judge quality of stone - 5 + 2 incipient cones, order [how can you tell?] shows R handed knapper. 3 blows with different and larger hammer [maybe] to remove one flake. [highly unconvincing details]

Hardin, Margaret Ann
1977 Individual Style in San José Pottery Painting: The Role of Deliberate Choice. In *The Individual in Prehistory*, J. Hill and J. Gunn, eds., pp. 109-136. New York: Academic Press.

Harding, David F.
1999 *Smallarms of the East India Company 1600-1856, Volume III: Ammunition and Performance*. Foresight Books, London.

[Incredible detail from documents and specimens on all issues, very well written.] Chapter 23: Flints, Percussion Caps, and Misfire Rates. Throughout, most flint supplied from England, sometimes as ballast nodules or other raw, especially before late 17th C, implying common knowledge of knapping at least enough to make strike-a-lights and early “wedge” [flake] gunflints. After late 17th C, mostly finished flints, ultimately in enormous numbers. Early flints are wedge form [= flake or spall], but superseded by end of 18th C by "platform" flints [= blade segment]. East Indiaman Earl of Abergavenny sank 1805 has about half of each among thousands of flints. Distinctions made in form + quality, and recognized then. [Illust with good photos of Abergavenny and other flints.] Three standard sizes (pistol, rifle, and musket) are larger than modern black powder fans use in same guns, but standardized by use of gauge, and similar to contemporary American standards. Info on producing and exporting companies. No detail on manufacture, and illustrations are from 1819 Edinburgh Encyclopedia [and not very accurate.] Documents constant complaints about quality of flints, inspections that rejected majority, and trials. [These seem odd to me - it shouldn't be hard to get a good flint, and in fact many of the trials end up blaming the soldiers' lack of skill in fixing flint in gun.] Agate flints (reputed harder than flint) from London and attempts to make in India - [since the old term "cut" is used for all flints, can't tell if these were cut or knapped.] Some attempts to use local flints, and import knappers or train some soldiers. Numerous ignition tests in late 18 early 19 C, show typical misfire rate around 15%, flints issued 1 for 10 or 20 shots, but actually lasted longer. Rules on how to fix in jaws of cock for best results.

Harding, I. C., S. Trippier, and J. Steele
2004 The Provenancing of Flint Artefacts Using Palynological Techniques. In *Lithics in Action: Papers from the Conference 'Lithic Studies in the Year 2000'*. E. A. Walker, F. Wenban-Smith, and F. Healy eds., pp. 78-88. Oxbow Books, Oxford.

Acid maceration to extract age-diagnostic organic-walled microplankton shows potential for sourcing in S England and Scottish flints.

Harding, P., PLGibbard, J. Lewin, MG Macklin, and EH Moss
1987 The Transport and Abrasion of Flint Handaxes in a Gravel-Bed River. In *The Human Use of Flint and Chert*, G. Sieveking and M. Newcomer, eds., pp. 115-126. Cambridge: Cambridge University Press.

experiment

Harding, P.
1987 An Experiment to Produce a Ground Flint Axe. In *The Human Uses of Flint and Chert*, G. Sieveking and M. Newcomer, eds, pp. 37-42. Cambridge University Press: Cambridge.

Hardy, Bruce L.
2003 Neanderthal Behaviour and Stone Tool Function at the Middle Paleolithic Site of La Quina, France. *Antiquity* 78 (301): 547-565.

Use-wear and residue study of 300 tools; half have evidence of use. Denticulate and Quina Mousterian levels, thermo-luminescence dates 40-48 kya, horse, bison, reindeer, cold steppe environment. Possible blood, hair frags, but most evid is of plant – wood working, eg. Moust pt w hard high-Si plant polish. Suggests wide range of resources worked, including sort and hard plants, wood, mammals, bird (feather bit) and bone or antler. Animal residues probably under-preserved. Hafting evidence at other sites but not here.

Harkness, Barbara M.
1986 Results on the Experimental Replication of the Turner Earthworks Pit-and-Tunnel Systems. *Lithic Technology* 15(2): 78-80.

Heat treatment in some odd Hopewell features

Harlacker, Leslie
2006 Knowledge and Know-how in the Oldowan: An Experimental Approach. In *Skilled Production and Social Reproduction*. Jan Apel and Kjel Knutsson eds., pp. 219-244. Societas Archaeologica Upsaliensis, Uppsala.

Elaborate tests to compare bonobos, skilled, and novice knappers to argue that "know-how" practical skill is more important in making Oldowan tools than "knowledge" theoretical understanding ie of platform angles and material, even in modern humans.

Harner, Michael J.
1956 Thermo-facts vs. Artifacts: An Experimental Study of the Malpais Industry. *Reports of the University of California Archaeological Survey* 40, Berkeley.

Malpais Industry lower Colo R. – crude surface finds – early? Like eoliths, poor tools – but desert pavement, not stream caused; stone boiling fractures? Or roasting pot? Or natural fire? Exper – oven at 1000 degrees F – fractures. Drop in water – no extra fract. But these differ from finds – no bulbs, less concoidal fract, no edge chipping. Can't rule out human chipping, need more work

Harper, Cheryl, and William Andrefsky
2008 Exploring the Dart and Arrow Dilemma: Retouch Indices as Functional Determinants. In *Lithic Technology: Measures of Production, Use, and Curation*. William Andrefsky, editor, pp. 175-191. Cambridge: Cambridge University Press.

"rather than signaling the use of dart technology during the Ancestral Pueblo period, some large hafted bifaces recycled from Archaic sites served as cutting or sawing tools, fulfilling need for Ancestral Pueblo people not filled by expedient flake tools." Pajarito Plateau, NM sites, 83 bifaces, Archaic with large corner-notched points compared to Coalition Period (1150-1325) and Classic Period (1325-1600) with small arrow points made from flake blanks, 178 "with the final shape often related to the shape of the original flake blank rather than a purposeful choice by the maker of the projectile tip." [even the poorly flaked points are shaped by choice!]. 3 theories explain presence of both in late sites: 1 multiple temporal components, 2 "replication" of large form for dart point or knife [really should just say "continued making that form"], 3 collection of old points for use as darts, knives, or ritually. Good context usually rules out 1, lack of biface debitage etc rules out 2. Ritual + functional use of old points in ethnography, a few refs. If reused for cutting, should have more wear + retouch [problem: larger points will anyway, they are more multifunction than little STPC arrow points]. If used only as cutting tools because arrows were the projectiles, lg pts in late sites should have more retouch, different shape than in Archaic contexts. If just used ritually, maybe not. Tests: haft area same both periods, but late site pts have much narrower + shorter blades = more retouch. Lg pts occur more often at late nonhabitation sites where tool production is not taking place; small arrow pts more in habitation + ritual contexts. So Archaic pts recycled into a system of expedient tools. Also implies arrow + dart were not contemporaneous.

Harper, Veronica, Azzura Di Marcello, and Jessica Jaynes
2007 Beveled Projectile Points and Ballistics Technology. Poster presented at? Accessed on web, URL: http://www.csulb.edu/~clipo/papers/551Posters-2007/BeveledProjectilePoints.pdf

[C. Lipo students' paper.] Assymetrical beveling, common in mid Archaic, should promote projectile spin at speed of throwing spear, 18 mps (Hughes 1998). Tested 6 beveled arch specimens, 3 non beveled, in low speed wind tunnel. They began spinning at 18 mps, and ceased spin at ca 22 mps. Assymetrical "twisted" bevel spun at lower speeds than symetrical bevel [not clear what they mean], suggesting assymetry intentional. Non beveled pt did not spin. [Why does spin cease at higher speeds?]

Harrer, Heinrich
1964 *I Come From the Stone Age*. Rupert Hart-Davis Ltd, London.

Travel adventure in New Guinea, first report of axe quarries. In Baliem R valley, quarry at Ya-Li-Me, cliff face broken by fire. Wamena village seems to be jumping-off point, missionized community. Writing mediocre, anthropologically naïve, not much detail on axes or quarries.

Harrington, Mark R.
1928 About Arrowheads. *Masterkey* 2(4): 25-28.

Humorous anecdote – shows 'old timer' how a pt was made by pressure, says learned from Indians, photo of stages of a pt w/ bone pressor. Mentions 'wide-spread fallacy' of 'heating flint and dropping cold water on it' Old man thinks god created them for Indians to use.

Harrington, Mark R.
1932 Flint Chipping. *Masterkey* 6(3): 96.

Paragraph on Brandon gunflints. Mentions George Ashley, Fred Snare, export to Africa, tinder flints for Boer War (24,000) and WWI (9,000)

Harrington, M. R.
1959 A Two-Purpose Atlatl. *The Masterkey*. 33 (2): 60.

SW type w/ antler flaker on handle

Harris, Arthur H.
1991 Preliminary Report on the Fauna of Pendejo Cave, Otero County, New Mexico. *Current Research on the Pleistocene* 8: 92-93.

[Pitifully unconvincing early man research]

Harris, Harry
1926 A Modern Artist in Flints. *Art and Archaeology* 21(2):68-70.

Account of Barbieri of Pasadena, CA [Barbieri published own work 1937], 30 years experience, taught self as teen in Michigan; uses antler and copper wire [photos show obsidian pts, competent but not super]

Harris, Ron L.
2014 Solutrean/Clovis and BiPoint Hypotheses. *Indian Artifact Magazine* 33(4):25-27.

Quick summary, not clear if he agrees. Photos of various players, Cinmar and other bipoint casts with Solutrean and Clovis forms. Bradley, Stanford, Hranicky.

Harris, W.R.
1916 The Ape Man. In the *Twenty-eighth Annual Report of the Ontario Provincial Museum*, 1916, pp. 49-62. Toronto: A.T. Wilgress.

[anti-evolution crack-pot]

Harrison, J.W.K. and S.D. Capaldo
1993 The Earliest Stone Tools: Their Implications for an Understanding of the Activities and Behaviour of Late Pliocene Hominids. In *The Use of Tools by Human and Non-Human Primates*, A. Berthelot and J. Chavaillon, eds., pp. 196-224. Clarendon Press: Oxford.

Harrison, Jack
1995 Untitled Letter to the Editor. *Bulletin of Primitive Technology* 9:9.

Promotes diversity, appreciate individual perspectives and share our talents as part of one “multicolored multiflow hunk of social rock”

Harry, Karen G.
1989 The Obsidian Assemblages from Homol’ovi III: Social and Economic Implications. *Kiva* 54(3): 285-296.

[good article] Late (post 1300) occup (as seasonal farming community) has more obsid-increased seasonal interaction. Almost all Gov’t Mt, prob obtained thru Anderson mesa sites, where Brown (1982) suggests some sites procuring obsid for exchange. Obsid at H in expedient tools, no evidence of restricted access or intensive use or “banking” of valued comodity. Lots (25%) cortex – arrives as cobbles, not finished goods from specialists. Non-

essential goods (obsid, cotton) used to keep exchange open, for subsistence goods in times of stress

Hart, Stephen
2000 *Flint Architecture of East Anglia*. Giles de la Mare Publishers Ltd, London.

Hart, Stephen
2008 *Flint Flushwork: A Medieval Masonry Art*. The Boydell Press, Woodbridge, UK.

Claims Romans used knapped flints at Burgh Castle River Waveny, but then forgotten until 13th C early Medieval walls of knapped flint, increase in important buildings eg Castle Acre Priory mid 14 C.

Hartenberger, Britt, Steven Rosen, and Timothy Matney
2000 The Early Bronze Age Blade Workshops at Titris Hoyuk: Lithic Specialization in an Urban Context. *Near Eastern Archaeology* 63(1): 51-58.

Wkshp w/ stored material, whole range of manuf by-products, in domestic situation. SE Turkey on tributary of Euphrates. Small rect rooms, stone foundations (including cores!) w/ mudbrick above. Blade core caches in rooms, also debitage, etc. 2 pits w/ 1600 stacked cores, 4 pits w/ waste debitage, almost all from blades; Household debris all over = expedient tools. Blade manuf restricted to wkshop. Rect tabular chunks flint from ~4 km. Crested blade or cortical blade beginnings of core – discarded, but Cananean blades mostly missing – absolute minimum 3200 blades (2 per core) made - but must be many more. Domestic hshld evidence of activities also = independent specialists, not elite controlled; Basic utilitarian tools, not convey social info, so not likely elite goods, common in houses all over site.

Hartwell, William T.
1995 The Ryan's Site Cache: Comparisons to Plainview. *Plains Anthropologist* 40(152): 165-184.

TX, 60 bifaces, 46 flks, hammer stns. Bifaces = preforms at diff stages, + 14 pts of Plainview types

Harwood, Joyce Ann
2001 The Gray Ghosts of Gustine. *Bulletin of Primitive Technology* 21:12-16.

[A bit too much "creative writing" style eg. "processed 100s of tons of chert"; quotes and cites my unpublished chapter]. Sollberger and Callahan friendly with Reinhardt, influenced his work, as did Nelson and Warren later. Died 1982. Disclaimer by editor – not celebrating his work, just recording history. Warren inspired by R, and also by Callahan and Silsby who were first to perfect Warren style on hafted knives. Jim Hopper created jig to flute them, from Sollberger. Warren taught Robt Blue lever style, Blue taught Harwood. [Confused piece w/ poor photos of Rhienhardt's trailer and debitage pile, 3 styles pts]

Harwood, Ray
1986a *Arrow Heads and Blades of Ancient California*. Privately Printed (World Flintknapping Society/ Tekawitha Institute of Ancient Man), Woodbridge, VA.

Harwood, Ray
1986b California Points. *Ancient Man Information Exchange Vol. 2.* Tekawitha Institute of Ancient Man: Woodbridge (VA).

Amateurish point typology

Harwood, Ray
1986c The Tale of the Flute. *Flintknapping Digest* 3(2): 1-3.

Summary of Crabtree, Flenniken, others, and own experiments

Harwood, Ray
1988 Flintknapping Bottle Glass. *20th Century Lithics* 1: 45-47.

Bottles, how to, tries to cover everything

Harwood, Ray
1988 Orcutt, King of the Flintknappers. Pamphlet privately distributed by author.

Sacred tradition – bifaces for White Deer Dance – Karok, for world renewal. Orcutt 1862-1946 w/ Karok mentor, made 100s large blades, sold bifaces and pts to collectors all over; knew of Ishi but no contact. Possible that Crabtree observed Orcutt [but no info]

Harwood, Ray
1988b Using the Ishi Stick. *20th Century Lithics* 1:84-91.

Describes Ishi's tools. Hafted pressure flakers for more leverage. "Controlled" [not!] experiment to show advantages, then claims any pt w/ large pressure scars is evidence of aboriginal use; lots of irrelevant examples

Harwood, Ray
1989 The 1989 California Rendezvous. *Chips* 1(3):2.

Harwood, Ray
1991 The History of 20th Century Flintknapping in North America. *Chips* 3(4):4-5.

Harwood, Ray
1993 J.B. Sollberger: Master of Paleo. *The Flintknapper's Exchange* July-August 1993: 41.

[Mostly flattery, little info] Began 1970 middle aged. First to use fulcrum and lever fluting

Harwood, Ray

1993 John Fagan: Knapper's Profile. *The Flint Knapper's Exchange* September-October 1993: 6-7.

Started age 10, 30 yrs ago, Crabtree school

Harwood, Ray
1993 Profile of Jeanne Binning, Ph.D. *The Flint Knapper's Exchange* September-October 1993: 7-8.

Little info, CA, finishing Ph.D., Crabtree and Flenniken student

Harwood, Ray
1994 Bob Patten, the High Plains Paleoknapper! *The Flintknapper's Exchange* March-April 1994: 5-6, 9.

Harwood, Ray
1999 *History of Modern Flintknapping*. Distributed by author.

Harwood, Ray
2001 Folsom, Clovis, and … the Opposed flute Anomaly. *Indian Artifact Magazine* 20 (3): 12-15, 74.

Harwood, Ray
2001 Points of Light, Dreams of Glass: An Introduction Into Vitrum Technology. *Bulletin of Primitive Technology* 21:24-36.

Predicts growth of interest in glass as natural sources get scarcer. Protohistoric local technol adapted subtraditions using glass. [rather unnecessary discussion of basic lithic techniques, including "the Whittaker Six" basics of pressure flaking"] Emphasis on pressure, including "power stroke" w/ Ishi stick or Aust wooden tool thrusting – these substitute for percussion on glass. Glass point traditions: Kimberley pts late 1800s to 1978 – recent, now lost art, 4 subtypes. Ishi pt type: tear drop noches, long triangle, medial ridge and related to Desert Side Notch pts. Good photos Ishi pts originals. Discusses bottle knapping in detail.

Harwood, Ray
2001 The Search for Ted Orcutt: Eugene's Journey. *Indian Artifact Magazine* 20(1):6-7, 72-74.

Intro: Harwood life and hard times. Eugene Heflin, amateur, in 1960s, researching Orcutt, found knapping site, died 1986. Orcutt story: b. 1862, Karok/Scot, at 14 apprentice to uncle. Knapping, apparently made living from traditional arts sales to collectors. Traveled for exotic stone; in 40s (early 1900s) world's best perc knapper- made 100s bifaces for Deer Dance and sale

Harwood, Ray
2001 Flintknapping Ishi Style. Privately Printed.

Harwood, Ray
2011 Fingerprints on the Glass, Knapping of the Ishi Saga and Considerations into Vitrum Technology. In *Experiment and Interpretation of Traditional Technologies: Essays in Honor of Errett Callahan*, Hugo Nami, ed., pp. 343-364. Ediciones de Arqueología Contemporánea, Buenos Aires.

Description and photos of Ishi knapping, from Nelson, Shackley, and RH observations of collections. Good photos of pts made by Ishi in museum. Ishi liked to use glass. Replicating his points in glass, tips and experience. Tear-drop expanding notches.

Hatch, James W., Joseph W. Michels, Christopher M. Stevenson, Barry E. Scheetz, and Richard A. Geidel
1990 Hopewell Obsidian Studies: Behavioral Implications of Recent Sourcing and Dating Research. *American Antiquity* 55(3): 461-479.

Four major sites. Sources consistent w/ Obsidian Cliffs in Yellowstone and Camas-Dry Creek in Idaho but possibly others in area too. Variation indicates multiple sources, range of dates also. Details on methods sourcing and hydration. Effects of fire. Material from "Master Artisan" grave at Hopewell actually diverse dates, not from making the large bifaces found elsewhere on site. See DeBoer 2004.

Hauptmann, Harold
1999 The Urfa Region. In *Neolithic in Turkey: The Cradle of Civilization, New Discoveries*. Edited by Mehmet Özdoğan and Nezih Başgelen, pp. 65-86. Arkeoliji ve Sanat Yayinlari, Istanbul.

Eastern Turkey, near Çayönü. Upper Mesop influence in early Neolithic, change from hunt/gath to permanent agric villages with differentiated society, including cult buildings with monumental carved pillars and sculpture in 9th mil BC.

Nevalı Çori [destroyed 1992 by Ataturk dam] village of long houses subdivided stone foundations suggest several rooms [or just foundations like grid houses at Cayonu?] 11-13 x 3.5-5.5 m, with square stone cult building 13 x13 m, roof supported by carved t-shape stone pillars, benched like a kiva. Sculpture from earlier phase buried into later version. Sculpture favors bird + human head motifs. Limited obsidian, good local flint, lots of points including PPNA types as well as PPNB, lots blades with sickle sheen, ground celts, shaft straighteners, butterfly beads like Abu Hureyra, marble rings, copper bead = early metallurgy. Many clay figurines, M + F + animal, not in cult area. Cultiv einkorn, 2-grain wheat, wild barley, lentil, pea, vetch, broad bean, wild nuts, hunt gazelle etc, domest sheep/goat.

Göbeckli Tepe more stone cult buildings [plans not shown] with benches and monolithic t pillars carved in relief. Bases of house structures cut into limestone, oval with placements for 2 roof supports.

Haury, Emil W.
1950 *The Stratigraphy and Archaeology of Ventana Cave*. Tucson: University of Arizona Press.

Archaic points. Arrow + bow remains, hafted points. Ritual use of points.

Haury, Emil W.
1945 *The Excavation of Los Muertos and Neighboring Ruins in the Salt River Valley, Southern Arizona*. Papers of the Peabody Museum of American Archaeology and Ethnology 24(1). Cambridge.

Writes up Hemenway Expedition (Cushing et al) work of 1887-1888. P 200-201 arrows and foreshafts from Double Butte Cave: common ritual offering, cites ethnog. One arrow of wood with nock for stone pt, others cane with hardwood foreshafts. Also numerous cane cigarettes, fill is usually resinous herb, minority have some tobacco.

Hawcraft, Jennie, and Robin Dennell
2000 Neanderthal Cognitive Life History and its Implications for Material Culture. In *Children and Material Culture*. J. S. Derevenski, ed., pp. 89-99. Routledge, New York.

Shorter childhood, both absolutely and relative to moderns, would pressure for rote instructional learning from adults rather than experimental, experiential learning, so culture would tend to stasis. Test 300 children 5-11 yr old on skills relevant to knapping, but not knapping itself. Force in hitting – only youngest too weak to detach flake. Accuracy hitting – wide variety but improvement with age. Sequential design ability (drawing incorporating an added blob) – significantly better older. 3-D shaping clay triangle – 5-7 more 2-D, older more variety of methods of forming. [Tests interesting but inadequately reported, and it would be better to test knapping directly].

Hawkinson, Cleone H.
2014 Curation History and Overview of the Plaintiffs' Studies. In *Kennewick Man: The Scientific Investigation of an Ancient American Skeleton*. Owsley, Douglas W., and Richard L. Jantz, eds., pp. 108-109. Texas A&M Press, College Station.

The Corps of Engineers mishandled the skeleton, allowed Indian access while denying it to the scientists, which resulted in theft of some bone, misplacement of other pieces, contamination by ceremonial juniper burning, etc. Improper curation because had decided to destroy it by giving to tribes for reburial. Corps, Dept of Interior, and tribes obstructed study as long as possible, including after court rulings allowed scientific study, refusing to approve study plans, not allowing video, etc. P 123 Rose concluded point entered hip from back, Chatters that point entered at an angle from the front.

Hawley, Marlin F., and Richard E. Hughes
1999 A Source Study of Obsidian from the Infinity Site (14MY305), Kansas. *Plains Anthropologist* 44(169): 297-305.

2 flakes from Malad, ID source. From Woodland site, but should not be used as evidence of Hopewell connection

Hayden, Brian, ed.
1979 *Lithic Use-Wear Analysis*. New York: Academic Press.

Hayden, B.
1977 Stone Tool Functions in the Western Desert. In *Stone tools as Cultural Markers: Change, Evolution and Complexity*, R.V.S. Wright, Editor., Humanities Press: Canberra. p. 178-188.

Hayden, B.
1979 *Paleolithic Reflections: Lithic Technology and Ethnographic Excavation Among the Australian Aborigines*. New Jersey: Humanities Press.

Hayden, Brian
1981 *PalaeolithicReflections – Lithic Technology and Ethnographic Excavation Among Australian Aborigines.* New Jersey: Humanities Press, Inc. Canberra: Austrian Institute of Aboriginal Studies

Detailed ethnography and experiments with stone tools – set up Abos, had then make spears, etc. Looks at edge angles, wear. Women knappers mentioned

Hayden, Brian
1986 Use and Misuse: The Analysis of Endscrapers. *Lithic Technology* 15(2): 65-70.

Comments on Siegel 1984

Hayden, Brian
1986 Resource Models of Inter-Assemblage Variability. *Lithic Technology* 15(3): 82-89.

Hayden, Brian
1987 From Chopper to Celt: The Evolution of Resharpening Techniques. *Lithic Technology* 16(2-3): 33-43.

Cutting requirements go up thru time w/ advances in woodwork, hunting and shelter. Resharpening changes from hard hammer to soft to resharpening flakes to pressure to grinding. Conservation of material increasingly important

Hayden, Brian, editor
1987 *Lithic Studies Among the Contemporary Highland Maya*. Tucson: University of Arizona Press.

Hayden, Brian
1987 Introduction. In *Lithic Studies Among the Contemporary Highland Maya*. B. Hayden ed., pp. 1-7. Tucson: University of Arizona Press.

Hayden, Brian
1987 Traditional Metate Manufacturing in Guatemala Using Chipped Stone Tools. In *Lithic Studies Among the Contemporary Highland Maya*. B. Hayden, ed., pp. 8-119. Tucson: University of Arizona Press.

Hayden, Brian
1987 Past to Present Uses of Stone Tools and Their Effects on Assemblage Characteristics. In *Lithic Studies Among the Contemporary Highland Maya*. B. Hayden, ed., pp. 160-234. Tucson: University of Arizona Press.

Hayden, Brian
2008 What Were They Doing in the Oldowan? An Ethnoarchaeological Perspective on the Origins of Human Behavior. *Lithic Technology* 33(2):105-139.

Australian ethnog - simple tools like flakes and choppers most needed for woodworking - making other critical equipment like digging sticks + throwing sticks, spears. So Oldowan similar, not just using crude cores (choppers) to produce simple flakes, which in turn implies a more elaborate material culture, and thus home bases etc seem more likely.

Hayden, Brian, Edward Blakewell, and Rob Gargott
1996 The World's Longest-lived Corporate Group: Lithic Analysis Reveals Prehistoric Social Organization Near Lillooet, British Columbia. *American Antiquity* 61(2): 341-356.

3 big house pits, deposits 2400-1100 B, each w/ diff lithic raw material types that stay same thru time = continuous groups, continued use same house or pit. Different access to resource areas stays same too. Probably group access to diff food resource areas too – some diffs in bone assembs. More than 1000 years stability of social groups. [I want to know more about houses – what evid? Can a pit house really survive and be rebuilt for 1000 yrs?]

Hayden, Brian and Rob Gargett
1988 Specialization in the Paleolithic. *Lithic Technology* 17(1): 12-18.

Why tool type diversity increases through time – specialized tools for increased efficiency in processing large volumes or repeated needs. Suggest multi purpose but simple tools for mobile people. When tasks become frequent, need special tools, or when volume processed is large. Analogy = sports fisherman – 1 knife; commercial fish packing - many different knives. UpperPal begins intense use herds, grain resources etc

Hayden, B. and W. Hutchings
1989 Whither the billet flake?, in *Experiments in Lithic Technology*, D. Amick and R. Mauldin, Editors. British Archaeological Reports: Oxford. p. 235-258.

Hayden, Brian, and Margaret Nelson

1981 The Use of Chipped Lithic Material in the Contemporary Maya Highlands. *American Antiquity* 46(4): 885-898.

Excellent – info on use of choppers to rough out metates, glass cutting tools, discard, use

Hayden, Bryan and Suzanne Villeneuve
2009 Sex, Symmetry and Silliness in the Bifacial World. *Antiquity* 83(322):1163-1175.

Symmetry derives from functional aspects and increased need for cutting edges in Acheulean, which led to bifacial billet work, which produces symmetry. Mithen and others don't know much about lithic technology.

Hayes, A.C.
1976 A Cache of Gardening Tools: Chaco Canyon. *Papers of the Archaeological Society of New Mexico* 3: 83.

Several dibble and digging sticks, a hafted tchamahia and a similarly hafted piece of sheep horn – evid for use as hoes

Hayes, Virgil
1994 Hafting Ideas. *Bulletin of Primitive Technology* 8:43-46.

Drawings of pt haftings in cane and foreshafts

Haynes, C. Vance, Jr.
1965 Carbon-14 Dates and Early Man in the New World. Paper Presented at the International C14 and H3 Dating Conference, Pullman, Washington, 1965.

Haynes, C. Vance Jr.
2005 Clovis, Pre-Clovis, Climate Change, and Extinction. In *Paleoamerican Origins: Beyond Clovis*, edited by R. Bonnichsen, B. Lepper, D. Stanford, and M. Waters, pp. 113-132. Center for the Study of the First Americans, Texas A+M University, College Station, Texas.

Plea for multiple hypotheses. Ice-free corridor still supported by some data. Clovis expansion still coincides with extinction of Rancholabrean fauna at 10,890 RCYBP, but stratigraphy shows too sudden to be either human predators or climate change alone, so probably both. Nenana complex of Alaska better Clovis progenitor than eg Monte Verdean. Retains skepticism about Meadowcroft dates, the Miller Lanceolate point there and similar pts in Wisconsin [see Overstreet 2005] and Cactus Hill may be just poor Clovis. [Good current statement of continuing conservative position].

Haynes, C. Vance
2011 Distribution of Clovis Points in Arizona and the Clovis Exploration of the State, 11,000 BC. *Kiva* 76(3):343-367.

Table of 109 point finds, including those from Naco, Lehner, Murray Springs. Most points in E half of state, clusters around Tucson + Flagstaff, sparse around Phoenix (destruction of sites, lack of resources?). Speculative scenario of a band of hunters moving into state from Utah to explain point distribution [but there is really no reason to assume all from one group - too much variability and a span of multiple lifetimes at least.] Assumes C points used with atlatls.

Haynes, C. Vance, and George A. Agogino
1986 Geochronology of Sandia Cave. *Smithsonian Contributions to Anthropology* No. 32. Washington, D.C.

Haynes, Gary
2002 *The Early Settlement of North America: The Clovis Era*. Cambridge University Press, Cambridge.

Surprizingly conservative viewpoint - skeptical of most pre-Clovis, supportive of possible megafauna overkill, dismissive of “Solutrean connection,” but gives fair discussions. Fluted point typology and distribution, Clovis lifeways. [Nice book, well-written with solid documentation even if you don’t agree with all positions.]

Haynes, Gary and Jarod M. Hutson
2013 Clovis-era Subsistence: Regional Variability, Continental Patterning. In *Paleoamerican Odyssey*. Kelly E. Graf, Caroline v. Ketron and Michael R. Waters ed., pp. 293-310. Tops Printing, Inc., Texas.

Healan, Dan M.
1992 A Comment on Moholy-Nagy’s “The Misidentification of Lithic Workshops.” *Latin American Antiquity* 3 (3): 240-242.

Tula obsid workshop. Microdebitage is best indicator of wkshp location. M-N criticizes H on basis of too restricted a definition: in fact knapping can take place in a dump, and waste is sometimes scavenged for further working.

Healan, Dan M.
1995 Identifying Lithic Reduction Loci with Size Graded Macrodebitage: A Multivariate Approach. *American Antiquity* 60(4): 689-699.

Healan, Dan M.
2002 Producer Versus Consumer: Prismatic Core-Blade Technology at Epiclassic/Early Postclassic Tula and Ucareo. In *Pathways to Prismatic Blades: A Study in Mesoamerican Obsidian Core-Blade Technology*. K. Hirth and B. Andrews, eds., pp. 27-36. Cotsen Institute of Archaeology Monograph 45. University of California, Los Angeles.

Healan, Dan
2003 From the Quarry Pit to the Trash Pit: Comparative Core-Blade Technology at Tula, Hidalgo, and the Ucareo Obsidian Source Region. In *Mesoamerican Lithic Technology:*

Experimentation and Interpretation, K. G. Hirth ed., pp. 153-169. University of Utah Press, Salt Lake City.

Healan, Dan M., and Janet M. Kerley
1984 Edge Damage Induced by Core Immobilization in Prismatic Blade Manufacture. *Lithic Technology* 13(1): 1-10.

Healey, Elizabeth disk
2001 The Role of Obsidian at the Halaf Site of Domuztepe, S. E. Anatolia. In *Beyond Tools: Redefining the PPN Lithic Assemblages of the Levant*. Isabella Caneva, Cristina Lemorini, Daniela Zampetti, and Paolo Biagi eds., pp. 389-398. ex oriente, Berlin.

6-18% obsidian, from both Cappadocian and E Anatolian sources (site is between them) >250 km. Obsid worked differently than chert, almost all blade production, cortex rare, some ornamental pieces finished by grind and polish.

Healey, Elizabeth, and Reay Robertson-Mackay
1983 The Lithic Industries from Staines Causewayed Enclosure and Their Relationship to Other Earlier Neolithic Industries in Southern Britain. *Lithics* 4: 1-27.

Healy, Frances
1984 Lithic Assemblage Variation in the Late Third and Early Second Millenia BC in Eastern England. *Lithics* 5:10-18.

Grooved Ware vs. Beaker pottery sites; Groove W assoc w/ oblique and chisel pts, flaked or polished discordal knives. Bkr w/ barb and tanged pts, straight edge flake knives

Healy, Frances
1987 Predictions or Prejudice? The Relationship Between Field Study and Excavation. In *Lithic Analysis and Later British Prehistory: Some problems and approaches*, A.G. Brown and M.R.Edmonds, eds., pp. 9-18. B.A.R. British Series 162: Oxford.

Healy, Frances
2004 After Hunter-Gatherers - Lithics in a Crowd Scene. In *Lithics in Action: Papers from the Conference 'Lithic Studies in the Year 2000'*. E. A. Walker, F. Wenban-Smith, and F. Healy eds., pp. 183-184. Oxbow Books, Oxford.

Healy, Paul F., Jaime J. Awe, and Hermann Helmuth
2004 Defining Royal Maya Burials: A Case from Pacbitun. In *The Ancient Maya of the Belize Valley: Half a Century of Archaeological Research*. James Garber ed., pp 228-237. University Press of Florida, Gainesville.

Adult male with pots, beads, shell, pyrite mirror back. In crypt covered with flint flakes, which are seen as sign of great importance, symbol that tomb was actually within Xibalba, or as physical remnants of lightning that formed cave or tomb. With refs.

Heeringa, Irene, and Willard L. Elsing
1960 *Treasure from a Pre-Historic Age: Part One, The Eccentrics of Oklahoma*. Oak Crest Museum, Joplin, Missouri.

crackpot pamphlet trying to connect Tussinger's fakes to Maya etc

Heflin, Eugene
1982 The Huge Obsidian Ceremonial Blades of the Pacific Northwest. *Central States Archaeological Journal* 29(3): 122-129.

Used in White Deerskin Dance of Hupa, Karok, Tolowa, Yarok, and other cerems of others [good refs]. Last of great NW Calif knappers – T Orcutt, Scotch/Karok, died 1946, age 84, cites sizes of blades – his largest 42 1/2" x 9" x 1 3/4"

Heider, Robert
1967 Archaeological Assumptions and Ethnographical Facts: A Cautionary Tale from New Guinea. *Southwestern Journal of Anthropology* 23(1):52-64.

Dugum Dani examples show difficulty of reconstructing past culture. Typologies not relate to emic categories, but may be useful anyway – example of ground axes and adzes. Perishable settlements leave little trace. Shell and stone trade reflects some relations, but other more important ones are in perishable material only. Archaeologist should "steep himself in a wide range of ethnographies, and be explicit, critical, and cautious in his choice of assumptions based on these ethnographies."

Heider, Robert
1991 *Grand Valley Dani: Peaceful Warriors, 2nd ed*. Holt, Rinehart, and Winston, Fort Worth.

General ethnography, RH part of expedition 1961 with Gardner, *Dead Birds* film of Dani "ritual" warfare. 57-58: Stone adzes and axes, blades traded in from 'distant quarries' [group not specified] then hafted by Dani owners - "the one essential item of the economy in which they were not self-sufficient." Adze more popular, 5-10/1 axe, used to cut down trees, finish planks, butcher pigs; axes only for splitting logs, firewood. Blades hard metamorphic epidote + clorite rock.

Pig tusks used as tools, sharpened with flint chips. 59-60: Weapons of wood, bows, arrows, spears. Bows 1.5 m long, strung w 1 cm wide bamboo strip. Arrows 1.7 m, no fletch, no nock. Longest shots by one test, 90-100 m. Arrows not poisoned, but "dirtied." Points notched or barbed to break off in wound. Two or 3 prong arrows for bird hunting. Spears valued, 3m length of laurel from Jalemo, thrusting weapon. But 101-102, battles, men armed by personal preference with spears or bow. Spearmen carry long 'jabbing' spears and often 'a couple cruder short spears which they can throw…'

Heilen, Michael P.
2004 Julian Hayden's Malpais Model: A Pre-Clovis Claim from the American Southwest. *Kiva* 69(3):305-331.

Simple stone tools, "sleeping circles" and other features, no points. Desert varnish as evidence of extreme age. Dating of this consistent pattern is problematic but worthy of further study.

Heilen, Michael, L. S. Premo, and Steven L. Kuhn
2003 Quantifying Variation at Snaketown: Assessing Levels of Standardization in Ceremonial Projectile Points. Submitted manuscript, Arizona State Museum.

Standardized elaborate pts from cremations suggest specialized manufacture. Different obsidian source areas used for different types suggest internal social/ethnic divisions. Small as well as large site obsid distribs show no elite control of material, use in domestic and ritual contexts. Kin based procurement and distrib likely, other artifacts like shell manuf in houses agrees. Shell limited to some houses, but level of manuf suggests part-time specialists only. Arguments about standardization not previously based on measurements, which can be compared with coefficient of variation. "Weber fraction" – human senses can perceive differences between objects to within ± 3% for a CV of 1.7%, so that is expected upper limit of standardization. Skilled ceramic replication can produce CV of 2-5%. Expect less for lithics. Whittaker (1984) data from exper pt replication produced CVs .12-.17. (Random variation distribution is CV = 57.7%).

Three main forms: 1)Snktn Serrated 2) Sauceda Notched 3) Snktn Barbed, 1 + 2 smaller. From a cremation mound with 1000 1 + 2 pts. Barbed are rare (n=64), from other contexts.

Suggest 3 levels of standardization, with my exper pts and most of the 1 + 2 pts in a middle class, and one of the Grasshopper sets at a high level, but the Snktn Barbed are at a low level. [Since these are the most elaborate, maybe not surprising and not an indication of lack of specialization.] Most standardiz in size, but diffs in details. Variation in base details may reflect diffs btwn workshops making overtly similar points for display. Degree of standardization and probable quantities of output support part-time specialization only.

Hein, Wulf
2012 Arrowheads made of flint. In *The Bow Builder's Book, Revised 2nd Edition*, Angelika Hörnig, ed., pps. 81-95. Schiffer Publishing Ltd., Atglen, PA.

Ok short knapping info for prehist Euro, illustrated w diagrams. [Translator (from German) needed some help.]

Heizer, Robert F.
1945 Introduced Spearthrowers (Atlatls) in California. *Masterkey* 19: 109-112.

Spanish- Mexican, Alaskan, and archaeological introductions in historic time

Heizer, Robert F.

1976 *A Collection of Ethnographical Articles on the California Indians*. Ballena press, Ramona.

Heizer, Robert F., and Thomas R. Hester
1978 *Great Basin Projectile Points: Forms and Chronology*. Ballena Press Publications in Archaeology, Ethnology, and History Number 10. Socorro: Ballena press.

Heizer, Robert F., and Adam E. Treganza
1944 Mines and Quarries of the Indians of California. *California Journal of Mines and Geology* 40(3): 291-359.

Hellweg, Paul
1984 *Flintknapping: The Art of Making Stone Tools*. Canoga Park: Canyon Publishing Co.

Mediocre how-to

Hellweg, Paul
1996 Easy to Make "Pebble" Tools. *Bulletin of Primitive Technology* 12: 21-23.

Oldowan bashing = throwing on anvil, bipolar, and discordal knives = anvil primary flake off flat cobble; illust w/ photos

Helwig, Kate, Valery Monahan, and Jennifer Poulin
2008 The Identification of Hafting Adhesive on a Slotted Antler Point from a Southwest Yukon Ice Patch. *American Antiquity* 73(2):279-288.

Ice finds show atlatl darts from before 8000 BP to appearance of bow and arrow at ca 1200 BP. This pt dates 7310 ± 40 BP uncal.; assoc w similar dated shaft frag. 24.6 cm long, now warped, slotted both edges for microblade insertion, one frag remains, slots 1-1.5 mm W, 3-4 mm deep along whole length. Short tang scored for attachment. Incised linear decoration, red pigment traces. Microscopy and spectroscopy show mastic is pure spruce resin with no inorganic additives, and not heated to produce tar or pitch.

Hemmings, Christopher Andrew
2004 *The Organic Clovis: A Single Continent-Wide Cultural Adaptation*. Unpublished PhD dissertation, University of Florida.

Continent-wide pattern irrespective of local environmental constraints. "State of the art" specialized technology for a generalist subsistence strategy without good recent analogs, in response to unique envir of Pleistocene. Data from 246 early Paleoindian sites with organic remains, focus on artifacts made of extinct fauna bone. 352 species plants + animals represented, with 116 having direct evidence of use, although clear preference for mammoth and mastodon. Nearly 250 formal bone + ivory tools in 45 different forms. Tight definition of Paleoindian = Clovis only, all others lack Rancholabrean fauna and are a different adaptation. [Makes extensive and convincing case documenting Clovis use of wide variety of plant and animal resources (although burning is not always a secure

indicator of an animal being eaten)]. Florida ivory tools overwhelmingly mastodon, not mammoth. Direct evidence of many species argues against human "overkill" but effect of hunting on proboscidians could have been important factor in their extinction, since they were doing very well just before Clovis.

Skeptical of expedient flaked bone "tools" - at odds with formal + curated Clovis assemblages. Formal tools ground, not flaked.

Most Clovis bone + ivory from Florida river sites, where context often poor. Three atlatl hooks: 1. Hendrix collection, Santa Fe R. Paleolama proximal phalanx with distal end ground to isolate spur .68 cm long with high contact polish. 2. Mastodon vestigial tusk hook, split, scored for hafting, beveled to elevate spur tip, 5 cm long. Ichetucknee R. 3. Proboscidian ivory shaft fragment reworked into atlatl hook, Santa Fe R. 7.5 cm L, sim in form to others. [also mentions but does not describe similar antler hooks. The photos in my copy are completely illegible]

Bannerstone [?] of proboscidian vertebra centrum13.5x1.5x5.4 cm, tapered bun in form, hafting hole mentioned but not measured, broken in middle with two drill holes for mend. [He's not sure it's Clovis, resembles later stuff eg Windover].

Ivory points: short ones are "launched;" long ones often considered foreshafts are really lance points [doesn't describe many individ specimens or argue about function much. P 192 confused section appears to dislike foreshaft idea because curved foreshafts not fly straight.].

Only 6 species documented for tool use: mammoth, mastodon, paleolama, dire wolf, horse, deer. Tools and manuf technique same all over continent. Split tusk analogous to splitting large bifaces to make point blanks, a characteristic Clovis technique. Overshot flakes for thinning and as tools. Two co-traditions of point form, parallel sided and excurvate. Blades from cylindrical + wedge-shaped polyhedral cores.

Clovis fluting failure rate 50+% [No!] so bone tools used because more reliable. Ivory pts puncture better if greased, explaining presence of ochre outside of caches [Huh? No connection explained]. Three alternative pts: short (launched) bone, stone (launched) and long curved pts used as lances and intended not to remain in prey.

Limited art (geometric incisions, one possible mastodon, beads) connect to Euro Up Paleolithic, but lack cave art. Counts points from sites and surveys [not considering thousands in private undocumented hands], argues that kill sites without bone would look very small. Distance of pts from stone sources indicates mobility. Oldest Clovis sites already have exotic stone, indicating prior exploration and travel. Highly mobile population of low density produced thin spread of homogenous cultural remains. Technology centered foragers, relying on technol, mobility, and use of predictable large game, but also very broad spectrum of resources, an adaptation with no recent analog.

Hemmings, C. Andrew, James S. Dunbar, and S. David Webb
2004 Florida's Early-Paleoindian Bone and Ivory Tools. In *New Perspectives on the First Americans*. B. T. Lepper and R. Bonnichsen, eds., pp. 87-92. Center for the Study of the First Americans, College Station, TX.

Pleistocene faunal associations including tools and modified bone for giant tortoise, sloth, dire wolf, llama, bison antiquus, tapir, mastodon and mammoth.

Hemmings, E. Thomas **x**
1987 The Horner Site Debitage. In *The Horner Site: The Type Site of the Cody Cultural Complex*, G. Frisson and L. Tood, eds., pp. 435-442. Orlando: Academic Press.

Brief. High proportion biface debitage

Hemmings, E. Thomas
2007 Buried Animal Kills and Processing Localities, Areas 1-5. In *Murray Springs: A Clovis Site with Multiple Activity Areas in the San Pedro Valley, Arizona*. C. Vance Haynes and Bruce B. Huckell eds. Pp. 83-137. Tucson: University of Arizona Press.

Detailed summary of archaeology of site, edited from unpub dissertation 1970. Loci include mammoth and bison kill areas, camp areas. Other associated fauna include camel, horse, canid.

Area 3 mammoth kill has mammoth footprints on occup surface, possible bison wallows. Partial carcass of adult F mammoth, parts of 2-3 bison. No points with mammoth but 2 lithic scatters include 1 pt and 2 tips, bifaces, blades, many flakes. Famous mammoth bone shaft straightener.

Area 4 multiple bison kill - 7 C pts, most damaged: "Impact damage was predominant, probably resulting from high velocity casting of projectiles, and transverse snapping was secondary, presumably resulting from thrusting into a vigorously moving animal. This may, in fact, represent the sequence of killing, mortal wounding by repeated dart or spear casts and the coup de grace administered by thrusting." [Can't actually make that distinction, eg Flenniken darting goats produced lots of snaps, as does target shooting, but interestingly implies belief that atlatls were used by Clovis. The pts are from 4-7 cm long, including one small obsidian, so all small, none really well made.]

Area 5 horse kill: 2 pt bases, flakes etc, only teeth survived.

Henderson, Norman
1994 Replicating Dog Travois Travel on the Northern Plains. *Plains Anthropologist* 39(148): 145-159.

No lithics but good – ethnog, experimental evaluation

Henning, Dale
1950 Two Unusual Finds from Allamakee County, Iowa. *The Minnesota Archaeologist* 16(1): 17 (plus plate of photos)

An odd Oneota pot. Flaked fish hook from near Fish School Mounds, found in erosional area [dubious antiquity – poor context - supposed to be one of few examples found in a good context, but not good enough to argue for authenticity of flint fish hooks]

Henning, Dale R. and Shirley J. Schermer
2004 Artifact Analysis. In Central Siouans in the Northeastern Plains: Oneota Archaeology and the Blood Run Site. D. R. Henning and T. D. Thiessen eds. *Plains Anthropologist* 49 (192, Memoir 36): 435-523,

Typical Iowa Oneota unnotched triangular points and thumbnail scrapers, etc.

Henning, Ed
2009 Red Jasper in Pennsylvania. *Indian Artifact Magazine* 28(2):6, 71-72.

Henry, D.O.
1989 Correlations Between Reduction Strategies and Settlement Patterns, in *Alternative Approaches to lithic Analysis*, D.O. Henry and G.H. Odell, Editors.American Anthropological Association: Washington. p. 139-156.

Henry, D.O.
1995 The Influence of Mobility Levels on Levallois Point Production, Late Levantine Mousterian, Southern Jordan, in *The Definition and Interpretation of Levallois Variability*, H.L. Dibble and O. Bar-Yosef, Editors. Prehistory Press: Madison. p. 185-200.

Henry, Donald O., Stephen A. Hall, Harold J. Hietala, Yuvi E. Demidoko, Vitaly I. Usik, Arlene M. Rosen, and Patricia A. Thomas
1996 Middle Paleolithic Behavioral Organization: 1993 Excavation of Tor Faraj, Southern Jordan. *Journal of Field Archaeology* 23(1): 31-53.

Henry, Don O., C. Vance Haynes, and Bruce Bradley
1976 Quantitative Variations in Flaked Stone Debitage. *Plains Anthropologist* 21(71): 57-61.

Henson, Donald
1985 The Flint Resources of Yorkshire and the East Midlands. *Lithics* 6:2-9.

Henry, Donald O., Seiji Kadowaki, and Sean M. Bergin
2014 Reconstructing early Neolithic social and economic organization through spatial analysis at Ayn Abu Nukhayla, southern Jordan. *American Antiquity* 79(3):401-424.

Floors in a PPNB nucleated settlement. Fill and floor assemblage formation processes. Chert artifacts from bidirectional naviform cores. Most chert from outcrops on Ma'an Plateau 50-55 km. Naviform core blade production in region ranges from household to specialized shop. Here houses have evidence of whole productio sequence, thus low level of specialization.

Hesse, India S.
1995 A Reworked Clovis Point Near Chevelon Ruin, Arizona. *Kiva* 61(1): 83-88.

Herbich, Tomasz
1995 L'application de l'électro-résistivité pour définer l'extension des aires comprenant des mines de silex. In *Les Mines de Silex au Néolithique en Europe: Avancées Récentes*. J. Pelegrin and A. Richard, eds, pp. 15-25. Comité des Travaux Historiques et Scientifiques, Vesoul.

Herley, Richard
1978 *The Stone Arrow*. Ballantine Books, New York.
1981 *The Flint Lord*. Ballantine Books, New York.
1984 *The Earth Goddess*. Ballantine Books, New York.

Trilogy of novels set roughly in Neolithic Britain. In *Stone Arrow*, Tagart's tribe of "nomads" in the forest is massacred by farming villagers. The lone survivor, he wipes out the village with cunning and woodscraft. His revenge is interrupted when he is captured by traders from the Flint Lord and made a slave in the flint mines, but he escapes that too, rescuing another slave's sister. Not a bad novel. The character conflicts within the village that lead to its destruction are more interesting than Tagart himself but Herley doesn't really know much about prehistoric Britain. His view of the Neolithic is Medieval and Iron Age (complex stratified society with feudal lords, peasants, slavery, capitalistic market trade, villages with diverse institutional structures like bakeries and brothels) rather than Neolithic and tribal. The technology is not glaringly wrong, but not vividly understood either. The Flint Lord rules because he controls the flint mines, and scrapers serve as currency for small transactions, apparently because they can only come from the Flint Lord's mines. This is a silly conception because the resources for simple tools are everywhere in S England, and anyone can make them, even if large mines like Grimes Graves supported specialist industries as well. The farmers supposedly are Germanic stock, probably owing more to his knowledge of later history than current understanding that suggests more French origins. The possible conflicts between indigenous hunters and recently entered village farmers is a situation that intrigues archaeologists as well.

In *The Flint Lord*, Tagart must rouse the other nomads as the Flint Lord plans to wipe them out and expand his empire. More warfare, treachery, betrayal, until both the Flint Lord and the nomads are destroyed. The Neolithic is imagined way too complex, with incongruous armies, taxes, ships, siege warfare, dogsleds [!] etc. By *The Earth Goddess*, all pretense of a realistic Neolithic is abandoned. The British Flint Lord turns out to be merely a governor for a Britain run as a colony by a German "Prime" emperor, they have elaborate measurement and writing systems, an order of monks that appears to be inspired more by Oriental history than anything else, and so on. The plot is also weaker: the boy Tagart adopted is raised by the monks and grows to repudiate the oppressive system they support, ultimately vowing to become Prime and reform it.

Hester, Thomas R.
1972 Ethnographic Evidence for the Thermal Alteration of Silceous Stone. *Tebiwa* 15: 63-65.

Hester, Thomas R.
1974a Archaeological Materials from Site NV-WA-197, Western Nevada: Atlatl and Animal Skin Ponches. *Contributions of the University of California Archaeological Research Facility* 21:1-43. Berkeley: University of California

Analysis of looted material from dry cave, near Winnemucca Lake, NV. Unusual atlatl >6000BC. Wooden shaft with attached bone hook and long bar weight (19 cm L, weighs 80-100 gm). Atlatl L

= 58.1 cm. [This is the model for Bob Perkins atlatls, aka Nicholarsen Cave atlatl, see Allely 1992]. 2 skin pouches w/stone tools - 5 hafted bifaces and one long obsid biface with wrapped base handle, all used as fish knives plus ? Variable micro + macro wear, not function-specific, but definitely use as knives, fish scales on one [A. Romano points out more likely atlatl dart foreshafts, possibly used in fishing, with a feathered line found with them attached as float. I agree they are probably foreshafts.] The base of points on these are obscured by mastic and sinew lashing, no notching visible, appear to be stemmed, x-rays confirm. Overall L from 174-230 mm, wood L 126-141, T 13-15, overall weights from 25-70 grams. [So small for dart, but large for arrow, and more likely early form points.]

Second bag had >100 pts and preforms of Eastgate type (shows type's reality), probably by one individual, with compound short antler pressure-flaker. [See Smith et al. 2013 – these pts all similar, and diff sizes could be classed as Elko vs Rosegate]

Hester, Thomas R.
1976 Belize Lithics: Forms and Functions. In *Maya Lithic Studies,* TR Hester and N Hammond,eds., pp. 11-20. Center for Archaeological Research: University of Texas San Antonio, Special Report 4.

Hester, Thomas R.
1977 The Lithic Technology of Mission Indians in Texas and Northeastern Mexico. *Lithic Technology* 6(1-2): 9-12.

Hester, Thomas R. (ed.)
1978 *Archaeological Studies of Mesoamerican Obsidian*. Ballena Press, Socorro.

Hester, Thomas R.
1985 The Maya Lithic Sequence in Northern Belize. In *Stone Tool Analysis: Essays in Honor of Don E. Crabtree*, M. Plew, J. Woods, and M. Pavesic, eds., pp. 187-210. Albuquerque: U of New Mexico Press.

Colha, 1979-81 seasons. 89 workshops id'd, ca 9% of mounds in 6 km2 area of Colha. Summary of assemblages: preceramic points, Early Preclassic at Cuello, L PreC to Early Postclassic at Colha. LPC - begin industrial production, tranchet bit tools, lg oval biface, stemmed macroblade "daggers," elongate bipointed bifaces, rough eccentrics, ovoid limestone hammerstones. Early C - little data. Late Classic - 17 workshops, oval biface (celts) smaller + narrower, chert blades, small stemmed pts on blades, "general utility biface" (thick + biconvex with finely chipped, almost pointed bit), in 2 forms I = elongate + oval, hafted in hole thru handle, II = truncated, hafted in socket. [As near as I can tell, truncated forms are broken, maybe reused rather than an intentional type, and the hafting distinction is pure speculation]. Also more, finer eccentrics. Early PostC - blade technol + celts disappear, emph proj pts, probably darts, leaf shaped bifaces (thin, points or knives), plano-convex triangular biface adze, use of antler billets. Late PostC - tiny arrow points.

As examined artifacts from Colha "realized rigid typological constructs would be meaningless. What leaves Colha as large oval biface...becomes axe or hoe at consumer end; when broken, recycled into myriad ad hoc forms."

Hester, Thomas R.
1989 Perspectives on the Material Culture of the Mission Indians of the Texas-Northeastern Mexico Borderlands. In *Columbian Consequences: Archaeological and Historical Perspectives on the Spanish Borderlands West*, Daivd H. Thomas, ed., pp. 213-229. Washington: Smithsonian Institution Press.

Persistence of lithic and ceramic technol, a new pt type arises [small triang form]

Hester, Thomas R.
1999 Notes on South Texas Archaeology 1999: 3 – Observations on Fraudulent Artifacts in the Borderlands. *La Tierra* 26(3): 1-6.

Not too informative but humorous. Good photos, some info: Mexican pts, thunderbirds and fish hooks, figurines, cites W & S 1999

Hester, Thomas R., David Burrow, Frank Asaro, Fred H. Stross, and Robert L. Giauque
2006 Trace Element Analysis of an Obsidian Milnesand Point, Gaines County, Texas. *Current Research in the Pleistocene* 23:106-107.

Cerro Toledo rhyolite source, Valles Caldera, Jemez Mts, New Mexico.

Hester, Thomas R. and Robert E. Heizer
1973 *Bibliography of Archaeology I : Experiments, Lithic Technology, and Petography*. Addison-Wesley Module 29.

A critical publication in the early days of experimental archaeology, a wonderful source, now outdated, but still good stuff.

Hester, Thomas R., Robert F. Heizer, and R.N. Jack
1971 Technology and Geological Sources of Obsidian from Cerro de las Mesas, Vera Cruz, Mexico, with Observations on Olmec Trade. In *Papers in Olmec and Maya Archaeology*, pp. 133-142. Contributions to the University of California Archaeological Research Facility No. 13. University of California : Berekeley.

Hester, Thomas R. and Helen Michel
1980 Geologic Sources of Obsidian Artifacts from the Site of Colha, Belize. In *The Colha Project Second Season, 1980 Interim Report*, T. R. Hester, J. D. Eaton, H. J. Shafer eds., pp. 313-316. Center for Archaeological Research, University of Texas, San Antonio.

14 specimens, x-ray fluorescence. 13 PostC and PreC from Ixtepeque, Guat. 1 PreC from San Martin Jilotepeque, Guat. None from El Chayal, closest source.

Hester, Thomas R. and Harry J. Shafer
1984 Exploitation of Chert Resources by the Ancient Maya of Northern Belize, Central America. *World Archaeology* 16 (2): 157-173.

Describes chert resources at Sand Hill, other sites, and especially Colha. Eocene and Miocene cherts [odd] Some open pit quarries at Colha, also aguadas as mines. Repeats much stuff from other articles.

Hester, Thomas R. and Harry J. Shafer
1987 Observations on Ancient Maya core technology at Colha, Belize. In *The Organization of Core Technology*, J.K. Johnson and C.A. Morrow, eds., pp. 239-258. Boulder: Westview Press.

Hester, Thomas R. and Harry J. Shafer eds
1991 *Maya Stone Tools: Selected Papers from the Second Maya Lithic Conference* Prehistory Press, Madison.

Hester, Thomas R. and Harry J. Shafer
1991 Lithics of the Early Postclassic at Colha, Belize. In *Maya Stone Tools: Selected Papers from the Second Maya Lithic Conference*. T. R. Hester and H. J. Shafer eds, pp. 155-162. Prehistory Press, Madison.

Hester, Thomas R. and Harry J. Shafer
1992 Lithic Workshops Revisited: Comments on Moholy-Nagy. *Latin American Antiquity* 3 (3): 243-248.

M-N's criteria for wkshp are too restrictive, other evidence than microdebitage identifies them, including "mounded deb deposits mixed with chipping dust originating on small platforms, or talus deposits spilling off platforms." Several examples at Colha. Deb differs from hshld debris – gives sherd % by weight for some deposits. Assessing scope of production more important than precise wkshp loc anyway.

Hester, Thomas R., and Harry J. Shafer
1994 The Ancient Maya Craft Community at Colha, Belize, and its External Relationships. In *Archaeological Views from the Countryside: Village Communities in Early Complex Societies*, edited by Glenn M. Schwartz and Steven E. Falconer, pp. 48-63.

Summarizes lithic sequence. Surveys primary and peripheral consumer sites. Some other lithic workshop sites in primary consumer zone.

Hester, Thomas R., Harry J. Shafer, and Thena Berry
1991 Technological and Comparative Analysis of the Chipped Stone Artifacts from El Pozito, Belize. In *Maya Stone Tools: Selected Papers from the Second Maya Lithic Conference*. T. R. Hester and H. J. Shafer eds, pp. 67-84. Prehistory Press, Madison.

Hester, T.R., H.J. Shafer, J.D. Eaton, R.E.W. Adams, and G. Ligabue
1983 Colha's Stone Tool Industry. *Archaeology* 36 : 45-52.

[good pop summary] Small cerem center, lithic workshop débris mounds. 2 main periods. Late PreClassic 800 BC-250 AD, tranchet adzes, lg oval bifaces, lg stemmed macroblades, eccentrics. Late Classic AD 600-900, chert blades and blade pts, small biface celts, eccentrics, some tranchets. Sees continuity, specialized small manuf center. Photo - density of debris. Estimated production of 2,000,000 tranchet adzes

Hester, Thomas R., H. J. Shafer, T. C. Kelly, and Giancarlo Ligabue
1982 Observations on the Patination Process and the Context of Antiquity: A Fluted Point from Belize, Central America. *Lithic Technology* 11(2) : 29-34.

Hester, Thomas R., Harry J. Shafer, and Thomas C. Kelly
1980 A Preliminary Note on Artifacts from Lowe Ranch: A Preceramic Site in Belize. In *The Colha Project Second Season, 1980 Interim Report*, T. R. Hester, J. D. Eaton, H. J. Shafer eds., pp. 229-232. Center for Archaeological Research, University of Texas, San Antonio.

Four stemmed points similar to N. Am. Archaic, surface finds without ceramics, 20 mile N of Belize City. Chert, 2 perhaps heated, diagonal flaking diagnostic [doesn't look that consistent to me except for one]. Shoe-shaped unifaces and stone bowls maybe assoc.

Hibben, Frank C.
1941 Evidence of Early Occupation in Sandia Cave, New Mexico, and other sites in the Sandia-Manzano Region. *Smithsonian Miscellaneous Collections* 99(23).

Hibben, Frank C.
1946 *The Lost Americans*. Thomas Y. Crowell Company, New York.

Hibben, Frank C. and Jacqueline Nichols
1978 Comment on Point #3: Fluted Sandia. *Flintknappers' Exchange* 1(3):29-35.

Interview, rambles. Defends Sandia, Lucy site has Sandia and confirms date ca 20 kya. Folsom camp w/ structures at Rio Rancho. He knapped in early days [which might explain Sandia points!]

Higgins, J.P.
1994 Letter From the Puget Sound Knappers. *Chips* 6(1):1.

Complains BLM may close Glass Buttes – to get money out of us; Waldorf replies – don't make mess, respect land owners

Higgins, Michael Dennis, and Reynold Higgins
1996 *A Geological Companion to Greece and the Aegean*. Duckworth, London.

Good background treatment, organized around major sites and areas, lots of info on rock and mineral exploitation in antiquity, eg marble quarries, gold, etc.

Milos obsidian in Plate 15A, near Demenegaki, dark obsid remants in rhyolite, originally all glassy but altered + crystallized after water entered cracks, leaving obsid only interiorly. Chap 13 covers Turkey, but really only the W, coast and inland to Sardis. Dominated by limestone deposits modified by extensive volcanism, producing marbles and other metamorphic and igneous deposits. No flint mentioned.
Chap 15 Cyclades. Milos/Melos obsidian valuable early. Basement rocks SE are metamorphic schists + marbles, overlain by volcanics, starting submerged 3.5 mya in SW, then 2.5 mya sub-aerial andesite + dacite domes in W, with ashes, then 1.7 mya rhyolite domes and submarine andesite domes + pyroclastics in E, highly altered + brecciated. Several explosive eruptions 400 kya to 90 kya produced phreatic craters and cones, tuffs, lahar (ash or debris flow deposits). Even later similar eruptions, most recent between 80-205 AD form more cones. Obsidian at Demengaki (E) in external parts of 1.8 mya rhyolite dome, and Bombarda dome at Ayia Nychia W of Adamas. Perlite produced by mining rhyolite with high water content, heating to expand, for lightweight aggregate + insulator. Bentonite + kaolinite converted from andesite + rhyolite by volcanic hot water. Bentonite = alumen of antiquity, used as deodorant, salve, emetic, dyeing.

Hildburgh, W. L.
1919 On the flint implements attached to some Apache 'Medicine Cords'. *Man* 19:81-87.

collected 1909 by Goddard, 4 cords w attached points. Manuf and use of such implements "practically obsolete among Apache of present day" although San Carlos + White Mt still make some pts for older men to use in quivers for special occasions. These not modern made, picked up for magical use. Effects: protect from missiles, protect a child. Probable relation between arrows and lightening [though he really has no evidence that Apache think this, just associations from other groups. The points shown include both small arrow pts and older dart points and bifaces].

Hildebrandt, William R., and Jerome H. King
2012 Distinguishing Between Darts and Arrows in the Archaeological Record: Implications for Technological Change in the American West. *American Antiquity* 77(4):789-799.

Ames et al. 2010 uses Shott, Thomas etc to suggest Hatwai Eared pts (4400-2800 BP) and Cascade pts (8500-4500 BP) are arrow pts on Plateau much earlier than usual 2300 BP date.

New Dart-Arrow Index is less affected by artifact damage and reworking: Neck width + max thickness, 11.8 mm as boundary between dart and arrow pt. Good proxy for wt + size, works on fragments, not modified by reworking, less subject to stylistic variation.

Test on NW Gt Basin assemblage of well-known types, 1600 pts from Hildebrandt excavs, data from Thomas and Ames, all work well.

Test hafted points: arch darts (Thomas, Shott) 18.5-20.6 mm, and Pueblo Bonito arrows (Thomas) 10 mm. Ethnographic arrow collections (Thomas, Sinopoli) don't work well, often have too-large points. Probably loss of skills and manufacture for collectors.

Hatwai + Cascade pts are dart pts. No reason to accept Ames early entry of bow, or long co-existence of atlatl, which was mostly replaced quickly.

Hill, James N.
1970 Broken K Pueblo: Prehistoric Social Organization in the American Southwest. Anthropological Papers of the University of Arizona 18. Tucson: University of Arizona Press.

Hill, James N.
1977 Individual Variability in Ceramics and the Study of Prehistoric Social Organization. In *The Individual in Prehistory*, J. Hill and J. Gunn, eds., pp. 55-108. New York: Academic Press.

Hill, James and Joel Gunn, eds.
1977 *The Individual in Prehistory.* New York: Academic Press.

Hill, K.
2013 A Revised Paleoamerican Menu: Wally's Beach Camel. *Mammoth Trumpet* 28(1): 17-20.

Alberta, reservoir, denuded by wind after draining. Camel vertebral column with severed ribs, cut marks. Megafauna footprints. Butchered horses, Clovis pts test positive for horse proteins. Kooyman + Tolman work.

Hill, Malcolm
1949 A Time Study in Making an Atlatl with Primitive Flint Tools. *Tennessee Archaeologist* 5(1): 12.

Took him 2 hrs and 58 min

Hill, Matthew
2006 Before Folsom: The 12 Mile Creek Site and the Debate Over the Peopling of the Americas. *Plains Anthropologist* 51(198):141-156.

1895 fluted pt with extinct bison

Hill, Matthew G., Vance T. Holliday, and Dennis Stanford
1995 A Further Evaluation of the San Jon Site, New Mexico. *Plains Anthropologist* 40(154): 369-390.

Pts pictured and described – San Jon (=Eden or = Firstview), and late Paleo or E Archaic notched pts

Hill, Phillip J.
1998 Recent Excavations at the Williamson Site: A Quarry-Related Paleoindian/Early Archaic Site in Dinwiddie County, Virginia. *North American Archaeologist* 19(1): 35-58.

Fluted point and Archaic site, large area. Debitage analysis used primary/secondary/ tertiary categories [bad idea]; Clovis-like and Kirk stemmed pts, flake tools, biface frags, [not very exciting]

Hill, Phillip J.
2011 A Study of Biface Technology at the Williamson Paleoindian Site (44DW1) in Southeastern Virginia: an Examination of Biface Reduction Utilizing the "Callahan Model" In *Experiment and Interpretation of Traditional Technologies: Essays in Honor of Errett Callahan*, Hugo Nami, ed., pp. 512-535. Ediciones de Arqueología Contemporánea, Buenos Aires.

Knappers at Williamson concentrated on early stage biface work and later stages were done elsewhere. They worked in stages, as modeled by Callahan.
[Some useful discussion of bifaces, but too much emphasis on Callahan stages which are well-known and useful, but the emphasis seems to be on testing them, rather than using them to understand the site. Some inexcusable jargon: "the excavated recovery included" - recovery is NOT a concrete noun, "assemblage" should be used instead. Some real problems with the site are minimized: the assemblage is surface collected from a plowed site, but he claims "stratigraphic integrity."]

Hill, Robert T.
1903 Flint, An Ancient Industry. *The Engineering and Mining Journal* 76: 692.

Brief note. TX chalk = true flint. Visit to Brandon, 13 knappers, traditional techniques described, some other uses of flint

Hill, Willard Williams
1982 *An Ethnography of Santa Clara Pueblo, New Mexico*. University of New Mexico Press: Albuquerque.

Old pts used to protect from ghosts, symbols

Hilton-Simpson, M.W.
1920 Gun-Flint Making in Algeria. *Man* 18-19: 33-34.

struck flakes with hammerstone, trimmed with tiny iron hammer [like carried with some guns] has screw driver handle. Local stone. Others use stone hammer only "rough but serviceable flints."

Hintzman, Marc William
2000 *Scarce-Resource Procurement and Use: The Technological Analysis of an Obsidian Blade Workshop in the Lowlands of Belize*. Unpublished MA thesis, University of California, Riverside.

Site 272-136 on El Pilar transect survey. Platform with 3 low mounds forming plazuela group, plus a chultun. Six trenches excavated [but info so vague it's hard to tell what came

from where.] Tested by BRASS program 1984, 1992, but structures not excavated. Ceramic chronol: occup Mid PreC thru Terminal Classic [he implys continuous use and blade making, but there is no date info for specific deposits. Probably this means a Late Classic site with early sherds in fill].
Exper replic of obsid blades to develop debitage typology. Uses a slotted upright support, some sort of chest crutch. Argues truncation of conical cores allows straight blades, good evidence in site. Obsidian material (11,440 pieces) little cortex or percussion core prep, lots of core maintenance and blade debris, almost no “good” whole blades = evidence blades were made on site from cores which had already been thoroughly prepared or partly reduced, probably a specialist activity. Numerous chert tools mentioned, no detailed analysis. [Wedges, our “edge-battered flakes”, possibly used to peck cores for truncation. Lots of drills or gravers indicate some other craft activity as well as obsid.]
[Useful analysis, some contextual problems: espec hard to separate primary and secondary refuse, no tight chronol. Some contexts he argues are primary because of small debitage seem from excav notes to also have architectural debris and trash mixed.]

Hirst, K. Kris
1991 The Great Gunflint Debate. *Journal of the Iowa Archaeological Society* 38: 62-65.

Gunflint or scraper? Considered morphology, context, use wear - decided to remain “equivocal”

Hirst, K. Kris
1992 Glass Bottles into Scrapers, Knives. *Iowa Archaeological Society Newsletter* 42(4): 1, 4-5.

Pressure flaked scraper edges on bases of 19th C bottle frags

Hirth, Kenneth
2002 Provisioning Constraints and the Production of Obsidian Prismatic Blades at Xochicalco, Mexico. In *Pathways to Prismatic Blades: A Study in Mesoamerican Obsidian Core-Blade Technology*. K. Hirth and B. Andrews, eds., pp. 81-90. Cotsen Institute of Archaeology Monograph 45. University of California, Los Angeles.

Hirth, Kenneth G.
2003 Experimentation and Interpretation in Mesoamerican Lithic Technology. In *Mesoamerican Lithic Technology: Experimentation and Interpretation*, K. G. Hirth ed., pp. 3-9. University of Utah Press, Salt Lake City.

Hirth, Kenneth G.
2003 The Kaminaljuyu Production Sequence for Obsidian Prismatic Blades: Technological Characteristics and Research Questions. In *Mesoamerican Lithic Technology: Experimentation and Interpretation*, K. G. Hirth ed., pp. 170-181. University of Utah Press, Salt Lake City.

Hirth, Kenneth G.
2008 The Economy of Supply: Modeling Obsidian Procurement and Craft Provisioning at a Central Mexican Urban Center. *Latin American Antiquity* 19(4):435-458.

Hirth, Kenneth and Bradford Andrews, eds.
2002 *Pathways to Prismatic Blades: A Study in Mesoamerican Obsidian Core-Blade Technology*. Cotsen Institute of Archaeology Monograph 45. University of California, Los Angeles.

Hirth, Kenneth, and Bradford Andrews
2002 Pathways to Prismatic Blades: Sources of Variation in Mesoamerican Lithic Technology. In *Pathways to Prismatic Blades: A Study in Mesoamerican Obsidian Core-Blade Technology*. K. Hirth and B. Andrews, eds., pp. 1-14. Cotsen Institute of Archaeology Monograph 45. University of California, Los Angeles.

Hirth, Kenneth G. and Bradford Andrews, and J. Jeffrey Flenniken
2003 The Xocihalco Production Sequence for Obsidian Prismatic Blades: Technological Analysis and Experimental Inferences. In *Mesoamerican Lithic Technology: Experimentation and Interpretation*, K. G. Hirth ed., pp. 182-196. University of Utah Press, Salt Lake City.

Hirth, Kenneth, and J. Jeffrey Flenniken
2002 Core-Blade Technology in Mesoamerican Prehistory. In *Pathways to Prismatic Blades: A Study in Mesoamerican Obsidian Core-Blade Technology*. K. Hirth and B. Andrews, eds., pp. 121-129. Cotsen Institute of Archaeology Monograph 45. University of California, Los Angeles.

Hirth, Kenneth G., Peter Kelterborn, Jacques Pelegrin, and Bradford Andrews
2003 Experimentation and Interpretation in Mesoamerican Lithic Technology: A Look to the Future. In *Mesoamerican Lithic Technology: Experimentation and Interpretation*, K. G. Hirth ed., pp. 234-238. University of Utah Press, Salt Lake City.

Hirth, Kenneth G., Gene L. Titmus, J. Jeffrey Flenniken, and Jacques Tixier
2003 Alternative Techniques for Producing Mesoamerican-Style Pressure Flaking Patterns on Obsidian Bifaces. In *Mesoamerican Lithic Technology: Experimentation and Interpretation*, K. G. Hirth ed., pp. 147-152. University of Utah Press, Salt Lake City.

Label three techniques: 'Ishi' (produces up from R, down from L pattern, point held edge up in flaking), 'Titmus' (produces up from L, down from R pattern, point held so flakes detached onto supporting fingers, not palm) and 'Crabtree/Tixier' (up L down R, point held flat in palm). Up from R, down L is supposed to be typical of N. America, "reverse" flaking down from R, up L is supposed to be typical of Mesoamerica. [These supposed patterns are not a good idea. Descriptions are confusing, any of these positions can be manipulated to produce either pattern, idea of areal distinctions is not supported with any data and seems overgeneralized, eg. Grasshopper pts and experimental pts for my diss all show down R, up L, so it is certainly not Mesoam only.]

Hiscock, Peter
2002 Pattern and Context in the Holocene Proliferation of Backed Artifacts in Australia. In *Thinking Small: Global Perspectives on Microlithization*, edited by Robert Elston and Steven L. Kuhn, Archeological Papers of the American Anthropological Association 12, pp. 163-178.

Hiscock, Peter
2004 Slippery and Billy: Intention, Selection, and Equifinality in Lithic Artifacts. *Cambridge Archaeological Journal* 14 (1): 71-77.

Ethnographic knapping by two Australians, with hammerstone to produce quartzite flake knives. Stated objective: >8 cm, white interior material. Variability: 6-15 cm, feather or hinge or retouched edges. Unusual posture, flakes fly behind and to L, invisible to knapper, so helper watches, and selection is by "negotiation." Final selection was by random from box of initially acceptable pieces [Knapping abilities appear crude]: attempts to retouch usually resulted in discard. Theoretical conclusions: retouch does not necessarily = design. Selection of "acceptable" pieces may be partly haphazard or oddly patterned. Decisions not all based on stable template, but on negotiation of different views about different attributes, contingent on changing circumstances of the moment. Should be careful of implying that all tools made to a template, or that transitions like Mid to Up Paleolithic reflect new abundance of tool forms/templates and thus new cognitive abilities. Perhaps different social dynamic instead of newly imposed "form".

Hiscock, Peter
2005 Reverse Knapping in the Antipodes: The Spatial Implications of Alternate Approaches to Knapping. In *Lithic Toolkits in Ethnoarchaeological Contexts*, edited by Xavier Terradas, pp. 35-39. BAR International Series 1370.

Ethnographic 1978 observations of Slippery and Billy, Alyawara men. "Old enough to have been exposed to traditional practices of knapping... which had been demonstrated to S + B when they were young men at start of 20th Century." Twisting cross-body stroke sent flakes behind and L of knapper, so knapper doesn't see his product. Pattern of flake fall different from modern exper knappers, archaeol patterns might differ as well. [True, but I also wonder just how skilled these guys were - sounds like not very, and perhaps never were habitual knappers].

Hiscock, Peter
2013 Occupying New Lands: Global Migrations and Cultural Diversification with Particular Reference to Australia. In *Paleoamerican Odyssey*. Kelly E. Graf, Caroline V. Ketron and Michael R. Waters ed., pp. 3-11. Tops Printing, Inc., Texas.

Hiscock, Peter, and Chris Clarkson
2007 Retouched Notches at Combe Grenal (France) and the Reduction Hypothesis. *American Antiquity* 72(1):176-190.

Attribute analysis of notched flakes concludes traditional types can be viewed as arbitrary divisions in continuum of notch size + number. More notches = more heavily reduced. Flake blank as constraining influence. Implications for Mousterian typology + interpretation of industrial variability.

History Detectives
2005 Episode 8: Calf Creek Arrow, Tulsa, Oklahoma. Transcript, URL: www.pbs.org/historydetectives accessed 9/7/005.

Calf Creek pt in bison horn core, examined to show apparently authentic, indicates projectile use as well as knife use of this type, assoc with *Bison occidentalis*, presumably atlatl. No illusts.

Hoard, Robert J., John R. Bozell, Steven R. Holen, Michael D. Glascock, Hector Neff, and J. Michael Elam
1993 Source Determination of White River Group Silicates from Two Archaeological Sites in the Great Plains. *American Antiquity* 58(4): 698-710.

Neutron activation distinguishes visually similar sources

Hoard, Robert J., and Jeffrey R. Ferguson
2011 Source Determination of an Obsidian Projectile Point from the Massacre Canyon Site (25HK13), A Keith Phase Occupation in Southwest Nebraska and Implications for Social Connections During the Early Ceramic Period. *Plains Anthropologist* 56(217):47-52.

Valle Grande source, Jemez Mts, New Mexico

Hockett, Bryan S.H.
1995 Chronology of Elko Series and Split Stemmed Points from Northeastern Nevada. *Journal of California and Great Basin Anthropology* 17(1): 41-53.

Obsidian hydration for 109 pts from NE NV [follow expected chronol pretty well], split stem pts Late Pleist – Mid Holocene, but Elko series not until Mid Holocene

Hockett, Bryan, William R. Hildebrandt, and Jerome H. King
2014 Identifying dart and arrow points in the Great Basin: Comment on Smith et al.'s "Points in Time: Direct radiocarbon dates on Great Basin projectile points." *American Antiquity* 79(3):561-565.

Smith et al. says Nicholarsen cache 101 points are both dart and arrow; applying Hildebrandt and King (2012) methods of distinguishing show they are just arrow points. Further argument about Elko vs Large Side-Notched form.

Hodder, Ian
1982 *Symbols in Action: Ethnoarchaeological Studies of Material Culture*. Cambridge University Press, Cambridge.

Artifact style as identity marker

Hodder, Ian, ed.
1987 *The Archaeology of Contextual Meanings*. Cambridge University Press: Cambridge.

Hodder, Ian, ed.
1989 *The Meanings of Things: Material Culture and Symbolic Expression*. Unwin Hyman: London.

Hodder, Ian
1999 Renewed Work at Çatalhöyük. In *Neolithic in Turkey: The Cradle of Civilization, New Discoveries*. Edited by Mehmet Özdoğan and Nezih Başgelen, pp. 157-164. Arkeoliji ve Sanat Yayinlari, Istanbul.

Polished obsidian mirrors and finely flaked flint daggers suggest evidence of specialization, but other reasons for arguing limited degree of complexity. [plate shows another dagger w carved openwork bone handle representing boars head]
New work 1993 - surface, 1995 - scraping N surface showed dense houses w symbolic stuff in area away from Mellaart's = household cult, not priestly quarters. But more elaborate buildings have more obsid pts + cores, figurines. Building 1 in N, details of sequence. Ritual activities including many burials and wall painting within domestic activity contexts. Suggest clean/dirty areas, relief sculpture integral to room + family, removed at abandonment, painting often changed + assoc with burial activity.

Hodder, Ian
2006 *The Leopard's Tale: Revealing the Mysteries of Catalhoyuk*. Thames and Hudson, London.

Hodgson, Derek
2009 Symmetry and humans: reply to Mithen's 'Sexy Handaxe Theory'. *Antiquity* 83(319):195-198.

Questions symmetry as evolutionary signal of health; symmetry is perceptual "early warning" to pay attention to something, humans recognize and are alert to symmetry at 4 months, before conscious awareness, so handaxe symmetry may arise simply from human alertness to and preference for.
[But misses point that most handaxes are NOT that symmetrical - Mithen stereotypes and exagerates.]

Hodges, Paul
2008 "They don't like it up'em!": Bayonet fetishization in the British Army during the First World War. *Journal of War and Culture Studies* 1(2):123-138.

Bayonet was not useful for much, including fighting as taught, inefficient and even dangerous in trenches. Reflected tradition of earlier warfare, training for aggressive

attitude, and British manly warlike virtues. Symbolic of such, and even sexualized. Promoted killing of prisoners or surrendering enemy.
[Symbolic functions of weaponry. But Hodges plainly has an anti-war and anti-weapon attitude and exaggerates or misunderstands some of the accounts he uses, apparently in part by post-modern contamination claiming that texts assign agency to the weapon.]

Hoffecker, John F.
2005 Innovation and Technological Knowledge in the Upper Paleolithic of Northern Eurasia. *Evolutionary Anthropology* 14 (5): 186-198.

Early (45-30 kya) Mid (30-20), Late (20-12) Upper Paleolithic innovations discussed world wide with first evidence dates for many. Early (dispersal period, before end Neanderthals at 30). Pre-35, only bone awls, eyed needles Kostenki 15 E Euro Plain 35-30. Drills by earliest EUP, so prob fire drills. EUP split base antler point, prob simple traps + snares. Beginnings of notational systems, painted images, and pipes or flutes.

MUP, Gravettian technol, periglacial envir, improved shelters, bone fuel, storage pits. At Buret, Siberia, 25 kya, figurine shows hood = sewn skin clothing. Beveled bone spear pts, ivory “boomerang” at Oblazowa, Poland. Isotopic + bone evidence of broader range of diet. Weaving + netting tools at several N. Euro sites. Intentionally fired clay ritual objects. Larger sites, denser occupations. By Solutrean times in W Euro, eyed needles, self-barbed antler pts (= fishing?), first spear thrower (Combe-Sauniere I) [drawing from Cattelain 1989].

LUP W Euro (Magdelenian) sites include multiple structures, lamps, poss stone boiling pits, large pops. Siberian contrast - short term sites = less productive habitat. Wider food ranges in all, barbed harpoons (Magd and E Euro + Siberia) but hooks only late eg Courbet France. Eliseevichi Russia 1000s fox bones = trapping. Spear thrower common in Magd but unknown in E Euro + Siberian sites. Bow and arrow not sure until 14 kya Stellmoor Germany, but backed microliths in Magd + Epi-Gravettian may = bow. Dogs also LUP. Cave art, lamps, mixed paints.

Hoffman, Charles M. **pdf**
1997 Alliance Formation and Social Interaction During the Sedentary Period: A Stylistic Analysis of Hohokam Arrowpoints. Unpublished PhD dissertation, Arizona State University.

Hoffman, Michael Allen
1979 *Egypt Before the Pharaohs: The Prehistoric Foundations of Egyptian Civilization*. Dorset Press, New York.

Cite for background to Gerzean knife; also has pictures of contemp tools

Hoffman, Michael Allen
1987 Late Gerzean Ripple Flaked Knife. Cast EG-2. *Lithic Casting Lab Catalogue No. 2*. Lithic Casting Lab, Troy.

[Actually card w/ cast, not in catalogue?]

Hoffman, Michael Allen
1992 Burlington Chert. *Chips* 4(3):3-4.

Hoffman, W.J.
1879 The Discovery of "Turtle-Back" Celts in the District of Columbia. *The American Naturalist* 13(2): 108-115.

Crude quartzite bifaces – small 2-4", thick [blanks?] undatable, pre-indian; Eskimos driven N by encroachment of Inds; tools too crude for hunt, so ate fish [!]

Hoffman, W.J.
1891 Poisoned Arrows. *The American Anthropologist* 4: 67-71.

Cites instances in literature. Poison effective by magic. Florida and Caribs, not Aztecs, Seris. Apaches used to use rattlesnake venom and deer liver. Lipan Apache - sap of yucca angustifolia. Sioux - Opuntia spines and grease. Blackfeet, Bloods, Piegan, Sioux - rattlesnake venom (+/- deer liver). Pit River Inds (Calif) - dog liver and wild parsnip. Siberia – polar bear liver. Indians won't admit use of poison on man [but none of those described mention game either, and most of above would only work by septicaemia]

Hofman, Corinne L., Alastair Bright, Arie Boomert, and Sebastian Knippenberg
2007 Island Rhythyms: The Web of Social Relationships and Interaction Networks in the Lesser Antillean Archipelago Between 400 B.C. and A.D. 1492. *Latin American Antiquity* 18(3):243-268.

Greenstone celts, Long Island flint, small carved stone ornaments among goods widely exchanged around islands. Craft specialization may be combined with symbolic values and shamanic activity.

Hofman, Jack L.
1986 Eva Projectile Point Breakage at Cave Springs: Pattern Recognition and Interpretive Possibilities. *Midcontinental Journal of Archaeology* 11(1): 79-95.

Buried terrace site, Mid Archaic hunt camp. Proj-pt/knife (PPK) higher rate thermal fracture (40-60%) than other lithics. Some "super heated." Non-thermal fracts = snaps, impact, perverse, radial. Thermals refit, but others not = on site breakage by heat. Tip frags have highest rate thermal breakage = cooked w/ meat or discarded near hearth

Hofman, Jack L.
1987 Hopewell Blades from Twenhafel: Distinguishing Local and Foreign Core Technology. In *The Organization of Core Technology*, J.K. Johnson and C.A. Morrow, eds., pp. 87-118. Boulder: Westview Press.

Hofman, Jack L., Lawrence C. Todd, and Michael B. Collins

1991 Identification of Central Texas Edwarts Chert at the Folsom and Lindenmeier Sites. *Plains Anthropologist* 36(137): 297-308.

Hofman, Jack L.
2002 High Points in Folsom Archaeology. In *Folsom Technology and Lifeways*, J. E. Clark and M. B. Collins, eds., pp. 399-412. Lithic Technology Special Publication No. 4. University of Tulsa, Tulsa.

Hofman, Jack L. and Shannon R. Ryan
2013 Refitting the Great Plains: A Long Distance Stone Tool Refit from Western Kansas. *Plains Anthropologist* 58(226):69-78.

Stemmed biface/knife from 2 sites 2.4 km distant. Reviews Plains refitting studies

Högberg, Anders
1999 Child and Adult at a Knapping Area: A technological flake analysisof the manufacture of a Neolithic square sectioned axe and a child's flintknapping activities on an asemblage excavated as part of the Öresund Fixed Link Project. *Acta Archaeologica* 70:79-106.

Malmö area, Sweden. Rare trace of individuals. "There can be no doubt that today's scientific knowledge is such that flake analyses based upon a technological diagnosis of flake morphology can be carried out without great methodological problems…" [in discussing basis for analysis - i.e. Sullivan + Rosen (he does not cite), are wrong in doubting. But H spends too much time defining flake attributes and how ID's are made.] Cluster of flakes around a pair of embedded stones, Neolithic, poss assoc w longhouses. Attributes of flakes from square section axes: 90 degree platform, pronounced bulb, lenticular platform shape, impact point off the edge, straight uncurved flake, facetted plat. Biface flakes (i.e. dagger making) differ: abraded plat, marginal impact, 45 degree platform angle, diffuse bulb, curved flake.

At Elinelund, 126 quad flakes, 9 biface flakes, all same flint. Experimental quad axe making produces ca. 10% bifacial type flakes, usually from making axe edge. Few flakes with cortex, many small from working side seams = middle + final stages, working blank, not from raw piece. Variability between knappers + pieces makes hard to count axes from flakes, but here prob just one axe made. From expers, prob ca 2 hrs work. Also a couple polished flakes suggesting rework of a finished axe edge. Same Danean local flint, some refit, microflakes present, localized around embedded stones = knapped in situ, distrib of flakes shows seated on one stone. But also flakes of different Senonian flint (some quad type) direct hammerstone percussion, a multidirectional core, and 2 flaked nodules, and a "worked piece" = possible blank.

"Child" is culturally defined, in lithic arch, usually expect comparatively less developed knapping, non-utilitarian pieces. Here the quad flakes are unfacetted plats, hard hammer rather than punch, i.e. incomplete knowledge of technique, in context of someone else of higher skill. Can't age the knapper, but should expect this learning to be in context of normal life, thus a child more likely, here prob imitating rather than being taught, since technique is not correct.

Hogberg, Anders
2004 The use of flint during the south Scandinavian Late Bronze Age: Two technologies, two traditions. In *Lithics in Action: Papers from the Conference 'Lithic Studies in the Year 2000'*. E. A. Walker, F. Wenban-Smith, and F. Healy eds., pp. 228-242. Oxbow Books, Oxford.

Unskilled ad hoc domestic flake production, vs large blades made elsewhere by specialists.

Hogberg, Anders
2006 Continuity of Place: Actions and Narratives. In *Skilled Production and Social Reproduction*. Jan Apel and Kjel Knutsson eds., pp. 187-206. Societas Archaeologica Upsaliensis, Uppsala.

Hogberg, Anders
2010 Two Traditions and a hybrid? South Scandinavian Late Bronze Age Flint. In *Lithic Technology in Metal Using Societies*, B. V. Eriksen ed., pp. 61-80. Arhus, Arhus University Press.

ad hoc household flints, and specialist blade knives, but not so clearly separated

Hogberg, Anders, and Deborah Olausson
2007 *Scandinavian Flint: An Archaeological Perspective*. Aarhus University Press, Aarhus.

Recognize 17 types based on geology and morphology. Glaciation and other factors affected what was available to prehistoric folk. Glacial + coastal deposits usually smaller + more battered than bedrock. Formation of Cretaceous flints initiated in burrows in limey mud. Diagenesis replaced calcium by silica from solution. Most exposure by erosion, but flint was mined in at least 2 locations in Denmark, + in SW Sweden. Different types described and illustrated, maps.

Holdaway, Simon
1989 Were there Hafted Projectile Points in the Mousterian? *Journal of Field Archaeology* 16(1): 79-86.

[Unconvincing] Uses retouched Moust pts, looks for bending fractures and over represented bases [wrong evidence] concludes just scrapers [expectable], therefore no Neanderthal hunting [too general and contradicted by other evidence] [contrast with Shea 1988]

Holdaway, Simon
1990 Mousterian Projectile Points-Reply to Shea. *Journal of Field Archaeology* 17(1): 114-115.

Critiques Shea on Shanidar wound

Holdaway, Simon
1995 Stone Artifacts and the Transition. *Antiquity* 69(265): 784-797.

Australia Pleist/Holocene

Holdaway, Simon, Shannon McPherron, and Barbara Roth
1996 Notched Tool Reuse and Raw Material Availability in French Middle Paleolithic Sites. *American Antiquity* 61(2): 377-387.

Function vs style debate resolved: use-wear shows no simple 1 to 1 form to function, scraper form related to site duration and material scarcity by resharpening, dating shows assemblages = 100s, 1000s years span in given layer [good summary].
Notched tools show same resharpening pattern as scrapers. Different preferred materials for diff tools in some sites. Notches tend to be made on local or poorer material. Use wear shows multiple uses. Size tends to increase with number of notches. Close says this is selection of blanks, here argue = resharpening of larger pieces. Lots variation (large SD) = not much design rules (i.e. style). Blanks from Combe Capelle (on flint source) larger than those from Pech and Quina with no local flint but CC has more single notch tools = selecting new blank rather than resharpening

Holdaway, Simon, Justin Shiner, Patricia Flanning, and Matthew Douglas
2008 Assemblage Formation as a Result of Raw Material Acquisition in Western New South Wales, Australia. *Lithic Technology* 33(1): 73-85.

Holdaway, Simon, Willeke Wendrich, and Rebecca Phillipps
2010 Identifying Low-level Food Producers: Detecting Mobility from Lithics. *Antiquity* 84(323): 185-194.

Australia, Neolthic Fayum Egypt

Holen, Steven R.
2003 Clovis Projectile Points and Preforms in Nebraska: Distribution and Lithic Sources. *Current Research in the Pleistocene* 20: 31-33.

Museum and private collections, 20 pts, some materials 600 km, = high mobility

Holen, Steven R.
2011 The Eckles Clovis Site, 14JW4: A Clovis Site in Northern Kansas. *Plains Anthropologist* 55(216):299-310.

Surface collected by amateur as eroded from Lovewell reservoir. Points, flakes, tools, but no blades, made of White River Group Silicate, distinctive purple chalcedony from Flat Top Butte, CO, ca 450 km distant. High luster, potlids on bifaces suggest heat treatment. Discarded tools + retooling (manuf flakes) suggest multipurpose camp, prob near kill event

(scrapers). Local Smokey Hill jasper good, but not used, maybe moving fast, or carrying enough better WRGS stone, including large pieces (cortical flakes).

Holen, Steven R., and Kathleen Holen
2013 The Mammoth Steppe Hypothesis: The Middle Wisconsin (Oxygen Isotope Stage 3) Peopling of North America. In *Paleoamerican Odyssey*. Kelly E. Graf, Caroline v. Ketron and Michael R. Waters ed., pp. 429-444. Tops Printing, Inc., Texas.

Holen, Steven R., Mark P. Muñiz, and Bob Patten
2008 A Comment on Howard's Authentication Analysis of the Angus Nebraska Fluted Point. *Plains Anthropologist* 53(207):357-366.

Howard concluded crude fluted pt assoc with mammoth was a fake. Reanalysis says it is authentic: found 1931, but made with skills + knowledge not available then, eg. full-length flute + trace of overshot flake, possible ochre, use-wear consistent with knife use, unfinished so crude appearance, typologically eastern fluted, not Clovis or Folsom. Also probably not associated with the mammoth.

Holen, Steven R., David W. May, and Shannon A. Mahan
2011 The Angus Mammoth: A Decades-Old Scientific Controversy Resolved. *American Antiquity* 76(3):487-499.

Fluted point is authentic, but age of mammoth too great for it to be in real association.

Holladay, David
1994 A Basketmaker II Knife System. *Bulletin of Primitive Technology* 7(1): 41-44.

Sand Dune Cave knife in Museum of Northern AZ, 3 from Edge of Cedars. Soft handles help prevent blade breakage; [touchy-feely but ok]

Holland, John D.
1988 Some Dover Billets. *20th Century Lithics* 1: 93-96.

Excav Mississippian wkshp sites, antler tools

Holland, John D.
1989 Paleo Conference in Maine. *Chips* 1(3):3.

Holland, John D.
1992 Knife River Flint. *Chips* 4(4): 4-5.

Describes origin, sources, heat treatment (450-480 F), refs

Holland, John D.
1994 Mt. Jasper Rhyolite. *The Flint Knapper's Exchange* May-June 1994: 5-6.

Rhyolite, often described as jasper, mined in outcrop in New Hampshire, Early Archaic – L Woodland. Refs

Holland, William R. and Robert J. Weitlaner
1960 Modern Cuicatec Use of Prehistoric Sacrificial Knives. *American Antiquity* 25(3): 392-399.

3 flint knives w/ wooden handles. 1) Plain, 35 cm long, blade 21 cm. 2) Hand – 28 cm long, blade 13. 3) Serpent - 30 cm, blade 12. Used in recent chicken sacrifices. Oaxaca, Mixtec Knives

Holliday, Vance T. and D. Shane Miller
2013 The Clovis Landscape. In *Paleoamerican Odyssey*. Kelly E. Graf, Caroline v. Ketron and Michael R. Waters ed., pp .221-246. Tops Printing, Inc., Texas.

Hollinger, R. Eric **-disk**
2001 Lithic Artifact Analysis. In *Paleoindian, Archaic, and Woodland Occupations on the Wever Terrace. U.S. 61 Bypass, Lee County, Iowa, Volume II*. Edited by David W. Benn, Thomas J. Chadderdon, Carl R. Falk, R. Eric Hollinger, Randall M. Withrow, and L. Anthony Zalucha. Pp. 44-76. Louis Berger Group, Marion, IA.

Wever sites primarily Oneota, some earlier components. p 65 Old Adena point from Oneota pit has stem notched through patina to use as pendant. Other old points from Oneota pits for ritual use and some reflaked for tool use.

Holly, Lance E.
2010 n.d. Beyond the Point: Arrow Shaft Technology of the Prehistoric Southwest. Unpublished MA thesis, U Colorado at Boulder, 2010.

Surveys surviving arrow shafts in SW from many sites, some literature only, as background for comparison of Pueblo Bonito and Aztec Ruins. Surprisingly consistent in construction: compound with cane shaft, only 2 of 491 arrow fragment specimens were from self arrows. Foreshaft always wood (many species), mainshaft always reed (*Phragmites communis*). 68 specimens with feather remnants, all with 3 feathers equidistant. (2 feathers attested in lit also). All with lead feather oriented perpendicular to nock. [No tangential lashing? Apparently all split vein?]

Variation is in use of stone points, and painting:
152 foreshaft tips: 55% tapered [= sharpened]; 33% notched [for stone point]; 13% blunt. But Pueblo Bonito has 51 specimens of which 30 (59%) are notched. [There are some sampling problems - first, the sample from PB may not be normal, second, it is included in the overall 152; third, unusual preservation of arrows everywhere may often be in unusual contexts like burials, ceremonial caves, sealed rooms at PB, etc] Aztec has 20 specimens, only 1 (5%) notched, Mesa Verde area sites 31 specimens, 2 (6.5%) notched; and Other Sites (all over pueblo world) 51 specimens, 18 (35%) notched. [Note that MV has 39% blunts, way high - maybe indicates more bird and rabbit hunting, less big game?]

Sharpened tips most common everywhere: PB 39%; AR 90%; MV area 55%; Other Sites 55%.

Painting: 55 specimens, most common colors red and green, designs usually solid color between fletchings, narrow bands, or longitudinal stripes, usually all near nock. Foreshafts rarely painted [but while none at AR or MV, at PB 13% of painted is foreshaft, and at Other Sites 39%]. Red dominates in all sites but PB, where green is more common, and AR has some green too.

So concludes connection between PB and AR, where Chacoan warriors or ritualists influenced or brought green, stone-tipped arrows.

[very interesting that in surviving arrows, sharpened tips outnumber stone tips, but he goes overboard - there are millions of points from sites, so stone tipped arrows cannot be negligible, and although in his sample, green may correlate with stone tips (or this may just be at PB), stone tips can't be mostly ceremonial arrows - too many with impact damage.]

Holmberg, Cecilia Lidstrom

2004 Saddle Querns and Gendered Dynamics of the Early Neolithic in Mid Central Sweden. In *Coast to Coast – Arrival: Results and Reflections*. Helena Knutsson, ed., pp.85-104. Coast to Coast Project Book 10, Uppsala.

Should not assume grinding is always female activity, or purely functional. [Simple hand stones and slab or basin metates, of flaked and ground sandstones and granites.] Possible connections in form and technique between handstones and axes. Spatial separation between axes and querns suggests gender division. A burial of children with querns: quern symbolically = adult/mother/nurture of child.

Holmer, Richard N. and Dennis G. Weder

1980 Common Post-Archaic Projectile Points of the Fremont Area. *State of Utah Antiquities Section Selected Papers* 7(16): 55-68.

Fremont – Utah types. Discusses Rose Spring Corner Notched, Eastgate Expanding Stem, Desert Side Notched and 3 sub varieties – Bear R. SN, Uinta SN, Nawthis SN; Parowan Basal Notched, Bull Creek (long fine isoceles triangle [sim pts at GH]). Bull Creek 1000-1300. Points differ where pots are same = matrilocality?

Holmer, Richard N.

1986 Common Projectile Points of the Intermountain West. In *Anthropology of the Desert West: Essays in Memory of Jesse D. Jennings*, edited by Carol J. Condie and Don D. Fowler, pp. 89-115. University of Utah Press, Salt Lake City.

Holmes, D.L.

1987 Problems Encountered in a High-Power Microwear Study of Some Egyptian Pre-Dynastic Lithic Artifacts. In *The Human Uses of Flint and Chert*, G. Sieveking and M. Newcomer, eds., pp. 91-96. Cambridge: Cambridge University Press.

Wear slow to form on Egyptian flint, lots of post depositional modification. Flint structure affects microwear.

Holmes, D. L.
1988 The Predynastic lithic industries of Badari, Middle Egypt: new perspectives and inter-regional relations. *World Archaeology* 20(1): 70-86.

Holmes, Diane L.
1989 The Predynastic Lithic Industries of Upper Egypt: A Comparative Study of the Lithic Traditions of Badari, Nagada, and Hierakonpolis. *BAR International Series 469*: Oxford.

2 vol reanalysis of Petrie and Caton-Thompsen collections plus some new (F. Hassan) from Hierakonpolis. Largely typological, great detail, sees trends thru time and regional differences. Sees fancy knives, etc. as largely tomb goods, probably from a few specialist workshops that developed in Amratian, most in Gerzean. Has a debitage sample from a "temple-wkshp" area doing bifaces but not ripple flaked knives, [Not enough illustrations, good bibliography]

Holmes, William Henry
1879 Notes on an Extensive Deposit of Obsidian in the Yellowstone National Park. *The American Naturalist* 13(4): 247-250.

Brief description of geology. Holmes found tools, biface blanks

Holmes, William Henry
1890 A Quarry Workshop of the Flaked-Stone Implement Makers in the District of Columbia. *The American Anthropologist* 3(1) (old series): 1-26.

Holmes, William Henry
1891 Manufacture of Stone Arrow-points. *American Anthropologist* 4:49-58.

Recognizes difficulty of telling true function. Materials listed. Quarries show steps to product – blank or tool. Stone working no longer a lost art. Percussion, indirect perc, pressure mentioned and illustrated. [no mention of fire and water at this time]

Holmes, William Henry
1897 Stone Implements of the Potomac-Chesapeake Tidewater Province. Bureau of American Ethnology, Annual Report, 1893-94: 13-152.

"In taking up the work of flaking stone I fully realized the difficulty of the task. The art is not to be learned in a day any more than are any of the ordinary mechanic arts such as carpentry or the working of metal, yet if savages learned it others can learn it, and no doubt of ultimate success need be felt by any student willing to give liberally of time and labor." (151)

Holmes, William Henry
1900 The Obsidian Mines of Hidalgo, Mexico. *American Anthropologist* 2(3): 405-416.

Holmes, William Henry
1919 *Handbook of Aboriginal American Antiquities. Part 1: Introductory and the Lithic Industries*. Bureau of American Ethnology Bulletin 60. Government Printing Office, Washington D.C.

p 364-365 Fire Fracture Processes [short section following extensive sections on other manufacture processes] "References to the employment of heat in shaping stone, which is a very different matter from merely breaking it up (he discusses heat in quarry operations earlier), are numerous but generally lacking in fullness, and very few …appear to be based on first-hand observation." [He then quotes Fraser's (1908) account with only the comment that " a much shorter time would ordinarily be required in producing a like result with hammerstone and bone flaker." So he doesn't really dismiss fire and water. Ellis essentially plagiarizes this section, and makes more fun of the supposed slowness of the process compared to real knapping.]

P. 283-330 Holmes quotes all the earlier observations of Indian knapping, especially pressure flaking arrowheads. [None mention fire and water, and his discussion p 364-5 seems added on. I think this means it had only recently become an issue, it was not a myth common before Fraser.]

Holtorf, Cornelius, and Tim Schadla-Hall
1999 Age as Artefact: On Archaeological Authenticity. *European Journal of Archaeology* 2(2):229-247.

Honea, Kenneth
1983 *Lithic Technology: An International Annotated Bibliography 1725-1980*. Lithic Technology Special Publication No. 2. San Antonio: University of Texas at San Antonio Center for Archaeological Research.

Honegger, Mathieu, and Pauline de Montmollin
2010 Flint Daggers of the Late Neolithic in the Northern Alpine Area. In *Lithic Technology in Metal Using Societies*, B. V. Eriksen ed., pp. 129-141. Arhus, Arhus University Press.

W Switzerland 4th mill Cu daggers appear, followed by long flint blades, then Grand-Presigny imports from 27th century BC on, along with increase in copper daggers. In this period also new recycling of flint dags, imitation of copper models, and bifacial retouch, apparently stimulated by interest in metals. Lake sites like Neuchatel getting flint from all over France.

Honerkamp, Nicholas and Norma Harris
2005 Unfired Brandon Gunflints from the Presidio Santa Maria de Galve, Penascola, Florida. *Historical Archaeology* 39(4):95-111.

1239 spall and blade flints in cache, unused, so representing desired product of knappers. Fort changed hands; Spanish founded1698, French burned 1719, Brits built new 1771, returned to Spain 1781, Brits took 1812-1814, Spanish rebuilt 1817, then US 1821.

[Gunflints expensive?]: 1784 tariff agreement 12 gf = 40 balls = ½ lb gunpowder = 1 lb in skins. Trade guns = 16-18 lbs in dressed skins.

Now on Naval Air Station, site found 1979, excavs 1990s. Cache outside of wall of 1719 Spanish fort.

Length, W, T, cortex. Type: Basic Spall (656), Modified Spall (124), Basic Blade (151), Modified Blade (297), Double Edged (11). All black or grey, consistent with Brandon origin. No blonde French at all. [The distinction between "basic" and "mod" in both cases is unclear, probably they mod to be more retouched but they don't describe adequately and refs to Stones types are not helpful.] Stone 1974 says double edge is variant of spall-type, but more likely not [NOT at all – they are plainly single ridge blade flints.] Percussion "demicones" removed by retouch on blade types. [Description of making blades shows they don't know enough about lithics. They accept Kenmotsu as claiming French modified by pressure flaking – not true. Cortex is a "flaw" – no, only when it is on the edge, and so on.]

Dating: feature from Second Spanish Period, (1781-1821) post 1795 by a sherd. No Fr flints, mix of spall + blade types suggest early 19th C. Size distribs are continuous, no separation of "rifle" or "pistol" types from "musket" size; most musket size according to Skertchly [a better source than the archys!]. Consistent sizing might be late development though; distinct groups rare in arch analyses. No size diffs among types here either. Standardization surprising. Also mix of types [plainly they don't know Abergaveny 1805 info, which they should since they cite de Lotbiniere]. Fr blondes common in other assemblages from site, not here, size cluster of both types suggests made at same time to same requirements, maybe same shop. Shows gunspall did not end in 18th C. Valuable, worth 6 trade guns, cached in haste, perhaps at 1814 Brit destruction of Spanish fort.

Horn-Wilson, Amy
1997 Projectile Points of the Cohonina: A Pilot Study. MA Thesis, Northern Arizona University.

187 small pts (+34 large pts) from 33 excavated Cohonina sites. 81% obsidian, not enough info for clear spatial or temp patterns. 41% serrated, espec later pts. 67% unnotched, no patterns. Tend to be narrow, no spatial patterns or good temporal patterns. 5 simple types based on notching, serration, and basal width, plus some untyped [but I don't like all her assignments] [Overall, fits my preconception: Assemblage looks Cohonina – mostly obsidian, mostly narrow +/or serrated pts, very few Anasazi low-notch pts, no Sinagua high-notched pts, no big long triangle un-notched pts]. Notched pts tend to be late, early sites dominated by typical Cohonina pts. Proportion of obsidian in Cohonina and Lizard ManVillage is essentially identical

Hornaday, William T. **lib**
1897 *Taxidermy and Zoological Collecting: A Complete Handbook for the Amateur Taxidermist, Collector, Osteologist, Museum-Builder, Sportsman, and Traveller*. New York: Charles Scribner's Sons.

Hornell, James
1930 The Cypriote Threshing Sledge. *Man* 30: 135-139.

Hornell, James
1931 The Distribution of the Threshing Sledge. *Man* 31:32.

Horsfall, Gayel
1987 A Design Theory Perspective on Variability in Grinding Stones. In *Lithic Studies Among the Contemporary Highland Maya*. B. Hayden, ed., pp. 332-378. Tucson: University of Arizona Press.

Horwitz, Tony
1998 *Confederates in the Attic: Dispatches from the Unfinished Civil War*. Pantheon Books, New York.

Hosfield, RT and R. Terry
2000 Renewed Excavations: Broom Paleolithic Sites. *Lithics* 21: 3-8.

poor stuff

Hosfield, RT, JC Chambers, MG Macklin, P Brewer, D Sear
2000 Interpreting Secondary Context Sites: A Role for Experimental Archaeology. *Lithics* 21: 29-35.

Abrasion of bifaces in rollers and river – 8 bifaces + 2 flake scatters
Shackley measurement of scar ridge widths – increase with abrasion
Hope to develop and observe a "SMART" electronically traceable biface

Hothem, Lar
1991 *Indian Axes and Related Stone Artifacts*. Paducah: Collector Books.

Illustrated collector's typol and price guide, mostly interesting for collector viewpoint – sections on manufact, fakes, how to collect, etc.

Hothem, Lar
1992 *Fake Chipped Artifacts: Some Considerations*. Hothem House, Lancaster.

Hothem, Lar
1997 An Early Flint-Chipping Kit. *Indian Artifact Magazine* 16 (4): 22-23.

1950's boy scout kit

Hothem, Lar
2000 Burin-flaked Blade Tips. *Indian Artifact Magazine* 19(3): 38-39, 81.

[He mistakes impact burination for a specialized intentional technique that "lasted for at least 8,500 years"]

Hothem, Lar
2001 Old-Time Indian Relic Dealers. *Indian Artifact Magazine* 20(1): 32-33, 77.

Many dealers by late 1800s; Some sample ads ("as printed except for any mention of grave goods") [-He's censoring history – why? To avoid offense now, or reflect good light on collectors or? - but he only excises from his quotes, not the photo of the old ad. Almost all material is quotes, no analysis, discussion, or ID of dealers, so not very useful]

Hough, Walter
1891 Arrow Feathering and Pointing. *American Anthropologist* 4:60-63.

Modern observations illustrate ancient life. Observed in Apache – tule reed w/ wood foreshaft; gum in slot, burned to heat, insert pt, wrap shaft w/ sinew. Feather arrangements: 3, 2, "rifling" the feathers by spiraling invented by ancients, but rarely found in Smithsonian specimens, describes a couple. "It seems not a little remarkable that rifling, which is supposed to be a modern invention, should be discovered and practiced by savages; but it is undoubtedly true; and it is possible that the "beveled " arrow-heads of camp sites were designed to effect the same rotary motion."

Hough, Walter
1918 The Hopi Indian Collection in the United States National Museum. *Proceedings of the US National Museum* 54(2235): 235-296. Washington: Government Printing Office.

Brief synopsis of Hopi, espec material culture. Beads not made, trade from Zuni and Rio Grande, exchange cloth. Mentions both men and women weaving. Baskets from Ute mentioned, also Apache, Navajo, Mohave. Stone – mano, metate, hammer, abrader still made. Points, knives, axes taken from ruins. Iron arrowheads traded thru Taos rapidly replaced stone. Turqoise mosaic on shell still done. Perforated sheep horn as arrow wrench. Describes bows – small, self bow, prob crude survival, no stone pts used, only iron. Rabbit sticks. No info on craftsmen. [Evidence for extensive trade connections, rapid loss of stone industry]

Hough, Walter
Experimental Work in American Archaeology and Ethnology. *Holmes Anniversary Volume* 194-197.

Houk, Brett A.
1998 Report on the Chan Chich Archaeological Project: 1997 Extended Season. Foundation for the Advancement of Mesoamerican Studies, Project Number 97004.

Small center, N. Belize. Group H dense residential area 1.25 km from Main Plaza, includes mounds of chert debitage up to 1.5 m high. Others in Group B, and "possible chert workshop" N of Main P near Struct A-6. [no details]

Howard, Calvin D.
1988 Notes on Sandia Points. *Plains Anthropologist* 33(122):535-537.

Contemporary with Clovis, used as knives. I and II forms = diff choices in hafting

Howard, Calvin D.
1988 Fluting Technology at the Lincoln Hills Site. *Plains Anthropologist* 33(121): 395-398.

Described in detail but no illust; Claims diff btwn Folsom and Clovis fluting platforms. LH pts look like W Clovis but fluted like W Folsom – in between?

Howard, Calvin D.
1990 The Clovis Point: Characteristics and Type Description. *Plains Anthropologist* 35(129): 255-262.

Describes typical attributes, diffs between C and Folsom; Most Eastern fluted pts prob not Clovis – technol more advanced like Folsom

Howard, Calvin D.
1994 Natural Indicators of Lithic Artifact Authenticity. *North American Archaeologist* 15(4):321-330.

Patinas and other chemical changes discussed by “authenticator.” Details on genesis but little on recognition criteria. Good refs

Howard, Calvin D.
1995 Projectile Point and Hafting Design Review. *North American Anthropologist* 16(4): 291-301.

Foreshafts reduce pt haft diameter, improve penetration, wider blades also help

Howard, Calvin D.
1999 River Patina on Flint Artifacts: Features and Genesis. *Plains Anthropologist* 44(169): 293-295.

Smooth and very lustrous. Not abrasive polish, often not edge-damaged by tumbling. Luster from dissolution of surface silica in silica-poor water, perhaps with a silica-gel surface layer

Howard, Calvin
2001 Authentication Analysis of the Angus Nebraska Fluted Point. *Plains Anthropologist* 46(177):323-325.

concludes probably fake 1930s find

Howard, Calvin D.
2002 The Gloss Patination of Flint Artifacts. *Plains Anthropologist* 47(182): 283-288.

Howard, Calvin D.
2006 Pedogenic Minerals as Artifact Antiquity Indicators. *Plains Anthropologist* 51 (197): 101-104.

Focus on iron minerals, also manganeze, magnesium.

Howell, F. C.
1961 Isimila: A Paleolithic Site in Africa. *Scientific American* 205 (4):118-129.

Acheulean, late, guess 75,000 [dates for Ach are too young]. “Camps around waterhole”, 5 beds of coarse sediment, many living areas, tools w/ chips. No bone preserved in upper, hippo kill in lower but few living areas. Short time, variety in assemblages, but most dominated by handax and cleaver, but some dom by flake tools. “Quanitity of tools out of proportion to any conceivable need” [Rather naïve about time spans in stratig layers]

Howell, F. C.
1965 *Early Man*. New York: Time/Life Books.

Includes famous photo series of Bordes knapping

Hranicky, Wm Jack
2002 *Lithic Technology in the Middle Potomac River Valley of Maryland and Virginia*. Kluwer Academic/Plenum Publishers, New York.

[Not really a lithic analysis, but more of an encyclopedia full of useful information on lithics and related topics much beyond the focus on Middle Potomac, but incoherently organized and written, and he’s fond of creating bad new jargon. Lots of illustrations of varying quality. Major sections on chronology, lithic technology, point typology, flake tools, caches, miscellaneous implements, and experimental archaeology].

Hranicky, Wm Jack
2004 *An Encyclopedia of Concepts and Terminology in American Lithic Technology*. Authorhouse, Bloomington, IN.

[A mixed bag. Vast compilation (598 pages) of good information from all sorts of sources, usually with references. But lots of irrelevant and useless stuff too, especially strange unnecessary concepts and coinages by Hranicky. Many entries are badly written with typos and errors, and students may be badly mislead by some info. References are tricky too – Fewkes spelled Fowkes, I get credited with 2 articles written by another Whittaker, one before I was born. Desperately needed a severe editor. Numerous small illustrations, some good, some awful. Alphabetical organization is confused, inconsistent, and redundant, so it’s not very useful as a reference encyclopedia. However, it is fun to browse.]

Hranicky, Wm Jack
2006 *Experimental Archaeology: A Science for Studying Native American Prehistoric*

Technology. Authorhouse, Bloomington, IN.

[As usual with Hranicky, a huge mixed bag. Some good information, but mixed with even more rubbish than usual. Dozens of meaningless equations and diagrams and jargons. Irritating pc-ness: “Paleo-Native-Americans,” section on why burials should not be excavated, other bullshit. Out of date and incorrect info on atlatls and many other things. And yet there are lots of nice illustrations of experiments and artifacts, although usually too small, and quotes from old sources that are hard to find.]

Hranicky, Wm Jack
2009 *Recording Clovis Points: Techniques, Examples, and Methods*. Authorhouse, Bloomington IN.

Based on McCary fluted point survey of Virginia. Encourages non-academic collectors to properly record points, provides standards to do so [probably too complex for many], basic info on Clovis pts, honest consideration of problems of fakes and market, large body of basic survey point data.

Hubbard, Samuel
1927 *The Doheny Scientific Expedition to the Hava Supai Canyon, Northern Arizona.* Oakland: Oakland Museum.

Crackpot. Bizarre and fatuous conclusions including dinosaur petroglyphs, petrified woman, Carboniferous shoe-sole, etc. These guys were either morons or drunks, or producing an elaborate satire.

Huckell, Bruce B.
1973a The Gold Gulch Site: A Specialized Chochise Site Near Bowie, AZ. *Kiva* 39(2): 105-129.

Site described – features, environment. Lithics – bifaces, debitage of rhyolite. Hunting and hunt prep camp (knapping)

Huckell, Bruce B.
1973b The Hardt Creek Site. *Kiva* 39(2): 171-197.

Cochise in Tonto Basin. Lithics - points, debitage

Huckell, Bruce B.
1979 Of Chipped Stone Tools, Elephants, and the Clovis Hunters: An Experiment. *Plains Anthropologist* 24(85): 177-189.

Exper butcher elephant with Clovis tools. Bifaces used, resharpened

Huckell, Bruce B.

1982 The Denver Elephant Project: A Report on Experimentation with Thrusting Spears. *Plains Anthropologist* 27(97): 217-224.

Spears with Clovis points used on elephant carcass. Rather thick foreshafts, point secured with sinew covered with resin. 5 by H, 4 by Bradley. All used with 2.5 m shaft. Thrusts at chest or shoulder height [but doesn't say if over or underhand]. Penetration into ribcage/abdominal area 75-274 mm, none the full length of foreshaft; penetration usually stopped at either point lashing or mainshaft socket. Breakage mostly of foreshafts; point damage limited to minor tip removal and basal corner snap. Right-angle hit less likely to snap. Movement of point in foreshaft causes burin damage to base. Ventral region of elephant is vulnerable to Clovis type thrusting spear.

Huckell, Bruce B.
2004 Clovis in the Southwestern United States. In *New Perspectives on the First Americans*. B. T. Lepper and R. Bonnichsen, eds., pp. 93-101. Center for the Study of the First Americans, College Station, TX.

Site and point distributions

Huckell, Bruce B.
2007 Clovis Lithic Technology: A View from the Upper San Pedro Valley. In *Murray Springs: A Clovis Site with Multiple Activity Areas in the San Pedro Valley, Arizona*. C. Vance Haynes and Bruce B. Huckell eds. Pp. 170-213. Tucson: University of Arizona Press.

Spatial analysis of debitage. Many materials, mostly of unknown sources. Numerous knapping clusters of related debitage, mostly representing repair or manufacture of bifaces, including points. Knapping was done in small concentrated areas.

Points - almost all damaged, none very carefully made, mostly short flutes, often multiple, could be fluted by direct or indirect perc, possible also pressure. Basal margins and concavity all ground. Several severe impact fractures. Reworking of damaged points. Points used on bison show more damage than those used on mammoth - perhaps more bone on smaller animal, perhaps used thrown spear on bison vs thrust on mammoth.

Blade and flake tools. No blade cores, blades rare in Clovis, cannot be called a blade based industry.

Huckell, Bruce B. and C. Vance Haynes
2007 Clovis Paleoecology as Viewed from Murray Springs, Arizona. In *Murray Springs: A Clovis Site with Multiple Activity Areas in the San Pedro Valley, Arizona*. C. Vance Haynes and Bruce B. Huckell eds. Pp. 214-228. Tucson: University of Arizona Press.

Competing models of Clovis: big game specialists with no modern analog, vs mammoth sites are biased sample, more generalized subsistence likely. At MS, assoc w mammoth and bison kills, horse and canid bones but assoc unclear - at most C sites, scattered other animal remains in unclear assoc, often because as at MS, a favorable spot under drought conditions. 14-22 mammoth kill sites, including 4 in San Pedro valley, suggest consistent prey. At MS and elsewhere, knapping aimed at maintaining necessary specialized weapon points, which were often lost and damaged, but worth recovering and repairing. [Never says whether he thinks atlatls used.] Termination of megafauna after "black mat" that covers MS mammoths and others suggests Clovis caused extinction, but mat also reflects climate change. San Pedro sites are microcosm of extinction event: decline in environment carrying capacity (dry), with addition of new predator.

Huckell, Bruce B. and J. David Kilby
2002 Folsom Point Production at the Rio Rancho Site, New Mexico. In *Folsom Technology and Lifeways*, J. E. Clark and M. B. Collins, eds., pp. 11-30. Lithic Technology Special Publication No. 4. University of Tulsa, Tulsa.

Huckell, Bruce B., J. David Kilby, and Marcus J. Hamilton
2002 Investigations at the Boca Negra Wash Folsom Site, North-central New Mexico. *Current Research in the Pleistocene* 20: 33-35.

Hudson, Jean
2006 Elk Skeleton Associated with Fluted Point in Northern Wisconsin. *Current Research in the Pleistocene* 23:117-119.

Silver Beach site, submerged, partial elk with Clovis or Gainey type point. Butcher marks, possible wounds. Jasper taconite point from Thunder Bay Ontario, 300-400 km. [False association, see Wisner 2008]

Hudson, Jean
2007 Update on Wisconsin's Silver Beach Elk Site(47BA526). *Current Research in the Pleistocene* 24:104-106.

Elk bones date ca 380 RCYBP, association with fluted pt probably accidental.

Hughes, Richard E. **lib**
1986 *Diachronic Variability in Obsidian Procurement Patterns in Northeastern California and Southcentral Oregon*. Los Angeles: University of California Press.

42 obsidian sources, x-ray florescence. Point types. Change thru time in pts and obsid use. 800 pts from 6 sites

Hughes, Richard E. and Fred W. Nelson
1987 New Findings on Obsidian Source Utilization in Iowa. *Plains Anthropologist* 32(117): 313-316.

Bear Gluch, E. Idaho sources

Hughes, Richard E. and Donna C. Roper
1999 Source Area Analysis of Obsidian Flakes from a Lower Loup Phase Site in Nebraska. *Plains Anthropologist* 44(167): 77-82.

Protohistoric Pawnee 1550-1800. Obsidian from Cerro del Medio in Jemez Mts, NM

Hughes, Susan S.
1998 Getting to the Point: Evolutionary Change in Prehistoric Weaponry. *Journal of Archaeological Method and Theory* 5(4): 345-408.

Evaluates (theoretically) engineering aspects of weapons, uses to interpret Mummy Cave points. Bow and arrow by 1500-1300 BP. Early atlatl 9200-7900 with unfletched darts, heavy, variable pts, after 7900 lighter more consistent pts indicate fletching. [Conclusions ok, engineering ideas weakly supported, see atlatl bibliog.]

Hull, Kathleen
1987 Identification of Cultural Site Formation Processes Through Microdebitage Analysis. *American Antiquity* 52(4): 772-783.

Microdebitage distributions in tipi-rings, accord with ethnographic info

Humphrey, Jodie
2004 The use of flint in the British Iron Age: Results from some recent research. In *Lithics in Action: Papers from the Conference 'Lithic Studies in the Year 2000'*. E. A. Walker, F. Wenban-Smith, and F. Healy eds., pp. 243-251. Oxbow Books, Oxford.

Hun Ahau Gallery
1996 *Catalog: Fine Mesoamerican Art*. Hun Ahau Gallery, Sun Valley.

photos of Gene Titmus eccentrics for sale

Hunt, Kevin
2006 Sex Differences in Chimpanzee Foraging Behavior and Tool Use: Implications for the Oldowan. In *The Oldowan: Case Studies Into the Earliest Stone Age*. Nicholas Toth and Kathy Schick eds., pp. 243-266. Stone Age Institute Press, Gosport IN.

Hunter, J. Marvin
1927 Nine Years Among the Indians, 1870-1879. Von Boeckman-Jones Co., Austin.

Original pub, now see Lehmann 1993

Hunzicker, David A.
2008 Folsom Projectile Technology: An Experiment in Design, Effectiveness, and Efficiency. *Plains Anthropologist* 53(207):291-311.

[Interesting and detailed.] Used 25 F points replicated by Patten (80 counting reuse after damage and reshaping), hafted 5 ways, fired with crossbow at 30-35 m/s perpendicularly into beef carcass ribs. Foreshafts on 220 cm, 240 gm shafts to simulate atlatl. Fluting helps

hafting - easier to fit convex foreshaft notch interior to flute surface than usual concave notch interior to lenticular point, but labor intensive. Hafted to full length of flutes.

Foreshaft types all performed similarly regarding break types. Break types: snap 30%, crush 21%, edge damage 15%, burination 12%, impact flute 8%, longitudinal split 3%, complex + snap 11%. Foreshafts rated on manufacture cost, pentration, durability, and point preservation. Of 108 shots, 32% between ribs to lethal depth, 42% hit rib but still lethal depth, 26% failed to penetrate 40 cm (judged as lethal). The 73 rib impacts damaged 73 pts (18 destroyed), 18 foreshafts, and 3 mainshafts - foreshafting protects main shaft. Hafting protected point - most damage to tip, point could be rejuvenated as in Ahler + Geib model = highly maintainable. 39% of shots minor damage, 32% no damage, 12% major damage, 17% total destruction of point. Average survival of 4.6 shots. Fragment frequency compared with archaeological finds. Rejuvenation index based on length reduction allows assessment of relative numbers of uses of archaeol assemblage points, then 75% lethality rate allows estimate of number of kills represented [as he notes, this is getting rather far from evidence; too many intervening variables of technology and human skill, eg accurate hits, exper was not with atlatl etc].

Hurst, Stance
2006 An Analysis of Variation in Caching Behavior. *Lithic Technology* 31 (2):101-126.

Hurst, Vernon
1961 Patination of Cultural Flints. *Science* 134(3474) :251-256.

Patination is complex, depends on structure as well as temperature and moisture, and time. Color of flint determined by grain size, texture, and impurities. Patination in obsidian glass is mostly hydration, dependent on temperature. Silica in flint is resistant to p, which operates mostly on its impurities, 3 processes : oxidation + hydration, dissolution + leaching, chemical + mechanical disaggregation. Using patination for dating requires considering all the variables. [oddly hopeful tone after explaining problems].

Hutchings, Rich, and Marina La Salle
2014 Teaching Anti-Colonial Archaeology. *Archaeologies: Journal of the World Archaeological Congress* 10(1):27-69.

Good example of current pathetic p.c. whining and dismissal of science. The authors have "cumulatively more than 25 years of experience in the discipline as students and instructors" so these kids must really know what is wrong with archaeology. "Archaeologists become the past's invaders, it's occupiers, it's colonizers." They fear that arch texts might promote "scientism, wherein science is the best if not the only way to access 'the past'. " They use as a text in class and cite with apparent approval the cowardly and hypocritical attitude of Kelly and DH Thomas' *Archaeology* (2010) which includes the statement "no images of Native Am skeletal remains appear in this book" out of respect for concerns of some indigenous elders. Current collaborations and recognition of diverse voices do not go far enough and are in fact co-opting and colonizing local histories. If texts don't spend much time on ethics, politics, and personal reflection, then these are "legitimately marginalized" -obviously we should stop teaching about the past and scientific method in favor of these other issues. The overall points are ok: p45 1.arch is study of people through their material culture 2. arch matters because it produces 'the past'. 3. 'past' matters because it is used to construct heritage in the present 4. heritage is who you are, origins, desires, i.e. personal identity 5. therefore arch impacts people's lives today, i.e. is political. But it is clear from the article that they don't understand this stuff in a useful way, and have no interest in producing, and probably fear, a fact-based 'past'.

Hutchings, Wallace Karl
1997 *The Paleoindian Fluted Point: Dart or Spear Armature? The Identification of Paleoindian Delivery Technology Through the Analysis of Lithic Fracture Velocity*. PhD dissertation, Simon Fraser University.

"Velocity-dependent fractures on fluted points reveal fracture rates associated with high-velocity impacts, indicating the use of the spearthrower" No clear evidence of Clovis atlatl, but early dates on hooks from Marmes Rockshelter and Warm Mineral Springs, both 9-10,000 BP, others. Summarizes Clovis and Folsom tool kits and hunting strategies. Problems of classifying points as dart or arrow tips, criticizes Odell's flake point hypothesis – accidental fractures look similar. Fracture surface features on flakes reflect manufacture. Relation between Wallner lines and fracture origin reflects velocity of fracture. [Fracture mechanics details and derivation of fracture velocities difficult to understand, illustrations in my copy reproduced poorly.] Test on manufacturing techniques, with velocity distinguishing pressure, soft percussion and indirect perc, and hard hammer perc, but variable and overlapping, especially pressure. Impact fracture should be in the "dynamic loading" or high speed range of fracture propagation.

Problems of reconstructing hafting system for experiments [good example of reasoning from variety of evidence]. Uses flute width to estimate shaft diameters of 12-17 mm. Compares Huckell 1982 and Frison 1989 experiments. Prehistoric darts (mostly SW and Gt Basin) 3-19 mm diameter, foreshafts 6-19 mm diameters, most 8-11 mm. Coleman, boar hunter, prefers 221 cm long, 11mm diam, Clovis point 20-30 gm, total weight 240 gm, similar to Australian average weight of 246 gm. Ethnog hunting range data poor, suggest accurate range 10-30 m.

Coleman's Georgia boar hunts - 51 hits, 58 misses, kills from 3-46 m, average 15 m. Measured spearthrower velocities, see Hutchings and Bruchert 1997.

Point fracture velocity tests using large cross bow at short range, shots against stone and beef ribs. All points obsidian, more or less Clovis form. Darts 167-296 gms, velocities averaged 35.6 m/sec, kinetic energy 117-165 Joules. Fracture velocity data from 53 points, spanned rapid (38%) and dynamic (62%) loading rate regimes. In other words, lots of variability, with fracture velocities "spanning full range of fracture velocities associated with stone tool manufacture. This suggests that the impact fracturing of lithic projectiles is a complex process which involves more than just those fractures caused by the extreme force of sudden impact." Fracture velocity less affected by impacted material (stone or rib) than in manufacture experiments. Compared also javelin, spear, and arrow, and dropped darts. Spear continuous pressure produces quasi-static (slow) fracture, javelin much slower than dart and arrow, which are similar. Only arrow and dart produce fractures in the upper dynamic loading range.

[I have trouble believing that projectile velocity makes much difference to fracture velocities which are 10-50 times greater, ie projectile velocities around 35 m/s, fracture velocities from 454-2231 m/sec. Also, note fairly consistent dart velocity, highly variable fracture velocity. His explanation that fractures are complex, and one impact may produce evidence of several speeds may be right. He would say lower ranges aren't definitive, but high range only achieved by arrow or dart.]

Examined archaeological specimens, total of 668, mostly fluted points and fragments, from many sites. Clovis – 19 pts with "velocity dependent" fracture features, 63% in "dynamic" range. Eight Folsom points, all within dynamic range. [Problems here include small sample, and calculations of fracture velocity apparently based on Modoc obsidian rather than actual material of points.]

Low fracture velocities in flute scars suggest pressure fluting of Clovis.

[Very interesting, high potential. I want to see other similar studies before I'm fully convinced.]

Hutchings, W. Karl
1999 Quantification of Fracture Propagation Velocity Employing a Sample of Clovis Channel Flakes. *Journal of Archaeological Science* 26:1437-1447.

Wallner lines and fracture wings, features of fracture surfaces, reflect fracture velocity; known for years, see Faulkner 1972 and others. Rate of fracture propagation in knapping is related to velocity of loading, affected by percussor density, mass, angle + speed of impact, and support of core + hammer. Undulations (ripple marks) not velocity-dependent, but show orientation of the crack, the longitudinal elastic wave. Wallner lines and fracture wings occur on surface when fracture waves encounter a local irregularity in material or the fracture boundary. The angle of divergence of these features reflects fracture velocity (they propagate faster than the main fracture itself) and is material-specific.

Few measurements of fracture velocity reported previously. H uses several hundred Glass Buttes obsidian flakes + blades, percussion, pressure, indirect perc. Different velocities distinguishable: "Quasi-static" 300-400 m/sec by pressure; "Rapid" 600-800 m/s by indirect perc, direct perc w antler, and at higher velocities 1000 m/s by stone percussors. "Dynamic" loading i.e. projectile impact, should produce fracture velocities 1000-1500 m/sec [but this appears to be estimated from someone elses flint experiments]. Examined Crabtree chest crutch blades, 46-117 m/s [i.e. very slow]. [Note that NONE of these velocities are directly measured, they are calculated with the assumption that this technique works and the constants for the obsidian material are correct.] Overlaps: some pressure fract velocities up to 615 m/s, so some pressure is not really quasi-static. The groups are statistically distinguishable despite overlap, but "not all measured values will be assignable to specific reduction processes."

Archaeological sample: 12 obsid Clovis pts. Experiments show all techniques can be successful at fluting and produce similar results. Velocities measured from scars [usually only one or two fracture wings observable – small samples] show fluting by pressure techniques, slow application of large amounts of pressure – ie something like chest crutch.

[I am still worried about the assumptions here, and the explanations are still not as clear as needed. Why doesn't he label the fracture features he observes and their relationships on clear photos of specimens instead of idealized diagrams?]

Hutchings, W. Karl
2011 Measuring Use-related Fracture Velocity in Lithic Armatures to Identify Spears, Javelins, Darts, and Arrows. *Journal of Archaeological Science* 38:1737-1746.

Fractures occur under different loading rates: quasi-static, slowly increasing contact force such as pressure flaking; rapid loading by impact such as in percussion flaking; and dynamic loading by high speed impact, restricted to certain projectile technologies.

Wallner lines and fracture wings originating from fracture boundaries and irregularities in material have velocity-dependent angles. A single impact may cause multiple fractures of different velocities at different places on a point. [Looking at his photos and diagrams (better than above) I still wonder how you can measure the angles of microscopic intersecting curved lines in a clearly replicable way.]

Experiments with custom crossbow of variable draw weight up to 204 kg, projectiles of variable weight, velocity measured by chronometer. 300+ obsidian points shot into beef ribs. Spearthrower darts from 167-296 grams [heavy!] at velocities around 36 m/s [ca 80 mph, too fast]. Fracture velocities spanned rapid to dynamic [i.e. lots of overlap]. Also shot 6 darts into stone by hand using atlatl, velocity not recorded but estimated between 34-43 m/s as in H + B 1997 [velocity estimates way too high] but got same range of fracture velocity measurements as beef ribs.

Javelins: 137-296 grams, velocities averaged 25.1 m/s [ca 56 mph, within range of javelin info] 45 shots, only 2 in ‘dynamic’ fracture range.

Arrows: 44.5-55.8 grams, shot with 45 lb compound bow, velocity 33.5-46.6 m/s [which should have told him his H+B dart velocity is too high since it is the same!]

There is a great deal of overlap in fracture velocities produced by diff loading rates, so only limited inference, but only arrow and dart projectiles produce fractures reflecting dynamic rate.

Huttatt, Richard
1985 An Experimental Hafting of a Pebble Hammer with Hour-glass Perforation. *Lithics* 6:21-23.

Green wood handle, top spread w/ flint wedges, held up well

Hyde, David M.
2012 The Impact of Microenvironments on Socioeconomic Organization in the Maya Lowlands: A Stone Tool Perspective. *Lithic Technology* 37(2):155-175.

Late Classic evolved land-use specific communities. Lithics from 3 Minimal Ceremonial Centers reflects local resource specialization, supports theory that communities specialized in ways relating to their microenvironments.

Hyland, David C. and Thomas R. Anderson
1990 Blood Residue Analysis of the Lithic Assemblage from the Mitchell Locality, Blackwater Draw, New Mexico. *Plains Anthropologist* 35(130): 105-110.

Details of procedure. Antelope found on 2 specimens [but overall not a convincing demo, and only meager results despite ideal conditions]

Hyland, D.C., J.M. Tersak, J.M. Adovasio, and M.I. Siegel
1990b Identification of the Species of Origin of Residual Blood on Lithic Material. *American Antiquity* 55(1): 104-111.

Iannone, Gyles John
1992 *Ancient Maya Eccentric Lithics: A Contextual Analysis*. M.A. thesis, Trent University, Peterborough, Ontario.

One of the few useful studies of eccentrics. Many were apparently clothed or painted.

Ibanez, J.J., et al.
1990 Knapping traces : their characteristics according to the hammerstone and the technique used, in *Le Silex, de sa genèse à l'outil : actes du Ve Colloque international sur le silex (Vth International Flint Symposium)*, M.-R. Séronie-Vivien and M. Lenoir, Editors. CNRS: Paris. p. 547-553.

Ibarra, Raouel and John Wellman
1988 Folsom Fluting: An Aboriginal Approach. *20th Century Lithics* 1: 29-36.

Glass, clamps, lever (simple); believes can tell diff btwn press and perc flutes [doubt it]; Detailed step-by-step, suggests fluting at many diff steps possible [title misleading]

Iceland, Harry B. and Jessica S. Johnson
1996 Recreating Missing Tools: Silicone Rubber Casting and Lithic Production Debitage Analysis. *Lithic Technology* 21(2): 149-154.

Iceland, Harry B. and Jessica S. Johnson
2000 Recreating Missing Tools: Silicone Rubber Casting and Lithic Production Debitage Analysis. *Bulletin of Primitive Technology* 19: 66-69.

Iggulden, Conn and Hal Iggulden
2007 *The Dangerous Book for Boys*. HarperCollins, New York.

Revival of 19th C literary form - boy's handbook. Amusing mix of general information and practical activities, some not so practical. For instance, "Making a Bow and Arrow" pp.35-38 suggests smashing up flint nodules to produce "shards" usable for points, and "napping" [!] by using a Phillips screwdriver to nibble the edge. Also odd mix of British and American information - Brit flint, "every state has its own firearm laws" but "rabbits never move far from their warrens."

Ihuel, Ewen
2004 *La Diffusion du Silex du Grand-Pressigny dans le Massif Armoricain au Neolithique*. Bulletin de l'Association des Amis du Musee du Grand-Pressigny Supplement No. 2. Comite des Travaux Historiques et Scientifiques, Indre-et-Loire.

In French "The Diffusion of Grand Pressigny Flint in the Neolithic of the Armorican Massif." Large blades and daggers of yellow Grand-Pressigny flint, made from "livre de beurre" cores and also conical cores, widely distributed in Neolithic, 4th millenium BC. Source in W France, reaching sites in Bretagne. Diffs between local use for tools, and blades distributed as part of elite exchange and made at source sites. Upper Turonian (Cretaceous) flint. [Illustrations focus on the blades, cores neglected].

Iler, Jim
1996 Oklahoma's Buried Maya Treasure. *The Ancient American* 13:3-6.

Imel, Ivan
1988a Replicating the Deep Concave Base Clovis Point by Indirect Percussion. *20th Century Lithics* 1: 25-27.

Clamps, clay, copper punch

Imel, Ivan
1988b Heat Treating West Texas Materials. *20th Century Lithics* 1: 78-79.

Low temps 375-400, but some need up to 800 degrees F; some needs drying first; Edwards chalced, chert, Alibates

Imel, Ivan
1989a Folsom Fluting: An Overview of Techniques Used. *Chips* 1(4): 4-10.

OK, mostly modern knappers and their tech named [bibliography not included, but citations in text]

Imel, Ivan
1989b Making a Paleo Point Type Set. *Chips* 1(3):4-5.

Ingbar, Eric E. and George C. Frison
1987 The Larson Cache. In *The Horner Site: The Type Site of the Cody Cultural Complex*, G. Frison and L. Todd, eds., pp. 461-473. Orlando: Academic Press.

Cache of 30 pts plus other stuff – Scottsbluff. Manuf sequences and use histories; Sctsblf leads to Cody Knife

Ingold, Tim
1993a Tools and Hunter-Gatherers. In *The use of Tools by Human and Non-human Primates*, A. Berhelet and J. Chavaillon, eds., pp. 281-295. Clarendon Press, Oxford.

Ingold, Tim
1993b Tools, Techniques, and Technology. In *Tools, Language and Cognition in Human Evolution*, Kathleen R. Gibson and Tim Ingold, eds., pp. 337-345. New York: Cambridge University Press.

Inizan, Marie-Louise and Monique Lechevallier
1994 L'adoption du debitage laminaire par pression au Proche-Orient. In *Neolithic Chipped Stone Industries of the Fertile Crescent*. H. G. Gebel and S. K. Kozlowski eds., pp. 23-32. Berlin, Ex Oriente.

Inizan, Marie-Louise, Hélène Roche, and Jacques Tixier
1992 Technology of Knapped Stone. *Préhistorie de la Pierre Taillée Tome 3*. Meudon: CREP.

Iovita, Radu, Holger Schönekeß, Sabine Gaudzinski-Windheuser and Frank Jäger

2013 Projectile impact fractures and launching mechanisms: results of a controlled ballistic experiment using replica Levallois points. *Journal of Archaeological Science*, in press.

Focus on effect of kinetic energy in formation of diagnostic impact fractures on glass Levallois points. Speed, kinetic energy, impact angle considered, rest controlled by artificial points and target material, air propulsion + velocity measurement. 266 gm spear, 7-30.5 meters per sec, range up to lower end of H + B. Six damage categories: flute-like (subsumed under longitudinal), burin-like (subsumed under longitudinal), transverse/snap, spin-off, tip crushing, microscopic (incipient or very small fractures). Decreasing impact angle from direct and increasing velocity both increase longitudinal fracture by enlarging platform width. As V increases, scar length increases, but weak trend except at 90 degrees. Transversal snap fract more common in slow velocity. Bending initiations are common but occur with non-impact situations too, just loading large platforms on fragile pts. Step terminations likewise quite common in impact but cannot be considered diagnostic. Animal targets are not homogeneous, and results would be less diagnostic in natural use. So distinguishing 3 weapon systems – hand, atl, bow will be difficult. Can separate extremes of velocity some based on freq of longitudinal fractures and their size, but in arch would need very large samples. For Neanderthals, both skeletal analysis and ballistic study of points suggests thrust or hand launched, no atlatl

Irribaria, Roland
1995 Premiers repérages d'une minière d'extraction d'opalite-silexite (silex tertiaire) en Loir-et-Cher, Communes de Suèvres et de Mer. In *Les Mines de Silex au Néolithique en Europe: Avancées Récentes*. J. Pelegrin and A. Richard, eds, pp.83-88. Comité des Travaux Historiques et Scientifiques, Vesoul.

Irvine, Todd
1999 Facts on Fakes. *Central States Archaeological Journal* 46 (1) : 74.

Collectors need to educate selves to protect.

Irwin, Donald C.

2004 Projectile Points. In *Bryce Canyon National Park: Archeology of the Paunsaugunt Plateau*, edited by Chris Wenker, pp. 81-114. Intermountain Cultural Resources Management Professional Paper No. 69. Department of the Interior, National Park Service.

Typology w keys for large and small pts. 123 pts from surface survey, 68 from sites, 55 isolated. Late Paleo/E. Archaic Gt Basin Stemmed + Pinto pts, Mid Arch side notched forms, L Arch Elko, Gypsum to small arrow pts - Rosegate, Desert Side Notched, and Parowan Basal-Notched. Raw material mostly Brian Head cherts from not too far, some obsid, other. Distribs examined.

Isaac, Barbara
1987 Throwing and Human Evolution. *The African Archaeological Review* 5:3-17.

Throwing (emph overhand) import in ethnog and hist, little evidence in deep past, so little discussed. Ethnog evidence of 1)prevalence 2)power and accuracy 3)ape ability 4)neurological and fossil evidence 5) arch evid and adaptive significance. Rare accounts of small game hunting, but more of warfare – surprising accounts of damage done against Euro recorders. Surprisingly large stones too, possibly up to 2kg. Chimps throw but poorly and underhand, more as display. Hard overhand throw requires diff phys and neurological. *Australo. afarensis* hand adapted for good throw. Calvin says need more neurons – hence larger hominid brains. Arch evidence: Olduvai, unmodified stones of suitable form carried in. Spheroids are same size as ethnog throwing stones. Early bipedalism should be linked to tool use – throwing would have been very adaptive w/loss of big canines, etc – defensive, then aggressive, then predatory. 2 mya – increased meat consumption – scavenging easier if throwing to chase predators; moderns don't know how effective throwing can be or could have been, even if evidence scant in arch record

Isaac, Glynn
1977 *Olorgesailie: Archeological Studies of a Middle Pleistocene Lake Basin in Kenya. Chicago*: University of Chicago Press.

Isaac, Glynn
1978 Stages of Cultural Elaboration in the Pleistocene: Possible Archaeological Indicators of the Development of Language Capabilities. *Annals of the New York Academy of Sciences* 280:275-288.

Measures of "complexity" in technol discussed: # types, range of variation, # of operations in manuf, compound tools, regionalized variation. Adaptive/Technol systems: Phase I – protohuman, simple tools (Oldowan), Phase II Acheulean – complex formal tools, prob containers for food, main formative period for communic skills; III maturing of culture depending on communication eg Moust and Up Pal

Ives, David
1975 The Crescent Hills Prehistoric Quarrying Area. *Museum Brief No. 22*. Columbia: University of Missouri.

Ives, David
1984 The Crescent Hills Prehistoric Quarrying Area: More than Just Rocks. In *Prehistoric Chert Exploitation: Studies from the Midcontinent* edited by B. M. Butler and E. E. May, pp. 187-196. Center for Archaeological Investigations, Occasional Paper 2, Southern Illinois University, Carbondale.

Ives, John W., Duane Froese, Kisha Supernant, and Gabriel Yanicki
2013 Vectors, Vestiges and Valhallas—Rethinking the Corridor. In *Paleoamerican Odyssey*. Kelly E. Graf, Caroline v. Ketron and Michael R. Waters ed., pp . 149-170. Tops Printing, Inc., Texas.

Ixer, R. A., O. Williams-Thorpe, R. E. Bevins, and A. D. Chambers
2004 A comparison between 'total petrography' and geochemistry using portable X-ray flourescence as provenancing tools for some Midlands axeheads. In *Lithics in Action: Papers from the Conference 'Lithic Studies in the Year 2000'*. E. A. Walker, F. Wenban-Smith, and F. Healy eds., pp. 105-115. Oxbow Books, Oxford.

Izuho, Masami
2013 Human Technological and Behavioral Adaptation to Landscape Changes around the Last Glacial Maximumin Japan: A Focus on Hokkaido. In *Paleoamerican Odyssey*. Kelly E. Graf, Caroline v. Ketron and Michael R. Waters ed., pp .45-64. Tops Printing, Inc., Texas.

Jack, R.N.
1976 Prehistoric Obsidian in California I – Geochemical Aspects. In *Advances in Obsidian Glass Studies*, RE Taylor, ed., pp. 183-217. Park Ridge: Noyes Press.

Anal of large # specimens (but from many sites), discuss geog change in source % in diff tribal areas. Contends no evid for source use change over time; Outlines some trade relations

Jackson, Robert, Michael Boynton, William Olsen, and Richard Weaver
1988 California Archaeological Resource Identification and Data Acquisition Program: Sparse Lithic Scatters: A Program for the Identification and Management of An Archaeological Reource Class. Sacramento: Office of Historic Preservation.

CRM concerns and debitage typology

Jacobs, Howard, and Alan Taylor
n.d. *Flint Knapping Made Easy*. VHS. IPB Video, Neosho, MO.

Jaeger, Ellsworth
1950 *Nature Crafts*. New York: The MacMillan Company.

short section on how to make arrows and points

James, Steven R.
1989 Hominid Use of Fire in the Lower and Middle Pleistocene: A Review of the Evidence. *Current Anthropology* 30(1):1-26.

Lots of claims back to 1.5 mya in Africa, including at Koobi Fora, Olorgosailie, Swartkrans, but not Oldovai. No real good hearths, natural phenomena prob better explan for traces of fire like burned clay bits, reddened areas etc. Mid Pleistocene better. Swartkrans possible burned bones assoc w fossil robust Australopiths, but attributed to early Homo Acheulean by Brain - but maybe just manganese stained. Kalambo Falls Early Stone Age lots charred wood, 180,000, possibly human caused. Cave of Hearths + Montagu Cave seem to be just burned bat guano. By Middle Stone Age traces of hearths, much more burned stuff eg Klasies River shelters, dates prob back to >100 kya. Best known - Choukoutien .45 mya ash, charcoal, burned stone + bone. Binford and others question - natural burning of organic layers, manganese staining on bones. Other Chinese sites Xihoudu and Yuanmou claim burned bone 1.8 mya, but context + artifacts problematic. In Europe, Vertesszollos burned bone patches in travertine .3-.6 mya, but prob mineral staining. Torralba + Ambrona .3-.5 mya small amounts wood + charcoal, argued for fire drive of elephants, but no burned bones, may be natural fire, may be just scavenged elephants too. Terra Amata .25-.4 mya structure, hearths, burned lithics + shell, charcoal, probably acceptable. Other late Mid Pleist sites including Lazaret fire evidence by 200 kya. Swanscombe bits of charcoal, change in pollen argued to indicate brush burning by hominids 297-347 kya - pretty feeble evidence. Clacton wood spears recently found not fire hardened. Conclusion: Evidence for controlled fire use is tenuous before appearance of Neanderthals etc at end of Middle Pleistocene, last 250 kya or less, assoc w early H. sapiens.

Comments: Gilbert pts out taphonomic problems of early sites, Gowlett defends his early fire at Chesowanja 1.4 mya; Lewis says *H. erectus* could have used fire even if not made [I doubt this - natural fire is not that common, keeping fire going not that easy], he points out rareness of lightning starts etc as argument that human starting more likely; Lynch - makes less likely that *H. e.* (ie pre-modern humans) made it to new world; McGrew claims spontaneous uses of fire by chimps; Pope defends Zhoukoutien from “Binfordian bias”. James reply cites frequency of natural lightning fires.

Janetski, Joel C.
1993 The Archaic to Formative Transition North of the Anasazi: A Basketmaker Perspective. In *Anasazi Basketmaker: Papers from the 1990 Wetherill-Grand Gulch Symposium*, edited by Victoria Atkins, pp. 223-241. Cultural Resource Series No. 24, Bureau of Land Management, Salt Lake City.

Bow and arrow arrived ca 200 AD, although C14 dates on wood charcoal may be a bit too early, but certainly early millenium, and after corn.

Janetski, Joel C., Mark L. Bodily, Bradley A. Newbold, and David Yoder
2012 The Paleoarchaic to Early Archaic Transition on the Colorado Plateau: The Archaeology of North Creek Shelter. *American Antiquity* 77(1):125-159.

Adaptive shifts in mobility, subsistence, and technology to becoming less mobile, more focus on large game, more local toolstone, adopting grinding tools and processing small seeds. Paleoarchaic 10,000 - 9,000 B.P. assoc with North Creek Stemmed pts [Gypsum-like to San Pedro-like]. Early Archaic 9,000-8,000 B.P. assoc with Pinto (some Elko Eared-like) pts, sim pts in Sand Dune Cave burial probably curated. With these, grinding tools appear.

Jardon-Giner, Paula, Joaquin Juan-Cabanilles, Rafael Martinez-Valle, and Valentin Villaverde
2000 Les points solutreènnes de faciès néolithiques: étude de la morphologie, de la typologie, et des fractures. In *La chasse dans la Préhistoire/ Hunting in Prehistory, Anthropologie et Préhistoire 111*. C. Bellier, P. Cattelain, and M. Otte eds., pp. 44-53. Societé Royale Belge d'Anthropologie et Préhistoire, Bruxelles.

Small stemmed + barbed bifacial points, pointes a cran on blades.

Jarvenpa, Robert and Hetty Jo Brumbach
1995 Ethnoarchaeology and Gender: Chipewyan Women as Hunters. *Research in Economic Anthropology* 16:39-82.

Not much lithic, but crits view that men would not lend women "their" "good" stone tools – ethnog women have their own equivalent tools; women hunt rabbits by selves – trap mostly – major food source at times; women hunt moose – men usually shoot but women participate in all, do most of butchery work

Jayez, Mozhgan
2015 The shift in bladelet technology from Late Paleolithic to Neolithic: The case study of Izeh, Khuzestan, Iran. *Lithic Technology* 40(1):52-67.

Reduction sequence study.

Jeffreys, M. D. W.
1965 The Hand Bolt. *Man* 65:153-154.

Handaxe as throwing weapon [silly]

Jefferies, Richard W., Victor D. Thompson, and George R. Milner
2005 Archaic Hunter-Gatherer Landscape Use in West-Central Kentucky. *Journal of Field Archaeology* 30 (1): 3-23.

1233 points from 13 middens and shell mounds used for chronol. Then attempts to use point frequency (per area, per 1000 yrs) as measure of occupation intensity, using 183 pts from surface survey.

Jelinek, Arthur
1965 Lithic Technology Conference, Les Eyzies, France. *American Antiquity* 31(2):277-278.

Reports on Crabtree – Bordes – Tixier demonstration

Jelinek, Arthur J.
1975 Some Current Problems in Lower and Middle Paleolithic Typology. Paper presented Conference on Lithic Typology, Les Eyzies, September 1975, MS.

Did this get published? Current Anthro?

Jelinek, Arthur J.
1975 A preliminary report on some Lower and Middle Paleolithic industries from the Tabun Cave, Mount Carmel (Israel). In F. Wendorf and A. E. Marks (eds.) *Problems in Prehistory: North Africa and the Levant*. pp. 297-315. Dallas: SMU Press.

Jelinek, Arthur J.
1976 Form, Function, and Style in Lithic Analysis. In *Cultural Change and Continuity: Essays in Honor of JB Griffin*, pp. 19-33. New York: Academic Press.

Jelinek, A. J.
1977 The Lower Paleolithic: Current Evidence and Interpretation. *Annual Review of Anthropology* 6:11-32.

Jelinek, A.J.
1978 Lithic Analysis Bibliography, MS

Jelinek, Arthur
1982 Obituary: Francois Bordes, 1919-1981. *American Antiquity* 47(4):785-792.

Jelinek, Arthur J., William R. Ferrand, Georg Haas, Aharon Horowitz, and Paul Goldberg
1973 New excavations at the Tabun Cave, Mount Carmel, Israel, 1967-1972: A preliminary report. *Paléorient* 1(2):151-183.

Jenkins, Dennis L. and a multitude of others
2012 Clovis Age Western Stemmed Projectile Points and Human Coprolites at the Paisley Caves. Science 137:223-228. http://www.sciencemag.org/content/337/6091/223.full.pdf

Stratig and dates show WST points and coprolites with human DNA equiv age to Clovis or earlier, thus a parallel contemporary tradition, or earlier than Clovis tradition.[points are several stem frags, not complete]

Jenkins, Dennis L., Loren G. Davis, Thomas W. Stafford, Jr., Paula F. Campos, Thomas J. Connolly, Linda Scott Cummings, Michael Hofreiter, Bryan Hockett,

Katelyn McDonough, Ian Luthe, Patrick W. O'Grady, Karl J. Reinhard, Mark E. Swisher, Frances White, Bonnie Yates, Robert M. Yohe II, Chad Yost, Eske Willerslev
2013 Geochronology, Archaeological Context, and DNA at the Paisley Caves. In *Paleoamerican Odyssey*. Kelly E. Graf, Caroline v. Ketron and Michael R. Waters ed., pp. 485-510. Tops Printing, Inc., Texas.

Jenks, Albert Ernest
1900 A Remarkable Counterfeiter. *American Anthropologist* 2:292-296.

Reworked old points into bizarre forms including fishhooks using teeth and steel pliers.

Jennings, Justin and Adrienne Rand
2008 Stemming the Tide: How Social Marketers Can Help in the Fight Against Looted Antiquities. *The SAA Archaeological Record* 8(3):28-31.

Advertising campaigns to change public attitudes.

Jennings, Thomas
2008 San Patrice: An Example of Late Paleoindian Adaptive Versatility in South-Central North America. *American Antiquity* 73(3):539-559.

Jennings, Thomas
2013 The Hogeye Clovis Cache, Texas: Quantifying Lithic Reduction Signatures. *Journal of Archaeological Science* 40:649-658.

52 bifaces of Edwards chert, some finished points, others late stage bifaces, with end thinning, overshot flaking. Quantitative measures for tempo of reduction (% W + T loss between stages), overshot directionality (L/R) etc to produce 3 potential flaking patterns: alternate opposed, dual edge serial, and shared edge serial. All 3 appear in cache.

Jensen, Helle Juel
1994 *Flint Tools and Plant Working: Hidden Traces of Stone Age Technology: A Use Wear Study of Some Danish Mesolithic and TRB Implements*. Aarhus: Aarhus University Press.

Jeske, Robert J., Daniel M. Winkler, and Dustin Blodgett
2010 Experimental Heat Alteration of Lithic Raw Materials. *Designing Experimental Research in Archaeology: Examining Technology Through Production and Use*, Jeff Ferguson, editor., pp. 111-128. University Press of Colorado, Boulder.

Ok outline of current understanding, experimental procedure. Example of experiment with Hixton and related WI orthoquartzites - no change in flaking quality at 500 F, so prehistoric heating for color change or in quarrying. [Why does he use bipolar fracture to test good material - lack of knapping skill? Unfortunately, not even a nod or reference to the many published non-academic experiments, e.g. Waldorf 1998. This is one place where the knappers could be useful to archaeology.]

Jeudy, Françoise, C. Jeunesse, J-L. Monnier, J. Pelegrin, A-M. Pétrequin, P. Pétrequin, and I. Praud.
1995 Les carrières néolithiques de Plancher-les-Mines (Haute-Saône): Exemples d'une approche intégrée. In *Les Mines de Silex au Néolithique en Europe: Avancées Récentes*. J. Pelegrin and A. Richard, eds, pp. 241-280. Comité des Travaux Historiques et Scientifiques, Vesoul.

Jobson, Robert W.
1986 Stone Tool Morphology and Rabbit Butchering. *Lithic Technology* 15(1): 9-20.

Considers some variables, most important are tool size – L, W, T; edge angle less effect

Joyce, Daniel J.
2013 Pre-Clovis Megafauna Butchery Sites in the Western Great Lakes Region, USA. In *Paleoamerican Odyssey*. Kelly E. Graf, Caroline v. Ketron and Michael R. Waters ed., pp. 467-484. Tops Printing, Inc., Texas.

Johnson, Ann M., and Brian O. K. Reeves
2013 Summer on Yellowstone Lake 9,300 Years Ago: The Osprey Beach Site. *Plains Anthropologist* 58 (227-228):1-192.

Paleoindian Cody Complex material from excavs along eroding bench of Yellowstone Lake in Y National Park. Large lithic assemblage [foolishly, they used Sullivan and Rosen categories as well as size classes to analyze the debitage, but don't report results perhaps because they were useless.] Tool stone mostly obsidian; 11 of 19 known Y sources represented. Identify a Nezu Complex of Cody age, but using local sources of Muskeg Valley Microquartzite and adding microblades and burins to usual Cody assemblage. Scottsbluff, Eden, other lanceolate pts, Cody knives. Also some oddities assigned to Cody or Pelican Lake, McLean, etc: deeply corner-notched "hafted lance heads". Some of this stuff from surface. No bone, antisera ID of various animals on stone tools. Propose seasonal round model of Cody subsistence.

Johnson, Catherine, Karolina Ross, and Stig Welinder
2000 Gender, Material Culture, Ritual and Gender System: A Prehistoric Example Based on Sickles. In *Gender and Material Culture in Archaeological Perspective*, edited by Moira Donald and Linda Hurcombe, pp. 169-184. Saint Martin's Press, New York.

Ethnog analogy or grave association with biologically sexed skeletons usual basis for gender in arch. S. Scandinavia grave sets 1800 BC to 200 AD. Farming comes to dominate society, power, ideology, and ritual relate to control of arable + harvest. EBA flint + bronze sickles in graves w both male oriented (weapons) and female (clothing ornaments) goods, MBA bronze sickles with skeletally male graves, but graves = ritual, not just personal equipment. EIA cremations iron sickles just with women, but only a few young women. Do sickles = beginning reproductive life in funeral symbology? Should see them as naration of social story rather than gender role markers. [rather nebulous use of rock art motifs, slightly incoherent article]

Johnson, Harmer
1998 Antiquities. *Prehistoric American* 32(3):21.

Johnson, Jay K.
1976 Long Distance Obsidian Trade: New Data from the Western Maya Periphery. In *Maya Lithic Studies*, TR Hester and N Hammond, eds., pp. 83-90. Center for Archaeological Research, U Texas San Antonio, Special Report 4.

Johnson, Jay K.
1976 Long Distance Obsidian Trade: New Data from the Western Maya Periphery. In *Maya Lithic Studies*, TR Hester and N Hammond, eds., pp. 83-90. Center for Archaeological Research, U Texas San Antonio, Special Report 4.

Johnson, Jay K.
1981 Further Additional Biface Production Failures. *Lithic Technology* 10(2-3):26-28.

Discusses “lateral snap,” “end shock” “snapping” “bending fracture” “longitudinal reverse fracture” “expansion fracture” [heat]. [But not very useful.]

Johnson, Jay K.
1993 North American Biface Production Trajectory Modeling in Historic Perspective. *Plains Anthropologist* 38(143): 151-162.

Ok chronol. review of historic themes from Holmes to present.

Johnson, Jay K.
1997 Stone Tools, Politics, and the Eighteenth-Century Chickasaw in Northeast Mississipi. *American Antiquity* 62(2):215-230.

18th C. thumbnail scraper = deerhide fur trade, some sites replaced w/ metal earlier. 1670-18thC. trade w/ Eng.- slaves, then deer hide, center of Eng. at Charleston also trade w/ Fr. at Mobile, Chicksaw on route to interior, wanted guns and ammo for war and hunting. Bifacial knives, drills, thumbnail scrapers sim to Oneota, prob. Siouxan, appear ca. 1000, prob relate to bison hides in Mid W., deer in SE. Early sites non-local tools (bifaces)- 18th C still non-local, but now cores, debitage, small tools, casual flake tools, unprep cores. Uses a good typol of flakes: core, biface, bipolar. Guns and small triangular pts., sedentism allows stockpile stone, work at home, use casual tools [Good]

Johnson, Jay K.
2001 Some Reflections on Debitage Analysis. In *Lithic Debitage: Contex, Form, Meaning*. William Andrefsky, Jr., ed. pp 15-20. Salt Lake City, The University of Utah Press.

Johnson, Jay K.
2003 Chickasaw Lithic Technology: A Reassessment. In *Stone Tool Traditions in the Contact Era*. Charles Cobb, ed., pp.51-58, University of Alabama Press, Tuscaloosa.

Johnson, L. Lewis
1975 Graph Theoretic Analysis of Lithic Tools from Northern Chile. In *Lithic Technology: Making and Using Stone Tools*. E. Swanson, ed., pp 63-96 The Hague: Mouton.

Clustering and other multivariate applied to cores [but not very interesting]

Johnson, Lucy Lewis
1978 A History of Flint-Knapping Experimentation, 1838-1976. *Current Anthropology* 19(2):337-372.

Best source for history, many refs.

Johnson, Lucille Lewis
2007 Reduction Analysis and Chaine Operatoire. *Lithic Technology* 32(1):143-146.

Commenting on other papers in this issue of LT. CO is larger than reduction sequence because it includes not just what happens to a piece of stone, but why - its social etc circumstances.

Johnson, M.
1978 "Problems of a Journeyman Flintknapper" *Flintknappers' Exchange* 1(1):8-9.

Johnston, D, M. Christmas, P. Harding, M. Green
1996 Modern Flintknapping. (Letter to editor) *Current Archaeology* 147:118.

modern debitage ruins site for surface debitage analysis - knap responsibly!

Jolly, Fletcher, III
1970 Fluted Points Reworked by Later Peoples. *Tennessee Archaeologist* 26 (2): 30-44.

cite for rework of pts.

Jones, Douglas
2009 Making Your Own Gunflints, featuring Bob Stewart. School of the Longhunter Series, Douglas Jones, Lexington, KY. Sold on ebay.

DVD, 108 min. [Stewart filmed inside teaching a class. Quality so-so, articulate and clear enough, but some of his geological and other info is poor. His points look ok, but some of his knapping is odd. He does teach a useful practical way to make gunflints out of flakes with minimal knapping skill, showing striking a flake (but doesn't explain angles at all) and pressure flaking to shape, but no close-ups, no pic of finished products, no demo of fitting to gun etc.]

Jones, Jonathan H.
1899 *Indianology: A Condensed History of the Apache and Comanche Indian Tribes. For Amusement and General Knowledge. Prepared from the General Conversation of Herman Lehmann, Willie Lehmann, Mrs. Mina Keyser, Mrs. A. J. Buchmeyer and Others*. Johnson Brothers, San Antonio.

See Lehmann 1993, this is the earlier version of his tale

Jones, Kevin L.
1984 Lithic Waste Flakes as a Measure of Cultural Affinity: A New Zealand Case Study. *Lithic Technology* 13 (3): 71-83.

Adze and core tool debris contrasts with flake tool debris but is related to prismatic blade debris [unlikely!] Diff. types adze = diff debris. Uses a relative of IPA interior platform angle

Jones, Mark
1990 *Fake? The Art of Deception*. Trustees of the British Museum, London.

Jones, Nigel and Steve Burrow
2011 A potential axe factory near Hyssington, Powys: Survey and excavation 2007-08. In *Stone Axe Studies III*. Vin Davis and Mark Edmonds, ed., pp. 295-308. Oxbow Books, Oxford.

Jones, Peter R.
1980 Experimental Butchery with Modern Stone Tools and its Relevance for Palaeolithic Archaeology. *World Archaeology* 12 (2):153-165.

bifaces better than flakes for most butchery- weight, long cutting edges, ease of holding. Olduvai expers, Acheulean technol, goats, cow, zebra. Details of Wakamba goat butchery process. Flakes best for skin cutting on goats, biface better on larger animals, larger heavier tools better for skin removal and meat cutting, larger tools easier to hold and less tiring. Few hand cuts – force on hand dispersed by long edges - but flakes more often cut hand

Jones, Peter R.
1981 Experimental Implement Manufacture and Use: A Case Study from Olduvai Gorge, Tanzania. *Philosophical Transactions of the Royal Society of London Series B, Biological Sciences* 292: 189-195.

hand axe replication (Bed 4) WK = HEB sites, WK = sample av flk scar count 10.5. HEB most worked, ave 20 flk scar, but in fact HEB older- raw material quality- phonolite good vs basalt. Edges weak- damage quickly in wood cutting and chopping, so butchery more

suitable. Goat butchery- retouched phonolite edge better than flake (which was weak), basalt flakes stronger, basalt handaxes smaller and hard to resharpen. Handax better than flake, easier to hold, longer cutting edges. Handax = butchery, so diff. btwn Acheul and contemp developed Oldowan

Jones, Peter R.
1994 Results of Experimental Work in Relation to the Stone Industries of Olduvai Gorge. In *Olduvai Gorge 5: Excavations in Beds III, IV, and the Masek Beds, 1968-71*. M. Leakey and D. Roe, eds., pp. 254-298. Cambridge University Press, Cambridge.

Exact sources known for all materials, distance increases thru time. Describes materials and sources: Quartzite: "forceful blows split flakes", edges naturally serrated and efficient. White or grey, assessed different techniques of percussion. Phonolite- green lava, flakes well. Basalt + trachyandesite- tough and coarse. Nephelinite- grey lava, tough + coarse. Chert-small irreg nodules, only used Beds I, II [needs more illustrations] Direct freehand hammerstone perc duplicates almost all features. Describes in detail flaking diff materials, techniques + forms. Advantages of biface long narrow form= long at edge. Experiments in cutting etc- quartzite best. [Useful and very detailed]

Jones, Rhys
1990 Hunters of the Dreaming: Some Ideational, Economic and Ecological Parameters of the Australian Aboriginal Productive System. In *Pacific Production Systems: Approach to Economic Prehistory*, edited by D. Yen and J. Mummery, pp. 25-52. Australian National University, Canberra.

cited in Taçon 1991- source of info on symbolic meaning of stone, espec stone spear = male = penis etc

Jones, Rys and N. White
1988 Point Blank: Stone Tool Manufacture at the Ngilipitji Quarry, Arnhem Land 1981. In *Archaeology with Ethnography: An Australian Perspective*, edited by B. Meehan and R. Jones, pp. 51-87. Highland Press, Canberra.

cited in Taçon 1991- source of info on symbolic use of stone

Jones, Scott
1996 Old World Handaxes: The Birth of the Biface. *Bulletin of Primitive Technology* 12: 30-35.

Made handaxes for "Killer Frisbee" theorists Peters and O'Brian- not convinced
Quotes from Shick + Toth, and me. Good summary of hand axe technol. and ideas

Jones, Scott
2000 Learn the Drill: Bipolar flaking, Microdrills, and Personal Adornment. *Bulletin of Primitive Technology* 19: 57-59.

Jones, Scott
2001 Just Scraping By: Beyond the Biface Bias, A Primer for Effective Uniface Tools. *Bulletin of Primitive Technology* 201 58-65.

Good photos, info on hafting scrapers including Ethiopian and Eskimo varieties.

Jones, Scott
2001 Quarry Spalling: The Fine Art of Massive Fracture Or, It Takes Spalls to be a Flintknapper. *Bulletin of Primitive Technology* 21: 17-19.

Hammerstone use, Coastal Plain of SE info. Large hammerstone, broad pt. of impact, low angle of blow = less stress and fracture. [good short article, good ethical and safety statements]

Jones, Scott
2001 Small-Scale Thermal Alteration: A Case Study and Experiment in Southeastern Archaeology. *Bulletin of Primitive Technology* 22: 35-45.

Jones, Scott
2001 Wooden pressure Flakers. *Bulletin of Primitive Technology* 22: 69-70.

Hard woods, rounded tip, burnished to harden. Best on thin edges, less abraded platforms.

Jones, Scott
2005 An Advance Reply to Jergen Weiner. *Bulletin of Primitive Technology* 22:8-10.

Weiner too critical about nature of experiment, and about use of pine pitch in N. Am. where it is in fact well attested.

Jones, Scott
2005 Pitch Glue. *Bulletin of Primitive Technology* 29:11-19.

Pine resins are variable for mastic use. Sweet gum (*Liquidambar styraciflua*) also good, but stays gummy. Mixed with pine resin it prevents brittleness. Collect from damaged trees, or melt pine tar out of heartwood. Temper with charcoal, ochre, or dried ungulate dung. Approx 10-15% charcoal to pitch. Hafting a stone knife.

Jones, Scott
2005 A Tool's Worth: A Functional Survey of Lithic Materials for Flaked Stone Tools. *Bulletin of Primitive Technology* 30:46-47.

Modern knappers emphasize esthetics over function in material choice. Prehistoric people used different rock for different functions [no examples given]. Briefly describes some tougher rock types.

Jones, Scott

2005 Five-Centimeter Biface. *Bulletin of Primitive Technology* 30:75-79.

Good size for diverse tasks, not hard to make = common.

Jones, Scott
2006 How Does the Modern Primitive Dress? *Bulletin of Primitive Technology* 32:13-14.

We want to be taken seriously. There is a "modern primitive" style reflecting do-it-yourself attitude. How should we present a primitive appearance when interacting with public? Period costume may restrict you to a limited time or perpetuate anachronisms. Typical rendezvous pre-1840 dress not suitable for prehistory. Dressing up may reduce credibility among eg. archaeologists and Indians. If don't dress up, may be considered amateur or novice. Author's position: "don't want what I wear to be muddled with what I teach" so dresses modern. Modern primitive dress comes from different sources, is an ideological no-win situation, decisions should be informed and conveyed to audience.

Jones, Scott
2011 Quartz Tool Technology in the North Georgia Piedmont. In *Experiment and Interpretation of Traditional Technologies: Essays in Honor of Errett Callahan*, Hugo Nami, ed., pp. 432-510. Ediciones de Arqueología Contemporánea, Buenos Aires.

Jorgensen, Svend
1985 *Tree-Felling in Draved*. Copenhagen: National Museum of Denmark.

Jöris, Olaf
2006 Bifacially backed knives (Keilmesser) in the Central European Middle Paleolithic. In *Axe Age: Acheulian Toolmaking from Quarry to Discard*. Naama Goren-Inbar and Gonen Sharon, eds., pp. 267-285. Equinox Publishing, London.

Sees different assemblages of MP Keilmessergrupen (Micoquian) as chronological and regionally distinct, reflecting populations shifts triggered by climate change.

Joyce, Daniel J.
1985 Heat Treatment of Alibates Chalcedony. *Lithic Technology* 14(1): 36-40.

Exper., treats alibates, good results- optimum temp. 250-350 C [482-662 F], change in luster, color, ease of flaking, more color change at upper end.

Juleff, Gill and Lee Bray
2007 Minerals, Metal, Colours and Landscape: Exmoor's Roman Lode in the Early Bronze Age. *Cambridge Archaeological Journal* 17(3):285-296.

Iron-rich ore deposit, exploited with pits in prehistory, possibly for trace copper, but more likely pigments and quartz with symbolic values.

Julien, M., Vaughan, P. and Lavallee, D.

1987 Armes et outils emmanchés a Télarmachay. In *Le Main et L'Outil: Manches et Emmanchments Préhistoriques*. D. Stordeur ed., pp. 287-296. Lyon: Maison de L'Orient

Justice, Noel
1987 *Stone Age Spear and Arrow Points of the Midcontinental and Eastern United States*. Bloomington: Indiana University Press.

Justice, Noel D.
2002 *Stone Age Spear and Arrow Points of California and the Great Basin*. Indiana University Press, Bloomington.

Justice, Noel D.
2002 *Stone Age Spear and Arrow Points of the Southwestern United States*. Indiana University Press, Bloomington.

This is third of the best typological series for the US. Uses a cluster system in all. For the SW, defines and names lots of new types, some of which are better than others. He attempts to describe, name, date, and locate small arrow point types - [worthy cause, but relies too heavily on some museum collections, for instance Magician burial for Sinagua. Misapplies Great Basin names like Cottonwood triangular to very different SW forms. Misquotes my Grasshopper work to say "different populations of triangular notched and unnotched points emerge from separate technologies" which bears no resemblance to my conclusions.] For the other regions, more traditional types are better established and used. Some photos; the drawings are ok: in Midwest volume mostly with just flake scar outlines, but in others, properly shaded. [Justice's books are tremendously impressive syntheses of all sorts of relevant info, even if you don't agree with all his typological groupings.]

Kalin, Jeffery
1981 Flintknapping and Silicosis. *Flintknappers' Exchange* 4(2): 2-9.

Appalling statistics from Brandon – 77 percent of deaths. Warns modern knappers.

Kaminska-Szymczak, Jolanta
2002 Cutting Graminae: Tools and "Sickle Gloss" Formation. *Lithic Technology* 27 (2): 111- 151.

Kamp, Kathryn A. and John C. Whittaker
1986 Unproductive Lithic Resources at Lake Mead. *American Antiquity* 51(2):383-388.

Quarry/collection sites on gravel terraces. Refitting showed not much was removed, many nodules just tested, or only a few flakes taken.

Kamp, K. and J. Whittaker
1990 Lizard Man Village: A Small Site Perspective on Northern Sinagua Social Organization. *Kiva* 55(2):99-125.

Kamp, Kathryn A. and John C. Whittaker
1999 *Surviving Adversity: The Sinagua of Lizard Man Village*. University of Utah Anthropological Papers Number 120. University of Utah Press, Salt Lake City.

Extensive sections on projectile points, debitage analysis, lithic raw material distribution and exchange.

Kamp, Kathryn, and John C. Whittaker
2002 Prehistoric Puebloan Children in Archaeology and Art. In *Children in the Prehistoric Puebloan Southwest*, K.A. Kamp, ed., pp. 14-40. University of Utah Press, Salt Lake City, Utah.

Kamp, Kathryn, and John C. Whittaker
2002 Excavations at Chiik Nah. (Report submitted to the Belize Department of Archaeology, published on the U. California Santa Barbara El Pilar Web Page at http://www.marc.ucsb.edu/elpilar/)

pitiful little housemound, a few scraggly stone tools

Kamp, Kathryn A., and John C. Whittaker
2014 Editorial Reflections: Teaching Science with Ethnoarchaeology and Experimental Archaeology. *Ethnoarchaeology: Journal of Archaeological, Ethnographic, and Experimental Studies* 6(2):79-80

Scientific method, experimentation.

Kamp, Kathryn, John C. Whittaker, Rafael Guerra, Kimberly McLean, Peter Brands, and Jose V. Guerra Awe
2006 A Ritual Spindle Whorl Deposit from the Late Classic Maya Site of El Pilar, Belize. *Journal of Field Archaeology* 31(4):411-423.

Breakage experiments show that a deposit of limestone spindle whorl fragments cannot be accidental breakage through use.

Kardulias, P. Nick
1992 The Ecology of Bronze Age Flaked Stone Tool Production in Southern Greece: Evidence from Agios Stephanos and the Southern Argolid. *American Journal of Archaeology* 96: 421-442.

Kardulias, P. Nick
2003 Stone in the Age of Bronze: Lithics from Bronze Age Contexts in Greece and Iran. In *Written in Stone: The Multiple Dimensions of Lithic Analysis*. P. N. Kardulias and R. W. Yerkes, eds., pp. 113-124. Lexington Books, Lanham.

Kardulias, P. Nick and Richard W. Yerkes

1996 Microwear and Metric Analysis of Threshing Sledge Flints from Greece and Cyprus. *Journal of Archaeological Science* 23: 657-666.

Not much new, but good details on use-wear: striations, rounding, sickle polish, and lacking the comet shaped pits of normal sickles. Thinks back 5-6000 B.P.- based on flint usewear at Knossos (Diamond) and Eneolithic sites in Bulgaria (Skakun) and PPNB Syria, Ali Kosh 4-5th mill (Anderson-Gerfaud) but his specimens are recent.

Kardulias, P. Nick and Richard W. Yerkes
1998 Defining the Cypriot Aceramic Neolithic: The Lithic Evidence. *Lithic Technology* 23 (2): 124-138

Typology of not very distinctive assemblages, suggests regional variation in AN but assemblages are small and generalized, relatively few formal tools or distinctive forms [slightly blah paper]

Kardulias, P. Nick and Richard W. Yerkes, eds.
2003 *Written in Stone: The Multiple Dimensions of Lithic Analysis*. Lexington Books, Lanham.

Kardulias, P. Nick and Richard W. Yerkes
2003 Introduction: Lithic Analysis as Cross-Cultural Study. In *Written in Stone: The Multiple Dimensions of Lithic Analysis*. P. N. Kardulias and R. W. Yerkes, eds., pp. 1-6. Lexington Books, Lanham.

Karimali, Lia
2005 Inferences and Limitations in Chipped-Stone Modeling: Learning from an Ethonoarchaeological Case (Threshing-Sledge Production in Thessaly, Greece). In *Lithic Toolkits in Ethnoarchaeological Contexts*, edited by Xavier Terradas, pp. 47-56. BAR International Series 1370.

Ethnog + arch work 1992-3 in mountain regions around fertile central plain of Greece. Long-term specialized production only where special conditions like agric stress or poverty, consumers turn to shorter term production to meet short term problems such as disruption of trade during WWII and Civil War. Irregular chert flakes or blades, made w metal hammer. Women did some knapping. Trade locally, and regionally thru markets and cooperatives. Specialized villages in Bulgaria also supplied into 1940s. Gunflints also made locally. Variability in production system, mobility, change thru time, specialization, and distribution systems [her conclusions parallel mine for Cyprus]. Apply as analogy to neolithic obsidian only with caution because modern situation different, distance models affected by social relations, long-distance distribution may be by itinerant producers, different exchange mechanisms operate concurrently. [Misses the point - the modern features seen as a problem for analogy are actually revealing of situations probably true in past as well, in spite of difference in modern economies. Good ethnohist info, but not clear when sledges went out of use, and photo of “knapping demonstration” looks like subject doesn’t really know how.]

Karimali, Evangelia
2010 Lithic and metal tools in the Bronze Age Aegean: A parallel relationship. In *Lithic Technology in Metal Using Societies*, B. V. Eriksen ed., pp. 157-167. Arhus, Arhus University Press.

Stone and metal as complementary tool kits.

Karklins, Karlis
1991 French gunflint manufacture and the New Edinburgh Encyclopedia (First American Edition). *Arms Collecting* 29(1):17-19.

American versions of Dolomieu, published in 1832, reprinted here, see also Smith 1960. Crude figure of tools and core [from Dolomieu?]. Iron hammer with square head, 2lbs, Steel hammer w 2 points, 10-16 oz; Disc hammer <12 oz, unhardened steel; steel chisel set in wooden block. Flints broken with large hammer, pointed hammer used to remove white coating of flint, then continues to "chisel off similar scaly portions [he means the flakes or blades] from the pure mass of flint" Flint has sloping bevel edge "which is impelled against the hammer [old word for frizzen] of the lock of the gun," sides, back opposite the edge, under surface rather convex and uninterrupted, upper facet which receives the upper claw of the cock is slightly concave and bears the longitudinal ridges produced by separation of the first scales. Cutting with disk hammer, trimming with it on stake, whole operation less than a minute, good workman can make 1000 good chips or scales a day or 500 gun flints; in space of 3 days can cleave and finish 1000 gunflints. "5 or 6 blows with a hammer are sufficient to produce a perfection which would require more than an hour's labour if the faces were formed by grinding… and less than a farthing will pay… though 50 times that sum would be insufficient.. if it were formed any other way." Sorted into fine and common classes, and into pistol, fowling piece, and musket [sizes]. A good flint gives 50 strokes before unfit for service. Lists locations in France, mentions Sicily and Zealand, Kent "and other parts of Britain".

Karlin, Claudine, Sylvie Ploux, Pierre Bodu, and Nicole Pigeot
1993 Some Socio-economic Aspects of the Knapping Process Among Groups of Hunter-Gatherers in the Paris Basin Area. In *The Use of Tools by Human and Non-Human Primates*. A. Berthelet and J. Chavaillon eds. pp 318-340. Clarendon Press, Oxford.

[Good] Up. Paleolithic - Magdalenians- 1) Lg. blades for later use and distrib. 2) smaller for immediate tool needs.
Diff. levels of skill defined by traits- fewer errors, larger core use, larger more standard blades as get better.
Good knappers make big blades, average make domestic tools, poor knapper make lots of mistakes = learning, maybe children.
One area 3 poor, one expert core + blade sets- teaching.
ID some individuals by technique, refitting, attempt to guess how many- children suggest not just male hunt camp
Good knappers get good material and in some sites, central location = social hierarchy

Kashyap, Arunima
2005 Lithics in India: Current Research Trends. Lithic Technology 30 (1): 7-11.

Katz, Lienke
1997 *The History of Blackwater Draw*. Eastern New Mexico University, Portales.

Pamphlet, good photos, amusing but too brief accounts and chronology of discoveries.

Katz, Pearl
1999 *The Scalpel's Edge: The Culture of Surgeons*. Allyn and Bacon, Boston.

Kaufman, Daniel
1986 A Proposed Method for Distinguishing Between Blades and Bladelets. *Lithic Technology* 15 (1): 34-40.

Epipaleolithic in Levant

Kauffman, Henry J.
1994 *American Axes: A Survey of Their Development and Their Makers*. Olde Springfield Shoppe, Elverson PA.

Stone age beginnings [weak popular understandings, no illustrations] to modern steel, emph on 19 C axes for collectors.

Kay, Marvin and Ralph Solecki
2000 Pilot Study of Burin Use-Wear from Shanidar Cove, Iraq. *Lithic Technology* 25 (1): 30-41.

Keally, Charles T.
2006 Summary of the "Final Report" on Japan's Archaeological Hoax. *Current Research in the Pleistocene* 23:6-9.

"Early Paleolithic" faking by amateur Fujimura, witnessed and exposed by newspaper, Japanese Archaeological Association examined artifacts, re-excavated sites, interviewed etc. Planting artifacts over 25 years and 188 sites. Why was there almost no published criticism of his Early and Middle Paleo finds?

Keegan, Barry
2004 The Primitive "What's-it" is a Tribulum or Threshing Sledge, and a Mention of Quarry Water as Prerequisite to Gunflint Knappers. *Bulletin of Primitive Technology* 27:84-85.

Answers previous reader question [as did I, they used a photo from my article]. French gunflint knappers dry flint only to make cortex brittle, but retain internal water for knapping quality. From thesis by S. White; other refs.

Keegan, Barry
2011 Working with Quartz and the Use of Bipolar Percussion. In *Experiment and Interpretation of Traditional Technologies: Essays in Honor of Errett Callahan*, Hugo Nami, ed., pp. 307-323. Ediciones de Arqueología Contemporánea, Buenos Aires.

Keegan, Barry
2013 Knapping Jasper, Agate, and Chalcedony from the Northeast USA. *Bulletin of Primitive Technology* 45:23-36.

Keeley, Lawrence H.
1977 The Function of Paleolithic Flint Tools. *Scientific American* 237:108-126. also in *Human Ancestors: Readings from Scientific American,* G. Issac and R. Leakey eds. pp 102-109 San Francisco: WH Freeman 1979.

Short, discusses techniques and history of microstudies, early proponent of high-power microscopy for polishes diagnostic of material worked. Blind test with Newcomer. Examples from Clacton, Hoxne, Swanscombe.

Keeley, L.
1980 *Experimental Determination of Stone Tool Uses: A Microwear Analysis*. Chicago: University of Chicago Press.

Uses of hand-ax as multipurpose, espec. butchering, p 160-2

Keeley, L.
1982 Hafting and Retooling: Effects on the Archaeological Record. *American Antiquity* 47 (4): 789-809.

Keeley, L.
1987 Hafting and 'Retooling' at Verberie. In *Le Main et l'Outil : Manches et Emmanchements Préhistoriques*. D. Stordeur ed., pp 89-96. Lyon: Maison de l'Orient.

Keeley, L.
1988 Lithic Economy, Style and Use: A Comparison of Three Late Magdalenian Sites. *Lithic Technology* 17(1): 19-25.

"Style" diffs btwn France and Spain largely just difs in size etc of raw material. Diffs in use blurred by emphasis overall on working bone and antler.
Base camps more later stage hide prep and retool composite projectile heads.
Use-wear: thin end scrapers for hides mostly, thick = cores, becs and piercers for graving and boring mostly bone, burins mostly graving and scraping bone/antler, backed bladelets for proj. pt. armatures.

Keeley, Lawrence H.
1993 Microwear Analysis of Lithics. In *The Lower Paleolithic Site at Hoxne*. R. Singer, B. Gladfelter, J. Wymer eds., pp 129-138. U. Chicago Press, Chicago.

Meat, hide processing, surprising amount wood work including scrape, adzing, wedging. Hand-axes (2) show butchering polish, but sim to flakes, suggests h-a as disposable general purpose take-along tools for work away from home base, often butchering. Diffs btwn Clacton and Acheulean industries real.

Keeley, Lawrence H.
1997 *War before Civilization: The Myth of the Peaceful Savage*. Oxford U Press, New York.

Anthropologists and archaeologists have "artificially pacified the past" for a variety of reasons, ignoring evidence of pervasive violence in tribal, non-western, and prehistoric societies, considering primitive war ineffective, childish, non-rational, driven by personal motivations such as revenge and theft, and not very destructive. He presents numerous examples to the contrary, a picture of pervasive warfare in primitive societies, even more destructive and mortal given issues of scale, and evaluates reasons for warfare. Archaeology is important because it produces physical evidence for instance that warfare in primitive societies goes deep into the past in all parts of the world, long before Western colonialism which is often blamed by some anthropologists for bringing war to other cultures. [Often credited as the starting point for a revival of consideration of warfare in archaeology in the last couple decades. It's an argument, so it's often a bit one-sided, and many of the examples are not discussed in enough detail to evaluate them. E.g. discussing Weapons, p 51 atlatls get a paragraph: defined, effective range 40m to max 80 m, rate of fire unknown, quilted cotton armor protected against darts. But the only source referred to is an Australian ethnography. Shortly thereafter, he exagerates the inefficiency of muskets - his goal being to show that primitive weapons are just as deadly.] p. 52-52 + refs: poisons, common distinction between war and hunting arrows with stone and other points.

Keeley, Lawrence H. and Nicholas Toth
1981 Microwear Polishes on Early Stone Tools from Koobi Fora, Kenya. *Nature* 293: 464-465.

Stone tool sites in fine sediment- Karari Oldowan 1.5 mya, 90 percent basalt- chemical weathering, no good for use-wear.
54 non-basalt artifacts- flakes and fragments, some retouched
9 w/ wear- 4 meat polish, 2 soft plant/silicous stems, 2 scrapers and 1 flake wood polished

Kehoe, Alice B.
1991 The Weaver's Wraith. In *The Archaeology of Gender*, edited by Dale Walde and Noreen D. Willows, pp. 430-435. Calgary: The University of Calgary Archaeological Association.

Mostly about likelihood that Magdalenian women made cordage and weaving, which being unpreserved, leave us w/ a male-biased view of technology and skill, but also pts out: 19^{th} century ideas of violent savages led to (male) archs seeing all bifaces as "projectile points" despite contextual evidence and common sense that knives are more common in habitation sites

Kehoe, Thomas F.
1966 The Small Side-Notched Point System of the Northern Plains. *American Antiquity* 31(6): 827-841.

Keil, Paul Livingston ("Pauke")
1919 *Arrowheads and Such: What you Want to Know About Them*. No Publisher given.

Inside front cover: "The purpose of the enclosed Arrowhead is to place in the reader's hands an actual specimen as a start for his collection. *It is genuine*." [so how was this sold? Mail order? At a shop?]
"hopes it will be the means of sending many out on a new line of pleasure - collecting relics." For "the average boy."
How They Were Made: "It is not true that flint was heated then touched with water shaping the stone into a desired form." "Finds… led the writer to experiment. It was found that water applied to heated stone caused it to crack badly, and smashed the theory which is commonly believed to be correct." Follows completely vague description: "after the rock was broken and split to the desired sizes, the pieces of stone were flaked off, with the antler implement used in the process."
[illustrated with numerous photos of collections of 'relics' and Indians, and really bad drawings of stereotypes]
Simple tips for finding: rural areas, plowed, lakes and other 'campsite' areas. Workshops with chips - "get a trowel, shovel, stick - anything, and dig around the spot." Burial grounds, rock shelters, caves… "Get out and collect - they are yours for the taking, friend." Benefits to boys - being outdoors, fond memories. Warns of fakers. [A wretched little pamphlet, chaotic organization, almost no useful info, ignorant and bad attitude even for its time].

Kelany, Adel, James A. Harrell, and V. Max Brown
2010 Dolerite Pounders: Petrology, Sources, and Use. *Lithic Technology* 35(2):127-148.

Aswan, Egypt, quarry and stone-working tools. Originally angular, discarded when rounded. Some have red marks, probably labels or ownership. Dolerite quarries where hammers made were near Aswan. Used by "bouncing" = released before impact and caught on rebound to reduce damage to body.

Kelker, Nancy L., and Karen O. Bruhns
2010 *Faking Ancient Mesoamerica*. Left Coast Press, Walnut Creek, CA.

[Well written, covers lots of different fakes. No one should ever trust an unprovenanced ancient art work again!]
Makes point of showing long history, well back into 19C for some things. Discusses complicity of museums and collectors, reluctance to recognize faking problem, political and economic motives. A few specific fakers named, often a bit too vague about naming

museums and other supporters of faking and looting, sometimes needs more citations. Quotes museum experts as "40+ %" fakes. Good fakes appeal to modern ideas of "the primitive" and often use titillating elements like human sacrifice and sexuality. Faking "pollutes" the archaeological record - examples include p 146 fake incensarios supposedly from Teotihuacan interpreted to suggest influence on Guatemala. Ceramics most common, but also hard stone from ornament to monument size, Teotihuacan stone masks, crystal skulls, metal work, Maya codices and wooden lintels. Many fakes by adding to plain original, or dishonest reconstruction, or incorporate old material to foil dating tests.

Often humorous, sometimes too flip or superficial as in p164 discussion of flaked stone from Teotihuacan area, with unsupported suggestion that knapper learned from US university class. Photo of the "tumi" shaped obsidian axe heads and 3 lanceolate bifaces. My work on modern knappers not cited, and they don't discuss the current tourist use of knapped artifacts. pp. 205-207 Aztec atlatl - the photo + description of the fake in Rome [they say in Argentina ethnographic museum] that copies British Museum loops and Florentine specimen carvings (Bushnell 1905; Callegari 1934; Beyer 1934).

See companion volume Faking the Ancient Andes (Bruhns + Kelker 2010).

Keller, Don
1982 Lithic Source Identification Through Macroscopic Analysis: An Example from Cedar Mesa, Southwestern Utah. *The Kiva* 47(3): 163-169.

Kelley, Gary
1990 1990s, The Stone Knife Age. *Blade Magazine* Sept/Oct 1990:44-47, 60.

Callahan, Stafford, and several others illustrated, good photos

Kelly, Isabel T. **137-145**
1932 Ethnography of the Surprise Valley Paiute. *U. of California Pubs. in Amer. Archaeol. and Ethnol*. 31(3) :67-210.

p 137-145 Stone working, ground, pipes, chipped implements- sources, reuse, pressure, heating. Bow and arrow making, fire making, poison

Kelly, John
2010 The Geological and Cultural Contexts of Basalt from Late Emergent Mississippian and Early Mississippian Sites in the Saint Louis Region. *Missouri Archaeologist* 71:199-215.

Axe making evidence in Cahokia region

Kelly, Robert L.
1988 The Three Sides of a Biface. *American Antiquity* 53(4): 717-734.

bifs as 1) cores 2) long use-life tools 3) function-specific products of shaping. Relate to material availability, group needs, mobility.

Kelly, Robert L. and L.C. Todd
1988 Coming to the Country: Early Paleolithic Hunting and Mobility. *American Antiquity* 53(2) : 231-244.

Clovis and Folsom high mobility- exploit game cross cutting envir. zones. Bifaces important for mobility - tools/cores- max # tools for min. amount of stone

Kelly, Thomas C.
1980 The Colha Regional Survey. In *The Colha Project Second Season, 1980 Interim Report*, T. R. Hester, J. D. Eaton, H. J. Shafer eds., pp. 51-70. Center for Archaeological Research, University of Texas, San Antonio.

Brief descriptions of a number of sites, some with lithic debris, but none as impressive as Colha. Yakalche – heavily looted small center. Northern River Lagoon – pottery as dense as lithics at Colha.
Rockstone Pond/Chicawate – Maya quarry operations, mounds of chert and limestone cobbles, and of debitage cut by road on top of a chert ridge.
Probably supplying Altun Ha only. Kunahmul – small center, 7 debitage mounds but less specialized than Colha with all stages represented, but some intrasite specialization.

Kelly, Thomas C.
1993 Preceramic Projectile-Point Typology in Belize. *Ancient Mesoamerica* 4: 205-227.

Belize Archaic Arch. Reconnaisance project 1980-83 set sequence of preceramic phases, but he crits it based on Colha survey work.
One Clovis pt [but doesn't look very good to me]
Lowe pts- like big wide Hardins- w/ L edge beveled w/ parallel flaking, basal ground. Heavy = thrusting spear? Assoc dates: 2500-1900 BC.
Sawmill pts- long w/ expand stem, convex edges, barbs, fine oblique parallel flaking. Lighter than Lowe = dart pts, also diff patinas from Lowe, probably younger than Lowe.
Allspice- wide expand base, barbs, short blade- maybe reworked Lowe.

Kelterborn, Peter
1981 The Livre de Beurre Method. *Flintknappers' Exchange* 4(3): 12-20.

Terminal Neolithic France, massive blades on Grand Presigny flint.

Kelterborn, Peter
1984 Towards Replicating Egyptian Predynastic Flint Knives. *Journal of Archaeological Science* 11:433-453.

[useful but badly written] Successful replic. No arch evid. of manuf sites

Kelterborn, Peter
2001 Replication, Use and Repair of an Arrowhead. *Bulletin of Primitive Technology* 21: 48-57.

Assemb of 89 Neolithic pts. in Swiss Canton Zug, 150 replications, 45 exper shots
Horgen type pts. = st. edge triangular [like Cottonwood], but shaft and manuf info scarce.
Usually minimal retouch, not over whole face, orientation of flake blank random but avoiding bulbs. Artificial target of box filled w/ road gravel and PVC skin, 4m distance.
Six damage patterns: tip crush 3%, edge damage 13%, burination 5%, bending fracture 13%, facial flaking [flutes] 5%, basal damage 25%.
Sharp basal edge works best with v-notch foreshaft which is stronger than u-notch. Haft w/ pitch blob that covers base ears of pt.
Repair recognizable as odd W/L ratio (short and wide) and unremoved facial flaking.
57% of assemblage showed damage, 29 percent repair. [good article]

Kelterborn, Peter
2003 Measurable Flintknapping. In *Mesoamerican Lithic Technology: Experimentation and Interpretation*, K. G. Hirth ed., pp.120-131. University of Utah Press, Salt Lake City.

Kelterborn, Peter
2005 What Widening Gap? *Lithic Technology* 30(2):86-88.

Gap between knappers and archaeologists? Academics too busy to pursue skills, need unusual skill now that basics of knapping well known. Knappers lack access to academic info. But archs need elite knappers, who are "greying"... "with no young candidates in the making" [not entirely true]. LT should encourage wider contributions and cooperative projects, broaden readership with info for knappers. Archs should encourage knappers by access to literature + collections, collaboration, demonstrations.

Kences, James
2004 Lithic Flake Scars, Percussive Sound, and Prehistoric Symbols. Antiquity Project Gallery Webpage, URL http://antiquity.ac.uk/ProjGall/ accessed 2/11/05.

Seems to want to interpret Upper Paleolithic art as onomatopoeic signs for knapping sounds. [Bizarre and incoherent, not worthy of *Antiquity*.]

Kenmotsu, Nancy
1990 Gunflints: A Study. *Historical Archaeology* 24: 92-124.

[long, dull, not great, Hamilton + Emery did it better]
recaps gunflint history and manufacture
expers w/ mod. and hist. TX site materials

Kenoyer, Johnathon M., Massimo Vidale and Kuldeep K. Bhan
1991 Contemporary Stone Beadmaking in Khambhat, India: Patterns of Craft Speculation and Organization of Production as Reflected in the Archaeological Record. *World Archaeology* 23(1): 44-63.

knapped blanks, then cut and grind

Kent, Barry C.
1983 More on Gunflints. *Historical Archaeology* 17(2):27-40.

Re-examine Witthoft's typol and chronol schemes, espec early gunflints. Some form of gunflint by 1580. Witthoft – earliest type bifacial "pillow" forms of "Nordic" or Danish flint, in US "copied" by Indians, appear after 1620. More likely not copied, but native working of imported flint flakes [right!]. So what did earliest Euro gf look like? Spall/ Clactonian/wedge-shaped flints rare in 17C US sites, probably only after 1650. No good archaeol specimen of earliest Euro – one possible is amorphous flint lump. So don't expect bifacial or spall form [I agree, amorphous flake most likely]. [Good table of dated sites reinforces chronol]: Earliest just bifacial, then spall added ca 1650, with a few "French", then spall + Fr with no bifacial ca 1700-1800, then a bit after 1800 add English [but he doesn't include Earl of Abergaveny, a critical date marker]. True flintlock invented ca 1625, but matchlock continued until ca 1675; wheellock, snaphance, miquelet all rare in US, so are matchlocks. Flintlocks found increasingly after 1630 in Iroquois sites. Knapping industry earliest attestations ca 1643 in France, 1655 England. Chicoutimi site shows blonde French blade type by 1663.

Bifacial form lacking in Fr, UK, or N Europe; but present in SE and S Europe – eg Albania (Evans), prob Portugal + Spain (but not reported for early Spanish sites in US). A few bifacial gf known from Napoleonic Belgium cache – thin broad flakes worked to rectangle, yellow to grey glossy flint, possibly SE European.

Bifacial "Indian" flints decline after 1675 in E, last until early 19C in Midwest US, of both imported and native stone. Ballast flint in 17th C Susquehannock sites, flakes in burials presumably for strike-a-lights. Miller and Keeler (1978 unpublished) describe battered chips from St Mary's City, MD 1638-1715 – what we should consider the first type of gunflint, the "chip gunflint." Could bifacial flints result from diffusion of idea from AmInds, survived in areas with archaic lock forms?

Kersel, Morag M., and Raz Kletter
2006 Heritage for Sale? A Case Study from Israel. *Journal of Field Archaeology* 31(3):317-327.

Should states sell antiquities? History and discussion of Israeli situation. Antiquities legislation (influenced by looters General Moshe Dayan and Jerusalem mayor Teddy Kollek) allows licenced dealers, export of antiquities. Pro: reduce storage problems, generate income for Antiquities Dept and museums, give access to public, reduce illegal sales and looting. As authors show, all these are false arguments, and the ethics of the state and its employees both protecting and exploiting its antiquities alone should rule out such enterprises.

Ketin, Ihsan and Cahit Erentöz
1962 1:500000 Ölçekli Türkiye Jeoloji Haritası, Explanatory Text of the Geological Map of Turkey, Sinop Unit. Maden Tetkik ve Arama Enstitüsü Vayınlarından, Ankara.

Text in both English and Turkish. Includes Kastamonu area.

But not very helpful map: area between K and Daday which should include Golcugez is mostly either a big pink unit of “Cr = Metamorphic Series, undifferentiated” or pale yellow “n = Neogene, Continental, Undiff” with one ridge of greenish with broken horizontal lines “Mof = Mesozoic (Ophiolitic Series), Mainly Cretaceous” which last could be the limestone ridge formations, but who knows. It occurs elsewhere in the region in fairly large units, so seems likely to be limestones as I think the broken lines indicate. Description of this unit p74 says “extensive and complicated formation” with “different lithologies” including “lité limestone, spilite, diabase, basalts, submarine pillow lava, thin-bedded red limestone, marl, radiolarite, serpentine and massif limestone blocks” Cretaceous age documented by extensive list of fossils, no mention of flint.

All around Kastamonu is Eocene volcanics, lavas mixed with flysch (sandstones, shales, gritty limestones, schists).

So yes, there are extensive limestone deposits, mixed in a very active region with volcanics and metamorphics. No one is interested in flint, no mention anywhere.

Keyser, James D. and Greer Rabiega
1999 Petroglyph Manufacture by Indirect Percussion: The Potential Occurrence of Tools and Debitage in Datable Contex. *Journal of California and Great Basin Anthropology* 21(1): 124-136.

Argues that indirect is necessary for very fine lines, smoother edges.
Produces bipolar-like flakes from chisels. [Generally good article although indirect percussion is not necessary for precise petros and is in fact clumsy - see Whittaker et al. 1999]

Keyser, James D. and John L. Fagan
1987 ESP: Procurement and Processing of Tongue River Silicified Sediment. *Plains Anthropologist* 32(117): 233-256.

Source and processing site, S. Dakota. Bifaces and reduction stages and failures.
Heat treatment- old hearths, experiment (need ca. 570 degrees F)

Keyser, James D. and John L. Fagan
1993 McKean Lithic Technology at Lightning Spring. *Plains Anthropologist* 38(145): 37-52.

1900 BC, Duncan pts and rejuvenation.
Biface technol- count flake scars, bif. flakes, est. total number bifaces. Bifs = preform for D. pts
Debitage analysis- size sort [but uses odd categories] = “primary, secondary, cortex, potlid, early, mid, late biface; pressure, notching, alternate flakes”
[Ok, but some extensive assumptions]

Keyser, James D. and David A. Kaiser
2010 Getting the Point: Metal Weapons in Plains Rock Art. *Plains Anthropologist* 55(214):111-132.

Identifies metal points on lances and arrows by comp to arch specimens, historic Euro art, documents, native other art. Triangular “bayonet” or beavertail “DAG” [never defined] forms, i.e. with deep rectangular side notches, and quilloned forms mostly derived from knives/bayonets. Metal points reaching Plains from E by 1500s, before horse.

Khedhaier, Rym, P. Verdin, R. Furestier, O. Lemercier, and A. Muller
2003 Dépiquage au tribulum au Néolithique final dans le Sud-Est de la France. Indices convergent de la tracéologie et de l’analyse des phytolithes. Le cas du site de Forcalquier-La Fare (Alpes-de-Haute-Provence) In *Le Traitement des Récoltes: Un Regard sur la Diversité du Néolithique au Présent*. P. C. Anderson, L. S. Cummings, and T. K. Schippers, eds., pp. 375-388. APDCA, Antibes, France.

Kidder, Alfred Vincent and Samuel J. Guerusey **o + x part**
1919 *Archaeological Explorations in Northeastern Arizona*. Smithsonian Institution Bureau of American Ethnology Bulletin 65.

atlatls and hafted points, other lithic info.

Kidder, Norm
1995. The Fire Watchers: Tradition vs. Technology. *Bulletin of Primitive Technology* 10: 10

Kilby, J. David
2005 A Survey of Lithic Raw Material Sources in and Around El Malpais National Monument. In *The El Malpais Archeological Survey, Phase I*. R. P. Powers and J. D. Orcutt eds, pp. 233-248. Intermountain Cultural Resources Management Archeology Program, Professional Paper No. 70. National Park Service.

New Mexico lithic sources

Kilby, J. David and Bruce B. Huckell
2013 Clovis Caches: Current Perspectives and Future Directions. In *Paleoamerican Odyssey*. Kelly E. Graf, Caroline v. Ketron and Michael R. Waters ed., pp .257-272. Tops Printing, Inc., Texas.

Kilby, J. David, and Joseph Vasquez Cunningham
2005 Lithics. In *From Folsom to Fogelson: The Cultural Resources Inventory Survey of Pecos National Historical Park*, Volume 1. Edited by Genevieve N. Head and Janet D. Orcutt, pp. 305-362. Intermountain Cultural Resources Management Professional Paper No. 6. National Park Service.

Flaked and nonflaked artifacts. [No adequate illustrations, especially points.] Regional resources include Jemez Mts obsidians, Pedernal chert/chalcedony, Rocky Mts Madera and Dakota Formation cherts, San Juan Mt and Rio Grande R Valley cherts + obsids, Mt Taylor obsids, Plains Alibates, Tecovas, and Edwards Plateau cherts.

Unfortunately used Sullivan and Rozen types for field recording debitage, note that it is good in replicability, but weak in inferential power, other info needed, give refs. Add platform types to create 3 analytical categories [thus effectively discarding S+R so why use it in the first place?, and replacing it with 3 highly lumped types of debitage. Not a good decision.]

627 projectile points, mostly small triangular notched or un, 3% of total lithic sample, ordinary distrib of other usual tool types. Four classes: Cores (19%); Expedient tools (used debitage)(28%); Low Energy tools (shaped for task, scrapers, choppers etc - 19%); and High Energy tools (bifaces - 35%). Patterns not too surprising: eg. obsidian increases thru time 1200-1700, espec for bifaces.

Relatively expedient, informal manos, with slight evid of intensification of use at periods of aggregation.

Kimball, Larry
1994 An Introduction to Methodological and Substantive Contributions of Microwear Analysis. *Lithic Technology* 19(2): 81-82.

Kimball, Larry R., John F. Kimball, and Patricia E. Allen
1995 Microwear Polishes as Viewed through the Atomic Force Microscope. *Lithic Technology* 20(1): 6-28.

Kimura, Hideaki
2006 The Shirataki Obsidian Mine Area and the Yubetsu-Horokazawa Technological Complex. *Current Research in the Pleistocene* 23:9-11.

Outcrops on top of Mt Akaishi 1147 m and down. Up Paleolithic blades and microblades from cores made on bifaces.

King, Eleanor M.
2012 The Social Dimensions of Production and Consumption Within Late Classic Colha, Belize. *Lithic Technology* 37(2):77-94.

Variability among households - some worked flint, some not but did agriculture, variability in tools made and used.

King, Eleanor and Daniel Potter
1994 Small Sites in Prehistoric Maya Socioeconomic Organization: A Perspective from Colha, Belize. In *Archaeological Views from the Countryside: Village Communities in Early Complex Societies*, edited by Glenn M. Schwartz and Steven E. Falconer, pp. 64-90. Smithsonian Institution Press, Washington.

Discusses assumptions about centers and small sites: centers assumed to have more of everything, but functions are similar, although small sites may be to some extent specialized. Lithic workshops not at center sites according to Mallory and Moholy-Nagy. [They seem to agree, while criticizing Mallory for discounting workshops at small sites because they should be at large.]

Colha: 36 Preclassic wkshps mostly at distance from center. But in main plaza domestic structures with a near workshop including multiple superposed plaster floors as loci of knapping, rebuilt as waste accumulated. Workshops nowhere assoc with domestic remains, but in "manufacturing zones" used by related nearby households. Late Classic wkshps more widely distrib, away from center, both discreet and as talus off of mound groups, both assoc w domestic occupation. Some diffs in what manuf step at loci = labor specialization. Not secondary deposits as M-H argues.

Status: knappers produced ritual goods, including L PreC bloodletting ritual with conjoined macroblades struck on site and used for bleeding on small pyramid = participation of skilled knapper. Not all mounds at C have good chert tools - agric related households are poorer.

King, Thomas J. Jr.
1976 An Archeological Survey of Some Horsetrails in Saguaro National Monument. MS on file, Western Archeol. Center, National Park Service, Tuscon.

Kinton, Tony
2010 Stone Head Gobbler. *Primitive Archer* 10(2):12-15.

Hunter M. Parker with simple stone point, self-bow.

Kinsella, Larry
2011 Great Knap-ins of the Past: The Fairview Heights - Devil's Hole. *Chips* 23(3): 21-22.

LK and Dave Klostermeier wanted to learn, so invited others at W Tyson State Park Oct 1980, including Charlie Laster, B Hunt, Bob Anthony, L Nelson, R Warren, Toby Morrow, F Bollinger, Ray France, Ray Wilson, Leonard Blake, John Kelly. Accused falsely of taking stone from prehist quarries in Park (near High Ridge). First real knap-in at Cahokia, 1981 as "Midwest Flintknapper's Convention" (7 came). R Warren not helpful, FB and LN taught others. 1983 in Pleasant Ridge Park, former Kinsella family land. Grew, only started charging a few yr ago. Evening lecture and raffle, tour of Cahokia. First full wkend in June, now 120-150 knappers.

Kirkbride, Diana
1978 The Neolithic in Wadi Rumm: 'Ain Abu Nekheileh. In *Archaeology in the Levant: Essays for Kathleen Kenyon*. R. Moorey, P. Parr eds. pp 1-10. Warminister: Aris and Phillips Ltd.

Kitahara-Frisch, Jean
1993 The Origin of Secondary Tools. In *The Use of Tools by Human and Non-Human Primates*. A. Berthelet and J. Chavaillon eds., pp. 239-248. Clarendon Press, Oxford.

Klein, Dana
1994 Great Chert Chase of 1993. *Chips* 6(1):6.

Kleindeinst, Maxine R. and Charles M. Keller
1976 Towards a Functional Analysis of Handaxes and Cleavers. The Evidence from Eastern Africa. *Man* 2:176-187.

Motor patterns learned by "primary socialization" = unconscious and "secondary soc" = less fixed. Both fixed + conservative characteristize diff pops [poor examples]. Hand axes and other tools should show this - block-on-block as one example (pattern also seen in bone flaking) [not convinced]
H-a's found resting on edges, could be using h-a by striking objects against its stationary edge, rather than modern pattern of striking with tool - need edge wear studies. [One problem is that it is inefficient to work this way if you are striking heavy item against a lighter tool- it has insufficient inertia to remain stable. Overall a pretty dumb article].

Klimscha, Florian
2011 Flint axes, ground stone axes and "battle axes" of the Copper Age in the Eastern Balkans (Romania, Bulgaria). In *Stone Axe Studies III*. Vin Davis and Mark Edmonds, ed., pp. 361-382. Oxbow Books, Oxford.

Klostermeier, David
1993 *Rediscovering the Lost Art of Flintknapping*. VHS. Privately produced, St. Louis.

"Knapper, A."
1998 The 1000% Syndrome. *The Texas Cache* 4(2): 5, 22.

Fakes- knappers mostly honest, bad guys are "middlemen" and artifact buyer who thinks he's getting "deal to good to be true" on an ancient piece

Knecht, Heidi
1993 Splits and Wedges: The Techniques and Technology of Early Aurignacian Antler Working. In *Before Lascaux: the Complex Record of the Early Upper Paleolithic*. H. Knecht, A. Pike-Tay, R. White eds, pp 137-162. Boca Raton: CRC Press.

Good descrip of Aurig - espec hafting split base pts by wedging. [Uses arch, exper, use-wear evidence in effective combination.]

Knecht, Heidi
1994 Late Ice Age Hunting Technology. *Scientific American* 271(1): 82-87.

"Cro-Magnons" 40,000-12,000 BP 4 types spear points.
Aurignaccan pref antler: 40-28 BP split base pt; 30,000 lozenge pt; 28,000 spindle pt
Gravettian-beveled bone pt used w. hand or atlatl (by 22,000 at least)
Expor replications, used w. calibrated crossbow to control force
Later pts easier to repair/replace

Knecht, Heidi

1997 The History and Development of Projectile Technology Research. In *Projectile Technology*, H. Knecht ed., pp 3-36, Plenum, NY.

Nice summary, excellent refs, espec Euro
Notes emph on proj points, 3 strategies to study = arch, exper, ethnog, then lists major kinds of study eg use-wear, typol, technol and manuf sequence, hunting strategies.
Spears vs. arrow- earliest atlatl date France 17,470 $\pm$ 250 Solutrean of Combe Sauniere on spearthrower hook.
Bow and arrow is Mesolithic, and 1st mill AD in Americas
Experimental perspectives- evaluate performance, wear + breakage, other
Spr throwers- little ethnog, lots exper, summary of weight theories
Ethno-arch perspectives- old collections, living people- efficiency, choice of weapons, tool kit and point form variation

Knecht, Heidi
2000 Design Strategies of Early Upper Paleolithic Bone and Antler Projectile Technologies. In *La chasse dans la Préhistoire/ Hunting in Prehistory, Anthropologie et Préhistoire 111*. C. Bellier, P. Cattelain, and M. Otte eds., pp. 28-36. Societé Royale Belge d'Anthropologie et Préhistoire, Bruxelles.

Several simple manufacture and hafting systems described.

Knell, Edward J.
2003 The Eden Projectile Point Manufacturing Sequence at Hell Gap, Locality V, Wyoming. *Current Research in the Pleistocene* 20: 37-39.

Knight, Charles L. F. and Michael D. Glascock
2009 The Terminal Formative to Classic Period Obsidian Assemblage at Palo Errado, Veracruz, Mexico. *Latin American Antiquity* 20(4):507-524.

Knight, James
1990 Australian Lithic Bibliography. *Lithics* 11: 51-62

topical biblio list

Knight, James
1991 Technology Analysis of the Anvil (Bipolar) Technique. *Lithics* 12: 57-87

good illustration of traits

Knight, James
1991 Vein Quartz. *Lithics* 12: 37-56.

describes fracture, properties, and flaking possibilities

Knowles, Sir Francis H. S.

1953 *Stone-worker's Progress: A Study of Stone Implements in the Pitt Rivers Museum*. Pitt Rivers Museum Occasional Papers on Technology 6, University of Oxford.

Knowles, Sir Francis H. S. and Alfred S. Barnes
1937 Manufacture of Gun-flints. *Antiquity* 11(42): 201-207.

Knowles, W. J.
1903 Irish Flint Arrow- and Spear-Heads. *Journal of the Anthropological Institute of Great Britain and Ireland* 33: 44-56, plates VI – XIII.

Simple evolutionary idea = lg and coarse to small and fine, sees Paleo to Neo continuity [spurious]
"The method of manuf arrow and spr pts in prehist times is largely a matter of conjecture." [Obviously he is ignorant of knapping at this point in his career, although says he tried and watched forger] Recognizes "blocked-out" pts in process
Leaf and lozenge shapes oldest, then kite shaped and triangular, and idented base triang.
Magical use of old pts

Knudson, Ruthann
1982 Obituary: Don E. Crabtree, 1912-1980. *American Antiquity* 47(2):336-343.

Knudson, Ruthann
1995 The San Jon Points and PaleoIndian Typology. *Plains Anthropologist* 40(154): 391-398.

3 pts described, not good context in site, don't tell much, used to discuss problems w. PaleoInd. typol: San Jon "type" dismissed
"Firstview" developed to apply to Olsen-Chubbuck [= Cody Complex = Eden, Scottsbluff] [but she doesn't want to call them anything, except <u>not</u> a distinct type]

Knudson, Ruthann, Eileen Johnson, and Vancce T. Holliday
1998 The 10,000-Year-Old Lubbock Artifact Assemblage. *Plains Anthropologist* 43(165): 239-256.

Lanceolates assoc w/ *B. antiquus* – [look like Hell Gap in outline, collateral flaked]

Knudson, Ruthann
2015 We are all one: Anzick children reburied. *Mammoth Trumpet* 30(2):11-14, 20.

Basics on find, questions about whether stone tool cache is part of burial - 2 children of different ages + chemical profiles: Anzick 1 = 1-2 yo M, Anzick 2 = 6-8 yr old. DNA from A1 shows belongs to population directly ancestral to many contemporary Inds, but closer to Central and S Am pops than N Am. Differing C14 dates but all in Clovis span. Ochre on bones and stones might = association. Anzick stone tools exempted from reburial by special clause in Montana "Human Skeletal Remains and Burial Site Protection Act" [ironic name as it specifies destruction as in NAGPRA]. Remains reburied in "Native ceremony" by Anzick family, Armand Minthorn and others, some archs attending. [Another happy-happy story celebrating how much we learned from Anzick along with the "moving" ceremony that "laid the children to rest". The children are dead, their bones don't care! This is the kind of bullshit that allowed the destruction of American archaeology under NAGPRA. One more important find gone.]

Knutsson, Kjel
2004 The Historical Construction of 'Norrland'. In *Coast to Coast –Arrival: Results and Reflections*. Helena Knutsson, ed., pp. 45-71. Coast to Coast Project Book 10, Uppsala.

Reuse of artifacts and copying of much older technology as symbolic connection to past among Neolithic Scandinavians.

Knutsson, Kjel
2006 A Genealogy of Reflexivity: The Skilled Lithic Craftsman as "Scientist." In *Skilled Production and Social Reproduction*. Jan Apel and Kjel Knutsson eds., pp. 153-186. Societas Archaeologica Upsaliensis, Uppsala.

Kobayashi, Hiroaki
1975 The Experimental Study of Bipolar Flakes. In *Lithic Technology: Making and Using Stone Tools*. E. Swanson, ed. pp 115-127. Mouton: The Hague.

describes bipolar exper [unclear, poorly written, conclusions not too useful, biblio rotten]

Kobayashi, Hiroaki
1985 The Study of Accidental Breakage on Backed Blades. *Lithic Technology* 14(1): 16-25.

Japanese Up Paleolithic. Experiment - sawed bone.
Breaks from latent cracks, wear spots, other. [not very useful]

Koerper, Henry C., Adella Schroth, and Roger Mason
1994 Morphological and Temporal Point Types: Evidence from Orange County, California. *Journal of California and Great Basin Anthropology* 16(1):81-105.

Testing applicability of Great Basin and Mojave types to coastal CA. [Stimulated by silly arguments of Flenniken + Wilke]. 8 Middle Holocene (3500-6650 RCYBP) sites with 79 C14 dates, variety of dart points (>3.5 gm). Many types co-occur, so not good temporal indicators. Minimal OC spans: Pinto + Elko 3580-6535 BP, Northern Side-Notched 5227-5647, Gypsum 4400-6324, Humboldt 3580-6324, Silver Lake 3580-6535. [Dates mostly on aggregated marine shell, so not the best, although isotope-adjusted and calibrated. Also the stratigraphy in these sites is not good, all points are oddly in the top levels of the sites, and the sample of points is too small.] Rejuvenation accounts for much of the variability [Maybe, but that's partly Flenniken bs, and I don't think these guys can really tell.] 72% are < 7 gm, too small for efficient dart point [according to Perkins 1992 - nonsense]. Gt B temporal associations don't apply to OC [possibly right, but not based on much].

Koerper, Henry C., Adella Schroth, Roger Mason, and Mark Peterson
1996 Arrow Projectile Point Types as Temporal Types: Evidence from Orange County, California. *Journal of California and Great Basin Anthropology* 18(2):258-283.

Bow and arrow intro ca 500 AD but some argue as early as 1250 BC. Rose Spring, Eastgate, Rosegate types seen as downsized Elko pts as bow replaced atlatl (Heizer + Baumhoff 1961) in Gt Basin. Also found in OC, weights around 3.5 gm boundary between arrow/dart. Earliest Cottonwood series pts in OC also similar to earlier atlatl pts. OC site dates support intro of Cottonwood Triangular and Leaf-Shaped forms ca 600 ± 200 AD, earlier than in Gt B. The leaf form seems earlier, but basal configuration of triangular forms shows no temporal signicance. Long narrow flared base forms related to Hohokam, suggest a “Sonoran Series”, terminal Late Prehistoric dates. Bow advantages: less movement, more ammo, in both war and hunt. Bow as temporal boundary between Intermediate Period and Late Prehistoric Period around 600 AD.

Kohn, Marek, and Steven Mithen
1999 Handaxes: Products of Sexual Selection? *Antiquity* 73(281):518-526.

Kohntopp, Steve W.
2011 *The Simon Clovis Cache*. Center for the Study of the First Americans, Bryan, TX.

Camas Prairie, S central Idaho. Discovered by farming 1961, crudely excavated by Simon family finders, “a bulldozer blade and pickaxe were used to remove cemented artifacts” damaging some pieces. [Unbelievable! But at least they then showed them to archaeologist Butler.] Butler + Swanson documented + tested site. About 33 artifacts, no obsidian, although sources are close and field notes may suggest some flakes. Red stained soil under [?] artifacts and one potlid suggest fire, or was it staining from the ochre that some say was on the artifacts. No material for dating. Swanson further tests: a few more tool frags, no debitage or faunal remains, probably not camp or kill site. Bifaces from early stage to finished, very long narrow fluted points. One early biface or ‘flake knife’ intentionally smashed into 4 tools [or was it hit by pick like several other bifaces?]. Spoke shave, considered geofact by Kilby. [These should be clear decisions - but not enough info is given and the photos are too poor for independent judgement.] A couple bifaces apparently not reported, a couple pieces now missing, a couple more found in area later. Apparently a lump of ochre found too. 14-19 different materials including 4 bifaces of quartz crystal from ID or NV. Red jasper, green chert, banded chert, phosphoria all from WY. One possible Alibates TX.

Discusses interpretations: utilitarian cache, burial, wealth storage, various kinds of votive deposit, possibly in lake. His theory: lack of use-wear or burial context, skilled work, suggest votive offering quickly made, perhaps because of contemporary volcanic eruptions.

[This is a nice short account, but artifact descriptions are jumbled and not detailed enough. It does make clear the contradictory info on the find - a real mess, especially because context was destroyed. Careful photos of artifacts and some good drawings, but photos are too small and fail to show flake scars well. Color of same artifact differs in different photos. Should have devoted this pub to *full size* color photos and drawings.]

Koldehoff, Brad and Tamira Brennan
2010 Exploring Mississippian Polity Interaction and Craft Specialization with Ozarks Chipped Stone Resources. *Missouri Archaeologist* 71:131-164.

Koldehoff, Brad and Gregory D. Wilson
2010 Mississippian Celt Production and Resource Extraction in the Upper Big River Valley, St. Francois County, Missouri. *Missouri Archaeologist* 71:217-248.

Stages - flaked and then pecked with round chert pecking hammerstones.

Kooyman, Brian P.
2000 *Understanding Stone Tools and Archaeological Sites*. University of Calgary Press, Calgary.

Generally good intro to lithic analysis w/ Canadian bent, short on debitage info

Korbeck, Sharon
1998 *Toys and Prices, 1999 6th Edition*. Krause Publications, Iola, WI.

Toy Guns section: Pre-1940s cast iron; then die-cast lighter alloys 1950s-60s. Mattel 'Fanner 50' 1957 "incredible success" drove others out or to imitate. Cheaper - addition of plastics 1960s. Post-war Japan made lithographed tin ray guns, clickers etc, shift of manuf to Hong Kong, Taiwan, Korea, now China. [Oddities: pic of 'Hawkeye Cap Piston, Kilgore, 1950s' - a small automatic pistol with an Iroquois type Indian head].
p 459 "Beware of Reproductions"… Repros of highly sought toy guns have yet to appear on the scene, mainly because the production and tooling costs for the potential market demand would be too high. But this has not stopped many small-time entrepreneurs from producing reproduction hammers, grips, and laser-copy boxes." [fakes]

Kornfeld, Marcel
2002 Folsom Technological Organization in the Middle Park of Colorado: A Case for Broad Spectrum Foraging. In *Folsom Technology and Lifeways*, J. E. Clark and M. B. Collins, eds., pp. 47-68. Lithic Technology Special Publication No. 4. University of Tulsa, Tulsa.

Kornfeld, Marcel, Kaoru Akoshima, and George C. Frison
1990 Sone Tool Caching on the North American Plains: Implications of the McKean Site Tool Kit. *Journal of Field Archaeology* 17(3): 301-309.

Middle Plains Archaic, Wyoming 5000 b.p. cache in pit in lg (repeated uses) site, 7 tools = 6 scrapers and flk. Fine grade material, local, 5 nodules, 4 sources at least, wood and hide polishes mostly, transport wear on ridges. Generalized tool caches as part of foraging strategy

Kornfield, Marcel, George C. Frison, and Mary Lou Larson
2010 *Prehistoric Hunter-Gatherers of the High Plains and Rockies, 3rd ed.* Left Coast Press, Walnut Creek, CA.

Massive rewrite of Frison's Prehist Hunters book.
Typology and chronology of pts, p 50 value of experimental arch. P. 55 intentional burination reworking of pts vs impact fracture. Knives and resharpening.
Possible pre-Clovis sites with mammoth bone modified or oddly distributed. [Seems skeptical, as they should, for sites with no stone tools.] Cultural sequence Clovis to recent illustrated by point types and other info. P. 127 Spring Creek Cave atlatl, hafted pts, and shaft frag (photo), late Plains Archaic, [BM related form].
Modern animals as analogs, and arch experiments. Photos and info from his experiment with Clovis pts on culled elephants. P175-180 weaponry – pts delivered by atlatl to elephants survived well, but can't penetrate if strike rib, shafts must be straight and atlatl hook must engage base of cup [he's too sensitive about these details], individual gear requires practice, primitive hunter needs patience and close range shots. Butchering – experiments with stone tools.
P 269 bow and arrow replace atlatl at Late Prehistoric Period boundary ca 500 AD, more versatile and faster than atlatl.
Quarries and lithic raw material – Spanish Diggings, Barger Gulch (Folsom, CO). Caches – Fenn cache (drawings), Crook Co cache, Larson cache (Cody, >40 Scottsbluff pts), McKean site caches.

Kornfeld, Marcel, Mary Lou Larson, Craig Arnold, Adam Wiewel, Mike Toft, and Dennis Stanford
2007 The Nelson Site, A Cody Occupation in Northeastern Colorado. *Plains Anthropologist* 52(203):257-278.

Only known from collecting, bone + lithic materials including Eden points.

Korobkova, G. F.
1992 Les cycles de l'économie agricole (d'apres l'outillage); resultats des analyses experiment tales et traceologiques. In *Préhistoire de l'Agriculture : Nouvelles Approches Experimentales et Ethnographiques*. Patricia C. Anderson, ed. pp. 271-280. Centre National de la Recherche Scientifique, Paris.

1999 Cycles of Agriculture Economy as Seen from Experimental and Use-wear Analyses of Tools. In *Prehistory of Agriculture: New Experimental and Ethnographic Approaches*. Patricia C. Anderson ed., Monograph 40, Institute of Archaeology, University of California, Los Angeles, pp. 183-192.

threshing

Kosakowsky, Laura and Rebecca McSwain
1977 Bibliography of Lithic Use-Wear Studies (By Topic and Author). unpublished ms.

Kosambi, D. D.
1967 Living Prehistory in India. *Scientific American* 216(2): 105-114.

[Crummy article], but brief mention of recent use of "microliths" [actually shatter] in ethnographic India

Kourtessi-Philippakis, Georgia
2010 Bronze Age lithic production in Northern Greece: The evidence from settlements. In *Lithic Technology in Metal Using Societies*, B. V. Eriksen ed., pp. 169-182. Arhus, Arhus University Press.

Kreiger, Alex D.
1944 The Typological Concept. *American Antiquity* 9(3): 271-288.

Kritzon, Chuck
2006 The Iceman's Belt. *Bulletin of Primitive Technology* 32:21-24.

Oetzi. Simple leather belt w pouch containing survival kit of stone tools and tinder fungus.

Kroeber, A.L.
1905 Notes on "The Obsidian Blades of California" by H.N. Rust. *American Anthropologist* 7: 689-695.

with Rust's article

Kroeber, A. L.
1925, reprinted in 1951 Yurok Law and Custom. In *The California Indians; A Source Book*. RF Heizer, MA Whipple eds. pp 336-368. U.C. Press, Berkeley. Original Kroeber 1925 Handbook of Indians of California. BAE Bull. 78.

Xerox of sections on Money- values of shells and obsidian bifaces

Kroeber, Theodora
1961 *Ishi in Two Worlds*. Berkely: University of California Press.

Kuhn, Steven L.
1992 Blank Form and Reduction as Determinants of Mousterian Scraper Morphology. *American Antiquity* 57(1): 115-128.

[Reviewed for Am Antiq 11/90]
Scraper variability more from flake morphol than intensity of reduction- relates to type of blank.
Dibble reduction model tested on Moust from Sant' Agostino, Italy –not supported- if variability = increased reduction, then expect index of reduction increase, size decrease as go from simple to transverse to convergent scraper- but not so.

Scraper types show some correlation w/ diff blank types made by diff techniques or having diff mean size and shape,
e.g. simple scrapers tend to be on longest type blanks (platform cores-relatively parallel dorsal scars) transverse scrapers on shorter blank types (split cobble and Levallois- related), scrapers w/ multiple edges on pieces without cortex (Levallois related)
But material at S ‘A small, so may not be seeing full range of reduction technol.
Good discussion of implications - blank type reflects reduction strategy, so may be choices in strategy impelled by desire for tool types. [Less mechanical view of Neanderthals than Dibble model].
“…it is counter-productive to try to explain away variation with reference to a single conditioning variable. The real analytical challenge is to systematically tease apart the effects of the many factors which influenced the forms of tools we find in the arch. record.” (final lines in MS)

Kuhn, Steven L.
1994 A Formal Approach to the Design and Assembly of Mobile Tool Kits. *American Antiquity* 59(3): 426-442.

Theory and ethnog comp. Optimal mobile kits = small finished tools, gains in durabililty or multi use usually outweighed by increased weight.
Cores are anamalous

Kuhn, Steven L.
1995 *Mousterian Lithic Technology: An Ecological Perspective*. Princeton University Press, Princeton.

Kuhn, Steven L.
2002 Pioneers of Microlithization: The ‘Proto-Aurignacian’ of Southern Europe. In *Thinking Small: Global Perspectives on Microlithization*, edited by Robert Elston and Steven L. Kuhn, Archeological Papers of the American Anthropological Association 12, pp. 83-94.

Kuhn, Steven L.
2004 Upper Paleolithic Raw Material Economies at Üçağızlı Cave, Turkey. *Journal of Anthropological Archaeology* 23:431-448.

12,000 yr stratig sequence - same raw materials but changing patterns of transport and consumption. Concept of “technological provisioning”. Shifts in raw material economy are responses to changes in mobility and scale/duration of occupation.
Distance from source is only poor proxy for “cost” of material. “Provisioning” makes artifacts/materials available, 3 strategies with different artifact life histories: 1.stockpile at places of likely activity, transport of material in variety of forms, relaxed need to economize, less investment per artifact. 2. keep individs supplied, mobile individuals maximize utility relative to weight, so formal tools, resharpening and reuse. 3. produce ad hoc for activities as needed, time constraints = less investment in artifacts and in material, so local.

Cretaceous flints common within 30 k, up to 40 cm nodules, younger Miocene also within 30 k, large nodules, better quality dark flint. Both also collectible as rolled material from fossil beaches.

Kuhn, Steven L. and Robert G. Elston
2002 Introduction: Thinking Small Globally. In *Thinking Small: Global Perspectives on Microlithization*, edited by Robert Elston and Steven L. Kuhn, Archeological Papers of the American Anthropological Association 12, pp. 1-8.

Kuijt, Ian, William C. Prentiss, and David L. Pokotylo
1995 Bipolar Reduction: An Experimental Study of Debitage Variability. *Lithic Technology* 20(2): 116-127.

Kumabayashi, Yusuke
2006 Observations on the Backed-Knife Industry of Hokkaido, Japan. *Current Research in the Pleistocene* 23:15-16.

Kunz, Michael, Michael Bever, and Constance Adkins
2003 *The Mesa Site: Paleoindians Above the Arctic Circle*. BLM-Alaska Open File Report 86. US Department of the Interior, Anchorage.

Excavations 1978-99 on prominent mesa, 450 stone tools, 120,000 debitage, of which 23.5% is biface thinning flakes. Very low rate of cortex and shatter. Distinctive unfluted lanceolate points, edges ground, somewhat like Hell Gap pts, also bifaces and unfinished pts. Some Clovis like flaking on bifaces and occasional fluting on points suggests shared common ancestor with Clovis. Hearths with C14 11,700-9700 BP. Use-wear studies show gravers as important multi-use tool, residues of plants and hair.

Kunz, Michael, and Jsaon M. LaBelle
2013 Obituary of Ele 'Tony' Antoine Baker, 1944-2012. *Plains Anthropologist* 58(226):102-105.

Parents did WPA archaeology, he resisted. Career in engineering, Texaco. Applied engineering models to flaking, Folsom fluting. Published lots online in Paleoindian and Other Archaeologial Stuff website www.ele.net including info on early Folsom + Clovis studies, Hibben, Sandia, McCormick, etc.

Kurten, Bjorn
1976 *The Cave Bear Story: Life and Death of a Vanished Animal*. Columbia University Press, New York.

Good popular account of cave bear paleontology, biology, and archaeology. Dismisses the "Neanderthal bear cult" as result of poor standards of early excavation, lack of knowledge of the oddities caused by natural processes in caves occupied by bears for centuries. Little real evidence for hunting cave bears at all.

Kvamme, Kenneth L.
1988 A Simple Graphic Approach and Poor Man's Clustering Technique for Investigating Surface Lithic Scatter Types. *Plains Anthropologist* 33(121): 385-394.

Good- a 2-D plan of multi-d data in a "snowflake" form
each arm = 1 variable eg. # of cores – produce a polygon
shapes can be compared and position of centroids plotted for comparison

Kvamme, Kenneth L.
1997 Patterns and Models of Debitage Dispersal in Percussion Flaking. *Lithic Technology* 22(2): 122-138.

Exponential fall-off curve of scatter as distance increases from knapper. Effects of knapping posture.

LaBelle, Jason M.
2012 Obituary of Ele "Tony" Baker 1944-2012. *Lithic Technology* 38(2):137-138.

Website: Paleoindian and Other Archaeological Stuff www.ele.net. Modeling fracture mechanics. [Early history of knapping and NM archaeol, his parents knew Hibben and others]

Lackey, Wade
n.d. *Two Hour Course on Making Arrow Heads*. VHS. Privately produced, Evant, TX.

Lafferty, Robert H.
2010 Lithic Reduction Analysis of a Late Archaic Single Activity Area at Site 3IN218, Independence County, Arkansas. *Missouri Archaeologist* 71:113-129.

Refitting flakes on rejected points to derive "transformational lithic reduction rules." [hideously overcomplex attempt to describe force application for each flake, using incomprehensible code]

Lahren, Larry, and Robson Bonnichsen
1974 Bone Foreshafts from a Clovis Burial in Southwestern Montana. *Science* 186 (4159): 147-150.

Anzick cache, Montana, 2 subadults, ochre covered, points + bifaces, bone rods. Large mammal bone, possibly mammoth, beveled ends with hatching, possible resin. Postulated hafting with added splint of bone, could serve as detachable foreshaft allowing repeated thrust with rearmament.

Lahren, Larry
2006 *Homeland: An Archaeologist's View of Yellowstone Country's Past*. Cayuse Press, Livingston, Montana.

[Nice personalized illustrated narrative of Montana prehistory.] Anzick Clovis site frequently referred to. Lithic archaeology includes projectile point chronology, knapping discussion featuring work of Ray Alt, Bonnichsen. Shoshone legend of how coyote stole knapping knowledge from wolf. Experiments with bow (Alt) and atlatl leave them skeptical of ability to distinguish points by size, and of penetrating ability of atlatl dart. [Stories about effectiveness of bow and arrow, and experiments with dart size points on arrows, but no info on any atlatl experiments.] Damage to points. Drawings and photos of Anzick artifacts, brief and not very clear discussion of events of find and study, including comments by "psychic" apparently accepted at face value. Mentions of "Clovis Hustle" and Woody Blackwell. Discusses relations between academic and contract and avocational archaeology; example of contract report on Dozer Rock Site. Bison hunting and kill sites. Spread of horse.

Laird, Roderick D.
1999 Experiments Confirm Likely Usage of Murray Springs Bone Tool. *Mammoth Trumpet* 14(2): 18-20.

Not spinning tool as suggested by Heite (MT 13(3)) but shaft wrench- works well, has notches at ends of opening which keep from cracking shaft and prevent shaft from turning. Should be used in pairs with heated shaft.

Lamb, Thomas K.
1979 Excavations at Operation 1001, A Lithic Workshop. In *The Colha Project 1979: A Collection of Interim Papers*. T. R. Hester ed., pp. 108-117. University of Texas, San Antonio.

Mound 100 tested. Celt manuf, plus other area. Two 2x2 m units. Unit 2 mass of debitage, lack of soils = uninterrupted activity. Late PreC, Classic.

Lamdin-Whymark, Hugo
2001 Neolithic Activity on the floodplain of the River Thames at Dorney. *Lithics* 22: 22-36.

26 flint scatters in situ in alluvium, low power 20-40x use wear study and refitting
3 types scatter 1) knapping- unworn, lots refits 2) utilized material- few refits, lots use-wear 3) activity areas- mixed
Leaf pts diff stages of manuf.

Lampe, David
1991 The Knappers. *The World and I*

Land, Doug
1995 Working With Stone. *The Texas Cache*. 2(2): 6-10

Awful ungrammatical rambling overview of knapping

Land, Doug

1997 A Favorite Find. *Indian Artifact Magazine* 16(2): 49, 59.

Worries about fakes, recounts a prank with planting one

Lang, Bud
1990 Flintknapping. *Knives Illustrated* 4(4):16-19, 84. (Fall 1990)

Knapper Don Fisher described, others illustrated including Callahan, Don Cruze

Lang, James, M.
1987 Hixton Silicified Sandstone: Wisconsin's Unique Prehistoric Lithic Material. *Central States Archaeological Journal* 34(3): 132-139.

Brief descrip, illust of points, not detailed or very useful

Langford, Russell R.
1961 A Technique for Eden Collateral Flaking. *Southwestern Lore* 27(3): 44-45.

Surface grinding proposed [S Behrnes believes he has evidence of lap knapping of Edens, but I have not seen any elsewhere]

Langlais, Mathieu
2011 Processes of change in Magdalenian societies in the Pyrenean isthmus (20-16 ky cal BP). *Antiquity* 85(329):715-728.

Lower to Mid Magd, groups settling into territories, importing long distance stone, more specialized manufacture. Points [backed blades] and lateral barbs [backed bladelets]

Lapatin, Kenneth D. S.
2000 Journeys of an Icon: The Provenance of the "Boston Goddess." *Journal of Mediterranean Archaeology* 13(2): 127-154.

Minoan ivory and gold, provenance (ownership history) now documented, but provenience (arch context and find site) unknown, possibly a forgery.
Article traces acquisition by British Museum, questions use of dubious material like this in reconstructing past or authenticating other finds. [Good]

LaPorta, Philip C.
2005 A Geologic Model for the Development of Bedrock Quarries, with an Ethnoarchaeological Application. In *The Cultural Landscape of Prehistoric Mines*. P. Topping and M. Lynott eds., pp.123-139. Oxbow Books, Oxford.

Largent, Floyd B.
1995 Some New Additions to the Texas Folsom Point Database. *Plains Anthropologist* 40(151): 69-72.

Distributions, no illustrations.

Largent, Floyd B.
2005 Learning by Doing: Experimental Archaeology with Bruce Bradley. *Mammoth Trumpet* 21 (1): 4-5, 20.

Biog info, promotion of Solutrean origin of Clovis, Bradley supports a “multiple entry” model.

Largent, Floyd B.
2006 Probing the Past: Leland Bement and the Paleoindians of Oklahoma. *Mammoth Trumpet* 21(2):8-11.

Copper Site - Folsom, “gourmet butchering” of hump and shoulder only, bison skull with hematite zigzag. Jake Bluff site, Folsom over Clovis, C complete butchery of bison.

Largent, Floyd B.
2006 Toluquilla, Mexico: American Laetoli? *Mammoth Trumpet* 21(2):17-20.

Sylvia Gonzalez says footprints in volcanic lapilli Xalnene ash layers, 40,000 yo. Mike Waters and others say not footprints, Renne says ash is 1.3 million years old. [poor photos don’t help, human presence highly unlikely at either date.]

Largent, Floyd B.
2008 The Clovis Comet Part III: The Implications. *Mammoth Trumpet* 23(3):18-20.

ca 13,000 BP, small comet impact on Laurentide ice sheet = 1000 yr cool episode (Younger Dryas) because melt water shut down Atlantic circulation. Short term blast + fire effects over much of continent broke up Clovis culture, extincted megafauna by starvation. Evidence in charcoal peaks and extraterrestrial particles. Goodyear sees abrupt pop reduction + change in pts in SE from Clovis to Redstone pts (also fluted, but long triang shape, sharper tip, deeper basal concavity, small guide flutes beside main flute indicate mechanism rather than Clovis direct perc.) Redstone = Gainey = post Clovis daughter culture.

Largent, Floyd B. Jr, Michael R. Waters, and David L. Carlson
1991 The Spatiotemporal Distribution and Characteristics of Folsom Projectile Points in Texas. *Plains Anthropologist* 36(137) 323-342.

settlement patterns not clear in TX pt distrib yet, dates 11-10,000 BP
Metric data given in detail, comforms to those elsewhere

Larick, Roy R.
1987 Circulation of Solutrean Foliate Points Within the Perigord, SW France. In *The Human Uses of Flint and Chert*. G. Sieveking and M. Newcomer eds., pp. 217-230. Cambridge: Cambridge Univ. Press.

Larsson, Lars
2000 The Passage of Axes: Fire Transformation of Flint Objects in the Neolithic of Southern Sweden. *Antiquity* 74(285): 602-610.

Pits w/ burnt flint, human bone, pottery, rock. Symbolic use of lithics.
Intentional destruction, or intent was to alter color to white- transformation, rite de passage?

Larsson, Lars
2004 Axeheads and Fire - The Transformation of Wealth. In *Lithics in Action: Papers from the Conference 'Lithic Studies in the Year 2000'*. E. A. Walker, F. Wenban-Smith, and F. Healy eds., pp. 197-205. Oxbow Books, Oxford.

Larsson, Lars
2011 The ritual use of axes. In *Stone Axe Studies III*. Vin Davis and Mark Edmonds, ed., pp. 203-214. Oxbow Books, Oxford.

Larson, Mary Lou and Marcel Kornfield
1997 Chipped Stone Nodules: Theory, Method, and Examples. *Lithic Technology* 22(1): 4-18.

sorting for refitting to level of "Minimum Analytical Nodule" provides info
3 WY site examples of diff. age
Same kind of info as refitting, but less work- eg. diff user of diff material, spatial distribs, temporal correlations w/in site/strata

Larsson, Lars, and Arne Sjöström
2011 Early Mesolithic flint-tipped arrows from Sweden. Antiquity 85(330) Project Gallery. Electronic document, URL http://www.antiquity.ac.uk/projgall/larsson330/ accessed 8/2013.

Rönneholm, former lake, modern peat cuttings reveal numerous finds and small sites dating Maglemose to Kongemose cultures (ca 7000-6000 cal BC). Find of wood + microliths with resin, assembled to reconstruct point of arrow 10.2 cm L, .9 cm diam. Hazel, v-shaped groove, 4 triangular microliths as barbs, 5th possibly tip [proximal end missing too], 7900-6600 cal BC. Another from Loshults Mosse 1951, 8900-7300 cal BC. Arrow find Vinkel, Denmark, 102 cm L, .7 cm diam, nocked, lashing for fletches, beveled tip, Early Boreal. Early Mesolithic arrow frags from Holmegaard IV, Zealand with microliths. Prejlerup, Zealand, Denmark auroch skeleton with 15 microliths, small arrow shaft frag w resin, 8410-7284 cal BC. [Resins not identified.]

Laub, Richard S.
2006 New Developments Concerning the Pleistocene Component of the Hiscock Site (Western New York State). *Current Research in the Pleistocene* 23:119-121.

fluted biface frags, mastodon bone, possible stomach contents

Laubin, Reginald and Gladys Laubin
1980 *American Indian Archery*. Norman: University of Oklahoma Press.

[Laubin knew lots of the old Sioux warriors of the 19th C in their old age]
p 7 Pope and others were biased against Indian archery by fondness for glory of English longbow. Surviving native bows often inferior ones, or misused.
p 116 No difference in shape of metal hunting and war points, although a few barbed war pts 'have been noted'. Flint war pts often triangular, loosely set in shaft with little or no binding so head remained in wound. [No attribution for any of this]. 'There are stories that war pts were set… perpendicular to the bowstring… to enter a man's ribs more easily…hunting pts set in same line of string to enter animal's rib cage more readily. If Indians ever had such ideas, they were impractical, because any arrow, no matter how it is fletched, will spin while traveling…"
p 118 "I once asked One Bull and other old-timers if they ever made stone arrowheads. The reply was no." Believed those found made by Iktomi or Little Spider People. Story of Crooked Neck who saw them working, tried to take point, was shot in neck with tiny arrow. After moving onto Plains, "proper stone was scarce or nonexistent." So made bone points. [I think his archaeology here is weak!] "Today there are more white men who know how to make stone arrowheads than there are Indians who can do it." Revived recently among Cherokee who learned from white hobbyist. Ishi last native knapper. Good modern knapper can make arrowhead in 20 min. Obsidian pts pentrate better on game than steel. Bone pts also not as good, but Plains folk had no choice. [again, no attributions for any of this].
p 120 Some think Folsom pts were for arrows [he must mean Brown] but so early must be on atlatl darts. 'Gem pts, bird pts' probably ceremonial "certainly they had no practical value" "no value in killing larger game." [Interesting that he devalues success of prehistoric archery thus.]

Lave, Jean, and Etienne Wenger
1991 *Situated Learning: Legitimate Peripheral Participation*. Cambridge University Press, Cambridge.

La Vere, David
2007 *Looting Spiro Mounds: An American King Tut's Tomb*. University of Oklahoma Press, Norman.

[Journalistic account, interesting, deplores destruction, but missed some important sources.]

Laville, Henri, Jean-Philippe Rigaud, and James Sackett
1980 *Rock Shelters of the Perigord: Geological Stratigraphy and Archaeological Succession*. Academic Press: New York.

Law, Randall

2008 No Stone Unturned: Trekking Through Dangerous Territory to Unravel Ancient Indus Trade Routes. *Archaeology* 61(5):55-60.

Looking for geological sources of Harrappan steatite, grindstones, lead.

Lawn, B. R. and D. B. Marshall
1979 Mechanisms of Microcontact Fracture in Brittle Solids. In *Lithic Use-Wear Analysis*, Brian Hayden ed. pp 63-82. New York: Academic Press.

Lawn, Brian and Rodney Wilshaw
1975 Indentation Fracture: Principles and Applications. *Journal of Materials Science* 10: 1049-1081.

Lawn, B. R. and T. R. Wilshaw
1975 *Fracture of Brittle Solids*. Cambridge: Cambridge University Press.

Lawrence, Robert A.
1979 Experimental Evidence for the Significance of Attributes Used in Edge-Damage Analysis. In: *Lithic Use-Wear Analysis.* Brian Hayden ed. pp. 113-121. NY: Academic Press.

Lea, Vanessa
2005 Raw, Pre-heated, or Ready to Use: Discovering Specialist Supply Systems for Flint Industries in Mid-Neolithic (Chassey Culture) Communities in Southern France. *Antiquity* 79 (303): 51-65.

Silex blond, honey colored Bedoulian flint of Vaucluse (N of Marseille), mid 4th - mid 5th C BC Neolithic. Differing production sequences targeted at different consumers. 1) Bladelets - flint extracted, shaped on production sites in Vaucluse, preforms circulated and heated before being knapped into bladelets on consumer sites (easier, less specialized blade producers). 2) Larger blades - made on production site, circulated as finished products, robust, long life, reused + refreshed.

Specialization: high-risk processes done at production sites. Exchange systems.

Leach, Melinda
2010 Quarry Pits and Hearth Fires: Balancing Work and Family in the Great Basin. *SAA Archaeological Record* 10(2):24-30.

Tosawihi (white knife) opalite chert quarries in Nevada. Exploited in historic times by Shoshoneans. Massive remains. Optimal foraging suggests in this area of limited resources, big game would be best support = male hunting, so it would make sense to have others do quarrying. Experiments show not difficult if use fire. Domestic quarry sites and nearby domestic reduction sites closer to water and other resources have grinding equip, obsidian and other non-local material (= tooling up), evidence of full family social groups supporting quarrying.

Leakey, L.S.B.
1953 (1960) *Adam's Ancestors*. (4th edition) Reprinted 1960 Methuen + Co, London.

2 important chapters- III "Interpreting Stone and Bone", good basics of knapping- cone principles, flaking w. hammer stone, flat flaking w/ "cylinder hammer" of wood or bone, pressure w/ ivory, bone, or stone "fabricator"
Patination, natural fractures [In 1953 at least he was pretty advanced for time]
IV "Uses of Stone and Bone Tools" Emph early scavenging- use of 1st stone tools (pg 57)
Hand axe = general utility tool by experiments, but more advanced forms could have been hafted as spears. Expers have shown possible to dig, chop bone, cut meat, skin, simple wood work. Flakes better for butchery and wood. Cleaver = ideal skinning and flaying tool. Goes on to other Mid and Up Pal. tools

Leakey, L.S.B.
1961 *The Progress and Evolution of Man in Africa*. London: Oxford University Press.

Leakey, M. D.
1971 *Olduvai Gorge vol 3 Excavations in Beds I and II, 1960-1963*. Cambridge: Cambridge University Press.

cite for use of photos as drawings for Oldowan tools

LeBlanc, Steven A.
1997 Modeling Warfare in Southwestern Prehistory. *North American Archaeologist* 18(3): 235-276.

Long survey of evidence
Hypoth that climate change led to increased warfare from 1200s- larger villages, abandon small, burning, dead by trauma
Hypoth that sinew-back or recurved bow also intro at this time, leads to intensified war, also changes in arrows, shields

Lech, Jacek
1987 Danubian Raw Material Distribution Patterns in Eastern Central Europe. In *The Human Uses of Flint and Chert*. G. Sieveking and M. Newcomer eds., p 241-248. Cambridge University Press, Cambridge.

Lee, Karl
2001 Experimental Heat Treatment of Flint. *Lithics* 22: 39-44.

In pit, 15 cm deep, following Waldorf video, wood fire
1) 2 levels, 6 hours 1200° above ground, upper level damaged, lower ok
2) less successful- finer sand fill
3) limestn gravel fill- better
coarser material on top- needs hotter, finer on bottom, to protect
[simple, a bit subjective, but Ok]

Lee, Richard B.
2002 Solitude or Servitude: Ju/'hoansi Images of the Colonial Encounter. In *Ethnicity, Hunter-Gatherers, and the "Other: Association or Assimilation in Africa*." Susan Kent ed., pp. 184-205. Washington, Smithsonian Institution Press.

"Kalahari Debate" - were San foragers or serfs? Revisionists say San were pastoralists or servants of pastoralists, dispossessed or marginalized, but no one has asked San about past, and compared ideas to archaeology. Lee collecting oral history in 1980s-90s from men born 1900-1930, for collective memory of pre-1870s precolonial past, excavating Late Stone Age - historic sites.

Ju claim 19th C autonomy, corroborated by current local elite (Tswana). Many arch sites, have a bit of iron and pottery = presence or contact w others. San explain as trade (w San traveling to neighbors, who did not live there), revisionists explain as evidence of domination. !Kung claim whites arrived before Tswana, no cattle until 3-4 generations ago. Iron came from Goba neighbors or Europeans, pottery from Goba or made by San but now forgotten. Some deny use of stone tools even as see archs excavate from local sites. Interp all stone as strike-a-lights. Evidence supports late arrival of other tribes and cattle, autonomy but not isolation of San, not dominated by others or formal pastoralists. No domest animals in sites before late 19C. [Note variable quality of folk history, rapid loss of lithic knowledge]

Lee, S. L.
1953 Ethnographic Notes on Washo Culture. In *Some Archaeol. Sites and Cultures of the Central Sierra Nevada*. R.F. Heizer and A.B. Elsasser eds. pp. 37-40. U. of Calif. Arch. Survey Rept. 21 Appendix D.

Last Washo Knapper, pressure
Superstition concerning artifacts

Lehmann, Herman
1993 *Nine Years Among the Indians, 1870-1879: The Story of the Captivity and Life of a Texan Among the Indians, edited by J. Marvin Hunter*. University of New Mexico Press, Albuquerque.

[See Greene 1972 for the long quote about fire and water knapping that comes out of this source, and comments on the dubious quality of the information in Lehmann's accounts. This one originally appeared under Hunter's name, Lehmann telling him the stories, published 1927.]

Leith, Elizabeth A.
2008 European Trade Goods on the Southern Plains: The Bryson-Paddock (34KA5) and Deer Creek (34KA3) Sites. In *Land of Our Ancestors: Studies in Protohistoric and Historic Wichita Cultures*, edited by T. Baugh and S. M. Perkins. *Plains Anthropologist* 53(208) Memoir 40: 551-564.

Different patterns of adoption of goods. Continued use of lithic technology - bow cheaper than flintlock and more effective for mounted bison hunting. A few glass points and scrapers, but few metal points - brass not good but valuable, iron hard to work. Stone scrapers as good as metal. Metal knives widely adopted, also hoes. French trade flintlocks valued for status, but low quality, required maintenance - evidence of stripping and reuse of parts, and recycling after no longer usable gun. Locally made gunflints [unfortunately not illustrated.]

Lekberg, Per
2004 Lives of Axes – Landscapes of Men: On Hammer Axes, Landscapes and Society of the Late Neolithic in Eastern Central Sweden. In *Coast to Coast –Arrival: Results and Reflections*. Helena Knutsson, ed., pp. 259-293. Coast to Coast Project Book 10, Uppsala.

ca 2350-1700 cal BC, abundant shaft-hole axe finds from "former cultural landscape of graves, sites etc" – distributions attempt to recontextualize. Hardstone material from dikes. Axes originally 20-35 cm long, reworked many times, usually after break thru hole. [apparently normal axe use assumed] followed by intentional deposition. Short axes not in hoards, longest not in graves, only fragments and preforms on settlement sites.

Lekberg, Per
2006 Ground Stone Hammer Axes in Sweden: Production, Life Cycles, and Value Perspectives, c. 2350-1700 cal BC. In *Skilled Production and Social Reproduction*. Jan Apel and Kjel Knutsson eds., pp. 361-386. Societas Archaeologica Upsaliensis, Uppsala.

Lemmons, Reno and Flora Church
1998 A Use Wear Analysis of Hopewell Bladelets from Paint Creek Lake Site #5, Ross County, Ohio. *North American Archaeologist* 19(4): 269-278.

Multi functional tools at non-mound site

Lenoir, M.
1975 Remarks on Fragments with Languette Fractures. In *Lithic Technology: Making and Using Stone Tools*. E. Swanson ed, pp 129-132. The Hague: Mouton.

[Useless - unrecognized examples of bending fractures described with vague and incorrect guesses of causes]

Lentz, Gary
2014 The Sharpest Cut of All. *Bulletin of Primitive Technology* 48:30-33.

GL had a small cist removed from leg by cooperative surgeon Dr. Luce using obsidian flakes made by Mel Bohleen. Pictures.

Lepper, Bradley T.
1984 Ohio Fluted Points: A Preliminary functional Analysis, Part II, the Johnson-Humrickhouse Museum Collection. *Ohio Archaeologist* 34(1): 4-12.

brf review lit., good refs, Clovis pts as knives
51 pts in collection micro use wear- 22 have lateral wear = non-proj use
both bifacial and unif wear [some maybe damage or reworking]
also some definitely reworked examples given and identified as post-pt use

Lepper, Bradley T.
Flint Ridge: an introductory bibliography. *Mound Builders' Notes*, [Lepper, Bradley T. ed]., No 2: 1-3

brief

Lepper, Bradley T.
1991 Licking County's Oldest Living Living Residents: 'Rip Van Winkle' Bacteria more than 11,000 years old. The *Licking County Historical Society Quarterly* 1(3): 1-5.

Lepper, Bradley
2008 Through a Glass Darkly: Dating Obsidian Points. *Mammoth Trumpet* 23(3):14-16.

Great Basin pts, mostly from Topaz Mt source, UT. Western Stemmed pt types and Pinto types similar in age: 10,000-8500 RCYBP (Duke, Carpenter, and Page 2007).

Lepper, Bradley
2013 The Big-Game Hunting Conundrum. *Mammoth Trumpet* 28(1):1-3, 7-8.

Speth et al. in forthcoming Quaternary International question normal model of Clovis big-game hunting: high quality stone important, but not necessary for hunting. Many inferior pts, but also higher than necessary quality points, some in caches = symbolic importance. Not necessarily tied to mobility of groups, could have been obtained by small expeditions rather than 'embedded' in normal subsistence. No evidence of food preservation or intense use of kills like breaking bones for fat, thus no pemmican, thus extreme mobility probably not supportable. Hunting large game is inefficient, thus probably more about male politics and prestige.

Lepper, Brad
2013 Early Skeletons Point to a Single Source Population for the First Americans. *Mammoth Trumpet* 28(3):1-5.

B. Auerbach U of KY study, 5 M skeletons, suggest single source in high latitudes of E Asia, colonization no later than 15 kya. Earliest Paleoinds retain cold climate morphology either from earlier source or acquired during "Beringian standstill", followed by isolation and differentiation of pops after going S.

Lepper, Brad
2013 Alternative Views of the Solutrean Theory, Part 2. *Mammoth Trumpet* 28(3):15-18.

Bordes, G. Haynes, Meltzer all say similarities exaggerated. Meltzer – if overshot so important, why not seen in pre-Clovis, who ought to be the descendants of Solutrean immigrants? Straus: no “maritime Solutrean adaptation.” Crawford: genetic evidence supports Asian origins.

Lepper, Bradley
2014 Clovis Child Answers Fundamental Questions about the First Americans. *Mammoth Trumpet* 29(2):7-12.

Anzick, Montana, burial of 2 yr old boy with 84 biface cores + preforms, 8 fluted points, 15 frags of elk antler rods (=8 foreshafts), 6 unifacial tools, 2 flakes, all ochre covered, only burial assoc with Clovis artifacts. Found 1986, now DNA genome analyzed, both mitochondrial (mother) and Y-chromosome (father). Compared to 52 recent groups, more closely related to all Native Am. groups than to any Eurasian pop, and closer to S + Central Am groups than to northern N. Ams. Interp: “80% of all living Native Ams descended directly from this child’s extended family” [Nonsense! Descended from individuals bearing same genes.] And because there are 20% non-related N Ams, must have entered continent “a few thousand years before Clovis”. No evidence for European connections, Solutrean theory should be dismissed.
Privately owned by Anzick family, now to be reburied, but compromise - in capsule to prevent degradation, possible to open every 50 yrs for more samples. [A lot of stuff about ‘emotional impact’ but possibly adequate compromise - if it actually happens that way. And if it had been reburied before, we couldn’t have learned any of this.]

Lepper, Bradley
2014 Ancient Siberian Boy Reveals Complex Origins of First Americans. *Mammoth Trumpet* 29(2): 6, 12-15.

Mal’ta burial of 3-4 yr old, ca. 24000 cal BP. His group ancestral to mod W Eurasians, contributed ca 14-38% of genes in mod Am Ind genome. Indicates first Ams were amalgam of east Asians and western Eurasians, maybe explains Eurasian skull shape of Kennewick and other early Paleoinds, and how mitochondrial X haplogroup mostly found in Europe, got to Americas.
Site excav 1928-1958, clusters of artifacts interpreted as dwellings. Burials - boy + infant (teeth only) had fancy goods: 120 ivory beads, bird pendant, figure-8 pendants, swan figurine, engraved plaque, bone pt or dagger, bone bracelet, unifacial stone tools. Work by Kelly Graf and Eske Willerslev and S. Demishchenko, sampled humerus (0.15 grams) [and the US reburial activists would consider this ‘destructive’!] “…demonstrating the wealth of info that can now be gleaned from a miniscule amount of bone. The worldwide scientific community owes a debt of gratitude to the Hermitage State Mus; if their staff hadn’t curated these remains for all these years, these new genetic analyses wouln’t have been possible.” [Contrast with Anzik in same issue: Mal’ta proudly displayed and still teaching about his people; Anzick hidden and now silenced by reburial.]

Lepper, Bradley
2014 The Clovis Comet: The Cratering Evidence. *Mammoth Trumpet 29(3):1-5, 9-10.*

None of several possible craters appears to be right size, age, or otherwise fit hypothesis

Lepper, Bradley
2014 Clovis Spear Points were Used to Process Plants. *Mammoth Trumpet 29(3):14-17.*

Paleo Crossing Site, Ohio. Diverse assemblage. Microwear analysis by Logan Miller. Point with projectile use striations, another with plant polish partly overlying meat polish. [are the differences really that distinct?] Other tools show butchering, plant processing, hide scraping.

Lepper, Bradley T.
2014 The People Who Peopled America. In *Kennewick Man: The Scientific Investigation of an Ancient American Skeleton*. Owsley, Douglas W., and Richard L. Jantz, eds., pp. 7-29. Texas A&M Press, College Station.

Survey of info, tabulation of skeletal remains. Info on burial type + possible ceremony, violence and possible cannibalism evidence. Shows how much can be learned from the rare paleo skeletal evidence. Several important finds have now been destroyed by tribes. The climate of fear and avoidance of skeletal archaeology produced by NAGPRA, while some tribes have a better attitude and see ancestral skeletons as the ancestors still teaching.

Lepper, Bradley T. et al
1991 Intestinal Contents of a late Pleistocene Mastodont from MidContinental North America. *Quaternary Research* 36: 120-125.

Lepper, Bradley T. and Robson Bonnichsen, eds.
2004 *New Perspectives on the First Americans*. Center for the Study of the First Americans, College Station, TX.

Lepper, Bradley T. and David J. Meltzer
1991 Late Pleistocene Human Occupation of the Eastern United States. In *Clovis: Origins and Adaptations*, edited by R. Bonnichsen and K. Turnmire, pp. 175-184. Center for the Study of the First Americans, Corvallis.

Lerner, Harry J.
2007 Introduction to the Themed Volume of Lithic Technology: “Lithic Reduction Analysis: Problems of Prehistory,” Proceedings of a Session Held at the 70th Annual Meetings of the Society for American Archaeology, Salt Lake City, Utah, March 30th-April 3rd, 2005. *Lithic Technology* 32(1):5-6.

[Award for longest most tedious title.]

Lerner, Harry J.
2007 Digital Image Analysis and Use-Wear Accrual as a Function of Raw Material: An Example from Northwestern New Mexico. *Lithic Technology* 32(1):51-67.

Lerche, Grith
1994 *Ploughing Implements and Tillage Practices in Denmark from the Viking Period to about 1800, Experimentally Substantiated*. Poul Kristensen, Herning, Denmark.

section on use of stone insets to prevent wear on sides of medieval plows

Lesko, Lawrence M.
1989 A Reexamination of Northern Arizona Obsidians. *Kiva* 54(4): 385-400.

Partridge Creek, Presley Wash obsidians described
accurate visual ID
distribs

LeTourneau, Philippe D. and Tony Baker
2002 The Role of Obsidian in Folsom Lithic Technology. In *Folsom Technology and Lifeways*, J. E. Clark and M. B. Collins, eds., pp.31-46. Lithic Technology Special Publication No. 4. University of Tulsa, Tulsa.

LeTourneau, Phillipe D. and Jan Cummings
2006 The Carrizozo Folsom Site in the Northern Tularosa Basin, New Mexico. *Current Research in the Pleistocene* 23:121-124.

Levine, Marc N. and Lucha Martinez de Luna
2013 Museum Salvage: A case study of Mesoamerican artifacts in museum collections and on the antiquities market. *Journal of Field Archaeology* 38(3):264-276.

Sotheby's US catalogs from 1966-2010, focus on Teotihuacan artifacts + other Mesoam, show same trends, growing interest to high starting late 1970s, peak 1990s, sudden drop 2000 on. Effect of legal actions not clear, urbanization still growing, looting continues, auction houses being a bit more careful (although may have shifted more sales to private instead of open auctions). Prices still rising, now 10 times what they were (adj for inflation) in 1970s. Poorly documented artifacts in museums still useful. [Examines those in Denver Mus Nature + Sci, but doesn't make much of a case for them.] Fakes abound, ests of 40% or even more in museums.

Lewenstein, Suzanne
1981 Mesoamerican Obsidian Blades; an Experimental Approach to function. *Journal of Field Archaeology* 8: 175-188.

Replication for usewear, identify use on arch sample [good]

Lewenstein, Sue
1986 Feature 11 and the Quest for the Elusive Domestic Structure: A Preliminary Reconstruction Based on Chipped Stone Use. In *Archaeology at Cerros, Belize, Central America: Volume I, An Interim Report*.
Robin A. Robertson and David A. Friedel eds., pp. 65-73. Southern Methodist University Press, Dallas.

Not all activity areas = specialized craft production, not all mounds = residences. “Once the quantity and spatial patterning of domestic behavioural residues are understood, these can be factored out of the artifact distributions.” [ie allowing us to see the specialists.]
Feature 11 = plazuela group of 3 structures [Mayanists frequently misuse terms like feature]. ca 700 lithic artifacts, 40-80x microscope, comp with experimentally used replicas. Late Preclassic. 5 spatial tool kit clusters in and around structure - bone + wood, hide/leather, outside rough wood work, inner room flake manuf + fine woodwork near ritual niche. Male activity = ritual + craft gathering for men, not residential. Mixed surface lots outside suggest net making + other activity.

Lewenstein, Suzanne M.
1987 *Stone Tool use at Cerros*. Austin: Universtiy of Texas Press.

Very extensive program of exper for microwear comparison
microwear analysis and interp. of tools

Lewenstein, Suzanne
1991 Edge Angles and Tool Function Among the Maya: A Meaningful Relationship? In *Maya Stone Tools: Selected Papers from the Second Maya Lithic Conference*. T. R. Hester and H. J. Shafer eds, pp. 207-218. Prehistory Press, Madison.

Lewenstein, Suzanne
1991 Woodworking Tools at Cerros. In *Maya Stone Tools: Selected Papers from the Second Maya Lithic Conference*. T. R. Hester and H. J. Shafer eds, pp. 239-250. Prehistory Press, Madison.

Lewin, Roger
1981 Ethiopian Stone Tools Are the World’s Oldest. *Science* 211 (4484): 806-807.

Lewin, Roger
1986 When Stones Can Be Deceptive. *Science* 231: 113-115.

Lhomme, Vincent
2007 Tools, Space and Behavior in the Lower Palaeolithic: Discoveries at Soucy in the Paris Basin. *Antiquity* 81 (313):536-554.

Gravel quarries expose several sites, dates 365-345,000 bp. Acheulean bifaces and flake tools, concentrations of faunal remains and debitage. Differences between sites in different zones = resource exploitation strategies: Sandy river banks have brief occups with limited activities. Gravel hillocks richer, exploiting animal resources and gathering raw materials - flint, granite + sandstone blocks, over 40 shed deer antlers at one [why? no evidence for use?]. Floodplain further from river low density short use.

Lindauer, Owen
1996 The Archeology of Americanization: Assimilation and Changing Identity of Phoenix Indian School Pupils. *CRM* 19(9): 37-41.

Stone tools and flaked plates as retention of home identity in school dump
[Interesting but some of the worst writing!]

Lindgren, Christina
2004 Quartz and People: Technological and Social Strategies during the Mesolithic in Eastern Central Sweden. . In *Coast to Coast – Arrival: Results and Reflections*. Helena Knutsson, ed., pp.85-104. Coast to Coast Project Book 10, Uppsala.

Experimental quartz knapping – lots of fragmentation, differing in type and quantities by method. 1) freehand-platform, 2) platform-on-anvil, and 3) bipolar on anvil.1 = broad method for variety of flakes, mostly to be retouched. 3 = standardized core prep to make unmodified flakes. Sites have floors where all kinds of knapping done together, including axes. "Performative character of technology communicated your identity" because different motions used in diff. 4500BC change – loss of bipolar, separate greenstone axe work areas, but no new technol. Probably symbolic reflection of social changes as well. [Possible, but I see no evidence that different people in these groups used diff techniques – espec when they occur together].

Lindow, Jeffre
2000 *A Headhunter's Guide to Stone Arrowheads…or A Primer of Prehistoric Projectile Points*. Chili (WI): Lindow Desktop Publishing.

a couple nice photos of Hixton pts by Blackwell
expresses good amateur arch ethic

Lintz, Christopher and John Dockall
2002 The Spreen Cache: A Case Study of a Prehistoric Curated Collection of Broken Tools from 41RN108, Runnels County, Texas. *Lithic Technology* 27 (1): 13-37.

Lipo, Carl P., Robert C. Dunnell, Veronica Harper, and John Dudgeon
2008 Beveled Bifaces and Ballistics Technology. Unpublished electronic document, "for submission to Journal of Archaeological Science." URL:
www.csulb.edu/~clipo/misc/BeveledBifacesAndBallistics-V2.doc
accessed: 7/12/11.

Beveling of Archaic points as knife resharpening vs to spin projectile. Many citations, especially early American archaeology. Only Wilson (1898) experimented; he found that beveled points on unfletched shafts rotated when dropped, drawn through water, or in wind tunnel. But mostly ignored by recent interpretations. Evolutionary view: beveling only on post-Clovis; most common pre-bow, therefore should be a response to particular set of conditions or requirements.

Like Wilson's experiments, aerodynamic theory supports bevel as producing spin. "Computational fluid dynamics" allows us to model effect of air moving across different biface shapes to see if bevel would have effect in real world situation. Model shows that spinning forces should be created at wind speeds consistent with prehistoric projectiles.

Wind tunnel experiments on bifaces mounted on a freely rotating axis show that they do indeed rotate. Rotation should improve accuracy and reduce drag of attached shaft, so should be selected for once it has been invented. Since not on all points, there must be certain conditions where it is advantageous. Mostly on larger points, thus larger shafts, whose rate of rotation will increase more slowly. Light objects at same starting velocity don't go as far, so rotation would have less effect [explaining why arrow points not beveled?] Smaller faster arrow need fletching to keep from tumbling, and it can also be used to rotate them more effectively than point bevel. So optimal payoff for rotation between 100-220 grams, dart + thrown spear weight.
Knife beveling likely too, distinguishable by wear patterns. Bevel/spin also should increase damage at impact.

[Is the rotational inertia enough to keep dart spinning after point hits solid material? Doubt it. Does rotation by point stabilize an atlatl dart? Doubt it very much. This whole paper is a good example of an experiment that does not apply well to real life, because it simplifies the variables too much. Like Wilson's experiments, Lipo et al. show that bevels can rotate a shaft under ideal conditions. BUT: A straight, non-flexing shaft in an air tunnel is not enough like a flexing atlatl dart in flight. Pascal Chauvaux's videos of darts in flight shows that they do indeed rotate as well as flex - but they have neither a beveled point, nor spiral fletching. They rotate in uneven pulses because of the oscillation of the flexing shaft. Resharpening of knives and points remains the better explanation of beveling. Arrow points are not usually beveled because many are too small to make it worth while, or perhaps because unlike dart points on foreshafts, they don't get secondary use as knives.]

Lipo, Carl P., Robert C. Dunnell, Veronica Harper, and John Dudgeon
2010 Beveled Bifaces and Ballistics Technology. Unpublished electronic document, submitted to American Antiquity. Accessed Jan 2, 2012, URL: http://www.isu.edu/anthro/dudgeon/pubs/Lipo_et_al_2011.pdf

Pretty much the same as 2008, some rewriting, added caution that not all beveling must serve same purpose, discussion of point types: Why is beveling mostly in earlier Archaic? Clovis pts not beveled because they were "stabbing" and cutting tools. Beveling appears with Dalton pts, which are also more consistently pointed, thus more specialized as projectiles. Abrupt decline of beveling unlikely to be reduced need for the accuracy promoted by spinning projectile. Unless some incompatible invention is more valuable, or unless spin achieved by adding fletching, in which case points don't need to be so heavy. Can't resolve this now.

Lipo, Carl P., Robert C. Dunnell, Michael J. O'Brien, Veronica Harper, and John Dudgeon
2012 Beveled Projectile Points and Ballistics Technology. *American Antiquity* 77(4): 774-788.

Beveling of Archaic points as knife resharpening vs to spin projectile. Midwest + SE Archaic, including Dalton, Hardin, Thebes etc. Many citations, especially early American archaeology, pro + con rotation. Only Wilson (1898) experimented; he found that beveled points on unfletched shafts rotated when dropped, drawn through water, or in wind tunnel. Smith (1953) tried on arrows, [claimed no rotation] but his experiments irrelevant as only dart pts beveled [Smith is just as relevant as Wilson + this experiment!] But mostly ignored by recent interpretations of bevel as sharpening.

Aerodynamic theory supports bevel as producing spin. Drag forces no longer normal to shaft, generates torque. Spin converts curved path of unevenly curved shaft to helical path because bias is rotated in all directions. This is “free” because uses already existing drag of pt, vs fletching which adds drag [Only ‘free’ if point x-section remains same? And a point larger than shaft must also produce more drag than shaft.] Rotation rate is function of velocity, bevel surface area, and angle, up to a “terminal RPM”. “Computational fluid dynamics” allows us to model effect of air moving across different biface shapes to see if bevel would have effect in real world situation. Model shows that spinning forces should be created at wind speeds consistent with prehistoric projectile velocities (5-60 m/sec, Hughes 1998) [=16-198 fps, or 11-132 mph. - i.e. to well above dart speeds]. Wind tunnel experiments at 30 m/sec [= 67 mph, better dart velocity but rather high] on bifaces mounted on a freely rotating axis show that they do indeed rotate. “Skin drag” on shaft relatively small, so not prevent rotation. Rotation should improve accuracy and reduce drag of attached shaft, so should be selected for once it has been invented. Since not on all points, there must be certain conditions where it is advantageous. Mostly on larger points, thus larger shafts, whose rate of rotation will increase more slowly. Light objects at same starting velocity don’t go as far, so rotation would have less effect [explaining why arrow points not beveled?] Optimum payoff for rotation at about 100 grams, dart/spear weight.

Beveling originates with Dalton, from which [disputable] develop two lineages: notched e.g. Thebes and stemmed e.g. Hardin. Earlier Clovis pts mostly stabbing/cutting multipurpose tools, no bevel. Dalton more functionally specific projectile point. Beveling lost abruptly, signalling different technol solution to accuracy, perhaps fletching.

[See comments on earlier versions, but in final form, whole paper is a good example of an experiment that does not apply well to real life, because it simplifies the variables too much. Like Wilson’s experiments, Lipo et al. show that bevels can rotate a shaft under ideal conditions. BUT: A straight, non-flexing shaft in an air tunnel is not enough like a flexing atlatl dart in flight. Pascal Chauvaux’s videos of darts in flight shows that they do indeed rotate as well as flex - but they have neither a beveled point, nor spiral fletching. They rotate in uneven pulses because of the oscillation of the flexing shaft. Resharpening of knives and points remains the better explanation of beveling. Arrow points are not usually beveled because many are too small to make it worth while, or perhaps because unlike dart points on foreshafts, they don't get secondary use as knives.]

Lively, Richard
2001 Olive Branch Site: The Cache. *Indian Artifact Magazine* 20(1): 40-41, 70.

Dalton 10,000 BP. 1000’s of artifacts since 1988
1960’s 2 caches of Daltons, 1 of Thebes w/ red ochre
1998 Vandalism by looters [even while Gramly digging there!] Clean-up found 10 large Dalton knives and 1 adze, 3 more knives 6.75”- 4.5” long, Burlington
[color photos]

Lizarralde, Manuel

1995 Primitive Flints out of Bone: A South American Indian Example. *Bulletin of Primitive Technology* 9: 20-22.

experiment: deer tibia, worked with stone tools

Llaurens, V., M. Raymond, and C. Faurie
2009 Why are some people left-handed? An evolutionary perspective. *Philosophical Transactions of the Royal Society, Biological Sciences* 364:881-894.

Reviews some prehistoric evidence, literature on genetic, developmental, and cultural influences. Since right handedness dominates in all known cultures past and present, but L-h persists, suggests long-term evolutionary advantages. Since it is not a balanced polymorphism, with low rates of L, suggests some fitness cost to L.

Loendorf, Chris
2010 Hohokam Core Area Sociocultural Dynamics: Cooperation and Conflict along the Middle Gila River in Southern Arizona during the Classic and Historic Periods. Unpublished PhD dissertation, Arizona State University.

Around 1000 pts from Gila River Indian Community surface surveys - Pima-Maricopa Irrigation Project.

Working with late arrowpoints, some info on earlier Archaic, assumed to be atlatl dart points, including damage info. Good discussions of arrow design elements, questions of style and function, chronology. Expect general trend through time to faster, smaller projectiles, thus smaller overall points. Assumptions that function is foremost, points for war should differ from those for big game hunting. War - un-notched or otherwise designed for separating from shaft and staying in wound. Provides some ethnographic and historical justification.

Chap 3. Point use-life: arrow pts unlikely to be reworked - better materials fragile, high speed impact destructive, too small anyway. Comps large (atlatl) pts to small (arrow) pts - lg pts have more use-wear and more reworking. Similar proportions 51%, 45% small, large recovered whole, or slightly damaged 17%, 18%. [contrasts w my Sinagua data].

Material source studies, obsidian sources - often smaller marekanite from S AZ.

Chap 4 Methods. Analysis by both attributes and point types. Classic points expected to be larger [STPC]; historic are smaller un-notched triangular types for O'Odham and narrower serrated concave based forms for Sobaipuri.

Point design theory - stone pts used mainly for big game or warfare; most arrows no stone point. Penetration and wound size critical, but large pt hinders penetration, so compromise. Increased velocity improves performance - range and accuracy - lighter projectile better. Heavy point requires more stabilizing fletching. Thrown projectiles allow human compensation during throw, but arrow released, no adjustments possible, thus consistency more important, point size more constrained, reworking more likely causes problems. Ethnog arrows standardized. Expect through time gradual decreases in point weight, punctuated by major changes as propulsion changes (i.e. atlatl to bow). Self-bow to recurve also increases speed and thus decreases point size. So size reflects chronology, shape more likely functional and social effects.

Ethnog review suggests points for use against humans differ from hunting points. For animals, lateral penetration is maximized; war points may be narrower to penetrate shielding, or wider for larger cutting wound. US military arrow wound data (Bill 1862) - ca 50% wounds in body or head, of which ca 50% fatal. Other 50% in neck or limbs, only 6% fatal. Ca 31% of all were fatal. Withdrawal damage, and points left in wounds.

Point design: expect hunt pts to have rounded tangs and notches, allowing withdrawal of arrow; war pts have pointed tangs, barbs or sharp corners, lack notches. Hunt pts more often broken, war pts more commonly whole.

Chap 5, Study area ethnog. B+A continued into 20C, stone + glass pts made into late 1800s O'Odham used club, hide shields, effective against arrows, and stone tips for war, but untipped arrow for small game hunt; in ethnog time very little big game hunting. Bourke (1891) notes Apache quivers contain many different shapes of point. Bill (1882) describes notchless glass points glued into foreshaft, break when strike bone. Apache use of glass points. In recent time frequent raids for plunder by Apache, revenge by O'Odham, who had to devise systems of signal and defense, practice. Hunter-gatherers Apache etc, maintained dispersed hidden population, including re-use of prehistoric sites, ephemeral dwellings, few ceramics - thus little trace; while sedentary agriculturalists concentrated for defense.

Point analyses. Distributions: Historic forms more on S of river, where settlements were, and access to game. Classic prehist more N side of river, espec mid-notch type [our high-notched]; while concave base serrated more on S, suggesting that these are actually historic. Historic types lighter than Classic [but narrow ranges overlap - almost all .5-1.0 grams. New recurved bow intro in Classic, recurved bow gains 20%+ in arrow speed over self-bow. Recurve intro maybe 1200-1450, sinew backing may be later or with, maybe assoc w Apache, unclear. O'Odham used unbacked recurve.

Historic Sacate site, 120 pts, almost all unnotched unserrated small triangles, including some made of glass. Two early historic Cienega Creek burials with over 150 Sobaipuri points in body cavities, ave .3 grams, over half broken.

War vs hunt point tests: unnotched pts more likely 97% to have sharp tangs [corners]; side-notched 42/58% sharp/rounded. SN pts more likely to have straight bases, UN more likely concave base (i.e. barbed). UN narrower (i.e. bodkins for piercing shields). Notched points more often broken (70%) than unnotched 34% as expect for retrieved hunting points. [But more likely just because they are more fragile, and larger than UN.] Chert most common material for all, but obsidian more for N pts, and basalt more common in UN pts (i.e. tougher material for war). [But more likely just because notching difficult in poor material.] Archaic pts mostly "hunting" design, Classic mixed, Historic almost all "war" design, corresponds to decrease in big-game hunting, rise of war. Serration rare in one area of survey, while common in others, from Archaic thru Historic, thus long term cultural style represented.

Loendorf, Chris R.
2014 Historic Period Akimel O'odham Projectile Points and Settlement Patterns. *Kiva* 79(1):83-103.

near Phoenix AZ, along Gila River, traditional core of land. Survey for irrigation project - 525 square km. Nearly 1000 pts from Early Archaic through late AD 1800s.

Disting Classic from Historic pts though morphologically similar: H pts generally smaller, ave wt .3 gm vs C pts ave wt .5 gm. H favor deeply concave bases and straight blade margins, prehist more likely concave blade margins, rarely deep concave bases. Notching rare to absent in H assemblages. Use of basalt increased, obsidian decreased.

O'odham pts often small triangular, lacking notch or serration [similar to our Sinagua Triangular or Cottonwood T] also U-Shaped Base T [deep convave base], and similar narrow but serrated "Sobaipuri pts", considered Huachuca subtype of USBT. Collections from hist sites indicate variation through time + space, in size, serration, base shape.

Rancheria type settlements dispersed along river, almost continuous artifact scatters in some areas. Looks at point and ceramic distributions. Casa Blanca area on S side of river was focal, densities highest there. Sobaipuri people immigrated to periphery of area in historic times.

Loendorf, Chris, Lynn Simon, Daniel Dybowski, M. Kyle Woodson, R. Scott Plumlee, Shari Tiedens, and Michael Withrow
2015 Warfare and Big Game Hunting Points: Flaked-Stone Point Design along the Middle Gila River in Arizona. *Antiquity*, in press.

Loendorf, Chris R., Craig M. Fertelmes, and Barnaby V. Lewis
2013 Hohokam to Akimel O'odham: Obsidian Acquisition at the Historic Period Sacate Site (GR-909), Gila River Indian Community, Arizona. *American Antiquity* 78(2):266-284.

Loendorf, Chris, and Glen E. Rice
2004 *Projectile Point Typology, Gila River Indian Community, Arizona*. Gila River Indian Community Cultural Resource Management Program, Sacaton.

Typological first volume of pt study for GRIC. Archaic, Hohokam, and Historic/Proto points. Large vs Small Point Complexes, early large pts more coarse material, later arrow pts use mostly finer material. [Very useful material but dull to read. The points look distinctively southern and Hohokam, but Anasazi-like side-notched and Sinagua-like high-notched points are present too. The typology developed is only so-so, clumsy descriptive names, too many categories, including splitting some that are surely the same. Lots of useful ref to lit on SW pt types. No use of site dating info for chronology, in fact, they mention glass points but fail to use them as secure indicators of at least some historic point types.] Data and individual point photos on CD.

Logan, Brad
1988 Lithic Resources, Terrain Variation and Prehistoric Site Distribution in the Kansas City Locality. *Plains Anthropologist*. 33(121): 321-336.

site distrib determinants: lithics, drainages, terraces and preserv. Geol. info used

Logan, Brad, Richard E. Hughes, and Dale R. Henning
2001 Western Oneota Obsidian: Sources and Implications. *Plains Anthropologist* 46(175): 55-64.

Warne site (KS)- Malad, ID, + Obsidian Ridge, NM = down the line during contact w/ W + S groups, maybe during bison hunt
Blood Run (IA) – Obsidian Cliff WY, Bear Gulch ID = sim to sources for earlier obsidian eg Mid Woodland = maintenance of trade w N. Plains

Lohse, Jon C.
2010 Evidence for Learning and Skill Transmission in Clovis Blade Production and Core Maintenance. In *Clovis Technology*, Bradley, Bruce A., Michael B. Collins, and Andrew Hemmings eds., pp. 157-176. International Monographs in Prehistory, Ann Arbor, MI.

Knowing details of technology allows recognition of mistakes. At least 4 skill levels (beginners, adepts, crafters, and experts), but much overlap in middle. Pelegrin concepts of *connaissance* (= cognitive knowledge) vs *savoir-faire* (= practical knowledge, know-how), with skill in middle, combining. Beginners lack both, while physical aspects of skill decline with age. Performance of individuals also varies from occasion to occasion, but consistency is greater with greater skill. Blade cores show different skill levels and kinds of errors.

Lohse, Jon C., Jaime Awe, Cameron Griffith, Robert M. Rosenswig, and Fred Valdez Jr.
2006 Preceramic Occupations in Belize: Updating the Paleoindian and Archaic Record. *Latin American Antiquity* 17(2):209-226.

Fluted fishtail and lanceolate points, Archaic materials with stemmed or barbed triangular pts.

Lohse, Jon C., Michael B. Collins and Bruce Bradley
2014 Controlled Overshot Flaking: A Response to Eren, Patten, O'Brien, and Meltzer. *Lithic Technology* 39(1):46-54.

[Getting a bit mean and angry]

Lombard, Marlize
2011 Quartz-tipped arrows older than 60 ka: further use-trace evidence from Sibudu, KwaZulu-Natal, South Africa. *Journal of Archaeological Science* 38:1918-1930.

Here and elsewhere evidence of hafting in form of mastic with ochre distrib on tools. Expers show microliths effective point components. Sibudu evidence wear and micro-residue supports use of segments as hafted hunting gear, show diagnostic impact fractures, but "unable to distinguish between mechanically-projected and hand-delivered weaponry." Now add 16 quartz bits to previous 13. A couple hafted transversely and very small are best interpreted as arrow points. [Possible but not conclusive to me. Mostly <20 mm, very small pieces of ugly material, notoriously hard to interpret wear on quartz, but presents each piece with dozens of tiny notations of striations and residue, including blood, which others also find problematic. Some of the striations look more like fracture features to me, and the organic residues are unrecognizable in the photos.]

Lombard, Marlize, and Laurel Phillipson
2010 Indications of Bow and Stone-tipped Arrow Use 64,000 Years Ago in KwaZulu-Natal, South Africa. *Antiquity* 84(325):635-648.

Stone tipped hunting technology back 100k in S Africa, mostly small stone points, but hard to distinguish spear, dart, or arrow. Here uses geometric stone artifacts other than points, identifying direction of impact based on patterns of macro-fracture, micro-wear, and micro-residue. Suggest spring-snares as precursor - both use bent wood and strong cordage. Maybe bow drill, evidenced by drilled holes in hard material [not as good an argument, bow not necessary. Thankfully they do not suggest atlatl as spring. In fact, while they mention spearthrowers, they hardly discuss them, contrasting spear vs arrow. This makes the whole project problematic since atlatls are far more likely at this early date than bow and arrow unless they can demonstrate some ability to distinguish them. I guess their small microliths hafted as transverse points seem more likely on arrows than darts.] Another precursor technology is hafting, and fletching is possible evidence of arrow but not necessary as Ju/'hoansi show.

So suggested checklist for detecting bow use: long strong cords, formal knots, use of latent energy in flexed wood, fishing + fowling, snares, bow drills, formal hafting technology, broad + varied hunting, change in faunal assemblages, change in climate and vegetation -- none alone, but when assoc with morphological, use-trace, and contextual evidence.

Howiesons Poort (59-65,000 years ago), Sibudu Cave, 79 stone segments [microliths], dimensions fit arrowheads, but some larger could be on spears or darts. Of 318 from SC, Klasies River etc, 21-24% have impact fractures. [Problems: these are microliths, presumably hafted as transverse arrowheads or side blades on organic points. They are little tiny pieces of quartz, crummy stone to see anything on, and I want to see more experiment before I accept all the little damage along fragile edges as "impact".] On 53 segments there are 971 occurrences of animal residue, mostly along edges. Little evidence in use-wear for cutting/scraping, and backed edges were hafted with compound adhesives. Some striations begin at impact scars on edges.

Further context: small fast game, fish, probable use of snares for small antelope, cordage for beads at least.

Lomberg, Ebbe
1973 *Die Flintdolche Dänemarks: Studien über Chronologie und Kulturbeziehungen des Südskandinavischen Spätneolithikums*. Kobenhavn: M.J. Lynge and Son.

Long, D., Wickham Jones, C.R., and Ruckley, N.A.
1986 A Flint Artefact From the Northern North Sea. In *Studies in the Upper Paleolithic of Britain and Northwest Europe*. Roe, Derek A. ed., pp 55-62. B.A.R. International Series 296: Oxford.

Longacre, William A.
1970 Archaeology as Anthropology: A Case Study. *Anthropological Papers of the University of Arizona* 17. Tuscon: University of Arizona Press.

Longworth, Ian and Gillian Varndell
1996 *Excavations at Grimes Graves, Norfolk, 1972-1976, Fascicule 5: Mining in the Deeper Mines*. British Museum Press, London.

Re-excavated shafts opened by Greenwell, Peake, Armstrong, and others, made detailed maps, found many artifacts (mostly antler picks) in situ. Floorstone, 13-30 feet deep and 30-60 cm thick was the goal. Conical shaft through loose upper material into chalk, then straight, with radial galleries to exploit floorstone. Debris from galleries used to fill earlier ones. No evidence of lamps or fires or other artificial light, ambiguous evidence of wooden supports. Calculate 5,135 kg floorstone from Greenwell's shaft, but with galleries, 58,200 kg, est 84% of available flint removed, so efficient process. Antler picks from red deer and a few roe, using brow tine until broken. Evidence of hammering shows used to break up flint [doubt it, need harder, heavier tool]. Two abandoned 45 kg nodules suggest beyond max size that could be brought up. In shallow shafts, digging with bone pick mounted on antler, a few deep shafts have some signs of stone axe use too. Ladders not survive but Neolithic timber use well-known other sites. Some rope marks on shaft walls. Est 628 man/days to dig Greenwell. Could use maybe 21 people for early digging, fewer in galleries with others helping above, maybe .5 cubic m per day per man, maybe 78 days working in all for shaft, another 15 for galleries. Some wallstone also used. Some floorstone not used, suggests excess of needs, or thrown back in to keep value high. [Not suggested as ritual. Express suspicion of chalk phallus etc. However, dog burial reported, stone axe marks on a few walls.] Numerous C14 dates, clustering around 2500 BC cal.

Lopez Varela, Sandra L., Annelou van Gijn, and Loe Jacobs
2002 De-mystifying Pottery Production in the Maya Lowlands: Detection of Traces of Use-Wear on Pottery Sherds through Microscopic Analysis and Experimental Replication. *Journal of Archaeological Science* 29:1133-1147.

Lopinot, Neal H. and Jack H. Ray
2007 Trampling Experiments in the Search for the Earliest Americans. *American Antiquity* 72(4):771-782.

Evaluating origin of modified pebbles from pre-Clovis age Big Eddy site in SW MO. Experimental trampling of MO chert cobbles using zoo elephants and bison. Metric analysis - site material overlapped with both elephant and Paleoindian flakes. Also “pre-Clovis” material tends to be too small for good tools, not the best stone available, from crushed edge platforms, high angle of flaking. A fractured sandstone boulder, refitted, weighs 18 kg, is better evidence. But zoo elephants lift rocks that size, and also throw rocks up to 2.5 kg.

Lord, John W.
1993 *The Nature and Subsequent Uses of Flint, Volume 1, The Basics of Lithic Technology*. Privately Printed.

Basics of flint and knapping, [not very coherent]

Lorentzen, Leon
1993 *From Atlatl to Bow: The Impact of Improved Weapons on Wildlife in the Grasshopper Region*. MA Thesis, University of Arizona.

late 1200's- Grasshopper Springs dominated by cornernotch pts (cf Rosegate or my "large" pts) - 72/93 pts, only 6 triangular pts
Chodistaas- mostly small triangular pts (my STPC) 277/569 pts
Size differential, espec stem thick and width, compared to hafted examples shows cornernotch = atlatl dart, triang pt = arrow
Shaft straighteners- for reed arrowshafts – 4 at C, 2 at GHS, not big enough for wooden atlatl shafts, but at C, on floor, at GHS in fill above floor = later reuse
After 1300 just triangular pts at GH, so late 1200s transition to bow, much later than other areas
Improve bow post 1300 by matching arrow sets - perforated antler = arrow gauges
[Intriguing, good arguments, and definite diffs in pt assemblages, but still no direct atlatl evidence. And why still using atlatl ca 200 yrs after everybody else, why no other late atlatls from dry caves for instance? I think this is actually a good case for ethnic differences in point style preference.]

Lovata, Troy
2007 *Inauthentic Archaeologies: Public Uses and Abuses of the Past*. Left Coast Press, Walnut Creek, CA.

Sections on Piltdown, Fujimura's faking of Japanese Paleolithic, Manitou Springs CO fake Anasazi pueblo, artists' uses of archaeology.

Lovett, Edward
1887 Notice of the gun flint manufactory at Brandon, with reference to the bearing of its processes upon the modes of flint-working practiced in prehistoric times. *Proceedings of the Society of Antiquaries of Scotland* 21, 206-212.

Low, Bruce
1996. Swan River Chert. *Plains Anthropologist*. 41(156): 165-174.

Lowrey, Nathan S.
1999 An Ethnoarchaeological Inquiry into the Functional Relationships between Projectile Point and Armor Technologies of the Northwest Coast. *North American Archaeologist* 20(1): 47-73.

Experimental [not ethnoarch] tested bone, slate, chipped arrow pts on hide, wood slat, and stone covered hide armor.
Armor increases in effectiveness but also in weight
Bone most effective (then slate), better than chipped stn pts
[interesting but too many variables, not enough trials]

Loy, Thomas H., Matthew Spriggs, and Stephen Wickler
1992 Direct Evidence for Human Use of Plants 28,000 Years Ago: Starch Residues on Stone Artifacts from the Northern Solomon Islands. *Antiquity* 66(253): 898-912.

Loy, T. H. and B. L. Hardy
1992 Blood residue analysis of 90,000-year-old stone tools from Tabun Cave, Israel. *Antiquity* 66:24-35.

10 specimens from Mugharan tradition (Upper Acheulean and Yabrudian), scrapers and bifaces. Residues best preserved under flake terminations. Sediment survived normal cleaning in field. Microscopic screening id modern fibers, rule out modern blood, and biochem tests used are not sensitive to fingerprint oils, so contamination unlikely. ID'd red blood cells, hair, collagen, and resin. Blood residues identified as mammalian.

Loy, Thomas H. and E. James Dixon
1998 Blood Residues on Fluted Points from Eastern Beringia. *American Antiquity* 63(1): 21-46.

Fluted pts (Clovis) from surface finds and excav, some w/ assoc bone
Definitely contemp w/ Southern ones, because hunt extinct animals
Evidence from distribs for ice-free corridors
A variety of methods to ID blood and species of origin
Mammoth blood id on 5/36 specimens, also Bison (2), Sheep (1), Bear (2), Caribou (8), Musk Ox (1), some mixed
Bison is modern, not *B. priscus*

Lubbock, Sir John
1890 *Pre-Historic Times: As Illustrated by Ancient Remains and the Manners and Customs of Modern Savages, Fifth Edition*. Reprinted 1971, Books For Libraries Press, Freeport.

[Organization is very strange, starting with Bronze Age, and wandering in each chapter]. p. 85 Grimes Graves and other mining, livre de beurre. P. 88 - 'conoidal' fracture explained. Torquemada, Belcher quoted on pressure flaking. [Doesn't discuss manufacture much, but nothing about fire and water].
"Although traditions and myths are of great importance and indirectly throw much light on the condition of man in ancient times, we must not expect to learn much directly from them. … As regards the Stone Age in Europe, both history and tradition are silent, and here, as in all long civilized countries, stone weapons and arrow-heads are regarded as thunderbolts or "Elfin" arrows." p. 429

Luchterhand, Kubet
1970 Early Archaic Projectile Points and Hunting Patterns in the Lower Illinois Valley. *Illinois State Museum Report of Investigations* No. 19.

Uses collector's points in Koster area. Considers Agate Basin, Dalton, Hardin, Thebes, + related Dovetail all to be Early Archaic 7500-10,000 BP. [Last 2 at least now dated to late end of this, others earlier]. Metric analysis to distinguish types. Distribution of types over study area - most finds near secondary streams back from the bluff line. Suggests such large pts best used on thrusting spears for large game (= deer, elk, bear) (41). Distrib suggests seasonal concentration on deer.

Luedtke, Barbara
1978 Chert Sources and Trace-Element Analysis. *American Antiquity* 43(3): 413-423.

Luedtke, Barbara E.
1979 The Identification of Sources of Chert Artifacts. *American Antiquity* 44(4): 744-756.

Luedtke, Barbara E.
1986 An Experiment in Natural Fracture. *Lithic Technology* 15(2): 55-60.

[One of the odder experiments on record - sent obsid thru mail to get it damaged! Applicability questionable.]
Flaking on cobbles- once first flake, often bifacial, then edge damaged
Angular frags flaked more. None looked very human- random
Flakes ok, ripples, errailures common [flake attributes not well described]
Need focus on entire assemblages, combinations of attributes, context and distribution to evaluate questionable assembs

Luedtke, Barbara
1992 *An Archaeologist's Guide to Chert and Flint*. Los Angeles: University of California.

One of the best sources for info on geology of chert, physical and chemical properties, heat treating

Luedtke, Barbara E.
1999 What Makes a Good Gunflint? *Archaeology of Eastern North America* 27:71-79.

[Good] Gunflint attributes may be more than just functional – economic, technological, or aesthetic + symbolic reasons. Ventral surface up or down – national preferences? Length of use: US Ordinance 1861 – >50 shots, issued 1 flint/20 rounds; Skertchly experiments – ca 30 shots; modern users claim up to 200 [doubt it!]. Frizzen + spring also affect flint use-life. Available 19th C statements about good flints. Material: flint preferred, chalk flint may be especially good. Color: Not necess good indicator of origin. Color often believed linked to quality, but may not be. Homogeneity: desire for homog may be primarily aesthetic since it only matters at edge [matters for efficient knapping production too.] Shape: quality + size classifications well defined [actually not as well as it sounds from Skertchly]. Gauges used. Standardization curious considering imprecision of use. [I think she overestimates the amount of adjustment that can be made to poorly sized flints – I doubt she has much practical flintlock experience.] Working edge: must be straight, sharp but not too sharp, often retouched to about 60 degrees. German cut agate started in 18th C, last longer. Other attributes: Skertchly suggests some were aesthetic, i.e. “slightly hollowed heel and sides considered a point of beauty.”

Color may have affected native markets, meaningful in their cultures. Symmetry and standardization may assure consistency, but are also emphasized in ideology of Industrial Rev. Current use allows replication study. Hamilton + Emery compared sparking of diff flints; Kenmotsu looked at use-wear.

Price structure info would be useful too. Was Brandon flint preferred because occurred in large nodules so efficient to knap it? [Now you're on the right track – many of the attributes result from efficient standardized manufacture.]

Lund, Marquardt
2007 About Some European Palaeolithic Bifaces and Leaf Points. *Chips* 19 (2): 6-13.

Central European Middle Paleolithic backed bifaces and knife forms, related to Szeletian and other complexes. Lichtenberg and Konigsaue sites in Saxony, with flat pointed bifaces and birch tar with hafting impressions. Later Volgu Solutrean bifaces, 14 in cache.

Lund, Marquardt
2007 Knap-in Held in North Germany. *Chips* 19(4):5-7.

6 knappers including ML, Jurgen Junkmanns (Diss on prehist bows), Kai Martens, Wulf Hein, Andreas Benke, Uwe Wesemann with first copper boppers in Europe [backgrounds not described] atlatls + bows.

Lund, Marquardt
2008 Death in the Cave. *Chips* 20(1):6-9.

La Grotte du Bichon, Alps. Bear skeleton lying on young man, Azilian pts in bear vert. (From Morel 1998) Mesolithic and Upper Paleolithic compound points illustrated.

Lund, Marquardt
2008 Egyptian Flint Work Part I. Chipping Butcher Knives in Ancient Egypt. *Chips* 20(3):4-13.

[Excellent, well illustrated, good refs] Asymmetrical knives, percussion with some pressure finish. Tomb butchering scenes with knives + resharpening. Beni Hassan tombs show mass production knapping. Tools ambiguous, held vertical, maybe perc, maybe press, maybe combination, red tips may indicate copper. Attempt with long, stick, copper tip, held vertical for direct perc - worked, but pressure did not. [But it is still a bizarrely inefficient way to use a long-handled tool]. Abydos early Dynastic tombs - knife specimens.

Lund, Marquardt
2009 Egyptian Flint Work Part II: Flint Bracelets. *Chips* 21(2):5-6.

Thin D-xsect flaked and then polished. Possible perforation techniques.

Lund, Marquardt

2009 Egyptian Flint Work Part III: Fishtail Knives, Rhomboid Knives, Gerzean Knives, and Flint Figurines. *Chips* 21(3):5-15.

Lund, Marquardt
2010 The Wiepenkathen Dagger. *Chips* 22(3):16-20.

1935 find in peat, hafted flint dagger in leather sheath, ca 4200 yr old. IB type dagger,mediocre, with resharpening. Handle of bark wrapped over cloth.

Luquet, G. and P. Rivet
1933 Sur le Tribulum. In *Melanges Offerts a M. Nicolas Lorga par ses amis de france et de langue francaise*. pp 613-638, Paris.

Geographic distribution of threshing sledge, names, w/ lots of old references

Lyman, R. Lee, Michael J. O'Brien, and Virgil Hayes
1998 A Mechanical and Functional Study of Bone Rods from the Richey-Roberts Clovis Cache, Washington, U.S.A. *Journal of Archaeological Science* 25: 887-906.

745 known, mostly Clovis assoc, W sites. Functions suggested: foreshafts, points, compound pressure flaker handle, sled runner.
Ethnog analogy not useful, so try mech/exper – assoc w. kills, pts too large for projectile suggest butchering tool leads to design uses and exper
Attributes of lg Clovis pts as butchering tools = sinuous edges, concave base, fluting (haft stability)
Details of nocking shaft and lashing pt – will still loosen w/ use – rods are "binding-tightening wedges" – in groove in shaft and under lashing
lashed down to lever the lashings tight around the point. [Ingenious, could be.]

Lyman, R. Lee and Michael J. O'Brien
1999 Prehistoric Osseous Rods from North America: Arguments on Function. *North American Archaeologist* 20(4): 347-364.

hafting wedge theory reiterated

Lyman, R. Lee, Todd L. VanPool, and Michael J. O'Brien
2008 Variation in North American Dart Points and Arrow Points when One or Both are Present. *Journal of Archaeological Science* 35:2805-2812.

There should be an increase in variability with introduction of new technology as makers experiment to find best combination of attributes, followed by decrease as less functional variations are discarded. Test when arrows are replacing darts, in stratig sequences in Verkamp Shelter, MO, Mummy Cave, WY, and Gatecliff Shelter, NV. Appears to work: "Diversity in dart-point classes should increase as artisans experiment with modifying dart points into effective arrow pts. Thus diversity in projectile points in general (arrow + dart) should be high ... when bow and arrow first appear but then decrease as some classes of

dart points and less-efficient arrow points cease to be manufactured." [But many problems in testing an interesting idea: 1) depends on assumption that can tell dart from arrow point, which is by Thomas weight + neck width in some cases, by typology in other, and neither of these is good enough. 2) assumes that variation is functional, ignoring style. If all variation is functional, one should not expect standardization anyway, since artifacts are seen as responding to changing adaptive needs. 3) The trends visible in the variability measures are very slight. 4) Both positive and negative trends explained by "experimentation" plus "archaeological misclassification" allowing any trend to fit the model.]

Lynch, Thomas F.
1990 Glacial-Age Man in South America? A Critical Review. *American Antiquity* 55(1): 12-36.

Lynch, Thomas F.
1991 Lack of Evidence for Glacial-Age Settlement of South America: Reply to Dillehay and Collins and to Gruhn and Bryan. *American Antiquity* 56(2): 348-355.

Lynch, Thomas F.
1991 Paleo Indians in South America: A Discrete and Identifiable Cultural Stage? In *Clovis: Origins and Adaptations*, eds. Bonnichsen, R. and Turnmire, K. pp 255-259, Corvallis, OR.

Lynch, Thomas F.
1991 The Peopling of the Americas - A Discussion. In *The First Americans: Search and Research*. Dillehay, Tom D. and Meltzer, David J. eds., pp 267-274. Boca Raton, Florida: CRC Press, Inc.

Lynch, Thomas F. and Stevenson, Christopher M.
1992 Obsidian Hydration Dating and Temperature Controls in the Punta Negra Region of Northern Chile. *Quaternary Research* 37: 117-124.

Lynch, Virginia, and Dario O. Hermo
2015 Evidence of hafting traces on lithics end-scrapers at Maripe Cave Site (Santa Cruz, Argentina). *Lithic Technology* 40(1):68-79.

7500-3000 BP. Polish from wood and 'hard material' on prox end of flake made into scraper. Comp to experimental specimens hafted with resin at right angle in wooden handle

Lynn, Michael, ed.
2010 Flint Knapping: Articles, Tips, and Tutorials from the Internet. Privately printed and distributed by the author. [I bought it at Letchworth Genesee knap-in 2010].

Favors material by Dan Long, M Bracken, Wyatt Knapp, K Wallace, Gary Abatte, Jim Winn, Tim Rast and others. Lots taken from Paleoplanet. Rocker punch indirect percussion by Lucas Nicholson aka "Goose" and rocker punch board by Abatte but based on

Dothager's lap rocker "Three digging stick" set-up. Fluting jig by Kenny Wallace. [Some quite good stuff, not enough basics of percussion for beginners, pressure info is better. Quality of photos quite good, even as b/w from internet.]

Lyon, Caleb
1859 How the Indians Made Stone Arrow Heads. *Historical Magazine* 3: 214

Shasta of Calif.
Proj. pt by percussion only

Lyubin, Vasily P., and Elena V. Belyaeva
2006 Cleavers and handaxes with transverse cutting edge in the Acheulian of the Caucasus. In *Axe Age: Acheulian Toolmaking from Quarry to Discard*. Naama Goren-Inbar and Gonen Sharon, eds., pp. 347-364. Equinox Publishing, London.

Cleavers differ in production strategy from handaxes with transverse edges - cleavers made on large thin flakes, handaxes shaped as core tools.

MacCalman, H. R. and B. J. Grobbelaar
1965 Preliminary Report of Two Stone-Working Ova Tjimba Groups in the Northern Kaokoveld of South West Africa. *Cimbebasia* 13: 1- 39.

Previously uncontacted hunt-gath group using stone - diff language + body form from Banta neighbors [handful of people, a few days in the field]
Bow + arrow w/ iron tip + poison, stone for other uses Bark containers + clothes. Trade w/ neighbors.
Direct perc on stone anvil. Quartzite pebble material. Use flakes unhafted, no core prep or retouch of tools. Some bloc on bloc as well, and bipolar perc
Chopper biface only formal tool. Small debitage used as coarse abrasive. Extensive other ethog. info [stone tool info actually scanty]

MacCurdy, George Grant
1900 The Obsidian Razor of the Aztecs. *American Anthropologist* 2(3) :416-421.

Attempts to explain fissures

MacDonald, Douglas H.
1995 Mobility and Raw Material Use at the Hunting Camp Spring Site (35 WA 96) Blue Mountains, Oregon. *North American Archaeologist* 16 (4): 343- 362.

MacDonald, Douglas
1999 Modeling Folsom Mobility, Technological Organization and Mating Strategies in the Northern Plains. *Plains Anthropologist* 44 (168): 143- 164.

exotic materials = travel, exchange, spouse exchange during long distance moves, necessitated by small pop.

MacDonald, Douglas H.
2009 Understanding Decision-Making Among Prehistoric Hunter-Gatherers via the Study of Lithic Technological Organization. *Lithic Technology* 34(2):71-92.

MacDonald, Douglas H.
2010 The Evolution of Folsom Fluting. *Plains Anthropologist* 55(213):39-54.

Folsom pts as solution to bison hunt problems, but fluting is unneccessary high-risk and wasteful, and unfluted points of various types just as good, so fluting must have a social purpose. In "dual inheritance" model, fluting serves as indicator of "good hunter" but was abandoned when conditions became more challenging.

MacDowell, Marsha, and C. Kurt Dewhurst
1980 Expanding Frontiers: The Michigan Folk Art Project. In *Perspectives on American Folk Art*, edited by Ian M. G. Quimby and Scott T. Swank, pp. 54-78. W. W. Norton and Company, New York.

Machin, Anna Jane
2008 Why Handaxes Just Aren't That Sexy: A Response to Kohn and Mithen (1999). *Antiquity* 82 (317):761-769.

Handaxes as "sexually selected extended phenotypes" is faulty idea. Sexual dimorphism in hominids does not reflect intensity of mate competition or who made tools; cost of handaxes low and opportunity for cheating by having but not making handaxe is high, no evidence of change in axe morphology in response to hominid evolution, no evidence that h-a not effective tool [other aspects of h-a archaeology neglected].

Mackay, Alex
2008 On the Production of Blades and its Relationship to Backed Artefacts in the Howiesons Poort at Diepkloof, South Africa. *Lithic Technology* 33(1):87-99.

Mackie, Quentin, Loren Davis, Daryl Fedje, Duncan McLaren, and Amy Gusick
2013 Locating Pleistocene-age Submerged Archaeological Sites on the Northwest Coast: Current Status of Research and Future Directions. In *Paleoamerican Odyssey*. Kelly E. Graf, Caroline v. Ketron and Michael R. Waters ed., pp .133-148. Tops Printing, Inc., Texas.

MacRae, R. J.
1988 Belt, Shoulder Bag, or Basket? An Enquiry into Handaxe Transport and Flint Sources. *Lithics* 9: 2-8.

MacWilliams, A. C., Karen R. Adams, Robert J. Hard, and John R. Roney o
2006 A Possible Plainview Component in Central Chihuahua, Mexico. *Current Research in the Pleistocene* 23:60-62.

Madsen, Bo
1984 Flint Axe Manufacture in the Neolithic: Experiments with Grinding and Polishing of Thin-Butted Flint Axes. *Journal of Danish Archaeology* 3: 47-62.

Madsen, Bo and E. Callahan
1980 Craftsman: Bo Madsen. *Flintknappers' Exchange* 3(2): 20-24, 3(3): 23- 25.

Madziga, A. G.
2003 Arrow Injuries in North East Nigeria. *West African Journal of Medicine* 22:106-109.

1989-99, .1% of ER at U of Maiduguir Teaching Hosp annually, N = 73. All males, 8 juvenile, rest adult, peak age 31-40. Farmers, cattle herdsmen, traders. Reasons: armed robbery 41%, communal clashes 20.5%, disputes btwn farmers vs herders 13%, cattle theft 8%. Arrows are barbed metal heads on wooden shafts, formerly poisoned for game, barb keeps in wound while poison works.[no good info on bow or arrow].

Head + neck 26%, chest 40%, abdomen 11%, arm 14%, leg 7%. No patients showed symptoms of poison. 7 developed infections. 3 patients died (4.1%). Transport in open pickup common, explains lack of leg wounds. Arrow should not be dislodged without surgical exploration - barbs cause further damage, hematoma forms at tip + muscles contract around arrow, reducing active bleeding while arrow in wound.

Magne, Martin P. R.
2001 Debitage Analysis as a Scientific Tool for Archaeological Knowledge. In *Lithic Debitage: Context, Form, Meaning*. William Andrefsky Jr., ed. pp. 21- 30. Salt Lake City, The University of Utah Press.

Magne, Martin P. R.
2004 Technological Correlates of Gwaii Haanas Microblades. *Lithic Technology* 29 (2) : 91-118.

NW Coast (BC) early Holocene ca 9000 BP. Microblade technol develops from biface and unifacial scraper-plane technol [i.e. they become cores].

Magne, Martin and David Pokotylo
1981 A Pilot Study in Bifacial Lithic Reduction Sequences. *Lithic Technology* 10 (2-3): 34-47.

Exper manuf of biface from flake, flakes from core, quantitive analysis of debitage.
Most useful variables: weight, dorsal scar count, platform SC, % cortex classes, which show debitage classes related to steps in manuf sequence,
allow some discrim btwn these steps. Seems to work with arch. assembs
[reasonably good article, a few probs]

Magnusson, Magnus and Hermann Palsson, trans
1965 *The Vinland Sagas: The Norse Discovery of America - Graenlendinga Saga and Eirik's Saga*. Harmondsworth: Penguin Books.

Cite for death by arrow of Thorvald

Magruder, Art
2001 Minnesota Flint Knapper's Guild Pine City Knap-in. *Chips* 13 (4): 5-6.

First after J Regan and D Planker died. Bigger than ever, >60 registered knappers. Redfearn, Cannon, Beach, Grybushes, among knappers, Whittaker, Koenen, Gonsior archaeologists. Ooga-Booga.

Mahlstedt, Thomas
1986 Filling in the Gaps (and adding new ones): Collections Analysis on Cape Cod and the Islands. *Bulletin of the Massachussets Archaeological Society* 47 (1): 5-12.

analysis of collections identifys new pt type or tradition- Cape Stemmed Tradition- crude thick stemmed to shouldered pts of coarse stone

Maigrot, Yolaine
2011 Neolithic polished stone axes and hafting systems: Technical use and social function at the Neolithic lakeside settlements of Chalain and Clairvaux. In *Stone Axe Studies III*. Vin Davis and Mark Edmonds, ed., pp. 281-294. Oxbow Books, Oxford.

Malakoff, David
2008 Rethinking the Clovis. *American Archaeology* 12(4):26-31.

Gault site, points illustrated, Solutrean hypothesis, distribution map of C points, quarries, comet hypothesis.

Maler, Teobert
1908 Explorations in the Department of Peten, Guatemala, and Adjacent Region, Topoxte, Yaxha, Benque Viejo, Naranjo. *Memoirs of the Peabody Museum of American Archaeology and Ethnology, Harvard University*, Vol IV, No. 2. Cambridge.

Travelogue archaeology and old-time "exploration, " i.e. clearing monuments. Small eccentrics found under Stela 15 at Naranjo illustrated.

Malick, S. C.
1961 Stone Age Techniques in Nineteenth-Century India. *Man* 61 (188): 163.

Quotes E. H. Man 1885 p. 160 The Abo Inhabs of the Andaman Islands use of stone and glass - apparently heat treating. *Women* flakers

Malinowski, B.
1925 Rational Mastery by Man of His Surroundings in *Science, Religion, and Reality* edited by J. Needham reprinted in *Anthropology for the Eighties*, edited by J. B. Cole, pp. 386-393.

Maliva, Robert G. and Raymond Siever
1989 Nodular Chert Formation in Carbonate Rocks. *Journal of Geology* 97: 421-433.

[Best explanation of chert formation I have seen] "Ghosts of carbonate precursors in cht nods indicate that they formed by replacement of carbonate rocks or sediment" in bulk pore waters at calcite saturation. Opal CT + quartz supersaturation from dissolution in the formation of amorphous silica skeletal material. Si crystal growth caused calcite dissolution. Initial precipitation as opal CT, later recrystallizes into quartz. Deep Sea Drilling Proj. recovered nodular cht at all stages of formation. Formations include 1)Up Cretaceous chalk S. Eng and Ulster White Limestone N. Ireland 2) up Greensand CR, 3) Portland Limestone up Jur S. Eng 4) Romp Creek Miss, S. Indiana 5) Onondaga Devonion NY
Sponge spicules as Si source- calcitized spicules in Lmstn, ghosts in chert. Localized dissolution of Ca by undersaturated water- only at nodule sites.
Boundaries btwn cht + Ca clear and close, = replacement simultaneous at this solution film
Formation most likely with marine pore water [i.e. under sea?] burial depths est at 30-1000m, some quite shallow but below surface zoo + other influences,
3 chemical models 1) organic matter oxidation 2) Hydrogen sulfide oxidation 3) mixing zone All flawed.
Force of crystallization- controlled replacement model: pressure on calcite crystal surfaces causes dissolution – could be overburden, but emph "nonhydrostatic stresses resulting from qtz + opal CT crystal growth produces carbonate dissolution in solution films at silica-carbonate contacts' [i.e. crystals pressing each other dissolve boundries] To form nodules depends on 1) (explains why often in burrows and fossils) organic matter content of sediment- attracts and bonds Si into amorphous silica gel, later recrystalized into opal CT and microcrystaline qtz (eg petrified wood). Once seed crystals formed, other Si crystallizes around them 2) Intraformation transport of Si- partly function of porosity 3) Biogenic Amorphous Si Concentration – layers rich w/ sponge spicules preferred sites of nodule development
Nodule formation then 4 processes: 1) crystal growth around Si seed crystals 2) interstitial crystal growth 3) force of crystaliz replacement of Ca by Si 4) recrystaliz of opal CT to qtz

Mallory, John K.
1986 "Workshops" and "Specialized Production" in the Production of Maya Chert Tools: A Response to Shafer and Hester. *American Antiquity* 51 (1): 152-157.

Presents obsid. data from Copan – limited production and specializ.
Uses ests of # of tools, time span to get yearly production [too many assumptions]
Applys to Colha data, argues for non-specialized household manuf, large accumulations may be dumps, not workshops
[he is obviously wrong – too many bad assumptions] see Shafer and Hester 1983, 1986.

Mallouf, Robert J.
1982 An Analysis of Plow-Damaged Chert Artifacts: The Brookeen Creek Cache (41 HI 86) Hill County, Texas. *Journal of Field Archaeology* 9(1):79-98.

Analysis in detail of plow breakage – typology and explans, some error, but good

Mallouf, Robert J.
1989 A Clovis Quarry Workshop in the Callahan Divide: The Yellow Hawk Site, Taylor County. *Plains Anthropologist* 34 (124): 81-104.

Texas - Edwards chert. Knapping debris possible assoc w/ Clovis pt. Not much material, poor context. Machine damaged.

Mallouf, Robert J. and John D. Seebach
2006 Filling in the Blanks: Early Paleoamericans in the Texas Big Bend. *Current Research in the Pleistocene* 23:124-127.

Mameli, Laura, Jordi Estevez, and Ernesto Luis Piana
2005 Deep Impact: Stones in Bones. Some Thoughts About the Ethnoarchaeology Contrast. A View From Tierra de Fuego (Extreme South America).). In *Lithic Toolkits in Ethnoarchaeological Contexts*, edited by Xavier Terradas, pp. 9-18. BAR International Series 1370.

Projectile points and damage to faunal bone.

Mandal, Stephen, Aidan O'Sullivan, Emmet Byrnes, David Weddle, and Jimmy Weddle
2004 Archaeological Experiments in the Production of Stone Axeheads. In *Lithics in Action: Papers from the Conference 'Lithic Studies in the Year 2000'*. E. A. Walker, F. Wenban-Smith, and F. Healy eds., pp. 116-123. Oxbow Books, Oxford.

Small to medium axeheads of fine-grained stone, porcellanite, porphyry, shale, schist etc made by flaking and grinding a suitable beach cobble in a few hours. Details of some examples.

Mandeville, M. D.
1973 A Consideration of the Thermal Pretreatment of Chert. *Plains Anthropologist* 18 (61): 171-202.

[Very good detailed review of early ethnog reports of fire and water and use of fire in knapping and possible heat treatment.] Early skepticism until Crabtree. Fire and water accounts [quoted]. His experiments fail, intense direct heat breaks flakes, water drops just boil off and "I have not succeeded in removing even a single tiny spall in this way." (179) Cites many ethnog accounts of use of fire, [often vague and ambiguous] in breaking up rock or quarrying, or [probably] improving the flaking qualities of the stone.

Recognition of heat pretreatment on artifacts. Tests by Crabtree and others, his own. Measures wood fire heat: to 800 C but mostly less. Physical changes, electron microscope study of his exper pieces - recrystallization in chert matrix, increasing homogeneity and predictable fracture.

Mandeville, M.D. and Jeffrey Flenniken
1974 A Comparison of the Flaking Qualities of Nehawka Chert Before and After Thermal Pretreatment. *Plains Anthropologist* 19 (64): 146-148.

Mansur-Franchomme, M.E.
1987 Outils ethnonographiques de Patagonie: Emmanchement et traces d'utilisation. In *Le Main et l'Outil: Manches et Emmanchements Préhistoriques*. D. Stordeur ed., pp 297-307. Lyon: Maison de l'Orient.

Marder, Ofer, Ianir Milevski, and Zinovi Matskevich
2006 The handaxes of Revadim Quarry : typo-technological considerations and aspects of intra-site variability. In *Axe Age: Acheulian Toolmaking from Quarry to Discard*. Naama Goren-Inbar and Gonen Sharon, eds., pp. 223-242. Equinox Publishing, London.

Marks, A.E. and P. Volkman
1983 Changing core reduction strategies : a technological shift from the Middle to the Upper Paleolithic in the southern Levant, in *The Mousterian Legacy*, E. Trinkaus, Editor. B.A.R: Oxford. p. 13-34.

Marks, Anthony and Phillip Volkman
1987 Technological Variability and Change Seen Through Core Reconstruction. In *The Human Uses of Flint and Chert*, G. Sieveking and M. Newcomer eds., pp 11-20. Cambridge: Cambridge Univ. Press.

Marks, Anthony E. Harold J. Hietala and John K. Williams
2001 Tool Standardization in the Middle and Upper Paleolithic: A Closer Look. *Cambridge Archaeological Journal* 11(1):17-44.

Marquet, Jean-Claude and Michel Lorblanchet
2003 A Neanderthal Face? The proto-figurine from La Roche-Cotard, Langeais (Indre-et-Loire, France). *Antiquity* 77 (298) : 661-670.

Piece of flint with a bone splinter through a natural hole looks like a face, from Mousterian context. [Practically everyone but the authors considers this an accidental non-artifact.]

Marsden, Barry M.
1983 *Pioneers of Prehistory: Leaders and Landmarks in English Archaeology (1500-1900)*.Omskirk: G.W. and A. Hesketh.

Brief sketches of antiquaries, but <u>no</u> useful bibliography. Xeroxed chap on forgeries- espec. "Flint Jack"

Marsh, Henry
Dark Age Britain.

Quote: “So few lives divide us; a hundred years
Carry three lives, and when the party’s over
The century drained dry, it yet appears
For patient spade suddenly to uncover,
Frail and a little chipped, the perfume gone
Of the dead wine. But in the bottle yet
We see the vanished ruby that glowed and shone
During those faded years when the wine was set
In those three glasses. Thirty men at most
Fill out a thousand years, each with his glass,
Laughing a table, no unbodied ghost
But a friend speaking, though the hours pass
So swiftly from the bottle to the tomb;
Their faces shine within my shadowed room.

Martens, Richard, and Brad Koldehoff
2011 To the Point: Mule Road. *Missouri Archaeological Society Quarterly* 28(2):20-23.

Contracting stem, triangular blade, like Dickson/Waubesa but thicker, cruder, not heat treated, related to Ledbetter/Pickwick pts. Assoc with Late Archaic MR Phase/Titterington Phase in MO River Bluffs IL, MO, 1900-1550 BC. Prob atlatl pts and knives. Burlington, Cobden cherts, others.

Martin, Dane
1994 News from the Northwest Coast. *Chips* 7(3):3.

Martin, Dane
1995 The Three R's. *Chips* 8(3):4.

Argues for signing points although he doesn’t care about archaeol - modern work is art and will be more valuable ($) if signed

Martin, Dane
1997 Planning a Trip to Glass Buttes *Chips* 9(2): 5-8.

Practical info, general locations, romance of rock hunting

Martin, Dane
1998 Hunt'n Flint with D.C. or How I Broke My Body. *Chips* 10(1):18-21.

Martin, Dane
2001 Obsidian or Glass? *Chips* 14(1):8-9.

Man-made obsidian tested for enclosing atomic waste by melting OR bedrock. Obtained a bit, had Redfearn, Howell, Theus knap – greenish with brown in thin edges, knaps much like and looks like Glass Buttes obsidian.

Martin, Dane
2002 The Variables of Heat Treating. *Chips* 14(1):17-19.

Recommends very slow – 20 hrs to get up to 200, then 24 hrs at 200 to dry, then raise temp (novaculite) 10-15/hr unless flakes or bifaces (20-40) up to 650, then "soak" 24 hrs [4 days for a load? Excessive.] Then cools as slowly.

Martin, Dane
2005 Valerie J. Grote Waldorf, September 1, 1954 to April 28, 2005: Master Lithic Artist. *Modern Lithic Artists Journal* 2:3.

Martin, Dane
2006 Who Was Ishi? *Chips* 18(3):4-7.

"Father of Modern Knappers' is understatement." [recounts basics, a bit too idealized and PC, refs to hunting Inds for sport etc.] "Ishi spent many hours teaching the Professor and many of the Anthropology students how to knap and from this group it has been passed down to all modern knappers and we owe it all to this man." [knapper folk history].

Martin, Dane
2006 Stuff. *Chips* 18(3):18-20.

Ron Fuller has moved to a different Keokuk quarry and C Ratzat has acquired the first one. Copper boppers now standardized by many folk with handle lines indicating each ¼" of size. Gramly in car accident, but ok. Mike Zebrowski killed 450 lb hog with clovis type spear DM made. DCW making film as well as book on Danish daggers. Don Dickson is now authenticating.

Martin, Dane
2006 Hooked on Knapping. *Chips* 18(4):4-6.

J Redfern, Dana Sledden, DM made flint fish hooks, tried on trout, JF caught 2. Authenticators + archys say no documented prehist examples. Gramly says Flint Jack sold hooks in 1880s in E US [unlikely to be English Flint Jack], 1900s-20s Chief Ma-Wat-Keen made + sold thousands, Shewey bought some knowing they were new. To work, should be sharp, light material best, about size of dime.

Martin, Dane
2007 Stuff. *Chips* 19(2):22.

Gramly says "Reinhart Dovetail" - ordinary button dovetail of Flint Ridge, 7.5" long sold at auction for $121k - new record price for single point. Folk distinctions of dacite vs basalt discussed.

Martin, Dane

2007 Stuff. *Chips* 19(3):21-22.

Wal-Mart hdqtrs in Bentonvill AR has Ind Artifact Museum, including Sweetwater Biface, [owner mentioned but not named].

Martin, Dane
2007 Stuff. *Chips* 19(4):20-22.

Roy Motley says 10 yrs ago 1/3 of points sent to him for authentication were fake, now only 1/10 - signing points has had impact.

Martin, Dane, D.C. Waldorf, Val Waldorf, and Mary Martin
1999 *Water Creek Knap-in, 1999*. VHS. Flintknapper's Corner, Washburn, MO.

Martin, Paul
1973 The Discovery of America. *Science* 179:969-974.

"Overkill" hypothesis of faunal extinction: models animal populations, human populations, and movement to support possibility that first humans in Americas (Clovis) wiped out Pleistocene megafauna - so fast that we should not expect many kill sites. [Classic article, but important to remember that this is a model, not evidence, and more recent information makes it much less plausible.]

Martin, Paul S.
1934 The Bow-Drill in North America. *American Anthropologist* 36(1): 94-97.

Bow-drill aboriginal among Eskimo, some N. tribes, other E. and NE prob intro by Europeans, not known elsewhere, but now discovered good specimen Grand Gulch Utah.

Martin, Paul S., William Longacre, and James Hill
1967 Chapters in the Prehistory of Eastern Arizona III. *Fieldiana: Anthropology* Vol. 57. Field Museum of Natural History, Chicago.

"Functional analysis was hampered by three difficulties: 1) The textured pottery had been classified in the traditional manner and counted, but the sherds were discarded, as had been our custom for 30 years. Thus, thousands of sherds and inferentially hundreds of shapes and sizes, were excluded from the study because of adherence to tradition." p. 127

Martin, Roxanne L.
1997 The Spousal Report on the Stone Technology Show. *Chips* 9(4): 8

Martin, Terrell L.
2001 The Barrington Site: A Middle Archaic Cache from the St. Louis Area. *Plains Anthropologist* 46(175): 95-107.

2 pits- 1) tabular bannerstone, galena, witchhazel seeds, side notched Godar/Raddatz/Osceola pt 2) 5 pts: St Charles, 2 Hardins,
2 Rice Lanceolate (1 w/ later side-notches), odd chert cobble, notched barite artifact [resembles axe effigy?]
Some points worn, mixed types, mostly E. Archaic, but EA not assoc. w/ bannerstones – interp as Mid Archaic caches (ritual) w/ older pts

Martin, Terrell L.
2007 Early Woodland Black Sand Occupatin in the Lower Missouri Valley, Western Missouri. *Plains Anthropologist* 52(201):43-61.

Consistent association with contracting stem dart points of non-local (80km) Burlington and other cherts. Assemblages contrast with Archaic - few cores, many small reduction flakes, more non-local material but not primary reduction on site.

Martingell, Hazell and Alan Saville
1988 *The Illustration of Lithic Artifacts: A Guide to Drawing Stone Tools for Specialist Reports*. Lithic Studies Society and Association of Archaeological Illustrators and Surveyors.

Martin-Jones, John, and Robert Tonkinson dept
1966 *Desert People*. Australian Institute of Aboriginal Studies.

Film, classic ethnography, b/w with no sound except narration. Western Desert Australia, 2 families for one day [but probably composited]. Men and youths carry 2 to 5 spears and sometimes spearthrower and firestick as walk, women carry wooden trays and digging stick. Spears just sharpened wood, ca 2-2.5 m long. Spearthrower of tray-shaped woomera type, although one boy seems to have a narrow version. [You never get a good look and never see them in use.]

Man looks for waste stone around old campsite, finds and knaps old core, using simple hard hammer percussion with no platform preparation, takes a couple flakes, leaves core, hammer, and waste on site.

Women harvest grass seeds in wooden tray, winnow them with hands and shake in tray, grind on stone slab, mix with water and bake in coals.

Men, boys (15 + 5-8), and women and teen girl all run down or dig out lizards, and the man digs out a bandicoot, kill by striking against spear, minimal cook on fire and then by covering in coals. Womans catch for day is about 8 lizards, from 10 cm to 30 cm in tray. Acacia root grub - dig out whole small tree for one finger size grub eaten raw on spot, with big smile.

Women dig for water with wooden tray in wells 1-2 m deep. Man collects bush tobacco, mix with ash for chew. Flies everywhere, on face, on food, mostly ignored but occasional hand waving.

Casually light grass fires to signal, for warmth and light, for fun, to keep fire stick smouldering.

Meet at camp, broken branches for windbreak, loosen soil for sleeping area with digging stick or metal hatchet, only Western artifact visible.

Martis, Ron
1997 Closed Entry Notching. *Chips* 9(4): 14.

Martynec, Richard J., Rich Davis, and M. Steven Shackley
2011 The Los Sitios del Agua Obsidian Source (Formerly Unknown A) and Recent Archaeological Investigations Along the Rio Sonoyta, Northern Sonora. *Kiva* 76(4):413-429.

SW AZ relevant, small green peralkaline obsidian marekanites (Apache tears) in rhyolite dome

Marzke, M. W.
1983 Joint Functions and Grips of the *Australopithecus afarensis* Hand with Special Reference to the Region of the Capitate. *Journal of Human Evolution* 12:197-211.

Marzke, Mary W. and M. Steven Shackley
1986 Hominid Hand Use in the Pliocene and Pleistocene: Evidence from Experimental Archaeology and Comparative Morphology. *Journal of Human Evolution* 15:439-460.

Exper tool manuf for observation of grips and movements of hands, identify areas of stress, estimate equivalents for fossil hands. Control of most Paleolithic tools requires two grips: passive support by palm with movement of tool by thumb and fingers, and one involving thumb and sides or palmar surface of 2nd and 3rd fingers. “Precision” grip of thumb + finger tips and “power” grip locking tools into palm rarely occurred, yet are categories of most discussions.
Australopithecus afarensis hands compatible with variety of grips, habitual and effective manipulation of unmodified stones as tools. Derived traits of Olduvai hand should enhance control of tools by thumb and fingers in same grip. Robust Neanderthal hands consistent with internal forces associated with muscle control of fingers and external forces accompanying hand-held tool use.

Mason, Carol
1971 Gunflints and Chronology at Ocmulgee National Monument. *Historical Archaeology* 5: 106-109.

Mason, H. J.
1978 *Flint-The Versatile Stone*. Haddenham: Providence Press.

Booklet for museums, British flint masonry and gunflint making. [Some good history and nice photos, but many mistakes in describing flint and knapping].

Mason, Otis T.
1891 Arrows and Arrow-makers: Introduction. *American Anthropologist* 4: 45-49.

Intro to articles by Holmes, Wilson, Flint, Hoffman, Bourke, Hough
A few comments and vocabulary of terms

"I do not think we are yet authorized to say that all tribes distinguished the rhomboidal hunting arrow head from the barbed war arrow head."

Mason, Otis T.
2007 *North American Bows, Arrows, and Quivers: An Illustrated History*. Skyhorse Publishing, New York. [reprint of 1894 *North American Bows, Arrows, and Quivers*. Annual Report of the Board of Regents of the Smithsonian Institution to July 1893: 631-680.

Compilation of ethnographic accounts of b+a use and manufacture, numerous drawings of specimens in the Smithsonian, including many stone tipped arrows. Mentions "throwing stick" and his 1885 paper which "was the starting point of half a dozen others which well-nigh exhausted that subject."

Hunting and war at close range, 20 yards or less. Lengthy knapping info taken from others. Mentions "in Washington there are several men connected with the Bureau of Ethnology who are capable of producing the most beautiful arrowheads from bits of obsidian or glass" [Cushing, Holmes? - he doesn't say, mentions own experiences p.29]. [no mention of fire and water at this time]

Skeptical of beveled points as making arrows spin: "There seems to be little testimony to the assertion that the savage had learned to bevel the sides of his arrow heads alternately, for the purpose of making his arrow revolve in the air. Mr. Cushing has shown that this alternate beveling of the edges was a natural result of holding the piece of stone in a certain way along the thumb during the operation of chipping." More authority for idea that barbed points are for war, to stay in wound [but no sources given].

Arrows made in standard sizes by each tribe, matching in quivers.
Spiral fletching by an Apache simply to make feathers lie flat. "It is inconceivable that any savage should grasp the problem of the rifle bullet and construct his missile accordingly." Normally not spiraled [but he quotes several authors mentioning spiral fletching too].

Poisons known, septic and plant. Salish believe obsidian and glass points to be poisonous. A number of accounts of glass points quoted.
[Dozens of careful detailed drawings of arrows, bows, etc.]

Mason, Otis T.
1895 *The Origins of Invention: A Study of Industry Among Primitive Peoples*. Walter Scott Ltd, London. Reprint 1966 M.I.T. Press, Cambridge.

Nice illustrations of hafted N. Am. stone knives. Chapter on stone working: "..the most skillful flintknappers of Brandon and elsewhere are not able to reproduce some of the most beautiful forms that are common in museums. The Smithsonian Institution has had a number of skilled workmen spend a great deal of time on the making of a leaf-shaped blade, but they have never succeeded in the effort. (123)" Flints in Tertiary deposits may not be artifacts, or may be rejected later preforms, following Holmes work. Paleolithic and Neolithic (chipped and ground) tools may be contemp, occur depending on available materials and cultural level, not just chronology, not an evolutionary sequence. "American archaeologists, who have laboured long to repeat the processes of the aborigines in stone work, find themselves unavoidably making "turtle backs" [failing to thin] when they are really trying to create the leaf-shaped blade. (132)" "No historic reference is found descriptive of the way in which the ancient Mexicans and the savages of Western Europe struck off long and even blades of obsidian and flint. (133)" Knapping processes described, illustrations from Holmes. Eskimo pressure flakers, wood too soft, ivory too hard - hard bone "tough enough to break stone yet soft enough to allow the stone to sink into its substance a little way to get a hold...Expert Indians will do the finest chipping with a steel point. But this can be made very sharp and does not slip. White men who make arrowheads prefer the point of steel. (135)" Female + male knap in Alaska. "Mr. Cushing informed the writer that the long and beautifully crenated surfaces of choice daggers...were produced by placing little bits of soft gum along the midrib at regular intervals and then using pressure. The writer has for years sought for an Indian who could do this fine work, but he has failed. This is indeed one of the lost arts. The English gun-flint makers are able to take a core of flint and divide it into laminae with marvellous skill, but no amount of reward has been able to tempt one of them to produce a leaf-shaped blade. Mr. Edward Lovett, of the Bank of Scotland, went to great pains for the author to secure the services of a knapper to do this work, but the specimens turned out to be utter failures. The deft hands that were once so numerous have lost their cunning, and there may never stand on earth another who can imitate what they wrought. (136-7)" [Good quotes demo loss of knowledge]

Long section on pecking, comp to modern masons. Sawing, boring, polishing.

Mason, Ronald J. and Carol Irwin
1960 An Eden-Scottsbluff Burial in Eastern Wisconsin. *American Antiquity* 26(1):43-57.

Cremation with a number of shattered points, both Eden and Scottsbluff types, made of unspecified quartzite [could it be Hixton?].

Masse, W. Bruce
1980 *Excavations at Gu Achi*. National Park Service Western Archaeological Center Publications in Anthropology no. 12. Tucson.

Masson, Marilyn A.
2000 *In the Realm of Nachan Kan: Postclassic Maya Archaeology at Laguna de On, Belize*. University of Colorado Press, Boulder.

Small Postclassic site. Section on lithics, tools, relation to Colha, small triangular points, bifaces and axes, recycling. Very nice eccentric pictured.

Masson, Marilyn
2001 The Economic Organization of Late and Terminal Classic Period Maya Stone Tool Craft Specialist Workshops at Colha, Belize. *Lithic Technology* 26 (1): 29-49.

Masson, Marilyn and Henry Chaya
2000 Obsidian Trade Connections at the Postclassic Maya Site of Laguna de On, Belize. *Lithic Technology* 25(2): 135-144.

Mastache, Alba Guadalupe; Robert H. Cobean, Charles Reeves, and Donald Jackson
1990 *Las Industrias Liticas Coyotlatelco en el Area de Tula* Instituto Nacional de Antropologia e Historia, Mexico City.

Mathien, Frances Joan
2003 Artifacts from Pueblo Bonito: One Hundred Years of Interpretation. In *Pueblo Bonito: Center of the Chacoan World*, J. E. Neitzel ed, pp. 127-142. Smithsonian Institution, Washington DC.

[Secondary info] 10-20% of lithics imported at different times, unusual numbers of points. [Better info on other materials but refs for lithic studies of Chaco.]

Mathieu, James R., and Daniel A. Meyer
1997 Comparing Axe Heads of Stone, Bronze, and Steel: Studies in Experimental Archaeology. *Journal of Field Archaeology* 24(3):333-351.

Axes: bronze palstaves cast in tin-bronze, hafted in sockets in straight handle, not as prehistoric evidence shows. Stone axes from U Penn collections, 2 polished flint Scandinavian, 2 ground stone Swiss Lake Dwelling, hafted in “crude handles’ - sockets in maple branches. [They argue that secure hafting is all that was needed, but their haftings are poor and clumsy, and this definitely affects efficient use of any axe. I also suspect if they were not good enough craftsmen to make good hafts, they weren’t good enough axemen to test them very well. However, most of their general conclusions are correct.] Cut trees of several species, measured time to fell [which is not a very good measure]. Steel and bronze found to be similar, no advantage to harder metal, suggesting that arguments about replacement on that basis are unfounded. Softer woods cut faster. Stone axes slower than metal, and metal thinner blades penetrate tree more easily and can make narrower cut.

Matskevich, Zinovi
2006 Cleavers in the Levantine Late Acheulian: the case of Tabun Cave. In *Axe Age: Acheulian Toolmaking from Quarry to Discard*. Naama Goren-Inbar and Gonen Sharon, eds., pp. 335-246. Equinox Publishing, London.

Only difference from handaxes in same deposits is preparation of distal cutting end by a transverse blow.

Matson, R. G.
1991 *The Origins of Southwestern Agriculture*. University of Arizona Press, Tucson.

Summaries of Basketmaker research including info on point styles.

Matthews, Janet and Leslie Morlock
1995 Making Puebloan Bone Awls. *Bulletin of Primitive Technology* 10: 18-19.

Results of their class project for me

Mauldin, R. and D. Amick
1989 Investigating patterning in debitage from experimental bifacial core reduction, in *Experiments in Lithic Technology*, D. Amick and R. Mauldin, Editors. British Archaeological Reports: Oxford. p. 67-88.

Maury, R.
1966 L'industrie de la pierre à fusil, dernière héritiere des techniques de la préhistoire. Science Progres d'Ecouverte 94: 267-270. Science Progres La Nature 3375:267-270.

French gunflint makers at Meusnes

Maus, James
1997 The Blacklight, A Useful Collector's Tool. *Prehistoric American* 31(3):7-8.

for detecting fakes, especially rechipped old points.

Mayer-Oakes, William J.
1996 SouthAmerican Paleo-Indian Projectile Points. *Lithic Technology* 21(2):134-148.

Supports an "Early Lithic" pre 20,000 stage in South American of pre-point traditions, followed by "PaleoIndian" bifacial point traditions. El Inga site evidence, crossdate to C14 from Fells Cave but not directly dated. 123 surface, 50 excav points, various forms, some fluted [or sort of]. [Badly written, confusing, fluting 'model' is poor, dating and stratig evidence weak, few good point illustrations.]

Mayer-Okes, William J. and Alice Portnoy
1986 "Blunt Perforator"—A New Early man Tool from Ecuador. *Lithic Technology* 15(3):106-108.

Mayhar, Ardath
1995 *Hunters of the Plains*. Berkley Books, New York.

OK but uninspiring novel set in Clovis/Folsom times. It is not clear that Mayhar distinguishes the two in her "Author's Note" on the archaeological background, and the hunters use both 'large' spear points and smaller 'fluted points'. Do-na-ti of the Badger Clan and E-lo-ni of the Terrapin clan are the heroic young couple who grow to lead their people. A mammoth stampede destroys the village, and D vows to hunt them and avenge his losses. In the event, he learns from animals and his companions to grow beyond this. Use of pots and mention of bows, as well as large earth lodges do not fit with Clovis era facts. Story is ok, writing competent, but no vivid details or sense that the author really knows much about the archaeology of the prehistoric setting. It's all a bit bland despite tooth and claw of dangerous animals and hostile tribes and an erupting volcano. Knapping descriptions are typical: p 66 the mammoth stampede destroys the supply of points the village knapper made up last winter, so our couple must go to the flint mine to resupply people. P 80: "When they came to the flint quarry in the river canyon, built their fire against another rocky cliff, and began chipping out fresh slabs of flint, he did not feel the effort or the cold… The colorful splits broke free easily, made brittle by the cold, and E-lo-ni snapped the segments into manageable sizes that she loaded into the bags they had brought…" P 179: "His weapon was ready, and from the obsidian he could make more points, if he broke the one already in place. As well, the curving shards displaced by his cautious taps would make knives of exquisite sharpness…"

McAnany, Patricia
1988 The Effects of Lithic Procurement Strategies on Tool Curation and Recycling. *Lithic Technology* 17(1):3-11.

[Good] discusses concepts of life history, curation, recycling. Colha chert bifaces (hoes). Social distance affects exchange and cost and is the major factor in determining whether tool will be curated. Indirect procurement (exchange) means greater cost, more curation and recycling. [Nice analogy between resharpening tools and resharp archaeol theory.]

McAnany, Patricia
1989 Stone-Tool Production and Exchange in the Eastern Maya Lowlands: The Consumer Perspective from Pulltrouser Swamp, Belize. *American Antiquity* 54(2):332-346.

Partly to dismiss Mallory crit of Colha as 'small, domestic use, or chert procurement by nearby communities' - consumer sites may inform more on scale of production + distribution networks.

Pulltrouser Late to Terminal Classic dominated by standardized formal tool types (oval bifaces + blades) and limited raw material variability (mostly Colha chert). C chert mostly tools + flakes (no biface blanks or blade cores), local chalcedony more cores + nodules for flake tools. C chert debitage more bifacial (platforms, dorsal scars) less cortical than local chalc.

Shafer made exper oval biface, resharpened, broke, recycled for debitage comparison - attributes more similar to C chert than local chalc [no details].

Debitage volumetrics not very useful to reconstruct production or especially consumption rates.

Size of center does not relate to production capability - "production centers and distribution nets can exist at many different scales."

McAnany, Patricia
1991 Structure and Dynamics of Intercommunity Exchange. In *Maya Stone Tools: Selected Papers from the Second Maya Lithic Conference*. T. R. Hester and H. J. Shafer eds, pp. 271-293. Prehistory Press, Madison.

McAnany, Patricia
1992 Agricultural Tools and Tasks: Patterns of Stone Tool Discard Near Prehistoric Maya Residences Bordering Pulltrouser Swamp, Belize. In *Gardens of Prehistory: The Archaeology of Settlement Agriculture in Greater Mesoamerica*. Thomas W. Killion ed., pp. 184-213. University of Alabama Press, Tuscaloosa.

Agricultural intensification thru greater labor or capital input, including bringing marginal areas under cultiv. Stimulated in Pulltrouser area sites by increased population, incorp in state with increased tax + exchange demands in Early Classic. In exchange syst, consumers of stone tools, probable exporters of agric products. Ethnog tropical agric intens does not require new tools, but labor or land may be reorganized. More intense use of land shifts labor from field prep to maintenance, from clearing to weeding + hoeing. Long discussion of ethnog weeding shows that hoes, machetes etc contact soil [duh!].

Model for Pulltrouser: Preclassic infield-outfield strategy as uplands were cleared, but by Late PC-Early Classic dense settlement with intensification by raised fields in swamps and more infield settlement agriculture leads to more weeding and hoeing in these sites.

Tools from all sorts of contexts, randomly sampled and not, fields, mounds, etc. Oval biface ubiquitous, of high quality chert from Colha. Lack of production evidence at PT = obtained by exchange from C. Ave dimensions 138 mm L, 60 mm W, 20 mm T., thinner than celt forms which were used for forest clearance, while oval bif used for weeding [maybe, or perhaps local diffs in tool manuf with fine material at Colha]. Puleston specimen shows hafting [yes, as likely axe rather than hoe]. Majority of specimens fragmentary or refurbished. Rounded edge becomes straight thru resharpening. Soil polish, i.e. hoe wear. Fragments curated, with preference for proximal end at residences - returning in haft, discarded when new blade put in, and medial frag used as hammers, but distal (bit) frags left in fields. [But as she admits, data don't show this pattern very strongly.] Increase in bits at residences thru time, and more sharpening flakes too = closer agric plots [but again the actual data is very weak.]

McBrearty, Sally, Laura Bishop, Thomas Plummer, Robert Dewar, and Nicholas Conrad
1998 Tools Underfoot: Human Trampling as an Agent of Lithic Artifact Edge Modification. *American Antiquity* 63(1):108-130.

Painted chert and obsid flakes trampled on loam and sand. Sand trampled deeper. 9-30% minimal damage, 8-65% "pseudo tools." More damage in obsidian, denser scatters, firmer surface (loam). Apply Bordes typol to pseudo scrapers [not good---all pictured are too small and minimally retouched compared to usual tools.] Trample traits = scars broad, bifacial but more often on dorsal side, perpendicular to edge, often contiguous like tool edges. Notches and denticulates in Mousterian sites may be trample.

McCall, Grant S.
2005 An Experimental Examination of the Potential Function of Early Stone Age Tool Technology and Implications for Subsistence Behavior. *Lithic Technology* 30 (1): 29-43.

Butchered deer legs. Many scavenging tasks can be done with unmodified cobbles as efficiently as with stone tools. Core tools no better than cobbles for bone breaking. Flakes generally better than core tools for cutting – ie defleshing and disarticulation. So that's prob what stone tools were for, but much early hominid carcass processing prob without modified stone tools, so little trace.

McCall, Grant S.

2010 Refitting Rate as a Tool for Investigating Geological and Behavioral Aspects of Site Formations: Theoretical and Methodological Considerations. *Lithic Technology* 35(1): 25-35.

McCall, Grant S.
2011 Review of Prehension and Hafting Traces on Flight Tools: A Methodology by Veerle Rots. *Lithic Technology* 36(1):91.

Mccall, Grant S.
2013 Review of The World Until Yesterday: What Can We Learn from Traditional Societies? By Jared Diamond. *Lithic Technology* 38(2):134-136.

McCall, Grant, and John Whittaker
2007 Handaxes Still Don't Fly. *Lithic Technology* 32(2):195-202.

Reprises Whittaker and McCall (2001) in response to article by Samson (2006) and continued promotion of silly ideas by Calvin. Handaxes do not fly as claimed by other experimenters, the specimens considerered "aerodynamic" are a biased selection of a variable artifact class, the archaeological evidence does not support throwing as a handaxe function, and the scenario of hunting by throwing into herds is ridiculous.

McCartney, Carole
1993 An Attribute Analysis of Cypriot *Dhoukani* "Teeth": Implications for the Study of Cypriot Chipped Stone Assemblages. Report of the Department of Antiquities, Cyprus. 349-364.

McCartney, Peter H.
1985 Changes in Behavioral Organization During the Late Pleistocene: Preliminary Evidence from Chipped Stone Tools. In *Status, Structure and Stratification in Current Archaeological Reconstructions*. M. Thompson, M.T. Garcia, and F. Kense eds., 269-275. Calgary: University of Calgary Archeological Association.

McCarthy, Frederick D.
1976 *Australian Aboriginal Stone Implements, 2nd edition*. Sydney, Australian Museum Trust.

[Useful for examples well illustrated in black and white.] Most sites already depleted of large pieces. [Sketchy] basics of stone and flake characteristics. Different knapping techniques brief descrip including *tula* chisel/adze and *leilira* (knife) blades. Text then describes multiple tool types. [Use of aboriginal words (from different languages?) as typological labels, but he does not define the types clearly.] Leilira: long blades, usually quartzite, often fitted w gum handle as knives, or as spearheads in N Territory, central Aust, and W Queensland, or fighting pick in N Terr. Unifacial *woakwine* and *pirri* points, wide distrib, often used as spear pts. Bifacial Kimberley points mostly spear pts, also knives, circumcision. Photos of stone, telegraph insulator, and glass specimens. Microlithic implements. Edge-ground implements. Axes, hammers, milling stones. *Tjurunga* sacred

stones carved with designs like some woomera. Section on bone and tooth tools. Ethnographic information and photos, but little info on native beliefs about stone tools.

McConnell, William
2014 Anzick (24PA506) Re-Revisited: Tools of the Anzick Site; Sources, Forms, Functions. *Bulletin of Primitive Technology* 48:22-29.

Color photos of one pt and replications.Beveled bone rods reconstructed as foreshafts for Clovis points, with a second short beveled piece and a small wedge under base of point. Used similar system on arrow to kill elk.

McCourt, Tom
1975 *Aboriginal Artefacts*. Adelaide: Rigby Ltd.

Australian stuff. [Collectors book, but good illustrations, ethnography seems accurate]. Glass and stone flaking. Varieties of points. Sources of stone. Axe making. P.103 includes second hand "witness" of fire and water knapping!

McCullough, Gary
2005 The Comondu Complex. *Indian Artifact Magazine* 24 (2): 10-11.

Small multi-notched late points in Baja Calif. Claims "ancient seafarer" connection for Pericue Inds. Point photos.

McDevitt, Kendall B.
1994 Results of Replicative Hide-Working Experiments; The Roles of Raw Material, Hide Condition and Use Wear Patterns in the Determination of Rhyolite End Scraper Function. *Lithic Technology* 19(2):93-97.

McDonald, Josephine J., Denise Donlon, Judith Field, Richard Fullagar, Joan Brenner Coltrain, Peter Mitchell, and Mark Rawson
2007 The First Archaeological Evidence for Death by Spearing in Australia. *Antiquity* 81(314):877-885.

Narrabeen, N. Sydney, SE Australia, body, not burial, adult male, in dune sands, ca 4000 BP. With backed microliths, including 3 frags embedded in or between bones. Usewear consistent with hafted spear armatures. Anatomical, forensic, and artifact evidence consistent with death by spearing, ethnographically known as ritualized punishment using "death spears" barbed with stone flakes.

McDonald, Mary M.A.
1991 Systematic Reworking of Lithics from Earlier Cultures in the Early Holocene of Dakhleh Oasis, Egypt. *Journal of Field Archaeology* 18(2):269-273.

Detected by patinations. Mostly burins made on old Levallois. Other material available, reworking preferred.

McDow, David A.
2000 Analysis of Stone Tools from Chan Chich. In *The 1998 and 1999 Seasons of the Chan Chich Archaeological Project*. Brett Houk ed., pp. 105-118. Papers of the Chan Chich Project No. 4. University of Texas, Austin.

82 artifacts from all proveniences, of which 25% bifaces [axe forms], 24% recycled bifaces, 5% thin bifaces, 10% cores, 12% hammerstones, 2% blades, 6% macroflakes, 8% unifaces, rest misc flakes + chunks. Oval bifaces (8) all unfinished frags, bifacial celts (6) are the finished used form, gen util bif (17)
Biface breakage mostly ‘snaps’ [he means bending, and manuf + use represented, also he uses Hester’s type II GUB which is just broken, not “truncated”]
Most tools rep heavily used/recycled , mostly from construct debris, lack of waste and preforms [but his oval bifaces and some others are plainly unfinished pieces] shows no workshop activity in these contexts, H area different, see Meadows.
“a bifacial celt distinguished from an oval biface by macroscopically observed use” [not the way these types should be defined!]
[Overall, not very useful]

McGee, R. Jon
1998 The Lacandon Incense Burner Renewal Ceremony: Termination and Dedication Ritual among the Contemporary Maya. In *The Sowing and the Dawning: Termination, Dedication, and Transformation in the Archaeological and Ethnographic Record of Mesoamerica*. S. B. Mock ed, pp 41-46. University of New Mexico Press, Albuquerque.

Incense burners (god-pots) most important ritual objects, occasionally renewed, old ones destroyed, equivalent to buildings in classic Maya. Blood now mostly *annato*, but ears occasionally pierced with stone blades or points to sacrifice blood.

McGee, W. J., W. H. Holmes, J. W. Powell, Alice C. Fletcher, W. Matthews, S. Culin, and J. D. McGuire
1900 In Memoriam: Frank Hamilton Cushing. *American Anthropologist* n.s. 2(2):354-380.

Some wonderful stories about young Cushing: from Holmes, how he met Hartt at Cornell, staggering up the hill to deliver a bag of stone tools. From Powell: as boy built wigwam in woods … “were indeed a scientific workshop in which young Cushing laid the foundation of a system of investigation which has since proved of marvelious efficiency and which has been successfully developed by other laborers. This new method of research in prehistoric archaeology I shall call the method by experimental reproduction.” 361

McGhee, Robert
1977 Ivory for the Sea Woman: The Symbolic Attributes of a Prehistoric Technology. *Canadian Journal of Archaeology* 1:141-149.

Avoid “naive functionalism” - artifacts have symbolic components too. Thule ancestors of Inuit. Use of different materials for diff artifact classes not just functional. Debliquy site, Bathurst Island - harpoon heads of ivory, arrow points of caribou bone. 5 other collections, arrowheads of antler, most harpoons ivory except where constrained by scarcity, altho antler easier to work and tougher, should be better for harpoons. Ivory also assoc w other sea + bird hunt tools, tools for winter life on sea ice, and women's gear like sewing kits. Antler assoc w opposed contexts: men, caribou + land hunting, summer life on the land. Ethnography supports land/sea as major dichotomy, products ritually separated. Myths connect women with birds + sea mammals, sea woman = #1 deity. Moon = man = land/sky = #2. [Nice article, early symbolist archaeology].

McGonagle, Roberta Lee
1973 Metal Projectile Points from the Deapolis Site, North Dakota. *Plains Anthropologist* 18(61):218-227.

Mandan site, 1st half 19C, destroyed by gravel pit, collections made 1958-60. 200 pts, include 11 unfinished, 9 trapezoidal preforms. Most iron, plus 11 copper, 3 brass. Can't tell Euro from native manuf. Metal pts not like preceding stone pts, prob modeled after Euro prototypes. Perino's Benton pts made from gun and bridle-bit parts, so native manuf. "… it is likely that Indians modeled their homemade metal arrowheads after European prototypes. The fact that most of the metal points look nothing like the protohistoric and historic stone points of the Plains seems to substantiate this. .. There are only 7 stone points from Deapolis: one is an unnotched triangle, and 6 are side-notched." p 220.

Mandan arrowmaking was specialized, only men with proper medecine bundle could make arrows. [But then she cites Buffalo Bird Woman (Wilson 1918) saying every Hidatsa lodge had stone anvil for making points].

Multivariate analysis of point forms, partly supports intuitive groups: 1. Diamond shaped, some serrated N = 15, 2. Quite symetrical, larger N= 5, 3. Serrated stemmed, large + small N = 10, 4. Stemmed, lacking serrations N = 107. [No good pictures, just small outlines in her multivariate clusters, but only a handful appear intentionally barbed. Most have shoulders that vary from straight across to angled upward.] On non-ferrous can tell that they were cut by chisel and beveled with file, but apparently corrosion is a problem for most.

McGrath, Michael
2010 Crowfield Points. *Chips* 22(2): 16-17.

Great Lakes Paleo, [short pentagonal fluted pt, looks resharpened to me]

McGrath, Michael E
2011 The Mighty Susquehanna Point. *Chips* 23(2): 20-22.

McGraw, A. Joachim
1980 Technological Analysis of Obsidian from Colha, 1979. In *The Colha Project Second Season, 1980 Interim Report*, T. R. Hester, J. D. Eaton, H. J. Shafer eds., pp. 233-240. Center for Archaeological Research, University of Texas, San Antonio.

584 pc, mostly blade frags, larger than most of ours from El Pilar. Some stats given.

McGrew, William C.
1991 The Intelligent Use of Tools: Twenty Propositions. In *Tools, Language, and Cognition in Human Evolution*. Kathleen R. Gibson and Jim Ingold, eds. Pp. 151-170. New York: Cambridge UP.

McGuire, Joseph D.
1896 Classification and Development of Primitive Implements. *American Anthropologist* 9:227-236.

McGuire, J. D.
1893 On the Evolution of the Art of Working in Stone. *American Anthropologist* 6(3):307-320.

Argues [from inability of 19C excavators to distinguish stratigraphy] that man, as far back as known, used pottery, fire, flaked and ground "Neolithic" type tools, and that in fact, ground tools must be earlier than flaked because they are easier to make. Discusses various manufacturing processes without mention of fire and water.

McGuire, R., J. Whittaker, M. McCarthy, and R. McSwain
1982 A Consideration of Observational Error in Lithic Use-Wear Analysis. *Lithic Technology* 11(3):59-63.

Differences among observers even in counting flake scars on micro photos.

McHugh, William P.
1973 New Archaeology and the Old Copper Culture. *The Wisconson Archaeologist* 54(2):70-83.

McIlrath, Sharon
1984 Obsidian Blades: Tomorrow's Surgical Tools? *American Medical News*, Nov 2, 1984:29-30.

Crabtree and Buck first 1975
Flenniken and 2 dermatologists
Sheets and Hardenburgh (MD) = Fracture Mechanics Limited
Callahan = Aztecnics

McKee, Edwin D, and Raymond C. Gutschick
1969 History of the Redwall Limestone of Northern Arizona. Geological Society of America Memoir 114.

Limestone, dolomite, chert
Widespread formation - 400' thick in Grand Canyon, goes some North and South of Grasshopper area

4 subdivisions of which youngest (Horseshoe Mesa member) and second oldest, have lots of chert [youngest probably in GH area, second oldest probably what I saw near Grand Canyon—poor chert but lots.]
Chert formed by diagenesis (secondary) at or soon after lithification—probably by introduction of SiO_2 by river into ocean. Erosion/episode through Early Pennsylvanian with a Karstic topography before deposition of Pennsylvanian Supai formation and Naco.

Mckern, W.C.
1939 The Midwestern Taxonomic Method as an Aid to Archaeological Culture Study *American Antiquity* 4(4):301-313.

McLaren, Andrew
2004 Mookaite: A Lithic Enigma. *Chips* 16 (1): 11-12.

W end of Australia, colorful silicified porcelainite in the weathering profile of Windalia Radiolarite, Lower Cretaceous. Opaline to chalcedonic silicification.

McLaren, Andrew
2008 Flintworking in the British Later Bronze and Iron Ages: A Critical Review and Statement of Research Potential. *Lithic Technology* 33(2):141-159.

Early arch accepted late flints, but 1970s rejected, mostly argued knapping extinct by M BA. Ford et al. 1984 argued for change in knapping, decline in skill, stone tools replaced as equivalent metal tools became available, only a few types survived [they seem to have had a hard time explaining advantages], more expedient tools. Failed to recognize functional problems and changing social values of flint, explored later by Edmonds (1995). [Good review and refs]

McLaren, Andrew P.
2011 "I'll have a flake to go, please" Expedient core technology in the Late Bronze (c. 1100-800 cal BC) and Earliest Iron (c. 800-600 cal BC) Ages of eastern England *Lithic Technology* 36(1):55-87.

From 'ringwork' at Mucking. Expedient flakes and scrapers.

McNabb, John and Nick Ashton
1990 Clactonean Gunflints? *Lithics* 11: 44-47.

Old finds from Thames foreshore called eoliths or Clactonian are actually flakes used as cores for early "wedge" gunflints [gun spalls] 1660-1780.

McNabb, John, and Nick Ashton
1994 Thoughtful Flakers. *Cambridge Archaeological Journal* 5(2):289-301.

McNabb, John

1996 More from the cutting edge: further discoveries of Clactonian bifaces. *Antiquity* 70: 428-436.

Swanscombe, argues against a separate, non-biface "Clactonian" tradition, in favor of some assemblages having few or no bifaces.

McNiven, Ian J.
1992 Bevel-edged tools from coastal Southeast Queensland. *Antiquity* 66(252): 701-709.

Flaked choppers used to process edible fern roots
archaeol info- debitage from reshaping, use-wear
Ethnohistoric info.

McPherron, Shannon P.
1995 A re-examination of the British biface data. *Lithics* 16:47-63.

McPherron, Shannon P.
2000 Handaxes as a Measure of the Mental Capabilities of Early Hominids. *Journal of Archaeological Science* 27(8):655-664.

McPherron, Shannon P.
2006 What typology can tell us about Acheulian handaxe production. In *Axe Age: Acheulian Toolmaking from Quarry to Discard*. Naama Goren-Inbar and Gonen Sharon, eds., pp. 267-285. Equinox Publishing, London.

Handaxe forms grade into one another, assemblages vary around a modal form, but these too intergrade. "Types" may be seeing stages in reduction, raw material, modification intensity. Stylistic and functional explanations are less likely.

McPherron, Shannon P. and Harold L. Dibble
1999 Stone Tool Analysis Using Digitized Images: Examples from the Lower and Middle Paleolithic. *Lithic Technology* 24(1): 38-52.

McPherron, S.P. and H.L. Dibble
2000 The Lithic Assemblages of Pech de l'Azé IV (Dordogne, France). Préhistoire Européenne 15:9-43.

McPherron, S.P., M. Sorresi, and H.L. Dibble
2001 Deux nouveaux projets de recherche á Pech de l'Azé (Dordogne, France). *Préhistoire du SudOuest* 8: 11-30.

McPherson, John
1987 *Primitive Fire and Cordage*. Printed by author.

McPherson, John
1987 *Brain Tan Buckskin*. Printed by author.

McPherson, John
1987 *The Primitive Bow and Arrow*. Prairie Wolf: Randolf (KS).

McPherson, John and Geri McPherson
1991 *Primitive Tools: Making and Using Them*. Prairie Wolf, Randolph.

McPherson, Robert S.
2009 *Comb Ridge and its People: The Ethnohistory of a Rock*. Utah State University Press, Logan.

Pp 68-70 Navajo beliefs about arrowheads: Lightning, arrows and snakes all associated, important in Shootingway ceremonial curing people who come in contact with lightning. All are “objects that move in zig-zags.” Some rock landmarks are giant arrowheads; e.g. Comb Ridge is made of arrowheads in a row, or is symbolically an arrow. The Twins wore flint armor when destroying monsters. When Big God was pierced by Monster Slayer’s arrows, his armor shattered and scattered, so flint flakes for use can be gathered. Arrowheads, knives, other objects of flint are synonymous with protection and safety. “Flint’s hardness, the sound as it rattles, and reflected light representing lightning give it power.” “Horned toads use flint as protection against lightning and are able to fashion their own points.” Arrowheads are prayed over and collected for protection, ward off disease, must be powerful because have already killed enemies or dangerous animals. Lightning is an arrow. Humans are built as arrows, body as stick, head as arrowhead. Arrowheads also associated with bears, a powerful protective animal (74), although also can be dangerous and evil.

McSwain, Rebecca
1991 A Comparative Evaluation of the Producer-Consumer Model for Lithic Exchange in Northern Belize, Central America. *Latin American Antiquity* 2(4): 337-351.

Adzes etc., from Colha as finished product to consumer sites which also obtained Colha-like material in less reduced form for local manuf of other tools. Enabled agric intensification.

Evidence: 50-60% Preclassic Cuello tools made of Colha-like chert, with increase thru time, accounted for partly by increase in bifaces in late PreC, mostly made of Colha chert. Local chalcedony and white chert for simpler tools. Large oval bifaces, tranchet bit bifaces, stemmed macroblades most common Colha types at Cuello. Only 5 whole OBs among over 400 bifaces [! implies what? - recycling, high use? Or could it be some manufacture as well?]. Colha chert flakes smaller than non-Colha chert flakes. But C-chert flakes at both Cuello and Colha essentially same size. Flakes from Colha workshops have much higher freq of facetted platforms than at Cuello. More lipped platforms at Cuello = more resharpen or late reduction. Similar percents of cortex at both consumer (Cuello) and producer (Colha) [probably because Colha blanks were macroflakes, not nodules, so already little cortex when reached workshop].

Meadows, Richard Keith
2001 Crafting K'awil: A Comparative Analysis of Maya Symbolic Flaked Stone Assemblages from Three Sites in Northern Belize. PhD. Dissertation, University of Texas, Austin.

Considers eccentrics as "flaked stone symbols." Details on material from Colha, Altun Ha, and Lamanai. Looks at technology, chronology and uses iconography to interpret some aspects of meaning, recognizing five main groups: 1 - "naturalized" people; and 2- animals; 3 - celestial markers; 4 - "abstracted indices of cultural esthetic [meaning unclear] and 5 - ritual or functional weaponry. Notes that many have traces of pigment and some were apparently painted to represent a particular image, bundled in cloth, [or clothed]. Some specific images are clearly intended by a few, recognizable by comparison to painting and glyphs, while others are more ambiguous. [Exactly the right approach, and one of the few useful studies of eccentrics; the conclusions are generally good. However Meadows needed to continue in this direction: better editing; cut the excessive theoretical nonsense, including weak "hypothesis testing" format; document and support the iconographic comparisons much more fully; look more usefully at the technology. We also won't get far until someone looks at caches as groups of repeated forms, not just individual artifacts, and includes similar forms in obsidian, etc.]

Meadows, Richard K. and Kristin M. Hartnett
2000 Archaeological Investigations at Group H: Investigating Craft Production and Domestic Architecture at Chan Chich, Belize. In *The 1998 and 1999 Seasons of the Chan Chich Archaeological Project*. Brett Houk ed., pp. 15-39. Papers of the Chan Chich Project No. 4. University of Texas, Austin.

NW Belize, Three Rivers area. H =Outlying platform + patio groups across creek SE of main center. 1.0-1.5 m high debitage mounds assoc w structures.
Subop B = test 1.5x1.5 m in debitage mound 16 m E of structures of H group. Mound 12x16 m, lg 2ndary flakes + preforms on surface. 10 cm arbit levels, 10x10x10 cm column sample, ca 1.5 m deep. Flakes "largely 2ndry decort flakes...direct hard hammer percussion." [without pic can't tell if they are BTF like LDF material, or earlier decort]. Unclear if primary or 2ndry refuse. Maybe 3 forms: biconvex oval bifaces [=GUB p 25], narrow, and triangular. [Seems to be more ceramics than at LDF, variable and less dense debitage]. Lenses of debitage w organic material suggest 2ndry deposition including household stuff, prob from platform. Knapping assumed on plat [but no evid].
Subop D = similar test in debitage ca 20 m S of mound H-30. Oval, thin, and narrow biface forms [I think he uses oval biface generally, not in Hester sense, p 25 says sim to general utility biface, but differentiates in his data table]. Upper levels primary + secondary flakes, lower more 2nd and tertiary flakes, no ceramics or other cultural material, total ca 1 m deep. Wkshop rested on small cleared limestone rise.
Ceramics in all H = Late Classic. Interps lithics as for local use + exchange, maintenance as well as manuf.
Lithic Analysis: a) tools + frags b) sample of complete flks from columns
Tools - 27% have wear from use, or recycling, 22% = preforms. 92% of preforms from debitage deposits = manuf, while maintenance more on structures but some in deb deposits

too. Forms = 15% “small oval bifaces (bifacial celts)”, 15% gen util bif with classic tear drop form, some thermally altered [?burned or heat treated implied?] 15% narrow bifaces (adzes?), 2% thin bifaces. Large oval bifaces (11% of assemb) “part of production continuum into gubs or bif celts. 41% of assemb untyped biface frags (mostly earlier stages). Some differences in type freqs btwn deb deposits [but statistically small].

Flakes (>/25 inch screen) N = 500. Relatively few lg flks w single dorsal scar. Prob thin + shape blanks from elsewhere into final form. [Muddled discussion, but seems that cortex is common, but most flakes 2+ dorsal scars - so agree with interp, it’s similar to LDF]. Material chalcedonic, with lots flaws, moderate quality. Occasional evidence of thermal alteration on some tools [unclear, and unlikely]. Only 7% flakes have facetted platforms, could = early reduction, but tools contradict, so thick biface manuf prob not need much plat work, sample of whole flakes skewed too. Macroflake blanks prob from local deposits, finished at H. [Actually no evid for macroflakes is presented, and the GUB drawn has cortex on both faces.]

Megaw, J. V. S. and D. D. A. Simpson
1979 *Introduction to British Prehistory: From the Arrival of Homo sapiens to the Claudian Invasion*. Leicester University Press, Leicester.

Standard text - solid, old fashioned survey in considerable detail. Lots of illusts of stone tools of the various periods, site details.

Mehringer, Peter J. Jr. and Franklin F. Foit Jr.
1990 Volcanic Ash Dating of the Clovis Cache at East Wenatchee, Washington. *National Geographic Research* 6(4): 495-503.

Clovis pts (illust) w/ silica crusts on bottoms from lying on pumice + ash from dated volcanic eruption ca 11,250 BP

Mehringer, Peter J.
1988 Weapons of Ancient Americans. *National Geographic* 174(4): 500-503.

Finding of Richey-Roberts (Wenatchee) Clovis site in Washington. Color photos. 2 enormous C pts >20 cm long

Mellars, Paul
2005 The Impossible Coincidence: A Single-Species Model for the Origins of Modern Human Behavior in Europe. *Evolutionary Anthropology* 14 (1): 12-27.

Summary of arguments for Out of Africa replacement theory: radical scale and complexity of change, clear evidence of African precedence, imp coinc that this would fit same time as spread of anatomically and genetically modern humans + end of anat and genet diff Neanderthals. Blade and bladelet industries as one new technol. Aurignacian (+ relatives) first mod cult, Chatelperronian as terminal Neanderthal with influence from newcomers, 39-35,000 uncal BP. Direct interaction probable, but also “bow-wave” of technol innovation moving ahead of modern human pops by diffusion and contact chains. Qafseh, Israel 90k early expansion of moderns assoc w cerem burial, perforated shell ornament, ochre, but Moust technol

Mellars, Paul
2006 Archeology and the Dispersal of Modern Humans in Europe: Deconstructing the "Aurignacian." *Evolutionary Anthropology* 15 (5): 167-182.

Split base pts, carinate scrapers, retouched blades and bladelet technology as markers

Mellars, Paul
2009 Moonshine Over Star Carr: Post-Processualism, Mesolithic Myths, and Archaeological Realities. *Antiquity* 83(320): 502-517.

Reviews changing interps, objecting to suggestions of ritual deposit of the 191 antler pts

Meltzer, David J.
1993 Pleistocene Peopling of the Americas. *Evolutionary Anthropology* 1(5): 157-169

Good overview, even handed, slightly on upbeat side. Best point is mobility and success of Clovis suggests stable long term occupation, not just migration thru areas

Meltzer, David J.
2006 *Folsom: New Archaeological Investigations of a Classic Paleoindian Bison Kill*. University of California Press, Berkeley.

[A really nice tho technical book with lots of good info and discussion, including readable summary of Folsom history and current interpretations with multidisciplinary contributions.] Re-excavations 1997-99, analysis of original material from Figgins and Cook's 1920s work. Good chapter on historical context: Cook and Figgins credited with discovery but were never credited with resolving question of human antiquity - in part because C + F not among elite scientists, and had backed several obvious losers before so were rightly considered poor judges. Barnum Brown (AMNH) and blacksmith Carl Schwachheim did most excav. CS diary appendix mentions several pts broken by picks, and pick marks are visible in the famous photo [so it was poor excav even if just for bones, and you have to wonder if the famous point really was found *in situ* as claimed]. Chapters on geology, environment, bison bone taphonomy. Butchering thorough, bones disarticulated but not smashed for marrow, few cut marks. Seems to be immediate kill + butchery site, as almost only artifacts are points. Early archs did not consider fluting important at first [perhaps because didn't know enough about knapping?], but soon began to speculate about its purpose. "Bayonet blood groove," hafting improvement, technological evolution in non-functional direction? Figgins considered arrowheads, Kidder suggested atlatl. Possible cache near site probably work of McCormick [documenting his activity by 1930s]. Variety of stone used, including Alibates up to 256 km distant, Tecovas jasper 200-375 km, others. Good illustrations of points. Breakage patterns considered and how points break, but "I only consider hand-thrown vs thrust, as the presence of atlatls in Paleoindian times is unresolved" [which makes the whole discussion a waste of time as they were almost certainly on atlatl darts, although we probably can't tell the difference between thrown and thrust from the points, and bending breaks do NOT "imply someone had a firm grip when the point broke."]

Meltzer, David J.
2009 *First Peoples in a New World: Colonizing Ice Age America*. University of California Press, Berkely.

[Detailed, readable, thorough coverage of state of the science. Meltzer generally gives both sides of an argument, but his biases are perceptable too. He thinks Clovis Pleistocene overkill is an extinct theory, considers Monte Verde the pre-Clovis clincher in spite of quoted comments about how strange it is, and scoffs at any Solutrean connection.]

Meltzer, David J. and Judith R. Cooper
2006 On Morphometric Differentiation of Clovis and Non-Clovis Blades. *Current Research in the Pleistocene* 23:127-129.

Meltzer, David J., Lawrence C. Todd, and Vance T. Holliday
2002 The Folsom (Paleoindian) Type Site: Past Investigations, Current Studies. *American Antiquity* 67(1): 5-36.

Describes history, geography and geology, short bones, good section on stone tools but no illust. Lithics mostly pts whole + broken, 4 butcher tools, no pt manuf evidence. High grade raw material from distance, no camp site found

Meltzer, David J., John D. Seebach, and Ryan M. Byerly
2006 The Hot Tubb Folsom-Midland Site (41 CR 10), Texas. *Plains Anthropologist* 51(198):157-184.

Small bison kill and processing site, with reworking of points indicating low stone supply.

Mendoza, Ruben G.
2007 Aztec Militarism and Blood Sacrifice: The Archaeology and Ideology of Ritual Violence. In *Latin American Indigenous Warfare and Ritual Violence*. R. J. Chacon and R. G. Mendoza eds., pp.34-54. University of Arizona Press, Tucson.

Revisionists try to refute accounts of Aztec sacrifice as "racist, colonialist" etc, claiming evidence is all derived from Spanish accounts which were propaganda or otherwise distorted. But our info not based only on Spanish accounts, there is also abundant archaeol evidence of ritual violence - experiments in heart excision, serological study of deposits, forensic analysis of skeletal remains, including numerous sites with evidence of peri-mortem mutilation and cannibalism, 170 crania from tsompantli skull rack at Tlatelolco associated with stone tools used to prep heads, etc.

Martinez (2003) questions ability to extract heart with stone tools. But Robicek and Hales (1984) show possibility of parting sternum, while simulation for Discovery Channel (2002) cast doubt, preferring transdiaphragmatic approach under sternum. And Matamoros killings in Mexico in 1989, by drug lord/cult leader showed possibility too. [could add that Martinez obviously doesn't know much about efficacy of stone tools.]

Mensforth, Robert P.
2007 Human Trophy Taking in Eastern North America During the Archaic Period: The Relationship to Warfare and Social Complexity. In *The Taking and Displaying of Human Body Parts as Trophies by Amerindians*. Richard J. Chacon and David H. Dye, eds., pp. 222-277. Springer, New York.

Suggests a ‘proximity model’ for trophies – more taken if victim close to taker [a schlepp effect for human body parts! Cites Friederici 1907 Scalping in America, but doesn’t acknowledge schlepp idea.]
Examples of burials with scalp or mutilation cut marks. Embedded proj pts mentioned but no pics or discussion. Indian Knoll and Carlston Annis burials show scalping and mutilation, decapitation, often assoc with violent death (proj pts or skull fracture) including child. No clear trophy specimens, but human bone artifacts. Other Archaic sites, including Frontenac Island and Windover. [Lots of evidence among Archaic groups all over].

Mera, H.P.
1938 Reconnaissance and Excavation in Southeastern New Mexico. *Memoirs of the American Anthropological Association* 51.

Not very useful, sketchy accounts of finds in caves in drainages of Guadelupe Mts. 2 atlatls, one whole, one frag both BM type, missing loops, no evid of weights, nock not described, looks groove + flush hook, [poor photo]
Dart foreshafts w/ + w/out stone pt or slot

Mercader, Julio, Melissa Panger, and Christophe Boesch
2002 Excavation of a Chimpanzee Stone Tool Site in the African Rainforest. *Science* 296:1452-1455.

Cote d’Ivoire chimp nut-cracking sites, unintentional production of flakes, 40 kg of nutshell and 4 kg stone excavated at Panda 100 site. Stones transported from outcrops to focal points, used as hammers, leading to refuse accumulation. Learning to crack nuts takes up to 7 yrs, females more likely to do it than males. Stone hammers 2-13 kg on solid anvils like roots and rocks. Hammers sometimes carried over 100 m, develop distinctive wear of pits + flaking. Anvil sites around one tree used 1975 to death of tree 1996. Real flakes scarce, mostly cortical. Most of debris small bits. Comparison with arch site material: chimp debris “within size spectrum and morphological parameters” of some of the earliest hominin assemblages. So could some hominin sites represent hard-object feeding? Byproducts might eventually be used as cutting tools.

Mercer, R. J.
1987 A Flint Quarry in the Hambledon Hill Neolithic Enclosure Complex. In *The Human Uses of Flint and Chert*. G. Sieveking + M. Newcomer eds., pp. 159-164. Cambridge: Cambridge University Press.

Mercer, R.J. and A. Saville
1981 *Grimes Graves, Norfolk: Excavations 1971-1972: Volume II*. London: Her Majesty's Stationery Office.

Brief description of digs in 2 shafts (see Vol 1). Flint industry by Saville—concludes a part-time industry by pop on site in Grooved Ware times + in E. Bronze, when used Neo discarded nodules.

Mercieca, Alison
2000 Burnt and Broken: An Experimental Study of Heat Fracturing in Silcrete. *Australian Archaeology* 51:40-47.

Cut rectangles from same nodule, 20x20x10; 20x20x20, 40x40x20 mm. Elec furnace 635-995 C. Putting samples, either wet or dry, in hot furnace from room temp usually fractured them. Taking them out hot to room temp did not, even if immersed in water, or dripping water on surface. The larger specimens fractured at lower temps. Number of fractures on first set pieces 20x20x10 increased with increase in temperature.

Merino, Jose Maria
1961 *Tipologia de Merino*. Sociedad de Ciencias Naturales Aaranzadi, San Sebastian.

In Spanish, large typol for lithics

Merlie, Gary
1989a More on Marking Points. *Chips* 1(3):1.

Merlie, Gary
1989b Pressure Flaker. *Chips* 1(4):12.

Merriam, Larry and Christopher Merriam
2004 *The Spiro Mound: A Photo Essay*. Merriam Station Books, Oklahoma City.

History of the looting of Craig Mound at Spiro and later WPA excavations, documented through some oral history and photographs of excavations and artifacts by Robert Bell. Pretty good account, lots of historic photos, detailed ownership chains for many artifacts. Some mention of unscrupulous artifact trade and contemporary fakes.

Mesoudi, Alex, and Michael J. O'Brien
2008 The Cultural Transmission of Great Basin Projectile-Point Technology: An Experimental Simulation. *American Antiquity* 73(1):3-28.

Messineo, Pablo G., and Maria Paula Barros
2015 Lithic raw materials and modes of exploitation in quarries and workshops from the center of the grasslands of Argentina. *Lithic Technology* 40(1):3-20.

Variety of cherts and silicified dolomites, exploited and distributed in different forms

Metcalfe, Bill
1995 *An Introduction to Flint Knapping*. VHS. Mound Builder Books, Branson.

Mevel, Ludovic
2013 Madelenian pioneers in the northern French Alps, 17,000 cal BP. *Antiquity* 87 (336): 384-404.

microblades made from good flint sourced 100+ km away. Later in Magd, more varied sources = networks for generation of new ideas.

Mewhinney, H.
1957 (1972) *A Manual for Neanderthals*. Austin: University of Texas Press.

Early flintknapping manual. [Amusing, reasonably accurate, but insufficiently detailed]. Devotes entire short chapter (62-64) to scoffing at “Fire and Wet Straw.”

Meyer, Pieter
2008 Authenticity Study of Asian Metal Objects. In Pernicka, Ernst, Silke von Berswordt-Wallrabe, and Hilke Wagner eds, *Original - Copy - Fake? Examining the Authenticity of Ancient Works of Art - Focusing on African and Asian Bronzes and Terracottas*. pp., 33-50. Verlag, Philipp von Zabern, Mainz.

2003 donation of $38 million Chinese antiquities to Cal State U at Northridge included many fakes, “doubts expressed to the university… were met by indifference and inaction.” But the U uses to educate public and donor claims income tax benefits. Shang, Han, and other early bronzes extensively copied - examples. Also Cambodian and Burmese Buddha figures. But Iranian gold beaker condemned by Muscarella in same volume is authentic [!!]. Liao, China silver and gold treasure, reported in papers as illicit find, then when objects appeared in Hong Kong, eagerly bought [by dealers and institutions who knew it was looted and didn’t care] but a few examples appear to have technical anomalies - modern tool use, cadmium solder etc - whole thing likely to be fakes supported by hoaxed story.

Meyers, J. Thomas
1970 *Chert Resources of the Lower Illinois Valley*. Illinois State Museum Repts of Investigations No. 18

M’Guire, J. D.
1891 The Stone Hammer and its Various Uses. *American Anthropologist* 4(4) 301-315.

Ubiquitious tool, chipping + other uses, but emphasis on pecking –make axes, statuary even into late times-shown by pit marks, finds of h-stns at Troy etc. Experiment—making axe

M'Guire, Joseph D.
1892 Materials, Apparatus, and Processes of The Aboriginal Lapidary. *American Anthropologist* 5(2): 165-176.

Conventional artifact names often misleading
Shape or material of objects indicates grade of intelligence of the race
Experiments with pecking with stone hammer, carving, boring, polishing etc.
Glyph pecking with sharpened quartzite pebbles
Axe made of nephrite with jasper hammer
Boring with bow + pump drill

Michaels, George H.
1989 Craft Specialization in the Early Postclassic of Colha. *Research in Economic Anthropology*, Supplement 4: 139-183.

General test for specializ applied to lithic industry. "Regular standardized mass production (non-food) … more than needed for household… with restricted access to technol, knowledge, skills, or materials, characterized by … vertical division of labor." Macro-contextual indicators = social complexity. Micro-contextual = workshops, storage facilities, differential product distrib, high volume production waste, control of critical resources. Technological indicators = production efficiency, production + product standardization, low error, error recovery techniques, standard tool kits.

Post-C only near re-occupied cerem center, no monument building. Lithic middens near cerem but assoc w housemounds + domestic waste, ie not as segregated as earlier. New tool forms – lose biface celts, new triangular adze, notched dart pts, lozenge + lenticular biface knife/pt forms, thick tapered biface [chopper]. Obsidian common, but only as blades. Deer antler billet replaces hard hammer. Chalcedony imported, mostly points. Wkshp debris as clean lenses in hshld middens (5), or larger dumps off platform edges (2) = organiz by hshld. No storage facilities. Some evid of vertical specializ = stat diffs in tool types in diff deposits.

Volumetrics: 4 midden samples of interbedded garbage + lithics, ave 34% debitage [much lower than LDF or Colha wkshps]. Fill est 2.5 mill gm/m3, of which 875,865 gm/m3 would be debitage, = 575,443 flakes/m3 [no info given on what size flakes were included]. Est 50-75 million flakes, 760-1140 metric tons in each deposit. Wkshp (without domestic midden) Op. 2037 est 1.4 mill flk/m3, far higher than Ford's Belize sites. Op. 2037 54.5 lenticular + lozenge biface failures/m3 = 10,900 total produced, lower than Roemer's est for oval bifaces in Late Classic, but still specialist.

Discusses efficiency and standardization in finished products + flakes + errors = fairly standardized production. Antler billets common ave 6-8/m3 in Op 2037, and uniform, but made in each hshld. Conclusion = specialization, but not at same level as earlier at Colha.

Michaels, George H.
1993 Evidence for Lithic Craft Specialization by the Classic Period Maya of the Upper Belize River Valley, Belize. Unpublished PhD. dissertation, University of California, Santa Barbara.

Investigate role of specialized lithic production as an economic supplement to Maya household economies. Theoretical considerations of role of specializ in Maya, and arch methods of studying specializ.

Analyzing material from 1 volumetric debitage sample, production tools, finished tools, and production failures from 48 housemounds (a stratified random sample) intensively test excavated by BRASS.

Craft specialization = "relatively regular and standardized mass production of non-food items". .. beyond hshld needs … "by persons having restrictive access to specific technol, knowledge, skills and raw materials, characterized by a vertical division of labor." Vertical div = spec by commodity, which can be subdivided by horiz specializ (function). Continuum of complexity expected.

Good discussion of past ideas of Maya economy enlivens dull theoretical background. Copan has evidence of urban area without much large scale specialization, while Colha is evidence of a specializ for regional trade in that area, explainable by diffs in two envirs.

Belize limestone late Cretaceous.

Summarizes BRASS projects. [Apparently he did not participate in any of the field work – later it seems he was at least present 1990.] Complains about problems using collections; reanalyzed all the lithic material used here.

Tool types described. [His tool assemblage proportions are skewed by material from 136 with the odd assemb of "drill, graver, wedge" – these make up 91% of 575 whole tools, and the remainder makes a very small sample spread over 48 sites].

Debitage analysis, 18,678 flakes collected [treated as one assemblage] with 20% chosen for detailed analysis. [Obsidian was not considered at all in this. Dimensional data presented only as means etc]. >1/2 flakes no cortex, majority small = late in reduction stage.

Efficiency as measure of specialization – based on amount of size reduction from tool blank to finished tool [how can he recognize graver preforms etc? This is not useful.] Tries to measure standardization of size too – concludes no strong case for specialization. Error rates: mostly breakage, collection is primarily finished and discarded pieces, not manuf discards. Production tools rare compared to many antler billets in PostC at Colha [his MA thesis] – diff btwn hshld and spec production. Tools from 136 are kit for wood (microwear) or shell working, not evid of a stone tool workshp – produced and consumed there by specialists in other crafts.

Workshops: most sites mix all types material, no microdebitage = not stone tool wkshps. Exceptions are 136 and LDF. 136 has little microdeb, high proportion finished + used up tools = secondary dump for workers in other craft. LDF = lithic production site (not part of 48 site sample).LDF in site center, 625 – 2500 sq m, near chert quarry holes [No, not quarrying chert there]. [Curiously, he "observed" material as excavated at LDF, but didn't make that a focus of his research.] Flakes consistently large, soft ham plats, BTF, lots micro – diff from all other sites. No finished or discarded tools, very few production failures. Density 65,690 flakes per cubic m. Making oval biface celts. Diff from Colha in more soil in deb deposits = more intermittent use. Lower levels less dense [not by our analysis of column sample]. Not assoc w residential units, and "in the middle of monumental center" [close but not in]. Also, E PostC Colha densities over 500,000 flks per cubic m. Yaxox sites have elevated densities of angular debris from quarrying, but not high primary flakes, so prob not doing initial reduction for exchange.

Michels, Joseph W.
1976 Some Sociological Observations on Obsidian Production at Kaminaljuyu, Guatemala. In *Maya Lithic Studies*, TR Hester and N. Hammond eds, Center for Archeological Research, University of Texas at San Antonio, Special Report 4, pp 109-118.

Michels, Joseph W. and Ignatius S.T. Tsong
1980 Obsidian Hydration Dating: A Coming of Age. In *Advances in Archaeological Method and Theory* Vol. 3, edited by M.B. Schiffer. Pp 405-443. Academic Press, New York.

Michlovic, Michael G. and Dean T. Sather
2007 Lithic Artifacts from the Early Archaic Component. In Archaeology and Paleoeinvironment at the Rustad Site (32RI775). Edited by M. G. Michlovic and Garry L. Running. *Plains Anthropologist* 50(196) Memoir 37:135-158.

North Dakota site with some Woodland and Paleo, mostly early Archaic features with lithics and bison bone. Mostly Swan River Chert, possibly heated, some Knife River Flint, others. Size grading (after ¼ inch screens) show similar distribs for all materials. Sullivan and Rozen categories used [which of course they have to interpret with other information since they are useless. For example:] lots whole flakes = core reduction (cores also present) but also many very small, probably from pressure retouch and finishing of tools. Small mediocre points with wide side/corner notches, ovate blades (Logan Creek/Mummy Cave types), also some unnotched triangular points [which are likely to be unfinished]. Points small, Nasseny and Pyle 1999, Shott 1997, Thomas 1978 criteria would class most as arrow points. Hughes 1998 would interpret most as light pts for fletched atlatl darts, but some rather small.

Midant-Reynes, Béatrix
1984 La Taille des couteaux de silex du type Gebel-el-Arak et al dénomination du silex en égyptien. In *Origin and Early Development of Food-Producing Cultures in North-Eastern Africa*. L. Krzyzaniak and M. Kobusiewicz eds., pp261-264. Poznan: Polish Academy of Sciences.

Brief description of manufacture, Egypt hieroglyphic for flint also = weapon used by gods and kings against underworld enemies.

Midant-Reynes, Beatrix, and Jacques Tixier
1981 Les Gestes de l'Artisan Égyptien. *La Recherche* 12:

Two pages in French, ok—Ripple flaked knives, manufacture and date.

Migal, Witold
1995 Stratégie et pratique d'études des chantiers d'exploitation souterrains. In *Les Mines de Silex au Néolithique en Europe: Avancées Récentes*. J. Pelegrin and A. Richard, eds, pp. 15-25. Comité des Travaux Historiques et Scientifiques, Vesoul.

Migal, Witold

2004 Social condition of flint working during the Bronze Age and Early Iron Age in Poland and Eastern Europe. In *Lithics in Action: Papers from the Conference 'Lithic Studies in the Year 2000'*. E. A. Walker, F. Wenban-Smith, and F. Healy eds., pp. 215-228. Oxbow Books, Oxford.

EBA bifacial daggers, axes, arrowheads made at source by specialists, widely distributed. Daggers of Ukranian flint, like bronze, in high status burials. MBA flint sickles of U flint also reach Poland, to settlements mostly using simple hard hammer forms. LBA new hard hammer implements made at old mines as specialist production of widely distributed utilitarian forms [blades].

Mijares, Armand Salvadore B.
2001 An Expedient Lithic Technology in Northern Luzon (Philippines). *Lithic Technology* 26 (2): 138-152.

Milanich, Jerald T.
2005 The Devil in the Details. *Archaeology* 58 (3): 26-31.

Innacuracies and fakes in de Bry/ le Moyne pictures of Florida Indians in 16th C

Miller, Arelene U.
1976 Arti-Fact or Fiction?: The Lithic Objects from Richmond Hill, Belize. In *Maya Lithic Studies*, TR Hester and N. Hammond eds. Center for Archeological Research, University of Texas at San Antonio, Special Report 4, pp 119-136.

Miller, D. Shane, Vance T. Holliday, and Jordon Bright
2013 Clovis across the Continent. In *Paleoamerican Odyssey*. Kelly E. Graf, Caroline v. Ketron and Michael R. Waters ed., pp .207-220. Tops Printing, Inc., Texas.

Miller, Frank
1997 Facts on Fakes: Archaic Bevels. *Indian Artifact Magazine* 16(2):58.

Correct form described, comps to two fakes—too large blade resharpened without wear.

Miller, G. Logan
2013 Illuminating Activities at Paleo Crossing (33ME274) Through Microwear Analysis. *Lithic Technology*: 38(2): 97-108.

Ohio paleo site, 10 tools analyzed. Wide range uses, hafting.

Miller, Heather Margaret-Louise
2007 *Archaeological Approaches to Technology*. Academic Press/ Elsevier, San Diego.

Section on lithics: basic techniques briefly, poor drawings, good photos of ethnog S Asia bead making, also interview on ethnog New Guinea axe making. Her overall view of technol influenced by *chaine operatoire* ideas and S Asian emphasis.

Miller, James A.
2006 *The Flintknapper's Guide to Rock - An e-book*. Privately published and distributed.

[CD format, lots color pictures, overall a very nice work.] Good basic geology background (Miller trained as geologist), defines types of rock. Prefers to lump chert, flint, jasper, agate, chalcedony as "CCS" cryptocrystalline silicates, but discusses separately [and slightly redundantly] in appendix. Info on finding rock sources. Chapter on conservation and ethics is generally good, but he unfortunately recommends spalling off cortex in the field, adding that waste should be removed or buried with modern marker objects. Recommends signing knapped work. Heat treatment described, principles discussed, lots of good tips, temperature recommendations, excellent before and after photos. Appendix lists and describes most common materials, with good photos of material, points, and names of some local examples.

Miller, James A.
2010 Summary Description of China Hollow Knappable Stone. *Chips* 22(2):20-23.

near Wasco, OR, basalt flows with secondary silicate deposits – opal, agate (chalcedony), and jasper, some colorful and translucent

Miller, Jim
2010 Making an Agee Point. *Chips* 22(3):21-22.

good instructions w photos, makes notches before narrowing the blade

Miller, M. L.
1897 The So-Called California "Diggers". *Popular Science Monthly* 50:201-214. Google Books, accessed July 14, 2014.
http://books.google.com/books?id=rZo6AAAAMAAJ&pg=PA215&source=gbs_toc_r&cad=3#v=onepage&q&f=false

Maidu? Sacramento Valley. P 207: "The material for the arrowhead was heated to a certain temperature, when it was chipped as desired with a spikelike stone implement, which was dipped in cold water, placed quickly upon the hot flint, and the necessary stroke given. The drop of water coming in contact with the hot flint and the simultaneous stroke cut the chip off about as desired. A rough stone was used to grind the points and edges into shape." [But is she a good observer?]: p 206: Their method of starting a fire was most skillful. Two round pieces of hard wood were used, one tapered to a point at one end. These were rubbed together between the hands until the friction produced a spark, which, thrown into a heap of fine, dry bark, produced fire almost instantly. I wondered how it could be done without burning the hands, so I hired an old Indian to satisfy my curiosity. He started a fire for me, and it was done so quickly, easily, and ingeniously, that I was still left wondering."

Arrows and spears sometimes poisoned with "juice of poisonous plants or putrid deer liver." (208)

Miller, Mark, Michael Stafford, and George Brox
1991 The John Gale Site Biface Cache. *Plains Anthropologist* 36(133): 43-56.

Wyoming Late Prehistoric, 18 bifaces of Tiger Chert from Green River 125 miles to W of site. Oval, plano-convex preforms.

Miller, Robert
1987 Sources and Specialists: Three Ancient Near Eastern Urban Flint Industries. In *The Human Uses of Flint and Chert*. G. Sieveking and M. Newcomer eds., pp. 205-210. Cambridge University Press: Cambridge.

Miller, Shane D.
2013 Review of Crowfield (AFHK-31): A Unique Paleoindian Fluted Point Site from South-Western Ontario (Memoirs of the Musuem of Anthropology, University of Michigan) by D. Brian Deller and Christopher Ellis. *Lithic Technology* 38(2):128-129.

Miller, Tom O.
1979 Stonework of the Xêtá Indians of Brazil. In *Lithic Use-Wear Analysis*, edited by Brian Hayden, pp 401-407.

Six survivors—Two knappers, used stone at contact in 1948.
Crude percussion—shattering, thick flakes
Select best for task, no pre-set standards apparent, little retouch
Wood working demonstrated.

Millon, René, editor.
1973 *Urbanization at Teotihuacan*. University of Texas Press: Austin.

Cite for Teot basic info.

Mills, Peter R.
1993 An Axe to Grind: A Functional Analysis of Anasazi Stone Axes from Sand Canyon Pueblo Ruin (5 MT765), Southwestern Colorado. *Kiva* 58(3):393-413.

44 specimens, numerous uses suggested ethnographically, experiments with manuf, cutting wood, dead and live, chopping sagebrush in sediments.
Many axes too dull for effective tree cutting
Lighter axes tend to be kept sharp (arch specimens)
Experimental axes stay sharp long time on wood, polish obliterates sharpening striations by 4.5 hours use
Dead pinyon broke axes
Cutting sage at ground level ie into soil effective, but quickly made ax too dull for wood. Forms striations and polish into flake scars. Heavier axes more likely to have soil striations
1.) Most Sand Canyon axes used hafted in sediments—heavy, with small bits, very dull, lots striations, wear into depressions = fluid medium
2.) Six SC axes used on wood—light, with large cutting edge

Tchamahias also used in sediment—deeper, lighter use—weeding, not clearing
3.) Broken axes used for hammering.

Mills, William C.
1921 *Flint Ridge*. Ohio Archeological and Historical Publications Vol. 30. Reprint 1993. No place or publisher, bought at Flint Ridge State Monument, OH 1996.
1921 *Flint Ridge*. *Certain Mounds and Village Sites in Ohio* Vol 3, part 3. F.J. Heer Printing Co, Columbus, OH. Reprint 2007 Gustav's Library Reprints, Davenport, IA.

Ok but wordy old account of quarries [larger than Goth's 1996] and a Hopewell mound with stone structure. Discusses early geological ideas of origins of flint - silica laid by organisms, replacing carbonates as limestone laid down, or by later hydrous action [all approaching modern understandings]. Excavated some quarry pits. Some quarrying by undermining vein of flint. Disputes use of fire in quarrying - his experiments show ineffective, and little charcoal in pits. Hammerstones and quarry tools. Biface blanks, some well refined, and blades and blade cores illustrated.

Mills, Tom
2008 A Copper Age Bow. In *The Traditional Bowyer's Bible, Volume Four*. Pp.75-90. The Lyons Press, Guilford, CN.

Made bow using copper adze and hafted stone tools. Useful timeline of dated bows [with citations but not full references].

Milne, S. Brooke
2005 Paleo-Eskimo Novice Flintknapping in the Eastern Canadian Arctic. *Journal of Field Archaeology* 30(3):329-345.

Two Paleo-Eskimo sites on inland Baffin Island. Novices identified by Shelley 1990 criteria – lots of steps, battered platforms, split flakes, large bulbs etc on debitage, cores, and bifaces. Good refs for children knapping. Knapping training possible because of relatively abundant material, easy food source (moulting fat flightless geese), exposure of sources during warm season. Probably not young children – required some trek, and implies varied social groups to link apprentices with teachers. [Good article, although some ID of novices is too specific – mistakes are common at quarry sites and especially with small raw materials.]

Milner, George R.
1998 *The Cahokia Chiefdom: The Archaeology of a Mississippian Society*. Smithsonian Institution Press, Washington.

Argues for a less centralized and less complex Cahokia system, no greater than others except for largest mounds which have created overestimates of population and complexity. Instead it was highly segmented, with potentially autonomous neighboring mound centers. Pp 81-87 lithics: Emergent Miss used Ste Genevieve Root Beer chert, later Miss more Mill Creek and Kaolin chert often imported as hoes made elsewhere. Quarries as at Crescent produced cores to distribute. Informal flake tools usual. and most points crude, although collections biased toward nicer points. Some very fine local and imported points in 17 groups in Mound 72, larger than normal points. Other ritual use of points and Ramey knives. Microdrills and sandstone saws as shell-work tools. Most tools produced by households; large and small sites had access to imports. Pp 138-140: Mound 72 local points no better than non-local, high quality and for symbolic use, but not evid of specialists.

Milner, George R.
2005 Nineteenth-Century Arrow Wounds and Perceptions of Prehistoric Warfare. *American Antiquity* 70 (1): 144-156.

Do a few skeletons with wounds = pervasive warfare? Indian War medical data, 248 injuries, 191 victims, mostly 1860s and 1870s, Plains and SW. Ca. 75% survival, 1/2 of deaths immediate. Ca. 51% wounds in body, 12% head/neck, 27% arm, 10% leg. Ca. 30% struck bone. Coues 1866:323 "when the [stone] head impacts on bone – and it generally transverses soft tissue until halted in this way – the chances of its shivering into bits vastly preponderate over the probability of its becoming fixed or glancing." 3/6 examples broke, 2 others detached from shaft. Ca 11% of victims survived with pts remaining in bone. Suggest ca. 3X as many deaths as observable skeletal wounds. A few skeletons with injuries imply much higher rates of injury and conflict, and relatively low casualties can reflect huge social upheaval (Civil War example).

Milner, George R., Scott W. Hammerstedt, and Kirk D. French
2010 Chert Hoes as Digging Tools. *Antiquity* 84(323):103-113.

Two Mill Creek chert hoes made by L. Kinsella hafted on short handles like Birger figurine, used by authors and 2 Maya workers. Easily damaged by rocks, roots also some edge damage, prob why only found in areas of alluvial soil. Polish developed quickly. Some estimates of mound building efficiency.

Minor, Rock, and Kathryn Anne Toepel
1989 Exchange Items or Hunters' Tools? Another Look at Lanceolate Biface Caches in Central Oregon. *Journal of California and Great Basin Anthropology* 11(4):99-107.

Are they late (post Mazama ash ca 7000BP) or earlier, late Paleo. Contra Scott et al, evidence of manuf shows made and used at site as tools, early, not later trade goods [not very wide usefulness].

Miotti, Laura L.
2004 Quandary : The Clovis Phenomenon, the First Americans, and the View from Patagonia. In *New Perspectives on the First Americans*. B. T. Lepper and R. Bonnichsen, eds., pp. 35-40 . Center for the Study of the First Americans, College Station, TX.

Minshall, Herbert L.
1976 *The Broken Stones*. Van Nuys: Copely Books.

follows George Carter, Calif early early ideas [unreliable]

Mitchell, Douglas R.
1984 Site 12Bo39: A Lithic Workshop in Central Indiana. *Lithic Technology* 13(3): 98-101.

Quarry reduction of simple bifaces

Mitchell, Douglas R. and M. Steven Shackley
1995 Classic Period Hohokam Obsidian Studies in Southern Arizona. *Journal of Field Archaeology* 22(3): 291-304.

Mitchell, John C.
1995 Studying Biface Utilisation at Boxgrove: Roe Deer Butchery with Replica Handaxes. *Lithics* 16: 64-68.

In situ unworn tools – use wear experiments to interpret
Modern professional butcher used h-axes – found them sharp and durable
Held in finger + thumb grip, no palm contact w/ edge, slicing action, little force
Preferred h-a to flakes for variety and length of edges

Mitchell, P. J.
1991 Pressure-flaked backed bladlets and points: new artefact types in the Later Stone Age of Southern Africa. *Lithics* 12:24-30.

Mitchum, Beverly
1986 Chipped Stone Artifacts. In *Archaeology at Cerros, Belize, Central America: Volume I, An Interim Report*. Robin A. Robertson and David A. Friedel eds., pp. 105-115. Southern Methodist University Press, Dallas.

Mostly Late PreClassic site on coast. Tool types described briefly. Little primary reduction on site; most common debitage is "biface trimming flakes from late stage reduction and biface resharpening flakes." Latter include orange-peel tranchet flakes and standard bit resharpening flakes. Lots hammerstones, probably more than knapping use.

Mitchum, Beverly
1991 Lithic Artifacts from Cerros, Belize: Production, Consumption, and Trade. In *Maya Stone Tools: Selected Papers from the Second Maya Lithic Conference*. T. R. Hester and H. J. Shafer eds, pp. 45-54. Prehistory Press, Madison.

Mithen, Steven
1994 Technology and Society during the Middle Pleistocene: Hominid Group Size, Social Learning and Industrial Variability. *Cambridge Archaeological Journal* 4(1):3-32.

English Paleolithic. Complex tools result from social learning, which requires large group=Acheulean. Simple tools from individual learning, small groups=Clactonian. Relates also to climate - Clact during full interglacial - affects group size [Interesting but arguable].

Mithen, Steven
1995 Palaeolithic Archaeology and the Evolution of Mind. *Journal of Archaeological Research* 3(4):305-332.

Mithen, Steven
2008 'Whatever Turns You On': A Response to Anna Machin, 'Why Handaxes Just Aren't That Sexy'. *Antiquity* 82(317): 766-769.

Defends his theory of handaxes as sexual selection tools because it "unites disparate features of the arch record": why h-a are 1. symmetrical, 2. over abundant at some sites, 3. persist a long time, 4. are lost when Levallois techniques replace them, and 5. show occasional oddities such as giants. [All of these are exaggerations and stereotypes of the archaeological record]. And it remains "thrilling" to hold a fine h-a because our minds remain attuned that way.

Moctezuma, Eduardo Matos
1988 *The Great Temple of the Aztecs: Treasure of Tenochtitlan*. London :Thames and Hudson

cite for photo p 98 + elsewhere of bifaces w/ skulls - sacrificial + ritual use of lithics

Moctezuma, Eduardo Matos
1990 *Treasures of the Great Temple: Art and Symbolism of the Aztec Empire*. Alti Publishing, La Jolla.

[Fine photo book.] Good images of tzompantli, urn with Tezcatlipoca carrying atlatl, carved obsidian urn and other objects, personified tecpatl (sacrificial knife) chert biface with teeth and eyes glued on, skull mask with biface nose, carved stone deer head with solar dart and cloud - these three items found repeatedly associated. And many more objects.

Moffat, Charles R.
1981 The Mechanical Basis of Stone Flaking: Problems and Prospects. *Plains Anthropologist* 26 (93): 195-212

Moffat, Charles R. , R. Patrick Stewart, and Dean G. Wilder
1998 Excavations of the Chally-Turbenson Site (21FL-71): A Multicomponent Chert Quarry Site and Workshop Complex in Southeastern Minnesota. *Journal of the Iowa Archaeological Society*. 45: 49-86.

Lithic scatters along Highway 63 just N or IA border. “Cedar Valley” or “Root River” cherts, apparently from lag glacial gravel terraces, but limestone bedrock also near. Mostly non-diagnostic artifacts, many unfinished small bifaces. [not too exciting].

Mohen, Jeanne-Pierre
1990 *The World of Megaliths*. Portugal: Casterman, Tournai

info on hafting tools, moving + working megaliths, experiments with such

Moholy-Nagy, Hattula
1976 Spatial distribution of Flint and Obsidian Artifacts at Tikal, Guatemala. In *Maya Lithics Studies*. TR Hester, N. Hammond eds, Center for Arch. Research. U Texas San Antonio, Special Rept 4 pp 91-108

Moholy-Nagy, Hattula
1999 Mexican Obsidian at Tikal, Guatemala. *Latin American Antiquity* 10(3): 300-313

Moholy-Nagy, Hattula
1990 The Misidentification of Mesoamerican Lithic Workshops. *Latin American Antiquity* 1 (3): 268-279.

Recog of workshops leads to social inference but many debitage deposits are not wkshps but dumps. “To call a dump a workshop is like calling a garbage can a kitchen.” (270). Different kinds of debitage deposits in Mesoam: Mounds, Unincorporated (middens), Microdeb in floors, Deb in construction fill, Deb in special deposits, and Random scatter.
Mounds at Colha and Rio Azul secondary because contain sherds etc [very small amounts tho]. “Of above, only microdeb incorp in floors is unequivocal indicator of activity locus or wkshp.”
Ethnoarch observations: “Deb in arch context can be regarded as having had no potential value for those who discarded it.” (272) [Not necessarily] Five examples of debitage clean-up (mod Maya, Ethiopia, Brandon, Lacandon).
Hypothesized expectations: 1. Primary work at quarry, deb in situ because lots of space. 2. finishing at residence, competition for space, removal of deb, possibly w exception of microdeb. 3. Denser settlement, less tolerant of waste. Implys can’t assume large sites not have wkshps – they just clear up more. Deb in construction means mounds are minimal estimators. Spatial extent of deb not relate to act loci, may be common dumps. 4. Qualitative info more indic of specialists than quantity of deb. 5. Deb only moved as far as necessary, so hs group assoc may be good. 6. Finished tools discard in diff place than deb. 7. Floor context deb usually intended to be discarded. 8. Once in 2nd dep, deb hard to connect to any wkshp.

Moholy-Nagy, Hattula
1991 The Flaked Chert Industry of Tikal, Guatemala. In *Maya Stone Tools: Selected Papers from the Second Maya Lithic Conference*. T. R. Hester and H. J. Shafer eds, pp. 189-202. Prehistory Press, Madison.

Moholy-Nagy, Hattula
1992 Lithic Deposits as Waste Management: Reply to Healan and to Hester and Shafer. *Latin American Antiquity* 3 (3): 249-251.

More quibbling about definitions. Chert widely distrib, not just in Belize "chert-bearing zone" and local chert craft spec at other sites.

Moholy-Nagy, Hattula
1997 Middens, Construction Fill, and Offerings: Evidence for the Organization of Classic Period Craft Production at Tikal, Guatemala. *Journal of Field Archaeology* 24 (3): 293-313.

Debitage from chert, obsidian, jade, slate, shell, bone. Two problems in examining debitage: Production activities are spatially flexible – not needing special facilities. Site maintenance activities move stuff. So not all debitage deposits are workshops, e.g. largest deposits at T from around important burial chambers. Most chert debitage from local chert biface production, most obsidian from blade production using imported preformed cores. Much from special deposits, including "problematical deposits" (cache etc which included lots of domestic refuse or debitage), but some from "general excavations" including architectural fill. Much domestic refuse incorporated in archit fill, but middens also around some house mounds and in chultuns, quarries, reservoirs. Only some hshlds have debitage, and it is usually mix of diff types e.g. bone + chert + other. Obsidian more restricted than chert. In PreClassic, chert waste most in chultuns; in Classic, shift to depositing it in caches and burials. Two "special purpose dumps" of obsid waste in shallow pits in platforms, with no domestic refuse or cache objects. Caches under stelae, in temples, and over burials contain chert and obsid waste as well as other waste and whole objects. Chert and obsid over burials together, chert mostly btf with other stuff, obsid mostly small percussion flake-blades with other stuff including waste from making eccentrics out of exhausted blade cores. In some, baskets of deb distrib through other fill. Such deposits don't contain usual sherds etc of domestic rubbish. Possibly symbolic of underworld or lightning. As well as offering, good way to "get rid of very large quantities of waste generated by craft specialists" producing artifacts for the construction of the burial or inclusion in accompanying caches. [But there is way too much for that to be the source]. And maybe from middens of knapper making other stuff [yes]. Primary purpose is dump, rationalized as offering because: 1 – composition same as special purpose lithic dumps, no household midden material included. 2 – no assoc with other traits of chamber burials. 3 – all known burials w waste deposits are from sites without surface accumulations of debitage. Elite activities promoted stone tool manuf, but prob directly controlled only special ones. "Except expedient production of tools of local chert and bone, all durable artifact production was carried out by specialists." [Prob too general]. Part-time specializ indicated by presence in household middens of waste from manuf of common standardized artifact types. Special purpose dumps indic full-time. Also assoc of debitage w elite burial, and its mix w exotic wastes, which also suggests multiple specializations in one household. Chert manuf by local hshlds (expedient tools); part-time spec in hshlds (mix w midden) and full-time spec (special deposits).

Lowland Maya 2 mutually exclusive patterns of lithic waste disposal: surface dumps, only at small sites eg Colha; and buried aggregates only at upper level sites.

Moholy-Nagy, Hattula
2003 *The Artifacts of Tikal: Utilitarian Artifacts and Unworked Material. Tikal Report No. 27, Part B*. University of Pennsylvania Museum of Archaeology and Anthropology, Philadelphia.

Maya. [She doesn't seem real experienced with lithic technology. Typology is based on old Kidder Uaxactun types, plus a "behavioral typology" which is reduction sequence blurred with typology] Hard hammer percussion dominates, with a few antler tools known. Nodules locally available for both expedient tools and specialist production (bifaces). Fine chert and chalcedony sometimes glossy, but no clear heat treatment. Reworking damaged bifaces common all periods, suggesting bifaces obtained from specialists, rework by owners. "Quantities of chert debitage and failed artifacts demonstrate the city an important production center by Terminal Preclassic…production loci themselves obliterated by site maintenance procedures." Specialist-produced forms and waste common all over, more so in center, more wide spread than other special artifacts except pottery. Common in construction fill of monuments, which often is midden brought in from residential groups. Debitage also in household middens, or chultuns, by Terminal Preclassic, so much waste that now put in special deposits, eg. exterior to burial chambers. In Classic, debitage in caches, problematical deposits, and special-purpose dumps. Lengthy descriptions, classification, extensive illustration. Notably lots of thin bifaces – points etc as well as larger knives.

Moholy-Nagy, Hattula
2003 Source Attribution and the Utilization of Obsidian in the Maya Area. *Latin American Antiquity* 14(3):301-310.

Several sources vary through time and space. Green and grey Central Mexican obsidian minor but consistent. Visual sourcing of grey Maya obsidians not very reliable.

Moholy-Nagy, Hattula, and Fred W. Nelson
1987 More Source Analyses of Obsidian from Tikal, Guatemala. *Lithic Technology* 16(1): 13-21

succession of sources-6, most near Valley of Mexico
visual variability means sourcing needs XRF

Mohrman, Herold
1983 More on the Large Obsidian Ceremonial Blades from the Pacific Northwest. *Central States Archaeological Journal* 30(2): 62-64.

Specimens in Mus of Sci + Nat Hist, St Louis

Moir, J. Reid

1917 The Position of Prehistoric Research in England. *Proceedings of the Prehistoric Society of East Anglia* 2

"But as regards flint fracture there is no excuse for ignorance on the part of any prehistorians. Anyone can fracture flints in various ways and take note of the results achieved, and in the opinion of the author, no one who has not so fractured flint is in spirit and in truth a serious student of prehistory." Eolith argument about human vs. natural origins some flints, patination not reliable for dating. "flaking diagrams" for typology + comparison.

Moloney, Norah
2004 The role of stone tools in the Early Bronze Age of southern Jordan: The assemblages of Wadi Faynan 100. In *Lithics in Action: Papers from the Conference 'Lithic Studies in the Year 2000'*. E. A. Walker, F. Wenban-Smith, and F. Healy eds., pp. 253-258. Oxbow Books, Oxford.

Monastersky, Richard
1990 Reopening Old Wounds. *Science News* 137(3): 40-42

"Behavior is the first thing to go when you're dead" p41- attributed to Larry D. Martin, U of Kansas paleontologist
Dinosaur paleopathology [simple but good]

Mondino, John
1993 A Few Comments on Material Resources. *Chips* 5(3):3-4.

Promotes conservation, laments depletion

Monnier, Gilliane F.
2007 Middle Palaeolithic Scraper Morphology, Flaking Mechanics and Imposed Form: Revisiting Bisson's 'Interview with a Neanderthal'. *Cambridge Archaeological Journal* 17(3):341-350.

Bisson recognizes imposition of form in MP scrapers based on "rules" for manufacture interpreted from novice knappers. Violations of "rules" at Skhul suggests that anatomically modern humans had mental templates. But his "rules" reflect flaking mechanics and experimental design rather than functional considerations during scraper manufacture, so can't conclude Neanders lacked mental templates or innovation and flexibility.

Montelius, Oscar
1888 *The Civilization of Sweden in Heathen Times*. New York: Haskell House Publishers Ltd (reprint 1969).

cite for microlithic point p 25. Good old engravings of various stone tools.

Montelius, G.O.A.

1903 *Die Typologische Methode*. Stockholm: Almqvist & Wicksell.

Montet-White, Anta
1968 *The Lithic Industries of the Illinois Valley in the Early Middle Woodland Period*. Anthropological Papers 35. Museum of Anthropology, University of Michigan.

Montet-White, Anta
1974 Significance of Variability in Archaic Point Assemblages. *Plains Anthropologist* 19(63): 14-24.

Mooney, James
1896 The Ghost-dance Religion and the Sioux Outbreak of 1890. *14th Annual Report of the Bureau of American Ethnology for the Years 1892-1893*, pp. 641-1136. Government Printing Office, Washington, DC. (reprinted 1965, University of Chicago Press, Chicago.)

Moore, Clarence B.
1916 Some Aboriginal Sites on Green River, Kentucky. *Journal of Academy of Natural Sciencces of Philadelphia* 16: 431-509.

Bannerstones, atlatl weight theory but prefers net hook idea. Complains of looting of mounds
[both plates + 1:1 photos atlatl parts] brf descrip burials, artifacts – 50 some association info
3 human traumas – stn pt in skull, atler in vert., skull w. blunt trauma and perforations

Moore, H. R.
1988 Knappin Nomads. 20th *Century Lithics* 1:99.

[Bleh!!! fake rustic account of commercial source exploration]

Moore, H. R.
1988e Loaded Billets. *20th Century Lithics* 1:92.

Lead filled antler tines

Moore, H. R.
1989a Knappin Nomads: High, Wide, and Windy. *Chips* 1(4):3.

Moore, H. R.
1989b Modern Tools for an Ancient Craft. *Chips* 1(3):6-7.

Moore, H. R.
1989c Point to Point Contact: Here and There. *Chips* 1(4):11.

Moore, Mark
1993 Replicating Elko Points. *Chips* 5(2): 8-10.

Good, arch based replication
some how-to, sequence of stages, descrip.

Moore, Mark
1993 Replicating Rosegate and Desert Side-Notched Points. *Chips* 5(3): 5-8.

Good typol and technol info from arch and replic

Moore, Mark
2000 Kimberley Spear Points of Northwestern Australia *Chips* 12(3): 5-17.

very good detailed article on manuf., history, cultural context with ref to primary lit

Moore, Mark W.
2003 Australian Aboriginal Blade Production Methods on the Georgina River, Camooweal, Queensland. *Lithic Technology* 28(1): 35-63.

Moore, Mark W.
2004 The Tula Adze: Manufacture and Purpose. *Antiquity* 78 (299): 61-73.

"gull-wing" tula with large bulb, negative bulb on dorsal, and gouge shaped edges. Tula invented 3600-2700 BP supplanting choppers. Queensland Australia ethnog, arch assemblage, replic experiment. Form is efficient for hafting and use.

Moore, Mark W.
2013 Simple Stone Flaking in Australia: Patterns and Implications. *Quaternary International* 285:140-149.

"Standard sequence" of development of stone tools (i.e. simple flake sequences develop to proliferation of more complex tools made by heirarchical behavioral chains, more cognitively complex) differs in timing in Australia. Old World, patchy complexity by 270 kya, prolif of complexity by 70 kya, Aust patchy complexity by 35 kya about 10 ky after entrance to continent. Human entrants to Aust carried simple technol, while more complex already assoc with modern *H. sapiens* elsewhere, didn't develop real complex until after 25 kya. [considers handax + Levallois "simple" chains of flakes that do not require hierarchical arrangement of "future results contingent on past actions" - but that's nonsense, h + L are certainly complex by his definitions]. In Aust, edge-ground axes first "complex hierarch ordered reduction sequence tools" in late Pleist, then backed microliths. Simple continues alongside microliths, axes, later bifacial Kimberley pts. [He shows macroblade production as "hierarchical." It is structurally identical to Levallois.]

Timing indicates that devel of complexity in Aust is *not* related to cognitive change because already fully modern. Also no correlation of tool complexity with mobility or organizational complexity - both equally useful and malleable to any circumstances or environmental change.

Symbolic use as cultural markers: in Aust, complex knapping performance and product serve as identity, connect to locality and myth, exchange goods, prestige, social relationship [good refs]. Computer modeling suggests innovation increases with population, and with long-distance contact. Complex knapping (and rock art) as "info exchange" to "open up" communications as populations become larger and fixed in restricted territories.

Moore, Mark W.
2014 n.d. Bifacial flintknapping in the northwest Kimberley, Western Australia. Journal of Archaeological Method and Theory, in press.

Survey recording over 300 surface lithic scatters in remote Kimberley area. Detailed descrip of flaking techniques: K pts (mostly quartzite in this area) made by bifacial percussion reduction of blanks to make thin bifaces, using quartzite hammerstones, followed by invasive large pressure flaking, sometimes with serration or other edge work. Theoretical focus on the 'technocomplex' (= whole activity system of manuf), subdivided into 'plan of action' (of steps in manuf to make desired piece). At each reduction step knapper applies a 'tactical set" (combination of imagery [mental templates], tools, and kinesthetic know-how [skills]) to particular circumstance. Each removal by a 'technique' combining mode of force application e.g. percussion, material of indentor, gesture of worker, and ideational element that combines + applies them.

Nice photos + drawings of stages in K pt manuf. Measurements suggest percussion results in 45% decrease in biface W to achieve 53% decrease in T [not very efficient].

Lots of good ethnog info and refs - KPs were observed by many. Older pt forms (prepared core points) attributed to ancestors. Biface pt manuf as 'innovation' serving social purposes of identity: worked because blank manuf done by men (with limited M audience) at quarry area, but 'virtuoso' performance of pressure work could be done anywhere, and was public; hence numerous observations that 'men always making points in camp,' while percussion work rarely observed. Knapping assoc with maleness, initiation, and pts important in networks of *wunan* marriage and good exchange. Display + exchange allowed monitoring of individual skill, which brought prestige. Davidson 1935 and Micha 1970: Wardaman people in 30s trying to make K pts but poor because did not know the percussion techniques necessary to make good thin blanks, because these were 'hidden' while the pressure work was done in public, even as 'performance.'

Moore, Robert K.
1973 *Projectile Point Types of the American Indian: Price Guide, second edition*. American Indian Books, Athens, Alabama.

crummy price guide, silhouettes of pts only, not much info
mostly interesting for prices- Clovis $25.00 etc, most pts $2-5

Moore, Roger A.
1994 The Lithic Assemblage from a Pueblo Petroglyph Site. In *Artifacts, Shrines, and Pueblos: Papers in Honor of Gordon Page*. Meliha S. Duran and David T Kirkpatrick eds, pp. 167-182

NW New Mexico 41 motifs on slabs, all pecked, some also abraded. PII sherds + assoc 83 lithics - siltstone, chert, basalt, qtzite. 19 choppers, abraders, pounders show stone-on-stone wear. Resharpening flakes = 20% of flake assemblage. Use-wear = microspalling + mass attrition resulting in rounding + flaking of formerly sharp edges. 3 hammer stones w/ battered pts + ridges. Replicated wear by making petros using cobble choppers.

Moorehead, Warren K. **Burling**
1910 *The Stone Age in North America*. Houghton Mifflin Company, Boston.

Vol 1, p. 122 "A paper by W. Thornton Parker, M. D., describes the arrow and its mode of manufacture [not well or in much detail], and magnifies the malignity of arrow-wounds. The author explains the apocryphal difference between hunting- and war-arrows, saying: "The head of the war-arrow is shorter and broader than that of the hunting-arrow, and is attached to the shaft at right angles with the slot which fits the bow-string, the object being to allow the arrow in flight more readily to pass between the human ribs, while the head of the hunting-arrow, which is long and narrow, is attached perpendicularly to the slot, to allow it to pass readily between the ribs of the running buffalo." [M does not explain why he considers this apocryphal or the wounds exaggerated, but on p 86:] "The pointed flint objects without stem are, for the most part, triangular war points. The story of their use is so old, having been printed in many publications, that it is only necessary to state that these are called war points because there is not means of fastening them securely to the arrow, and they became detached from the arrow when the victim attempted to withdraw the shaft." [I can't tell whether or not this is a dismissive tone.]

Quoting several pages from 1885 report by Sellars, including (68) "It is also in these game districts that what is known as the 'bevel-edge arrow-points' are found, that have been a subject of discussion as to their use. Foster says of the one he has illustrated: 'The specimen represented is from Porfessor Cox's collection, and the two edges are symmetrically beveled, as if to give it a rotary motion.' I have met many others that accept this idea, unmindful of the fact that a ship is not steered at its stem, but by the rudder at its stern, and an arrow is not directed or held to its course by its point, but by the feather at the butt end of its shaft; and if a rotary motion was required, it would naturally be given by placing the feathers spirally around the shaft. The broad flat sides of these beveled points would neutralize any effect from the short bevels in passing through the air." Also probably not 'reamers', but bevels produced because "simplest and easiest to form by chipping when laid on their flat'. [So Moorehead also does not accept the bevel/spin idea].

[Primitive scholarship: M doesn't use footnotes like most of his peers, which are bad enough, but instead names the author, and then has a 'Bibliography' arranged by topic, but not alphabetized within topic, and no titles given for articles, just journal and date. And he is notably missing some of the refs I would like to have found.]

Moratto, Michael J.
1972 A Study of Prehistory in the Southern Sierra Nevada Foothills, California. Ph.D. dissertation, Department of Anthropology, University of Oregon.

cite for bifaces in Miwok area burials

Moratto, Michael J.
1984 *California Archaeology*. Academic Press, New York.

Morel, Philippe
1998 La grotte du Bichon (La Chaux-de-Fonds, canton de Neuchatel, Suisse) In *Les Dernieres Chasseurs - Cuelleurs do massif Jurassien et des ses marges*. pp. 88-93. Lons-le-Saunier.

Azilian hunter and bear skeleton together. [source for Lund 2008]

Morisaki, Kazuki
2006 The Kou Point and Kou Industry in the Upper Paleolithic of Western Japan. *Current Research in the Pleistocene* 23:16-18.

Morlan, Richard E.
1991 Peopling of the New World: A Discussion. In *Clovis Origins and Adaptations*. Robson Bonnichsen, Karen L. Turnmire, eds, pp 303-308. Oregon: Center for the Study of the First Americans

Morley, Sylvanus G.
1946 *The Ancient Maya*. Stanford: Stanford University Press.

Cite for illust of hafted knife from Cenote at Chichen Itza fig 14 p238

Morrow, Carol A.
1984 A Biface Production Model for Gravel-Based Chipped Stone Industries. *Lithic Technology* 13(1): 20-28.

Morrow, Carol A.
1987 Blades and Cobden Chert: A Technological Argument for their Role as Markers of Regional Identification During the Hopewell Period in Illinois. In *The Organization of Core Technology*. J. K. Johnson + C. A. Morrow, eds., pp 119-150. Boulder: Westview Press

Morrow, Juliet E.
1997 End Scraper Morphology and Use-Life: An Approach for Studying Paleoindian Lithic Technology and Mobility. *LithicTechnology* 22 (1): 70-85.

If paleoind bifaces used as portable cores, end scrapers further from sources should be on bifacial thinning flakes + smaller + thinner w/ increase distance - some support found

Morrow, Juliet E.
2010 The Sloan Dalton Site (3GE94) Assemblage Revisited: Chipped Stone Raw Material Procurement and Use in the Cache Basin. *Missouri Archaeologist* 71:5-40.

Dalton cemetery, excav 1974, 439 stone tools including 146 D pts. D dates 10,500-9,900 rcybp = 12,480-11,300 cal BP, overlaps w Folsom. Woodland envir, high biotic diversity.
New material IDs by J. Ray. Most pts Lafayette chert, pale brown/grey, S IL/MO/AR, closest material to site. Several others include Burlington from >200km MO. 71/110 small D pts beveled, most serrated, little evidence of use-wear. Large points as possible "costly signals" or other social/symbolic valued goods.

Morrow, Juliet E.
2014 Review: Across Atlantic Ice: The Origin of America's Clovis Culture, by D. Stanford and B. Bradley. *Lithic Technology* 39(1):76-78.

Acuses them of misrepresenting and misinterpreting data, selective use of facts, etc.

Morrow, Juliet E. and Toby A. Morrow
1996 Fluted Point Complexes in the Midwest: A Technological and Morphological Perspective. Paper presented at 41st Midwest Archaeol. Conference, South Beloit, Illinois, Oct 9-12 1996.

distinctions between Clovis + Gainey pts.

Morrow, Juliet E. and Toby A. Morrow
1999 Geographic Variation in Fluted Projectile Points: A Hemispheric Perspective. *American Antiquity* 64(2):215-230.

Fluted technol devel in Gt Plains of W N Am, ca 11,500 BP, spread across N, Meso, and S Am - by 10,800 BP fluted fishtail pts in S. Am's S tip. Metrics show clinal changes in pt form from Clovis to Fishtail to others. Growing + expanding, mobile pop = rapid spread w."drift" of traits

Morrow, Juliet, and Toby Morrow
2002 Exploring the Covis-Gainey-Folsom Continuum: Technological and Morphological Variation in Midwestern Fluted Points. In *Folsom Technology and Lifeways*, J. E. Clark and M. B. Collins, eds., pp. 141-158. Lithic Technology Special Publication No. 4. University of Tulsa, Tulsa.

Morrow, Juliet E., and Toby A. Morrow
2002 Rummells-Maske Revisited: A Fluted Point Cache from East Central Iowa. *Plains Anthropologist* 47 (183): 307-321

1960's find excav by UI. 20-22 fluted pts, 1 lg side scraper. Burlington + Verdi cht, unheat treated (as are virtually all MidW paleo). Many broken by plow-prob all whole when buried. Bag wear on surfaces, only a couple flakes assoc - not made there. No use wear, damage, or resharp - all pristine. Eastern affinities - eg "Gainey" pts, a bit later. Sim also to Lamb site cache. Geog overlap w/ Clovis in IA vs temporal diff - no ocher or burial assoc - utility cache?

Morrow, Toby

1984 *Iowa Projectile Points*. University of Iowa Press, Iowa City.

Good local + Midwestern point typology. Raw material sources and identification.

Morrow, Toby A.
1988 Thebes Knives: Experimental Application to Archaeological Data. *20th Century Lithics* 1:8-23.

Exper debitage + stages applied to a site. Indirect percussion notching

Morrow, Toby
1994 A Key to the Indentification of Chipped-Stone Raw Materials Found on Archaeological Sites in Iowa. *Journal of the Iowa Archaeological Society* 41:108-129.

Morrow, Toby
1997 A Chip Off the Old Block: Alternative Approaches to Debitage Analysis. *Lithic Technology* 22(1): 51-69.

Test 4 techs on exper debitage-2 bif (1 Clovis pt), blade core, bipolar core. Mass Analysis sensitive to reduction mode - hardhm/sft hm/press but not core form + reduction strat. Sullivan + Rozen categories not useful. Platform Morphology - good for core + reduction strat. Metric attributies of individ flakes.

Morse, Dan F.
1997 *Sloan: A Paleoindian Dalton Cemetery in Arkansas*.Washington, Smithsonian Institution Press.

Excav 1974 to stay ahead of looters [interesting stories of relations with collectors, looters, and the Sloans who wanted site properly excavated]. M. Schiffer participated. Sand dunes in NE Arkansas, area now destroyed by agric. Final excav 200 square meters, av 3-4 tools/m, 1 complete pt/m. One Archaic burial, 211 small bone frags from Paleo component, only a few anatomically identifiable. Chapters on bone, artifacts, biface + point technology (Bradley), microwear (Yerkes + Gaertner), artifact distribution patterns, geology, vegetational history, and Dalton period overview.

439 Dalton artifacts, including 146 pts, 42 adzes. Chert plentiful, good quality, discard of tools that could be recycled. Different Miss R Valley watersheds access diff cherts in uplands - lots exchange among watershed microbands. Crowley Ridge, Pitkin + other Ozark cherts, Crescent Quarry + other Burlington. [see also J. Morrow 2010] Large Dalton pts (up to 19 cm) only possible on Burlingtons. Most pts complete, unresharpened form or freshly resharpened. Large broad form named Sloan Dalton, prob not for use. 110 pts < 8 cm long, almost all complete + unused. Majority beveled, often serrated. All 72 bevels “right-handed”, ie on R edge viewed tip up = worked w tip toward knapper [not necessarily], differs from later Archaic pts which have “left” bevels. All bevels = resharpening, unifacial conservation of material. Six awl/drill forms on pts, also 2 burinated and 1 scraper. Point dimensions cluster tightly. Mean max L for large pts 111.5 mm, for normal pts 61.8 if beveled, 63.7 if not. Mean max T = 6.4 mm. Bifaces in caches, appear not to be pt preforms, only 1 preform found.

Earliest formal adzes known (humped ovoid bifaces with ground hafting areas), made on Crowley Ridge chert cobbles. Also scrapers, abraders, piece esquille.
[Artifact photos are inexcusably bad - all the pts are illustrated with photos, but too reduced to be of much use, and cut out from a black background, so ugly as well. No good drawings either. Particularly sad since much of the useful analysis is of the points and other tools, and individual artifacts are discussed but can't be examined. Bruce Bradley had to post pictures to rectify this. Apparently the publisher's fault, wrecking an otherwise nice book. See http://www.primtech.net/sloan/sloan20r4.html]
Bradley describes manufacture: single trajectory, most Dalton forms known as resharpened, preforms rare. Sloan all finished, most flake scars from pressure work, early stages less evidenced. Substantial prelim pressure thinning followed by alternate edge beveling + serial pressure working base to tip, finished by careful serration. Often each face has L edge serial flaked, R non-patterned pressure + bevel flakes [so implies only one pass]. Steep bevel produces large flakes + bulbs in serial pressure that then used for serrations. Base thinned by fluting, ground.
Microwear on adzes shows use on dry and charred wood, adzing motion, possible mastic residues in haft area. Dalton pts - most Sloan unused, Brand site meat polish, projectile damage = point + knife, narrow resharpened form used as hide awl. Scrapers show hide polish.
"Cemetery" because numerous bone frags, but no separable grave lots, although many artifacts cluster in "caches." [Individual knappers identifiable? Can't tell: the catalog numbers are in no particular order in the photos, the pts are not grouped by context but by shape which perhaps overemphasizes similarities, and while the 'cluster' descriptions list numbers, these include other artifacts and are hard to track down]
Dates: Dalton comes from Clovis base = late Pleistocene fluted tradition 10,600-10,000 BP

Morse, Dan F.
1999 Two Chert Knapping Kits from Northeast Arkansas. *Lithic Technology* 24(2): 111-118.

Mississippian, 14 & 16 C, looted stuff, context poor, probably not complete sets. Mostly hammerstones, abraders, and flake pieces [Not very exciting]

Mortillet, G. de
1891 Mousterien des environs de Mons. *Bulletin de la Societe d'Anthropologie de Paris* 2:565-568.

Moss, E.
1987 Polish G and The Question of Hafting. In *Le Main et l'Outil : Manches et Emmanchements Préhistoriques*. D. Stordeur ed., pp. 97.102. Lyon : Maison de L'Orient.

Moulton, Anne L., and Thomas S. Abler
1991 Lithic Beings and Lithic Technology : References from Northern Iroquoian Mythology. *Man in the Northeast* 42 :1-7.

Mythic references to beings associated with chert reveal old lithic technology. Creator Twin Tawiskaron = Flint, also stone giants. Flint is evil twin, bursts out of mother, burnt & struck with antlers by good twin Sapling. Read myths as reflections on knapping, flint sources, heat treatment, etc. [Some far-fetched, obviously not knapping related] but symbolic importance of flint established.

Moundréa-Agrafioti, A.
1987 Problémes d'emmanchement dans le Néolithique grec : les gaines et manches en bois de cervidé. In *Le Main et l'Outil : Manches et Emmanchements Préhistoriques*. D. Stordeur ed., pp. 247-256. Lyon : Maison de l'Orient.

Mounier, R. Alan
1999 Neophytic Notes on Fire-Making with Friction. *Bulletin of Primative Technology* 18:49-57.

Easy to do, hard to discover alone by experiment. Basic how-to confused by masses of detail. Careful recorded expers. [A little overboard but pretty good.]

Movius, Hallam L.
1968 Note on the History of the Discovery and Recognition of the Function of Burins as Tools. In *La Préhistoire: Problémes et Tendances*, F. Bordes and D. de Sonneville-Bordes, eds., pp. 311-318. Paris: CNRS

Muensterberger, Werner
1994 *Collecting, An Unruly Passion: Psychological Perspectives*. Princeton University Press, Princeton.

Freudian take - collecting = control, usually as result of deprivation or trauma in childhood

Mulholland, Susan C.
2006 Paleoindian Quartz Points in Northern Minnesota and Adjacent Ontario. *Current Research in the Pleistocene* 23:130-132.

Mulholland, Susan C., Stephen L. Mulholland, Gordon R. Peters, James K. Huber, and Howard D. Mooers.
1997 Paleo-Indian Occupations in Northeastern Minnesota: How Early? *North American Archaeologist* 18(4): 371-400**.**

Point distribs, using collections, including finds by T. Romano

Muller, Jon
1977 Individual Variation in Art Styles. In *The Individual in Prehistory* J. Hill and J. Gunn eds., pp. 23-39. New York: Academic Press.

Müller, Sophus

1902 Flintdolkene i den Nordiske Stenalder. *Nordiske Fortidsminder* 1(5): 125-180, plates 23-28.

Flint daggers in the Nordic Stoneage, in Danish, with French summary. Important illustrations.

Mulligan, Connie J. and Andrew Kitchen
2013 Three-Stage Colonization Model for the Peopling of the Americas. In *Paleoamerican Odyssey*. Kelly E. Graf, Caroline v. Ketron and Michael R. Waters ed., pp .171-182. Tops Printing, Inc., Texas.

Munday, Fred C.
1976 Intersite Variability in the Mousterian of the Central Negev. In *Prehistory and Paleoenvironments in the Central Negev, Israel, Vol. I: The Avdat/Aqev Area Part I.* A. Marks ed. Pp. 113-140. Dallas: SMU Press.

Discusses effects of distance from source.

Munday, F.
1979 Levantine Mousterian Technological Variability: A Perspective from the Negev. *Paléorient* 5:87-104.

Muniz, Mark
2004 Exploring Technological Organization and Burial Practices at the Paleoindian Gordon Creek Site (5LR99), Colorado. *Plains Anthropologist* 49 (191):253-279.

AMS dates on skel and charcoal = 12,050-10,150 cal BP. Female, assoc w bifaces, flakes, hammerstone, drilled animal teeth and bone, ochre, and burning. Biface technol relates to Hell Gap and Clovis, suggesting continuity. Some lithic artifacts burned, most have very little wear = made for burial. Hide smoothing wear on pebble. No antler, maybe woman relied on hard hammer for her tool maintenance. Possible symbolic diff – shaped tools (bone, bifaces) are broken and/or burned; unshaped (flakes, pebble) are not [too many exceptions]. Gender considerations – is this a woman's tool kit, or offerings?

Murdoch, John
1892 Ethnological Results of the Point Barrow Expedition. *Ninth Annual Report of the Bureau of American Ethnology for 1887-1888*. Pp. 19-451. Government Printing Office, Washington D.C.

1881 exped to N tip of Alaska. Eskimo still making and using some stone tools along with metal. Describes pressure flaking and flakers, hafting of tools. Also atlatls, bows, complete material culture collection.

Murphey, Kelly A.
1981 A. Note on the Bison Calcaneum as a Billet. *Flintknappers' Exchange* 4(3):4-6.

Find from Idaho, with Hell Gap-like point, used as billet. Experimentally tried, works well.

Muscarella, Oscar White
2008 The Veracity of "Scientific" Testing by Conservators. In Pernicka, Ernst, Silke von Berswordt-Wallrabe, and Hilke Wagner eds, *Original - Copy - Fake? Examining the Authenticity of Ancient Works of Art - Focusing on African and Asian Bronzes and Terracottas*. pp., 9-18. Verlag, Philipp von Zabern, Mainz.

[Good points but badly written and egocentric.] Near E forgeries made for over a century. Scientific evaluations often considered unchallengable, but really no more reliable than connisseurship. Four problems: "issue of forgeries of ancient objects involves only objects that have not been excavated by archaeols from a known site." [probably too optimistic - planting and salting are not unknown, and good way to make forgery look "authentic"] 2. All dealers insist they never sell forgeries, but that others do. 3. Skill and knowledge of forgers cannot be overestimated. They are good craftsmen, and monitor scientific advances in detection. 4. Conservators + testers can err honestly, or obey wishes of superiors, donors etc by dissimulating, lying, and avoiding conclusive tests.

Muto, Guy R: Peter J. Mehringer Jr., Claude N. Warren
1976 A Technological Analysis of Projectile Points from a Burial, Amargosa Desert, Nevada. *Kiva* 41(3-4):267-276.

Myers, Andrew
1987 All Shot to Pieces? Inter-Assemblage Variability, Lithic Analysis and Mesolithic Assemblage 'Types': Some Preliminary Observations. In *Lithic Analysis and Later British Prehistory: Some Problems and Approaches.* A.G. Brown and M.R. Edmonds eds., pp. 137-154. B.A.R. British Series 162: Oxford.

Myers, Thomas P.
1995 Paleo Indian Occupation of the Eastern Sand Hills. *Plains Anthropologist* 40(151):61-68.

Nebraska, based on points and lithic sources, illustration of points from a collection.

Nadel, Dani
2001 Indoor/Outdoor Flint Knapping and Minute Debitage Remains: The Evidence from the Ohalo II Submerged Camp (19.5 KY, Jordan Valley). *Lithic Technology* 26 (2): 118-137.

Nagai, Kenji
2006 A Chaine Operatoire Approach to the Production of Tanged Points from South Kanto, Japan. *Current Research in the Pleistocene* 23:18-21.

Naganuma, Masaki
2006 Refitted Points: Biface Reduction Strategy in the Terminal Pleistocene of Honshu Island, Japan. *Current Research in the Pleistocene* 23:21-24.

Nagle, Ed
1914 Arrow-chipping by Means of Fire and Water. *American Anthropologist* 16: 140.

Letter, not eyewitness, could be one that popularized myth, Fraser 1908 earlier. See Whittaker 2015.

Naik, Gautam
2005 Arrowhead Case: Knapping Hits a Spot for Flint-Stone Fans. *The Wall Street Journal* October 6, 2005, on line, URL: http://wsj.com.

Visited Osage Knap-in, focus on Jim Spears. [Stupid title but ok article].

Nami, Hugo Gabriel
1984 Experimental Approach to the Manufacture of Chipped and Ground Stone Artifacts from the Túnel Site, Tierra del Fuego, Argentina. *Lithic Technology* 13(3): 102-107.

4 triangle basalt artifacts, flaked, one side ground, unknown use. Experiments with grinding. [not very useful]

Nami, Hugo G.
1984 Some References to Glass-Chipping Technology in Argentina. *Lithic Technology* 13(1):29-30.

Some refs only – to ethnographic pts he says but no more info. [not very useful – obscure refs w no page #s]

Nami, Hugo G.
1988 Some Remarks on the South American Flint-Like Materials. *20th Century Lithics* 1:70-76.

[No useful info]

Nami, Hugo Gabriel
1997. Arquelogia Experimental, talla de la piedra Contemporanea, Arte Modemo y Tecnicas Tradicionales: Observationes Actualisticas para Discutir Estilo en Technologica Litica. Relaciones de la Sociedad Argentina de Antropologia XXII-XXIII: 1997-1998: 363-388.

Nami, Hugo Gabriel
1998 Reflections on Stone Tool Reproductions: A Folsom Example. *Bulletin of Primitive Technology* 16: 76-79.

Suggests replication levels: A: Simulation of Process & Product – not good replics B:Simulation of Process, Replication of Product- good copy made wrong technic C: Replica of Process, Sim of product – right techniq but not good replic

D: Replic both process and product “true replication:” rest is “simulation” – D is goal.

Nami, Hugo Gabriel
2001 A Simple Holding Device for Microblade Obtaining by Pressure Flaking. *Bulletin of Primitive Technology* 22: 79-82.

Pressure flaking in hand with notched stick “vice”

Nami, Hugo Gabriel
2001 Consideraciones Tecnologicas preliminares sobre los artefactos liticos de Cerro de Los Burros (Maldonado, Uruguay). Comunicaciones Antropologicas. Museos Nacionales de Historia Natural y Antropologia.

PaleoIndian fishtail (Fell) points.

Nami, Hugo G.
2001 Current Trends in Lithic Technology in Argentina. *Lithic Technology* 26 (2): 94-104.

Nami, Hugo
2006 Experiments to Explore the Paleoindian Flake-Core Technology in Southern Patagonia. In *Skilled Production and Social Reproduction*. Jan Apel and Kjel Knutsson eds., pp. 69-80. Societas Archaeologica Upsaliensis, Uppsala.

Nami, Hugo
2006 Preliminary Experimental Observations on a Particular Class of Bifacial Lithic Artifact from Misiones Province, Northeastern Argentina. In *Skilled Production and Social Reproduction*. Jan Apel and Kjel Knutsson eds., pp. 130-152. Societas Archaeologica Upsaliensis, Uppsala.

Nami, Hugo G.
2011 Experiments to Understand North and South American Late Pleistocene Lithic Reduction Sequence: An Actualistic and Comparative Study. In *Experiment and Interpretation of Traditional Technologies: Essays in Honor of Errett Callahan*, Hugo Nami, ed., pp. 204-253. Ediciones de Arqueología Contemporánea, Buenos Aires.

Where did fluting originate? Differences in reduction sequence between Clovis, Folsom, and Fells Cave points, different “recipes for fabrication” but can’t resolve question of relationships. Could be independent, or shared some kinds of technological traditions. Fluted with small lever device.

Nami, Hugo G.
2011 Theoretical Reflections on Experimental Archaeology and Lithic Technology: Issues on Actualistic Stone Tools Analysis and Interpretation. In *Experiment and Interpretation of Traditional Technologies: Essays in Honor of Errett Callahan*, Hugo Nami, ed., pp. 92-168. Ediciones de Arqueología Contemporánea, Buenos Aires.

Experimental science, actualistic studies and uniformitarianism, analogy, middle level theory and middle-range research. Some history of experimental archaeology, photos of Crabtree (from Harwood) and Bordes (my photo, but Wikipedia credited!), Tixier (Wiki), Callahan + Sollberger (Nami). Limitations of experiments. Mentions modern non-academic knappers, eg Frank, Spears, useful to arch even if not experimenters. Experience improves perception of artifacts, gives better hypotheses to understand. Equifinality, different ways of producing same result, creates uncertainty in interpretations of artifacts. Four categories of reproduction: 1. Simulate process and product, not authentic 2. Simulate process, replicate object 3. Partial replic of process, simulate product, 4. Replicate both process and product. Examples: Photo McCormick Folsoms (1), Crabtree Folsoms (3 – because not really good replic of Folsom), Patten Folsoms (4). More than 25 p of refs.

Nance, C. Roger and Katharine A. Kirk
1991 Obsidrian Blades from La Blanca, A Changing Lithic Industry on the South Coast of Guatemala. *Latin American Antiquity* 2(4): 371-383.

Prismatic blades thru time get smaller, more fragmentary, more wear and bipolar rejuvenation = obsidian scarcer (imported)

Nance, J.D.
1971 Functional Interpretations from Microscopic Analysis. *American Antiquity* 36(3): 361-366.

[Important early use-wear article.] Stockton points (CA) have striations showing use other than as projectiles.

Nash, Michael A.
1980 An Analysis of a Debitage Collection from Colha, Belize. In *The Colha Project Second Season, 1980 Interim Report*, T. R. Hester, J. D. Eaton, H. J. Shafer eds., pp. 333-352. Center for Archaeological Research, University of Texas, San Antonio.

Op 2001 – E PostC, 50 cm thick wkshp dump (so 3 samples), making bifaces and triangular tools. Op 2006 Late PreC, 20 cm level from wkshp, making tranchet tools, bifaces. Op 1001 20 cm level from wkshp, bifaces and tranchet tools. Column samples 20 cubic cm using arbitrary 20 cm levels [he must mean 20 x20 x 20]. Exclude flakes smaller than 15 cm [he must mean 15 mm]. Looks at size, material color, platforms (bifacial, cortical, single facet, multifacet), and plat angles. [Not readily comparable with our analysis, eg. sizes analyzed as averages, but only around 40% "biface" platforms, despite emph on manuf bifaces. But no discussion of interp of what they were making and why there is some variation. Not very useful]. [See Shafer 1985 for clearer presentation of same material].

Nassaney, Michael S. and Kendra Pyle
1999 The Adoption of the Bow and Arrow in Eastern North America: A View from Central Arkansas. *American Antiquity* 64 (2):243-264.

Plum Bayou sites – pts. Indicate abrupt adoption ca AD 600, metrically discrete – not modif of dart pts. Adoption variable, not simple. Arrow pts generally < 5 mm T, < 2 gm, <9 mm neck W.

B + A prob from old world, earliest ca 3000 BC in Arctic, differentially accepted until 700 AD when Small Triangular Points widely adopted in E N Am, possible flake pt predecessor (Odell) earlier. [see also Patterson 2005] Plum Bayou = Woodland - Miss w/ mounds in Mississ R. Basin; 93 pts, dart & arrow, sites near Toltec Mounds. Dart = Gary, Means stemmed (19) appear to co-occur with pts in AD 700-1100 contexts. Small pts = arrow = Alba, Keota, Scallorn, Sequoyah. Metrically 2 groups by wt, thick, neck w, L, also diff production techniques. Arrow pts from bipolar flakes, dart pts from bifacial cores. Gradual increase in arrow, decrease in dart thru time. But not continuous varation between them, so different origins.

Regional comparisons: N. Plains – Avonlea pt AD 100 overlaps with darts, diffused from Arctic. W Iowa- uniface flake pt. AD 200-450, diffuse from NW. S Plains- uniface flake pt 3000 BC, bifacial pts AD 500-600 overlap with dart, transitional forms = in situ development. Mid W small pts AD 500-700, replace stemmed/notched darts, overlap, gradual development, gradual size decrease, small dart pts on Am Bottom maybe for arrow by 4000 BP. Late Wdlnd bodies with arrowpts in them 300-350 A.D. NY sudden thin haft pts = arrows 3000-2500 BP, also L. Archaic New Eng. N. Carolina piedmont triang pts introduced 2500-2020 B.P., decrease in size = transition. SE B + A from W. not N, Gary and other pts decrease in size, gradual transition.

But, here (Ark) abrupt intro, overlap, earlier intro b + a than thought. Selective adoption w/experimentation followed by wide use by AD 700. Reorganizations of hunt & war?

Nassaney, Michael S. and Michael Volmar
2003 Lithic Artifacts in Seventeenth-Century Native New England. In *Stone Tool Traditions in the Contact Era*. Charles Cobb, ed., pp.78-93, University of Alabama Press, Tuscaloosa.

Nations, James D.
1989 The Lacandon Maya Bow and Arrow: An Ethnoarchaeological Example of Postclassic Lowland Maya Weapon Manufacture. In *La Obsidiana en Mesoamerica*. M. Gaxiola and J.E. Clark, eds. Pp. 449-457. Instituto Nacional de Antropologia e Historia, Mexico D.F.

Nations, James D. and John E. Clark
1983 The Bows and Arrows of the Lacandon Maya. *Archaeology* 36(1):36-43.

[Interesting but not enough detail.] Manuf now for tourist trade, indirect perc for flake blanks.

Naumann, Aaron Joseph **sic**
2008. An Initial Analysis of the Gottschall Rockshelter Lithic Assemblage. Michigan:Michigan State University.

Needler, W.

1956 A Flint Knife of King Djer. *The Journal of Egyptian Archaeology* 42:41-44.

Curved knife with 'cut-out' handle covered in gold foil. Typical of 1st Dyn, bought, prob looted from Abydos during excavs of Djer tomb by various archs. 37 cm long. Name of Djer inscribed in foil. [good photos]

Needler, Winifred **parts**
1984 *Predynastic and Archaic Egypt in the Brooklyn Museum*. Brooklyn: The Brooklyn Museum.

Descriptive catalogue of material from 2 expeds by Henri de Morgan 1907, 1908 [He did lousy work- grave looting & artifact collecting] Fine flints (section Xeroxed) including ripple knife with ivory handle from grave 32 at Abuzaidan with pots (10) palette, serpentine vase – rich but not outstanding . Good descriptions and information. – DeMorgan described knife as "1 side polished while other is left as it came from the hand of the flint cutter" [implying wrong manuf. sequence]

Neeley, Michael P.
2002 Going Microlithic: A Levantine Perspective on the Adoption of Microlithic Technologies. In *Thinking Small: Global Perspectives on Microlithization,* edited by Robert Elston and Steven L. Kuhn, Archeological Papers of the American Anthropological Association 12, pp. 45-56.

Neeley, Michael P. and C. Michael Barton
1994 A New Approach to Interpreting Late Pleistocene Microlith Industries in Soutwest Asia. *Antiquity* 68 (259): 275-288.

Technical rather than cultural (style) explanation for variation in microliths among Mushabian Kebaran Natufian assemblages. Diffs in backed bladelets & geometric types more from stage of manufacture than ethnic style. Espec trimming geometrics to fit pre-existing hafts in repair etc. So microlith indices not good cultural or temporal markers. [fairly good, very much after Dibble scraper model. Highly critical responses - see Goring-Morris et al 1996.]

Negash, Agazi, and M. S. Shackley
2006 Geochemical Provenance of Obsidian Artefacts from the MSA Site of Porc Epic, Ethiopia. *Archaeometry* 48(1):1-12.

Middle Stone Age obsidian artifacts transported 250 km.

Neiburger, E. J.
2005 Old Copper: Determining Fake from Real. *Indian Artifact Magazine* 24 (4): 42-46, 64.

Neill, Wilfred T.
1952 The Manufacture of Fluted Points. *The Florida Anthropologist* 5 (1-2):9-16.

Theory of why flutes – 1) hafting- too much variation[considers all variation intentional] 2) blood groove 3) reduced weight 4) poison
Does all replication by indirect percussion [!] followed by fluting to remove ridge [of steps] left by flaking edge [incorrectly in first place.] [Good examples of early ignorance and eternal bad reasoning]

Neitzel, Jill E.
2003 Artifact Distributions at Pueblo Bonito. In *Pueblo Bonito: Center of the Chacoan World*. J. E. Neitzel, ed., pp. 107-126. Smithsonian Institution, Washington DC.

Among much else, points common in some rooms (up to 340 in one) and distribution in rooms and areas suggests some had ritual or symbolic function.

Neivens, Mary and David Libby
1976 An Obsidian Workshop at El Pozito, Northern Belize. In *Maya Lithic Studies* TR Hester, and N Hammond eds. Center for Arch. Research, U. Texas at San Antonio, Special Report 4. pp. 137-151.

Nejman, Ladislav, and Chris Clarkson
2008 Scraper and Notch Reduction in Middle and Upper Palaeolithic Assemblages from Central Europe. *Lithic Technology* 33(1): 17-30.

Nelson, F. W., K. K. Nielson, N.F. Mangelson, M.W. Hill, and R.T. Matheny
1977 Preliminary Studies of the Trace Element Composition of Obsidian Artifacts from Northern Campeche, Mexico. *American Antiquity* 42:209-225.

Cite for Teotihuacan sourcing study

Nelson, Larry Lee
1968 The Effect of Annealing on the Properties of Edwards Plateau Flint. MS thesis, University of Denver.

Nelson, Larry Lee
2002 The Richard Warren I Knew. *Chips* 14(4):16-18.

Pretty much what he told me with some more family details and stone info, photos.

Nelson, Margaret
1987 Site Content and Structure: Quarries and Workshops in the Maya Highlands. In *Lithic Studies Among the Contemporary Highland Maya*. B. Hayden, ed., pp. 120-147. Tucson: University of Arizona Press.

Nelson, Margaret
1987 Contemporary Specialization and Marketing of Manos and Metates in the Maya Highlands. In *Lithic Studies Among the Contemporary Highland Maya*. B. Hayden, ed., pp. 148-159. Tucson: University of Arizona Press.

Nelson, Margaret C.
1991 The Study of Technological Organization. In *Archeological Method and Theory* Volume 3, edited by MB Schiffer, pp. 57-100. Tucson: University of Arizona Press.

Questions of mobility, expediency /efficiency – Technological "strategy"

Nelson, M. C.
1996 Technological Strategies Responsive to Subsistence Stress. In *Evolving Complexity and Environmental Risk in the Prehistoric Southwest*, Joseph A. Tainter and Bonnie B. Tainter eds, pp.107-144. Santa Fe Institute for the Study of Social Complexity, Proceedings 24, Addison-Wesley, Reading MA.

Tech strats include specialization and diversification - examines projectile pts from late SW. Design theory: 1. stem + barb pts [eg Rosegate-like] should be to remain in animal detached from haft 2. corner-notched expanding stem pts remain in animal + on haft, 3. side-notched easily remove from animal and stay hafted. So 1 +2 are versatile, but 3 intended for animals not to be tracked after shot, thus specialized for communal drive hunting. Aggregate collections from Chaco, Tijeras, Gran Quivira dominated by side-notched, Mimbres and Black Mesa all three. [interesting idea but her gross data cannot possibly approach it - mixing of types with some chronol diffs, overgeneralized ideas of hunting and point design, and innaccurate description of point qualities. E.g. side-notched pts, the universal late arrow pt, are not "securely hafted, specialized forms designed for reuse" 130 because almost all are too small to rework - they are exactly equivalent to the "simple triangular, minimally retouched forms common in late prehist contexts. These are versatile replaceable forms suited to generalized hunting strategies." 134]

Nelson, Nels C.
1916 Flint Working by Ishi. In *William Henry Holmes Anniversary Volume*, edited by F. W. Hodge, pp. 397-402. J. W. Bryan Press, Washington, D.C. Reprinted 1976: AMS Press, New York.

"Not having experimented very much, I am unable to say why Ishi proceeds as he does, but he gets results which I cannot imitate, try as I will. Ishi removes thin and fairly slender chips that extend 2/3 or more across the face of the flake, while my chips are thick and short. Consequently, his arrowpoints when finished are thin and shapely, while mine, much to his disgust, are thick and clumsy affairs." p.401

Neumann, Thomas W.
1988 High-Magnification Use-Wear Analysis of Projectile Points from Southeastern Minnesota. *Plains Anthropologist* 33(121):367-375.

120 pts L Archaic- M Woodland, 11 types. Lots evid use as knives, espec hide working. Breakage patterns, Keeley type use wear supported by experiment. Need to reassess function of tools & sites – no longer likely simple male-oriented tools. [some problems – hide cutting = skinning rather than processing? Poor understanding of breakage]

Neumann, Thomas W. and Elden Johnson
1979 Patrow Site Lithic Analysis. *Mid-Continental Journal of Archaeology* 4(1):78-111.

Neusius, Sarah W., and G. Timothy Gross
2007 *Seeking Our Past: An Introduction to North American Archaeology*. Oxford University Press, New York.

Textbook, many lithic illustrations, mostly drawings of variable quality from other sources.
p 209 good drawing of Skagit atlatl carving from NW coast
On accompanying CD, lengthy chapter D2 “Weaponry of Clovis Hunters at Blackwater Draw” by Anthony Boldurian accepts assumption that Clovis had atlatls, discusses hafting models for Clovis points and bone rods, and promotes idea of a socketed harpoon with C point as end-blade [for which the archaeological evidence is nil - model is based on one Archaic specimen and analogy to Inuit harpoons.]

Neves, Walter A., Mark Hubbe, Danilo Bernardo, André Strauss, Astolfo Araujo and Renato Kipnis
2013 Early Human Occupation of Lagoa Santa, Eastern Central Brazil: Craniometric Variation of the Initial Settlers of South America. In *Paleoamerican Odyssey*. Kelly E. Graf, Caroline v. Ketron and Michael R. Waters ed., pp. 397-414. Tops Printing, Inc., Texas.

Newbert, David DeTar
1997 The Fenn Clovis Cache. *Prehistoric American*. 31(4):12-15.

Brief description Clovis cache with good photos of some pts- Fenn bought 1988, owner claimed his grandfather found ca 1902, 3-corner UT,WY,ID
56 pc, 20 pts, many w/ red ochre, pc’s at other stages from blank to finished pt. – Fine materials from right area. [Everyone seems to accept as genuine, and there is no real reason to think any are fakes, however, it should NOT be considered good data for some things - like the association of a crescent with Clovis points - there is no real reason to believe that all of the pieces were found together.]
Fenn bought San Lazaro Pueblo – 4500 rooms – “serious amateur excavation” – [not from what I hear – just looking for goodies]

Newbert, David DeTar
1998 The Mother of All Cody Knives. *Prehistoric American* 32(3):14-15.

Bought big Cody 5/12”, other best one is Shewey, now in Forrest Fenn collection – both pictured.

Newbert, David DeTar
1998 Selling counterfeits is a Crime. *Prehistoric American* 32(3):25.

[DDN = federal prosecutor, collector, friend of Shewey at Ft Osage] Amiels went to prison for selling fake art prints – fake points are similar, also fakers don't pay tax = criminals

Newbert, David DeTar
1998 The Shewey Spud: Size DOES Matter. *Prehistoric American* 32(4):18-19.

Photos, bought by C Shewey at Spiro, now owned by Tommy Beutell

Newcomer, Mark H
1971 Some Quantitative Experiments in Handaxe Manufacture. *World Archaeology* 3(1):85-93.

Newcomer, Mark H
1974 Study and Replication of Bone Tools from Ksar Akil (Lebanon). *World Archaeology* 6(2):138-153.

Newcomer, M.H.
1975 "Punch Technique" and Upper Paleolithic Blades. In *Lithic Technology: Making and Using Stone Tools*. E. Swanson ed. Pp. 97-102. The Hague: Mouton Publishers.

Newcomer, Mark, R. Grace and R. Unger-Hamilton
1986 Investigatng Microwear Polishes with Blind Tests. *Journal of Archaeological Science* 13:203-217.

Newcomer, Mark, R. Grace and R. Unger-Hamilton
1987 Microwear Polishes, Blind Tests, and Texture Analysis. In *The Human Uses of Flint and Chert*. G. Sieveking and M. Newcomer eds. Pp.253- 263. Cambridge: Cambridge University Press.

Newcomer, Mark H. and C. Karlin
1987 Flint Chips from Pincevent. In *The Human Uses of Flint and Chert*, G. Sieveking and M. Newcomer eds. Pp. 33-36. Cambridge: Cambridge University Press.

Newcomer, M. H. and G. de G. Sieveking
1980 Experimental Flake Scatter-Patterns: A New Interpretive Technique. *Journal of Field Archaeology* 7 (3): 345-352.

At Grimes Graves, experimental axe and blade manufacture [no details]. Pattern of flake drop from standing wider than sitting, soft hammer bifaces make more broken flakes and small debris than hard hammer.

Newman, Adam, and Kevin Verhulst

2010 Dogg Knapping: Kevin Verhulst Discusses the Secrets of Making Stone Points. *Newsletter of the Iowa Archeological Society* 60(2):4-5.

Reminiscences of learning, photos of knapping.

Newman, Jay R.
1994 The Effects of Distance on Lithic Material Reduction Technology. *Journal of Field Archaeology* 21(4):491-501.

Size decreases with increasing distance from source – Pot Creek & Cerrito Pithouse site – raw material sources discussed

Newton, Cody
2011 Towards a Context for Late Precontact Culture Change: Comanche Movement Prior to Eighteenth Century Spanish Documentation. *Plains Anthropologist* 56(217):53-70.

Considers small tri-notch points as one indicator of Shoshonean identity, along with Intermountain Ware pottery.

Nichols, George W.
1970 The Hinge Fracture Problem in Fluted Point Manufacture. *Missouri Archaeological Society Memoir 8*: 2-9.

Reverse hinge fracture – [overshot flutes] discussed. Early experiments claimed (1950's). No one else cited. [Short & mediocre]

Nichols, Jacqueline
1978a Editorial. *Flintknappers' Exchange* 1(2):3-4.

Nichols, Jacqueline
1978b Editorial. *Flintknappers' Exchange* 1(3):3.

Nichols, Jacqueline
1978c A Staging Problem. *Flintknappers' Exchange* 1(2):25-26.

Nichols, Jacqueline
1979 Alternate Knap-in Terms. *Flintknappers' Exchange* 2(1):35.

Nichols, Jackie
1979 Problems/ no solution in the Calico Hills. *Flintknappers' Exchange* 2(3):20

Supportive of Calico, photo of alleged blade core.

Nichols, Jacqueline, Bob Patten, J. B. Sollberger, and L. W. Patterson
1978 Problems/Solutions: Staging. *Flintknappers' Exchange 1(3):25-27*

Comments by all – Patten "convenience" vs "strategy"

Nielsen, Ebbe H.
2004 The seventh and sixth millenium transition in Switzerland. In *Lithics in Action: Papers from the Conference 'Lithic Studies in the Year 2000'*. E. A. Walker, F. Wenban-Smith, and F. Healy eds., pp. 185-196. Oxbow Books, Oxford.

Early Neolithic is in Mesolithic tradition, including development of EN arrowheads from LM microliths.

Nielsen, Poul Otto
1981 Meisterwerke der frühen Metallzeit aus Flint. In *5000 Jahre Feuersteinbergbau: Die Suche nach dem Stahl der Steinzeit*. Gerd Weisgerber, ed. Pp. 236-237. Bochom: Deutschen Bergau- Museum.

Flint copies of some Euro metal weapons 1 p with photos.

Nieuwenhuis, Channah José
1998 Unattractive but Effective: Unretouched Pointed Flakes as Projectile Points? A Closer Look at the Abriense and Tequendamiense Artifacts. In *Explorations in American Archaeology: Essays in Honor of Wesley R. Hurt*. Mark Plew,ed. 133-164.

Microwear on Columbia Artifacts – simple edge trimmed flakes (Adriense industry) Lake Pleist to Holocone.
Teq industry more elaborate, some bifaces. Ab = nonspecialized hunters, maybe wood pts- but use wear on triangular flakes = proj pts [calls them "arrow heads" but doesn't seem to imply bow use] Also lots plant/ wood work on other flakes. Simple-expedient tools.

Nishiaki, Yoshihiro **disk**
2001 Hafting Systems of Sickle Elements from the Chalcolithic Levels of Telul eth-Thalathat II, Iraq. In *Beyond Tools: Redefining the PPN Lithic Assemblages of the Levant*. Isabella Caneva, Cristina Lemorini, Daniela Zampetti, and Paolo Biagi eds., pp. 27-43. ex oriente, Berlin.

Noone, H.V.V.
1943 Some Aspects of Aboriginal Stone Cultures. *Mankind* 3(5):136-139.

Australians use all known stone working techniques

North, Chris D., Michale S. Foster, John M. Lindly, and Douglas R. Mitchell
2005 A Newly Discovered Clovis Point from the Phoenix Basin and an Update on Arizona Clovis Point Attributes. *Kiva* 70 (3): 293-307.

In wash. Two others from Phoenix area. Late Wisconsin times developing desert scrub similar to conditions today - prob passing through between better resources eg San Pedro valley. Stubby, fluted both sides, basal grinding, resharpened after impact. Chalcedony. Ca 40 AZ pts, high variation, many materials.

Northover, Peter
2008 Alloy Choice in Chinese and Islamic Forgeries. In Pernicka, Ernst, Silke von Berswordt-Wallrabe, and Hilke Wagner eds, *Original - Copy - Fake? Examining the Authenticity of Ancient Works of Art - Focusing on African and Asian Bronzes and Terracottas*. pp., 70-73. Verlag, Philipp von Zabern, Mainz.

Leaded bronze was used until Ming dynasty when brass (zinc Cu alloy) became available, but many forgeries are in brass.

Nowell, April and Melanie Chang
2009 The Case Against Sexual Selection as an Explanation of Handaxe Morphology. *PaleoAnthropology* 2009:77-88.

Outlines sexual selection theory to show that it may not apply well to humans. Mithen idea that handaxes demonstrate sexual selection: symmetrical indicates good health, good skills, knowledge of resources, social awareness - why handaxes are symmetrical, found in large numbers, with little evidence of use. Shows that all of this is wrong: handaxes highly variable, do not increase in symmetry thru time, are in fact tools, and too distant from genetic basis to work with sexual selection theory. [MS Reviewed for CA.]

Nowell, April and Francesco d'Errico
2007 The Art of Taphonomy and the Taphonomy of Art: Layer IV, Molodova I, Ukraine. *Journal of Archaeological Method and Theory* 14 (1): 1-26.

Microscopic exam of "art" on bones from open Mousterian site with mammoth bone rings. Large mammal bone, mostly mammoth, lots of weathering + carnivore effects, butchering marks, excavator damage, misidentified as symbolic engravings. E.g. stick figure anthropomorph = blood vessel lines, another cuts root marks and must have been added in modern times, a couple from penciling or scratching on labels, etc. [Clumsy old excavation with knives, shovels etc is largely to blame.]

Nunn, Greg
1994 An Excellent Hunting Point: Replicating the Elko Eared Archaic Projectile Point. *Bulletin of Primitive Technology* 7(1):45-47.

"For modern abo hunting" advantages = size, concave base. Stages of knapping briefly described.

Nunn, Greg
2005 *Replicating the Type IC Neolithic Danish Dagger: Advanced Flintknapping with Greg Nunn*. DVD, Greg Nunn/Paleo Technologies, Castle Valley, UT.

Uses prehist techniques and tools (copper pressure tools arguable). Stage by stage through process from nodule through bifacing, ground on sandstone with dagger glued by beeswax to wooden grip, pressure finish with edge to edge pressure flaking. Most of process supported by evidence of originals [he could have shown more pics of them]. Tools discussed. Whole process took 24 hrs 23 min. [Very nicely produced, clear explanation, lots of information applicable to other knapping. He refers to arch evidence, doesn't use modern grinders, so long section on grinding unusually useful. Could use a little more detail watching some processes, and he doesn't show the debitage enough. Overall excellent and very impressive.]

Nunn, Greg
2005 Using the Soft Hammerstone: The Tool of the West. *Chips* 18(1):5-7.
2007 Using the Soft Hammerstone: The Tool of the West. *Bulletin of Primitive Technology* 34:57-61.

Gritty hammerstone works for all biface stages except notching. Archaeologically neglected, in western collections he's seen only 2 antler billets [probably because many looters aren't interested or don't recognize them, they aren't rare and this is example of why non-scientific collections can mislead you - see Olsen 1978, 1980. But basic point that we don't use hammerstones enough is correct]. Continuous bevel platforms best. Hard to get as thin as with antler.

Nunn, Greg R.
2006 Using the Jutland Type 1C Neolithic Danish Dagger as a Model to Replicate Parallel, Edge-to-edge Pressure Flaking. In *Skilled Production and Social Reproduction*. Jan Apel and Kjel Knutsson eds., pp. 81-114. Societas Archaeologica Upsaliensis, Uppsala.

Describes stages in detail, see his DVD. Notes physical damage to hand nerves from gripping while hand-grinding and pressure flaking.

Nunn, Greg R.
2011 Using the Jutland Type IC Neolithic Danish Dagger as a Model to Replicate Parallel, Edge-to-Edge Pressure Flaking. In *Experiment and Interpretation of Traditional Technologies: Essays in Honor of Errett Callahan*, Hugo Nami, ed., pp. 256-306. Ediciones de Arqueología Contemporánea, Buenos Aires.

Oakley, Kenneth P.
1961 *Man the Tool Maker*. Chicago: University of Chicago Press.

Oakley, Kenneth P.
1964 *Man The Tool Maker (3rd ed.)* Chicago: University of Chicago Press.

Oakley, Kenneth P.
1972 Skill as a human possession. In *Perspectives on Human Evolution 2*. S. L. Washburn and P. Dolhinow eds. New York: Holt, Rinehart and Winston.

Oakley, Kenneth P., Peter Andrews, Lawrence H. Keeley, and J. Desmond Clark
1977 A Reappraisal of the Clacton Spearpoint. *Proceedings of the Prehistoric Society* 43:13-30.

Context & fauna, description – yew, long taper. Compared to ethnog, micro analysis = probably spear, maybe game trap stake, not digging stick.

Ouave, Kylie E.
2014 Reivew of Mining and Quarrying in the Ancient Andes: Sociopolitical, Economic, and Symbolic Dimensions edited by Nicholas Tripcevich & Kevin J. Vaugh. *Lithic Technology* 39(1):72-75.

O'Brien, Eileen M.
1981 The Projectile Capabilities of an Acheulian Handaxe from Olorgesailie. *Current Anthropology* 22(1):76-79.

O'Brien, Eileen M.
1984 What was the Acheulean Hand Ax? *Natural History* 93(7): 20-24

The handaxe as throwing weapon. [Dumb idea, see Whittaker and McCall 2001].

O'Brien, Michael J and R. Lee Lyman **sic**
2003 Cultural Traits: Units of Analysis in Early Twentieth-Century Anthropology *Journal of Anthropological Research* 59:225-250.

O'Brien, Michael J, Lyman, R Lee, and John Darwent **sic**
2001 Cladistics is Useful for Reconstructing Archaeological Phylogenies: Paleoindian points from the Southeastern United States *Journal of Archaeological Science* 28:1115-1136.

O'Brien, Michael J. and W. Raymond Wood.
1988 *The Prehistory of Missouri*. Columbia, University of Missouri Press.

General text, lots of info on point types, photos, other lithic info.
p. 80 Dalton begins early, 8950 BC, contemp w Folsom, and is the midwestern descendant of Clovis.
p. 93 Dalton pt functions - point/knife, resharpened by serration and beveling, reveals handedness, multifunctionality is why so many exist (Morse, Goodyear). More likely variability from different projectile uses, and "Dalton" is a lumped type covering lots of functional variation. E.g. large Sloan type Daltons hafted as spears, serrated type for different hunting. Beveled Daltons (most common) probably first atlatl points, beveling helped stabilize flight. Later in Early Archaic, around 6500 BC most beveling ends, prob because now added fletching to shafts. And points get smaller because don't need large heavy point to stabilize shaft once you have fletching. [Bad idea - beveling does not spin a dart.]

p 112-117 discussion of hafting, following Musil (1988) design models - trend from fluted lanceolates to contracting or stemmed, to notched increased efficiency of penetration and reduced damage to shaft and allowed more reuse of damaged points. Then organize Archaic points by hafting type. Mention R Madden and Virgil Hayes experiments with atlatl, cite Hayes (1994): bannerstone helps match spine of dart with force of atlatl, allowing most efficient recovery from flex; can adjust to accommodate different spears. [Nonsense.]

O'Brien, Patricia J.
1990 Evidence for the Antiquity of Gender Roles in the Central Plains Tradition. In Powers of Observation: Alternative Views in Archeology. S.M. Nelson and A B Kehoe eds. *Archeological Papers of the American Anthropology Association* No. 2

Ethnohistoric approach to task differences – arch evidence of female gardening, meat processing & hide areas – tools associated include hammers & debitage – "most parsimonious explanation" = females made and maintained own tools.

Ochsenschlager, Edward L.
1998 Viewing the Past: Ethnoarchaeology at al-Hiba'. *Visual Anthropology* 11(1):103-143.

[Unusually thoughtful and enjoyable discussion of problems and promises of ethnoarchaeology.] Biases in collecting data, relations with informants, differential preservation, attitudes toward artifacts shaped by gender, social status, morality, etc. Info on toys, bitumen, reeds, houses, slings, etc.

O'Connor, Anne
1999 Brixham Cave and the Antiquity of Man: Reassessing the Archaeological and Historical Significance of a British Cave Site.

Excav 1858-1859, Evans & Prestwich then to France – resolved antiquity of man question. Somewhat stratigraphic excav by Pengelly, 36 lithics, weathered, refits – not primary deposition, but assoc with bones in cave. Temporally mixed. Problems recognized at time – so why was it convincing? – examined by right people (elite) at right time. Open air sites actually better.

O'Connor, James F
1967 Elko Eared/Elko Corner- Notched Projectile Points as Time markers in the Great Basin. *University of California Archaeological Survey Report #70* U.C. Berkley.

Odell, George H.
1981 The Mechanics of Use-Breakage of Stone Tools: Some Testable Hypotheses. *Journal of Field Archaeology* 8:197-210.

Use wear (flaking) theory & examples of variety of motions & materials & tool types. Projectile points. Burins, shaving, scraping.

Odell, George H.
1982 Emerging Directions in the Analysis of Prehistoric Stone Tool Use. *Reviews in Anthropology* 9(1): 17-33.

Odell, George H.
1984 Chert Resource Availability in the Lower Illinois Valley: A Transect Sample. In *Prehistoric Chert Exploitation: Studies from the Mid Continent*. B.M. Butler and E.E. May eds., pp. 45-68. Center for Archaeological Investigations, Occasional Paper No.2

Odell, George H.
1985 Small Sites Archaeology and Use-Wear on Surface-Collected Artifacts. *Midcontinental Journal of Archaeology*. 10(1):21-47.

Odell, George H.
1988. Addressing Prehistoric Hunting Practices Through Stone Tool Analysis. *American Anthropologist* 90:335-356.

Use wear ID's unretouched flakes used as pts at Woodland sites & Archaic Mid W. Compare with experimental breakage of formal pts. Argues earlier use of bow and arrow than usually believed.

Odell, George H.
1989. Experiments in Lithic Reduction. *In Experiments in Lithic Technology.* Daniel S. Amick and Raymond P. Mauldin eds. Pp. 163-198. BAR International Series 528. England.

Odell, George H.
1990 Brer Rabbit Seeks True Knowledge. *Aun*. 14, pp. 125-134. Uppsala.

Odell, George H.
1994 Assessing Hunter–Gatherer Mobility in the Illinois Valley: Exploring Ambiguous Results. *In the Organization of North American Prehistoric Chipped Stone Tool Technologies.* Pp. 70-86. Ann Arbor, Michigan: International Monographs in Prehistory.

Odell, George H.
1994. Prehistoric Hafting and Mobility in North American Midcontinent: Examples from Illinois. *Journal of Anthropological Archaeology* 13:51-73.

Odell, George H.
1994 The Role of Stone Bladelets in Middle Woodland Society. *American Antiquity* 59(1):102-120.

Hopewell – blades – 3 sites compared use-wear. Habitation – unimportant, variety of uses; Mortuary sites – common, restricted tacks- cutting & scraping soft materials; suggests use in manufacturing grave goods- hide, reed mats, clay pots, maybe bodies (though no cuts), but not hard material goods. [He tends to exaggerate a bit- trends don't look as strong as he thinks.]

Odell, George H.
1995. Is Anybody Listening to the Russians? *Lithic Technology* 20(1):40-52.

Use-wear and other lithic info in Illinois Valley Through Time.

Odell, George H.
2003 Wichita Tools on First Contact with the French. In *Stone Tool Traditions in the Contact Era*. Charles Cobb, ed., pp. 29-50, University of Alabama Press, Tuscaloosa.

Odell, George H.
2002 *La Harpe's Post: A Tale of French-Wichita Contact on the Eastern Plains*. University of Alabama Press, Tuscaloosa.

[Useful and well-written report], protohistoric Wichita site in Oklahoma. Historic context of French expedition 1719, to a village on the Arkansas River not far from modern Tulsa, with Tawakoni, a Caddo-speaking group, probably ancestral to the Wichita.

Lasley Vore site fits the circumstances well, evidence of contact period life. Limited excavation time, plowed but important site, Odell combined surface examination, test pits with metal detecting, mechanical trenching, and removal of plow soil to concentrate on complete excavation of the best contexts, several clusters of features. Odell synthesizes specialist reports covering faunal remains, ceramics, stone tools and debitage, and artifacts of European origin, especially gun parts and beads.

Lithic analysis fairly comprehensive, with a focus on use-wear. Retouched tools dominated by scrapers and small triangular projectile points. Raw materials from the Ozarks and the Flint Hills, little local stone, economizing behavior visible in lack of cores, and recycling broken bifaces. Heat-treatment common. The debitage suggests emphasis on simple flake core technology, with a substantial amount of bifacial tool working. About 20% of the debitage consists of "biface reduction flakes," a percentage that is artificially lowered by defining only flakes without cortex as bifacial reduction flakes.

Use-wear analyses, 297 retouched tools and 2,664 pieces of undamaged debitage tabulated by activity (motion patterns) and contact material hardness categories. Grinding tools oddly included with the flaked stone, which affects the distribution of some wear types. Scrapers among few tools where traditional name actually reflects use, may reflect hide preparation for trade as well as local use. Small projectile points are common, and unretouched flakes also often show impact damage suggestive of projectile use.

Odell attempts to find activity and ethnic differences among feature clusters, but ambiguous.

Odell, George H.
2004 *Lithic Analysis*. Kluwer Academic/Plenum Publishers, New York.

[Generally good, thorough, readable handbook. Unusually large sections on sourcing and functional (use-wear and residue) analysis. Needs more artifact illustrations; those on knapping are really poor. Organization is logical and focuses on practical “problems” but for beginner needs to introduce flake traits and some other basics earlier, before fracture

mechanics etc, and the definitions when given rely too heavily on fracture theory. Favors "trajectory model" for assemblage variability analysis = different reduction strategies. Manufacture includes some ground stone info. Discusses tool typologies and problems with typological systems. Defines and correctly criticizes Sullivan and Rozen methods, but flake attribute discussion is too brief and poorly illustrated – lithic analysts NEED to learn diagnostic traits of different flake types. Good history of use-wear studies with slight plaintive tone. Reasonably balanced discussion of residues.]

Odell, George H.
2007 In Memoriam: Stan Ahler. *Lithic Technology* 32(1):3.

Odell, George H. and Frank Cowan
1986 Experiments with Spears and Arrows on Animal Targets. *Journal of Field Archaeology* 13(2) :195-212.

[mediocre - a lot of inconclusive stuff] Illustrates some break types ; a few conclusions of interest: broad pts pentrate less, break less, unretouched pts work as well but last less.

Odell, George and Frieda Vereecken-Odell
1989. First Impressions and Ultimate Reality : Excavation of the Day Site in Wagoner County. Oklahoma.

Odess, Daniel and Jeffrey T. Rasic
2007 Toolkit Composition and Assemblage Variability : The Implications of Nogahabara I, Northern Alaska. *American Antiquity* 72(4) : 691-717.

484 lithic artifacts from sand dune site assoc w burnt bone bits. Percussion biface blanks, pressure flaked biface preforms, microblades + cores, notched and lanceolate projectile pts, scrapers, flakes, 212 pc debris.8.5 kg, mostly obsidian. Interp as tool kit. Artifacts show transport damage, high proportion complete or usable tools, multi-use bifaces. Such kits differ from usual arch assemblages.

Ogburn, Dennis E.
2011 Obsidian in Southern Ecuador: The Carboncillo Source. *Latin American Antiquity* 22(1):97-120.

N Andes. Small nodules of high quality glass on surface, up to 3 cm diam. Used as small flake expedient tools, mostly local use, only source for great distance.

Ohel, Milla Y.
1987 The Acheulean Handaxe: A Maintainable Multifunctional Tool. *Lithic Technology* 16(2-3): 54-55.

Good biblio. Multipurpose supported by use-wear & exper (Keeley), distribs away from sites – because efficient to take versatile, maintainable tool.

Ohnuma, K.
1995 Analysis of Debitage Pieces From Experimentally Reduced 'Classical Levallois' and 'Discoidal' Cores, in *The Definition and Interpretation of Levallois Variability*, H.L. Dibble and O. Bar-Yosef, Editors. Prehistory Press: Madison. p. 257-266.

Ohnuma, Katsuhiko and Christopher Bergman
1982 Experimental Studies in the Determination of Flaking Mode. *Bulletin of the Institute of Archaeology* 19: 161-170.

[Good, short, concise, counters Sullivan and Rozen] Supports very high accuracy in recognizing hard vs soft percussion, even though using typical cores, <u>not bifaces.</u> Attributes as expected: Hard hammer - clear pt & cone of perc, unlipped butt & pronounced bulb; Soft - lipped butt, difuse bulb, vague or lacking pt & cone of perc.

Okay, A. I.
2004 Tectonics and High-Pressure Metamorphism in Northwest Turkey. Field Trip Guide Book P01. 32nd International Geological Congress, Florence Italy. Italian Agency for Environment Protection and Technical Services, Florence.

Turkey appears to have been cobbled together from several colliding continental fragments with separate Palaeozoic and Mesozoic geological histories, united after Early Tertiary in events leading to collision of Gondwana and Laurasia. So there are several major zones + continental boundaries; Orhaneli/Harmancik seems to be in Tavsanli Zone, “a subducted passive continental margin” dominated by metaclastic blueschists and marbles. Above this is a sequence of basalts with pelagic limestone + shales, and radiolarian chert, the Cretaceous Accretionary Ovacik Complex, later deformed and metamorphosed. Then a large unit of ultramafic rock of an extrusive ophiolite (peridotite, gabbro, intrusive diabase dykes, followed by intrusive Eocene granodiorite plutons. All this overlain unconformably by Miocene to Pliocene terrigenous deposits.

Around Orhanelli small basins contain Neogene sediments with lignite which is used in power stations. [this explains the coal mentioned by Ali]

[the field trip passed down the Orhanelli-Harmancik road, within a few km of Cakmak, but no mention is made of the Neogene material there, let alone the mines and one of Turkey’s characteristic geological industries - must be too recent to be interesting to them!]

Oland, Grant S.
2013 The Fifteenth-Seventeenth Century Lithic Economy at Progresso Lagoon, Belize. *Lithic Technology*: 38(2) 81-96.

Reliance on recycled and reworked tools from Colha, decrease in obsidian obtained thru trade. Increase in point production suggest conflict between Maya communities before Spanish. Overal decline. Possible knapper’s kit of ‘tightly compressed ball of flakes, preforms, unused pts, worn peccary incisor…pressure tool.’ Points are small triangular side-notched forms, made on biface thinning flakes, not very standardized [and maybe not same knapper - too much variation in intentional attributes of form, also in workmanship, tho most are pretty poor]. Notches high, low, bases straight, deeply concave, etc. Flakes for pts may have been scavenged at Colha.

Oland, Maxine H.
1999 Lithic Raw Material Sources at the Southern End of The Freshwater Creek Drainage: A View from Laguna de On, Belize. *Lithic Technology* 24(2):91-110.

L de On has Post Classic "consumer" assemblage with formal tools from Colha production center, expedient tools of local material. Distinguished chalcedony, chalcedony-quartz blend, Chert Bearing Zone cherts (7 varieties by color), and coarse chert etc. [However, many types occurred together at most geological sources - I don't think the fine divisions are useful.]

Olausson, Deborah S.
1980 Starting from Scratch: The History of Edge-Wear Research from 1838 to 1978. *Lithic Technology* 9(2):48-60.

Subdivided by topics: Approaches – Ethnog analogy, Exper replication and use. Causes – mechanical action, tool material, worked material, tool manuf., edge angle, angle of use, edge morphology, post-depositional factors, length of use, force. Technical advances-quantification, magnification, residues, photos

Olausson, Deborah S.
1982 Testing for the Presence of Thermal Pretreatment of Flint in the Mesolithic and Neolithic of Sweden. *Journal of Archaeological Science.* 9:275-285.

Electron micro exam of structure. Prehist specimens were not heat treated – daggers, sickle, axe.

Olausson, Deborah S.
1983. Flint and Groundstone Axes in the Scandinavian Neolothic: An Evaluation of Raw Materials Based on Experiment. *Scripta Minora* 1982-1983: 2. Royal Society of Letters at Lund.

Expers in manuf, use, breakage, diff materials

Olausson, Deborah S.
1983. Lithic Technological Analysis of the Thin-Butted Flint Axe. *Acta Archaeologica* 52: 1-87. Kobenhavn.

Mostly use experimentation – breakage patterns.

Olausson Deborah S.
1993 Report on an Ongoing Research Project: Craft Specialization and Prehistoric Society. *Fornvännen* 88:1-8.

[Good] recognizing specialists at 3 levels – 1)Household = Egalitarian soc 2) Attached craft spec – expensive, limited, exotic, product controlled by non-producer = ranked soc 3) Independent craft spec - standardized, cheaper, wide distrib, product controlled by craftsman = complex soc. Clark (unpub) x-cult sample shows this correlation of soc type with craft type. Looking at flint axes & daggers, bronze swords and tools. Dagger refs.

Olausson, Deborah
1998 Different Strokes for Different Folks: Possible Reasons for Variation in Quality of Knapping. *Lithic Technology* 23(2):90-115.

Argues that knapping skill is partly innate ability, thus unevenly distrib in population, so suitable for control/exploitation by "aggrandisers" = elite. Attempts to measure innateness with survey of modern knappers, looking for correlations of knapping skill with other skills (art, patience, music, chess). [Methodology problems – survey not representative and arguments generally weak, but some good comments about learning and skill levels.]

Olausson, Deborah
2008 Does Practice Make Perfect? Craft Expertise as a Factor in Aggrandiser Strategies. *Journal of Archaeological Method and Theory* 15:28-50.

[Similar points reworked and expanded from 1998, much stronger, well written, good paper.]

Olausson, Deborah
2011 Experimental Flintknapping Replication: A Valuable Method of Archaeological Analysis. In *Experiment and Interpretation of Traditional Technologies: Essays in Honor of Errett Callahan*, Hugo Nami, ed., pp. 37-55. Ediciones de Arqueología Contemporánea, Buenos Aires.

Early experiments interested in making a product (replicating), now in studying the process, including chaine operatoire, mental processes. Staging concepts. Examples mostly from Scandinavia to show how expers illuminate skill – relative difficulty of manuf, raw material qualities and prehistoric preferences, recognize individuals (Gunn, my Grasshopper study), chaine op + decision making, time expenditure and object values, curation + site duration and function, debitage analysis, volume of production and exchange, identification of workshops , taphonomic processes, ID of earliest tools vs natural products, cognitive properties.

Oliveira, E., F. Galhano, EB Pereira p305-314
1983 *Alfaia Agricola Portuguesa, 2nd ed*. Instituto Nacional de Investigaçao Cientifica, Centro de Estudos de Etnologia: Lisbon.

Sections on Portuguese threshing sledges – diff from Cyprus – with wooden yoke, also the Punic cart used. Apparently to present (1983).

Ollinger, Jamie
1991 Ooga-Booga News. *Chips* 5(2):7

Olsen, Sandra L.
1977 A Study of Bone Artifacts from Grasshopper Pueblo, AZ P:14:1. *Kiva* 44(4): 341-373.

antler pressure flakers + billets

Olsen, Sandra L.
1980 Bone Artifacts from Kinishba Ruin: Their Manufacture and Use. *Kiva* 46(1-2):39-67.

Olsen, Sandra L.
1989 On Distinguishing Natural from Cultural Damage on Archaeological Antler. *Journal of Archaeological Science* 16:125-135.

Wear and damage from antler use by deer distinguished from flaking tool use microscopically.

Olsen, Sandra L.
1989. Solutré: A Theoretical Approach to the Reconstruction of Upper Paleolithic Hunting Strategies. *Journal of Human Evolution* 18:295-327.

Butchering patterns and topography show was *not* a jump, but animals driven up to cul de sac against base of plateau – multiple hypoth considered. Bone info, not on tools.

Olsen, Sandra L. and Pat Shipman
1988. Surface Modification on Bone: Trampling versus Butchery. *Journal of Archaeological Science* 15:535-553.

Microscopic analysis of striations.

Olszewski, D.I.
1986 A Reassessment of Average Lunnate Length as a Chronological Meter. *Paléorient* 12(1):39-44.

Olszewski, Deborah I.
1994 The Late Epipaleolithic Chipped Stone "Heritage" in Early Aceramic Neolithic Assemblages in the Northern Fertile Crescent. In *Neolithic Chipped Stone Industries of the Fertile Crescent*. H. G. Gebel and S. K. Kozlowski eds., pp. 83-90. Berlin, Ex Oriente.

Olszweski, Deborah I. and Harold D. Dibble
1994 The Zagros Aurignacian. *Current Anthroplogy* 35(1):68-75.

Old typol study, argues from Warwasi that Baradostian etc are variant of Aurig, with lots variation interp probably as activity facies. Suggests ME origin of Aurig

Olszweski, Deborah I., Harold D. Dibble, Utsav A. Schurmans, Shannon P. McPherron, and Jennifer R. Smith
2005 High Desert Paleolithic Survey at Abydos, Egypt. *Journal of Field Archaeology* 30(3):283-303.

Olszewski, Deborah I and Alan H. Simmons
1982 Tools for Thought: Some Comments on The Analysis of Puebloan Chipped Stone Assemblages. *Kiva* 48 (1-2):109-116.

High rate informal tools in puebloan assembs. Need to look at debitage (favors primary, 2ndary etc typology).

O'Malley, Connor
2012 A Rabbit-Stick from Stone Tools. *Bulletin of Primitive Technology* 43:56-60.

Photo-description of manufacture using ground stone axe + adze, flake, biface. 5 hrs.

O'Neil, Brian
1984 Introducing APPDAR: Areal Projectile Point Distribution Analysis and Recording Project. *Southwestern Lore* 50(3):1-6.

Recording private collections, organized location data – suggested format, no substantial data.

Onken, T. J., ed.
2005 *Modern Lithic Artists Journal*. Lithic Artists Guild Ltd, Manito, IL.

Commercial venture, fine photo spreads of work by modern knappers or owned by collectors, some ground stone, usually no articles.

Origer, Thomas M. and Jessica Anderson
1994. Preliminary Results on an Assessment of the Effects of Fire on Obsidian Specimens from CA-SON-458, Salt Point State Park, Sonoma County, California. *International Association for Obsidian Studies Bulletin* No. 12:3-4.

Less than 15% of surface obsid had readable hydration after fire, but 5 cm of burial protected obsidian.

Orna, Bernard and Elizabeth Orna
1984 *Flint Building in Norfolk*. Norwich: Running Angel

Geol background, mostly photos of buildings, date info.

Orr, Kenneth G
1946 The Archaeological Situation at Spiro, Oklahoma: A Preliminary Report. *American Antiquity* 11(4):228-256.

Osborne, Carolyn M.
1965. The Preparation of Yucca Fibers: An Experimental Study. *Memoirs of the Society For American Archaeol*ogy 19:45-50.

Wetherill Mesa fibers- juniper bast, corn husk, cotton, Yucca, unID. 3 types yucca fiber – diff processing. Scrape fresh- ok, makes "quids" of waste fiber & tissue- fine white fibers, much time. Retted - left over winter, ok., brown, less work. Boiled and scraped - high waste, long time, fine, cream color fibers. Pound, week soak, scrape - easy, but weak fibers - pounding not good. Boil, soak, scrape – v. easy, brownish but not as brown as prehist. Scrape with flake or bone "flesher." [Not too interesting - but o.k. as guide to try someday]

Osborne, Douglas
1965 Chipping Remains as an Indication of Cultural Change at Wetherill Mesa. *Memoirs of the Society For American Archaeol*ogy 19:30-44.

Attributes: material (chert, claystone, other) natural vs artifical heel [platform], multiple heel interior vs exterior origin. Flake core, true core, hinge, bulb. Much use of tabular material. Earlier sites with claystone – more prepared heels, - remove soft cortex. Material from Long House, Mug H, Two Raven H, Step H, Big Juniper H, Badger H. Major change is materials – generally more claystone PI early, more chert late (PIII) [but not completely true] more artificial heels early (use of clay stone) later finer chert & natural heels. No change flake vs true cores. Cores consistently blocky, debris consistent 20% throughout. Hinges rarest PI & PIII – PI more skill with worse material? PIII better material. [Most interest in change thru time and dating /seriation] All materials local. No explanation for shift to chert – can't apply data elsewhere but methods yes- can date any site with 100 flakes. Material usage espec important.
[Not great- an early attempt at modern lithic analysis, not very imaginative or interpretive, author doesn't seem too expert with lithics – no mistakes, just look of items and literature cited. Historical interest only.]

Osborne, Richard H.
1998. The Experimental Replication of a Stone Mortar. *LithicTechnology* 23(2):116-123.

To estimate minimum time. Little ethnog knowledge. Used granite boulder. Basalt hammers too brittle, quartzite better, smaller at first, then larger as hole deeper. 5 hrs: 11 cm diam, 2 cm deep, vol 68 ml. 8 hrs: 11 cm diam, 3.5 cm deep, vol 140 ml = 67,200 strokes.

Otte, M., F. Biglari, D. Flas, S. Shidrang, N. Zwyns, M. Mashkour, R. Naderi, A. Mohaseb, N. Hashemi, J. Darvish, and V. Radu
2007 The Aurignacian in the Zagros Region: New Research at Yafteh Cave, Lorestan, Iran. *Antiquity* 81(311):82-96.

Tests in cave dug by Hole in 1960s, nice intact Aurignacian sequence, typical endscrapers, burins, blade tools of local small flint nodules, Arjeneh (blade) points, Doufour bladelets, some Levallois technique for heavy Mousterian points, bone awl, sagaie fragment. Lots of hematite, including a pendant imitating deer tooth, also perforated shells + teeth. Fauna mostly caprids (96%), gazelle, some pig, carnivores, fish. Dates 24-35k uncal BP. This area interpreted as source of early modern humans and their culture (Aurignacian) which spread to Europe, outcompeting Neanderthals. Aurig sites occur 20 to 1 Mid Paleolithic, suggesting high rate of reproduction.

Otte, M. and Casper, J.P.
1987 Les pointes de la Font-Robert: Outils emmanchés?. In *Le Main et l'Outil : Manches et Emmanchements Préhistoriques*. D. Stordeur ed. Pp. 65-74. Lyon: Maison de l'Orient.

Otte, Marcel, Jacques Pelegrin and Fernand Collin
1990 Towards an Integrated Approach: The Use of Canaanean Blades. *Aun* 14:135-145.

Hassek Huyuk, Turkey, Late Uruk and Early Bronze Age, room with cache 45 cores, blades. Microwear shows sickle use, repeated retouch. Experiments show copper tipped punch technology for Canaanean blades, specialized production, but local obsid blades diff technique. [No exper details, not very useful. See Edens 1999 for similar situation]

Overstreet, David F.
2004 Pre-Clovis Occupation in Southern Wisconsin. In *New Perspectives on the First Americans*. B. T. Lepper and R. Bonnichsen, eds., pp. 41-48. Center for the Study of the First Americans, College Station, TX.

Mammoth bone piles, some apparently modified or assoc w flakes, interp as storage in lakes, dates 13,500-12,500.

Overstreet, David F.
2005 Late-Glacial Ice-Marginal Adaptation in Southeastern Wisconsin. In *Paleoamerican Origins: Beyond Clovis*, edited by R. Bonnichsen, B. Lepper, D. Stanford, and M. Waters, pp. 183-195. Center for the Study of the First Americans, Texas A+M University, College Station, Texas.

Mammoth processing sites and Chesrow- complex projectile point habitation sites (stumpy lanceolates) in moraines and other rapidly changing ice-margin environments. Could be hunting, or foraging-scavenging. Human mammoth interaction back to 13,500 RCYBP, so "blitzkrieg" model untenable.

Overstreet, Robert M.
1995 *The Overstreet Indian Arrowheads Identification and Price Guide, 4th ed*. Avon Books, New York.

Overstreet, Robert M.
1997 *The Overstreet Indian Arrowheads Identification and Price Guide, 5th edition*. Avon Books, New York.

Features Gramly on Clovis, market reports by several collectors/dealers. Newly arranged by region.

Overstreet, Robert M.
2005 *The Overstreet Indian Arrowheads Identification and Price Guide, 9th edition*. Gemstone Publishing Inc, New York.

Larger and fatter, but same info and org as 5th. Illustration quality is not very good. [R. Motley says he can't vouch for western material, but midwest etc has been cleaned up by him and other authenticators, so there are now very few modern points in it, responding to complaints about past editions.]

Overstreet, Robert M.
2013 *Official Overstreet ® Identification and Price Guide to Indian Arrowheads, 13th edition*. House of Collectibles, New York.

[Getting obese.] Much of same info, illustrations vary in quality, larger section of color examples. Point types and examples are reasonably consistent and with normal usage, but some oddities. Organization by region means many types found in several; sometimes suggests regional variants.

Large new section at front of collections of David Root, Art Gerber, others. Root claims to have found as a boy a fluted point in Chesapeake Bay, 'whose style and green chert material are only found in Europe…some of most important evidence to support theories of an ancient land bridge between Europe and N Am." [Huh? and of course it is not shown, just page after page of slate, including some OH bannerstones and birdstones]. Gerber collection shows "famous Kentucky Green River banner cache found 30 miles from Owensboro KY."[9 bannerstones paired with 8 antler hooks, plus bunch of beads - but who can trust any of this.]

Overstreet, Robert M. and Howard Peake
1991 *The Official Overstreet Identification and Price Guide to Indian Arrowheads, 2nd ed.* The House of Collectibles/Random House, New York.

Owen, L.R.
1987 Hafting Microblades: Examples from the Dorset Culture of the North American Arctic. In *Le Main et l'Outil : Manches et Emmanchements Préhistoriques*. D. Stordeur ed., pp. 147-150. Lyon: Maison de L'Orient.

Owen, Linda R.
2000 Lithic Functional Analysis as a Means of Studying Gender and Material Culture in Prehistory. In *Gender and Material Culture in Archaeological Perspective,* edited by Moira Donald and Linda Hurcombe, pp. 185-205. Saint Martin's Press, New York.

Experiment/microwear studies by others form basis of functional interp of Upper Paleolithic tools, but biased toward hunting and use of tools on animal materials and hard materials, in other words, what are ethnographically male spheres. Magdalenian SW

Germany example - stone tools show lots meat, but also lots plant use - is this biased or fair representation? Many imporant plant resources are evidenced in other ways.

Owsley, Douglas W. and David R. Hunt
2001 Clovis and Early Archaic Crania from the Anzick site (24PA506), Park County, Montana. *Plains Anthropologist* 46 (176):115-124.

Owsley, Douglas W., and Richard L. Jantz, eds.
2014 *Kennewick Man: The Scientific Investigation of an Ancient American Skeleton*. Texas A&M Press, College Station.

Owsley, Douglas W., Karin S. Bruwelheide, Laurie E. Burgess, and William T. Billeck
2007 Human finger and hand bone necklaces from the Plains and Great Basin. In *The Taking and Displaying of Human Body Parts as Trophies by Amerindians*. Richard J. Chacon and David H. Dye, eds., pp. 124-166. Springer, New York.

8 specimens, including one fake. One attributed to Cheyenne 1876 has fingers, small pouches with plant stuff inside, bacculite fossils carved into effigies, and 4 (formerly 5 or 6) Late Prehistoric projectile points attached. One point is partly ground. Quote (p162)from Grinnell 1923:117-118: “Men very commonly wear stone arrowheads tied in the hair or about the neck, and usually to the shank of the arrowpoint is tied a little deersking bundle containing medicine, usually a part of some plant. They wear these stone arrowpoints in order that they may have long life. This is a part of the general belief as to the endurance, permanence, and perhaps even immortality of stone.”

Owsley, Douglas W., Althea A. Williams, and KarinS. Bruwelheide
2014 Skeletal Inventory, Morphology, and Pathology. In *Kennewick Man: The Scientific Investigation of an Ancient American Skeleton*. Owsley, Douglas W., and Richard L. Jantz, eds., pp. 139-186. Texas A&M Press, College Station.

The major skeletal analysis finally allowed in 2005-2006. Initial examinations obstructed by absurd Corps of Engineers restrictions designed to prevent proper study: team not allowed to measure or use computerized notes; took a court order to allow use of an audio recorder.

Skull: male features, less ante-morten pathology than assessed by Chatters, but two small healed depressed fractures. Only one tooth lost in life! But very heavy wear. Assymetrical arms show right-handed. Abnormalities in R glenoid cavity of scapula from throwing: “glenoid rim fracture can be linked to activity involving rapid, vigorous movement of the arm and shoulder, such as the swift, snapping motion of throwing a dart with an atlatl...this injury was undoubtedly a source of pain and discomfort that affected KM’s ability to hunt and fish...” Time-lapse photo of Stanford throwing with atlatl.

Healed rib fractures from some sort of chest injury.

Wound: basalt or dacite point embedded in right posterior ilium (pelvic bone, at hip). Point tip damaged or missing, exact form hard to see on scans, appears serrated. Differing assessments of directionality of wound. They conclude point entered his right hip traveling front to back and downward about 29 degrees. Broke off part of iliac crest and embedded in back interior of ilium blade. “KM ... may have pivoted to narrow his profile in an attempt to dodge the dart.” No evidence of chronic infection, they see healing with a fibrous encapsulation of the point, while bone around it partly remodeled and partly resorbed. No interior organ damage, missed major muscles too, and “analysis of the leg bones indentified no lasting or significant impact on his mobility or activity.”

Some degenerative problems in knee. Squatting facet. Age: varying estimates, they give 35-39. Some wear and arthritis on other joints and vertebrae.

Özbaşaran, Mihriban
1999 Musular: A General Assessment on a New Neolithic Site in Central Anatolia. In *Neolithic in Turkey: The Cradle of Civilization, New Discoveries*. Edited by Mehmet Özdoğan and Nezih Başgelen, pp. 147-164. Arkeoliji ve Sanat Yayinlari, Istanbul.

Tests on low tell (ca .7 m) PPNB. C14 7980 + 220 bp uncal, prob contemp w L 1 at Aşıklı Höyük and after earlier L 2 at 9 mil bc (8400 bp) and before Çatal Höyük 7020 BC [but are they mis-using the bp BC? They actually seem likely to overlap]

Özbek, Onur
2011 Primary and secondary raw material preferences in the production of Neolithic polished stone tools in northwest Turkey. In *Stone Axe Studies III*. Vin Davis and Mark Edmonds, ed., pp. 217-230. Oxbow Books, Oxford.

Özdoğan, Aslı
1999 Çayönü. In *Neolithic in Turkey: The Cradle of Civilization, New Discoveries*. Edited by Mehmet Özdoğan and Nezih Başgelen, pp. 35-63. Arkeoliji ve Sanat Yayinlari, Istanbul.

Çayönü Tepesi excav 1964-1991. PPNA to current levels, located at environmental transition zone. 4 main stages in PPN. For long only PPN site excav in Anatolia, wide exposures (8000 m2)

Obsidian from nr Bingol, 150 km. Site on trib of upper Tigris, 160 x 350 m, 4-6 m deep. Pre-pottery sequence named by evolution of architecture. Round buildings, PPNA 10,200-9400 BP, Grill Buildings span PPNA to early PPNB 9400-9100 or in the 7000s BC [apparently calibrated but doesn’t say], Channelled Buildings 9100-9000, Cobble Paved Building 9000-8600 Cell Building 8600-8300, Large Room Building 8200-8000 transition between LPPNB and PN. Four main “evolutionary” stages. 1. PPNA small village of oval semi-sub huts of reed or wattle+daub, overlain by larger grill buildings w rectang foundations of rows of stones, subdivided but prob reed superstructures like previous huts. N Zagros zone lithics - short flint pts, El Khiam + hollow base pts, flat thin blades, only 11% obsid, lots sickle sheen from harvest + reed cutting.

2. PPNB lifestyle - Grill bldngs develop, posts + rect superstructures, activities segregated to front or inside bldngs, special wk areas. Abandoned buildings intentionally buried. Pts less standardized, blades more. Intensive collection wild emmer + einkorn, pulses dominate, hunting, possible domest pig. 3. PPNB increasing complexity, contact w Middle Euphrates cultures. Cobble paved bldngs with floors supported on stone socles. Special “Skull building” with burial in crypts, detached skulls, copper bead. Lithics now

intensive obsidian, Cayonu artifacts (double backed blades) bipolar naviform cores [misused term, they mean bidirectional]. Sheep/goat domest, cultivated wild emmer, more grinding equip. 4. decline of PPN way of life, transition - less homog archit, lots clay figurines of sheep/goat, tokens. Standard tool types include lots Cayonu tools, loss of naviform cores, trend to pastoral model.

Copper - sequence from malachite bits in round house phase to cold hammering to incipient pyrotechnology, making pins, awls, hooks, beads, rings. Lots bone tools including a few antler sickles, v-shaped scapula tools for harvesting grain. Lots handstones, pestles increase, many celts including some in walls. Many stone + shell beads.

Paddaya, K., Richa Jhaldiyal, and Michael D. Petraglia
2007 The Acheulian quarry at Isampur, Lower Deccan, India. In *Axe Age: Acheulian Toolmaking from Quarry to Discard*. Naama Goren-Inbar and Gonen Sharon, eds., pp. 45-73. Equinox Publishing, London.

Working tabular limestone and macroflakes into handaxes etc. [Ugly stuff, excessive typologizing].

Pagoulatos, Peter
1992 Experimental Uses of Stone Tools: A Preliminary Study. *Man in the Northeast* 43:91-99.

Use wear expers with different raw materials used to cut different material for different times – Qtz cobbles, Qtzite, Felsite, Argillite, NY Chert – used unretouched flakes, @ 12 used on cornstalk, deer hide, oak, deer bone, 100, 500, 1000 strokes [so one specimen of each combination]. More damage appeared when used longer on harder materials [whoopee!]

Pagoulatos, Peter
1993 The Manufacture of Eastern Connecticut Quartzite Tools: A Experimental Study. *Bulletin of the Archaeological Society of Connecticut* 56:57-62.

Knapping a qtzt biface with hammerstone produced crushing edge damage on both biface & waste flakes – [unsurprising]

Painter, Floyd
1987 Lithic Projectile Points: Mislocation or Rejection is the Crux of the Question. *Chesopiean* 25(2):2-8.

[naïve & amusing, marginally useful]
How do you lose pts on a habitation site? – must be discarded or rejected for some reason
1) mishap/destruction/calamity 2) attack/defeat and abandonment 3) w/ burials
4) intentional abandon village and goods 5) caching 6) loss But above only 5%, other 95% : 7) pickup pts, eventually lose interest 8) animism- if pt fails, it's because it doesn't want to help - so discarded 9) animism- pt can only make one kill [family tradition from author's gt gnd fa] 10) rejected in manuf – but most made by professionals 11) rejected after use and damage 12) balance altered by use 13) bases brought back for repair of spear

Palomo, Antoni, Juan F. Gibaja, Raquel Piqué, Angel Bosch, Julia Chinchilla, and Josep Tarrús
2011 Harvesting cereals and other plants in Neolithic Iberia: the assemblage from the lake settlement at La Draga. *Antiquity* 85(329):759-771.

preserved wooden sickles with flint blades

Papagianni, Dimitra
1997 Late Neolithic flint technologies in Cyprus. *Lithics* 17/18: 70-81.

Site of Kandon Koufovounos near Akrotiri, long blades w/ silica gloss of diff material from flake tools. High skill vs low. No early blade debris, so not local?

Pappu, Shanti, and Kumar Akhilesh
2006 Preliminatry observations on the Achelian assemblages from Attirampakkam, Tamil Nadu. In *Axe Age: Acheulian Toolmaking from Quarry to Discard*. Naama Goren-Inbar and Gonen Sharon, eds., pp. 155-180. Equinox Publishing, London.

India, nice quartzite handaxes.

Pargeter, Justin
2011 Assesing the macrofracture method for identifying Stone Age hunting weaponry. *Journal of Archaeological Science* 38: 2882-2888.
http://dx.doi.org/10.1016/j.jas.2011.04.018

Pargeter, Justin
2013 Rock type variability and impact fracture formation: working towards a more robust macrofracture method. *Journal of Archaeological Science* 40 (11): 4056-4065.
http://dx.doi.org/10.1016/j.jas.2013.05.021.

Paris, Elizabeth H.
2012 Cohesion and Diversity in Formative Period Maya Lithic Tools and Techniques: A View from San Estevan, Belize. *Lithic Technology* 37(2):111-140.

Fluid intercommunity connections and exchange. Local production of tools similar to those from Colha and other sites.

Parker, Angela
2005 Flintknapping: 100 Pounds of Attitude. VHS, Red Rock Lithics, Pella, IA.

Parker, Richard
1993 Pecking and Grinding a Hard Stone Axe. *Chips* 5(3): 2-3.

Good general tips

Parker, Richard A.
1992 Experiments in Grinding Flint. *Chips* 5(2):7.

Ok description of grinding flint axes 3-5 hrs/side, with grit on slab

Parker, W. Thornton
1883 Concerning Arrow-Wounds. *Philadelphia Medical Times* 14:127-129 (Nov 17, 1883).

p 127 soldiers still face arrows, one died of superficial wound across chest "that he was the victim of a poisoned arrow admits of little doubt". "The arrow can be shot with as much precision as our best modern revolvers, and at 100 yards is a deadly weapon." Grooves to allow blood to escape. Each tribe and warrior has "easily recognized devices on the shaft". Manufactured metal heads sold to Indians, they make own, also stone, bone, glass, wood, etc. Heads detach in wounds because sinew bindings loosen [doesn't suggest this is on purpose]. Indian ingenuity in removing. P 128: Use of poison is disputed, but probably it is a secret not revealed to others but common in "devilish ingenuity." Various recipes, often less effective than thought, rotted liver "commonest and least secret" recipe. Quotes Bill on a survivor of wound through lung. [see quotes below; note that much of this material is second-hand stereotypes, not necessarily observed by the author]

Parker, W. Thornton
1913 Personal Experiences Among our North American Indians from 1867 to 1885. Northampton, Mass. Googlebooks http://books.google.com/books?hl=en&lr=&id=N-QbSBZtT3IC&oi=fnd&pg=PA5&dq=Personal+experiences+among+our+North+American+Indians+from+1867+to+1885,&ots=gDZOFe5GE7&sig=6O94UBKUv6PDYhrD8vCGTF5Vbgs#v=onepage&q=war-arrow&f=true

On Arrow Wounds pp 62-68. quote used by Moorehead on war-arrows. Poison disputed, rotted liver story, arrowheads left in wound because sinew holding them loosens when wet (65), but can be pushed through, or Inds insert 2 hollow sticks to cover barbs and pull out. [It appears throughout he is thinking of metal points]

"The head of the war-arrow is shorter and broader than that of the hunting-arrow, and is attached to the shaft at right angles with the slot which fits the bow-string, the object being to allow the arrow in flight more readily to pass between the human ribs, while the head of the hunting-arrow, which is long and narrow, is attached perpendicularly to the slot, to allow it to pass readily between the ribs of the running buffalo." (p. 67)

Parry, William J.
1999 Aztec Blade Production Strategies in the Eastern Basin of Mexico. In *Pathways to Prismatic Blades: A Study in Mesoamerican Obsidian Core-Blade Technology*. K. Hirth and B. Andrews, eds., pp. 37-45. Cotsen Institute of Archaeology Monograph 45. University of California, Los Angeles.

Parry, William J. and Andrew L. Christenson

1986 *Prehistoric Stone Technology on Northern Black Mesa, Arizona*. Center for Archaeological Investigations Occasional Paper 12, Southern Illinois University, Carbondale.

Parry, William J. and Robert L. Kelly
1987 Expedient Core Techology and Sedentism. In *The Organization of Core Technology*. J.K. Johnson and C.A. Morrow, eds., pp 285-304. Boulder: Westview Press.

Give data, especially biface to core ratios, from woodland, SW, Oaxaca suggesting decrease in bifaces and formal tools, increase in cores and expedient tools thru time all over. Mostly the change is between Archaic and later. Correlates with shift to sedentism, especially with larger villages, also with emphasis on maize agric. Discuss some complexities- mobile h/g (like their ethnog examples) may make exped tools if raw material abundant and ubiquitous [so why is Archaic similar all over US- must be areas where raw matterial abundant and ubiq] and sedentary people don't make formal tools because can collect and stockpile materical at site of use- so make exped.

Parsons, Elsie Clews
1918 War God Shrines of Laguna and Zuni. *American Anthropologist* n.s. 20(4):381-405.

Ritual use of arrows and stone points in shrines, and miniature bows. At one Laguna shrine in extinct geyser, found a couple possible dart fragments. [Based on comparison with Pepper, and Kidder + Guernsey finds, but unlikely to be that old and not a positive ID anyway.]

Parsons, E. C.
1939 *Pueblo Indian Religion*. Chicago: University of Chicago Press. (1996 University of Nebraska Press, Lincoln).

106: arrowheads and ashes safeguard against witches and other dangers; " Women may tie an arrowpoint into their belts, or a point may be held under the tongue when venturing forth at night (Laguna, Isleta). The grave is protected by marking around it with an arrowpoint, protected against witches [who steal corpse material] who prowl as dogs or coyotes or wolves (Isleta). … ashes reason obscure… arrowpoints have power because they have been shot by a powerful spirit, by Lightening."
326: Sticks of Office, including one with pendant of 12 pts for Oraibi War Chief, Zuni WC had 'arrow-tipped stick or staff'. Others have lion, eagle feather, serpent, crook and other sacred associations.
329-334: "Stones: Shells: Stone Points and Hoes" - pebbles, concretions, naturally shaped 'effigies', fossils, petrified wood, crystals, shells - all on altars, in medicine bundles, on paraphernalia, including mortuary. Arrow or spear pts in bowls, on altars, fetishes. Arrowpoints used to protect against witches, magically kill witches, "picked up in ruins" and "They are dropped from the fingers of Lightning (Hopi) and when discovered should be picked up by L's rep, the Flute Society chief (Walpi)." Zuni hero twins (Beetle Boys) destroy Water Serpent with yellow and blue arrowheads from ruin. Chamahia of yellow or

black slate from ruins as "rain knives" on Hopi altars, "described as snake-swallower prototypes of stick-swallowers."

Parsons, Gary A.
1987 Thermal Alteration of Monterey Banded Chert: An Analytical Study with Emphasis on Archaeological Sites of the Central California Coast. In *Coyote Press Archives of California Prehistory*, *California Lithic Studies 1*, edited by G.S. Breschini and T. Haversat, pp 1-40.

Partel, Yiga and Milla Ohel
1981 Measuring the Radius of Flake Bulbs by a Spherometer. *Lithic Technology* 10 (2-3): 28-30.

[Looks workable, but they were unable to show usefulness- no correlation of bulb size with material or flake length.]

Pastrana, Alejandro
2002 Variation at the Source: Obsidian Exploitation at Sierra de Las Navajas, Mexico. In *Pathways to Prismatic Blades: A Study in Mesoamerican Obsidian Core-Blade Technology*. K. Hirth and B. Andrews, eds., pp. 15-26. Cotsen Institute of Archaeology Monograph 45. University of California, Los Angeles.

Pastrana, Alejandro, and Kenneth G. Hirth
2002 Biface Production and Craft Specialization: A View from Sierra de las Navajas, Hidalgo. In *Mesoamerican Lithic Technology: Experimentation and Interpretation*, K. G. Hirth ed., pp. 197-207. University of Utah Press, Salt Lake City.

standardized manufacture of bifacial points for Aztec military use - large cores worked for large flakes, made into bifacial preforms, or tabular pieces ditto, stored until sent to city for finish work there. Point forms from Tenochtitlan, Texcoco, and Tlatelolco illustrated: [3-7 cm long, triangular forms with shallow side notches and usually concave bases, sizes suitable for arrow to dart, regular pressure flaking]. But article describes methods, has little conclusion.

Pasztory, Esther
1983 Aztec Art. New York: Henry N. Abrams, Inc.

Cite for explanation of Flintknife glyph symbolism p. 168, 83.

Patel, Samir S.
2009 The Case of the Missing Buffalo Soldier. *Archaeology* 62(2) :40-44, 62.

Brecheisen and gang of looter friends despoiled NM Fort Craig cemetery and SW prehistoric sites. [Of particular note when looters talk about respect and interest in the past - this scum was a vet, knew it was illegal, still dug up dead soldiers as trophies.]

Patel, Samir S.
2009 Drugs, Guns, and Dirt. *Archaeology* 62(2) : 45-47.

Meth addicts and dealers loot sites, use artifacts to launder money.

Paton, Robert
1994 Speaking Through Stones: A Study from Northern Australia. *World Archaeology* 26 (2): 172-184.

Ethnographic study Northern Territory, Mudburra/Jingili people. Large blade-flake knives “leilira” made of quartzite from 4 quarries. Boulders dug, cracked by fire, cores selected or made from macroflakes, blades struck by direct percussion. [Although he claims long study and intimacy, it seems he never actually observed the process, and it may no longer be done, but he doesn’t make this clear.] Blades left at quarry for later use, lacking in local sites, and use-wear on specimens very rare. Because manufactured for exchange, in groups. Local exchange for similar blades from different quarrys, or boomerangs and other goods. Distant exchange – 325 km N, then a further 275 km – also for similar blades and other goods which are mostly also available in all areas. Symbolic import of exchange dominates, not utility. Quarry access and blade use restricted, blades + quarry assoc with Pelican in Dreamtime, thus relate to management of Dreaming symbolism and supernatural relationships. Boomerang exchange as example – done to improve community relations and image (and goods transported by airplane!). [Interesting example of exchange for symbolic values, but why did he focus on blades? His argument that they have no utilitarian import is weak, his knowledge of manufacture is vague, and the documented exchange example of boomerangs doesn’t involve blades at all].

Patten, Bob
1978 The Denver Series, Point #13: Eden. *Flintknappers’ Exchange* 1(1): 18-20.

Block constraining point allows no motion, so flat flake trajectories, no curving
See comments by Stanford

Patten, Bob
1978 The Denver Series, Point # 3: Fluted Sandia. *Flintknappers’ Exchange* 1(2): 28-29.

Patten, Bob
1978 Denver Series, Point # 7: Hell Gap. *Flintknappers’ Exchange* 1(3): 29-30.

Patten, Bob
1978 Cushioned Percussion. *Flintknappers’ Exchange* 1(1): 5-6.

Hard hammer perc cushioned on leg behaves like soft hammer for bifaces

Patten, Robert J
1978 "Push" vs "Pull" Flaking. *Lithic Technology* 7(1):3-4.

Patten, Bob
1979 The Denver Series; Point # 17: Browns Valley Point. *Flintknappers' Exchange* 2(1): 17-18.

Patten, Bob
1979 The Denver Series: Point # 34 Blackwater Draw Clovis, New Mexico. *Flintknappers' Exchange* 2(2): 5-6.

Patten, Bob
1977 The Denver Series, # 5, Folsom Point from Folsom, New Mexico. *Flintknapper's Exchange*
2(3):16.

Patten, Bob
1980 Soft Stone Hammer Percussion. *Flintknappers' Exchange* 3(1):17.

Similar to baton, used on Clovis. Mentions holding biface to control flakes.

Patten, Bob
1980 Folsom Staging: A Speculative Approach. *Flintknappers' Exchange* 3(2): 7-10.

Description, some good tips. Stages as decision making points.

Patten, Bob
1986 Replicating the Casting Lab Dalton. *Flintknapping Digest* 3(1): 21-27.

Illustrates 5 stages in making a Dalton replica – also available as casts

Patten, Bob
1986 Bob Patten, The High Plains Paleoknapper. *Flintknapping Digest* 3(1): 2-4.

Interview

Patten, Bob
1997 Evaluation Stone Artifacts [sic]. *The Texas Cache* 5(2): 8-12.

Some tips on recognizing fakes
Warnings about fakes
Diff btwn reproduction = just "image" and replication = recreate original process, and teleolithics= beyond ancients, high art [did he get this term from ms of my article or remember from Warren?]

Patten, Bob
1999 *Old Tools – New Eyes: A Primal Primer of Flintknapping*. Stone Dagger Publications, Denver.

Patten, Robert J.
2002 Solving the Folsom Fluting Problem. In *Folsom Technology and Lifeways*, J. E. Clark and M. B. Collins, eds., pp. 299-308. Lithic Technology Special Publication No. 4. University of Tulsa, Tulsa.

Patten, Bob
2005 *Peoples of the Flute: A Study in Anthropolithic Forensics*. Stone Dagger Publications, Lakewood, CO.

Clovis and related cultures approached by consideration of fluting.
Somewhat optimistic but reasonably balanced discussion of pre-Clovis issues and Solutrean.
Importance of staging – "natural division of the production process" aids efficient work rhythm, allows material to be "banked" in early stages without committing to a particular form. Technological stability because knapping includes "process steps" each with proven results and cultural constraints.
[Writing is clear but needs more illustration and assumes lots of knowledge].

Patten, Bob
2005 Comments to Odell. *Lithic Technology* 30(2):85-86.

Gap between academics and knappers? Shared interests, but failure to develop theory of fracture. Academics should take first step to collaboration.

Patten, Bob
2007 Parsing Folsom Rock. *Lithic Technology* 32(1):69-78.

Patten, Bob, J.B. Sollberger, and L.W. Patterson
1978 The Staging Problem. *Flintknappers' Exchange* 1(3):25-27.

Patterson, L. W.
1975 Lithic Wear Patterns in Deer Butchering. *Texas Archaeology* 19(2):10-11.

Patterson, L. W.
1978 Comments for Novice Knappers. *Flintknappers' Exchange* 1(2):10-12.

Ok, good tips, but not new

Patterson, L. W.
1978 Practical Heat Treating of Flint. *Flintknappers' Exchange* 1(3):7-8.

Oven, 500 F

Patterson, L. W.
1979 A Texas Knap-in. *Flintknappers' Exchange* 3(2):2.

Patterson, L.W.
1979 Additional Comments on Bipolar Flaking. *Flintknappers' Exchange* 2(3): 21-22.

Patterson, L.W.
1979 Comments on Abrasion of Striking Platform Edges. *Flintknappers' Exchange* 2(3):7.

Abrasion damages surface, makes fracture initiation easier - like glass cutter

Patterson, L.W.
1979 Minimum Effort Strategies in Lithic Reduction. *Flintknappers' Exchange* 2(1):10-13.

Optimum raw material selected, minimal flaking

Patterson, L. W.
1979 Quantitative Characteristics of Debitage from Heat Treated Chert. *Plains Anthropologist* 24(85): 255-259.

Patterson, L. W.
1980 A Chert Cobble Flaking Experiment. *La Tierra* 8(4): 29-34.

Patterson, L. W.
1980 The Fineness Syndrome. *Flintknappers' Exchange* 3(2):11.

Deplores concentration on thin bifaces to exclusion of other concerns and bias of our views

Patterson, L. W.
1980 Measurement of Stone Artifact Edge Angles. *Flintknappers' Exchange* 3(2): 11-13.

Mentions goniometer, polar graph paper, clay impression, observer errors and non-comparability
from "intersection of curved sufaces" = "non linear angles" espec on bifaces.
Sees bevel on biface edges as the true platform angle [problem with scale – micro vs macro beveling- hard to decide]
Don't confuse "flake detachment angle with striking platform angle" [IPA with EPA]
Striking platform angle must be less than 90 degrees

Patterson, L. W.
1980 The Significance of Dart Point Stem Breakage. *Bulletin of the Texas Archaeological Society* 51: 309-316.

Fore shaft reuse evidenced by frequent stem frags
Blade damage also discussed – hunt damage - reworking

Patterson, L. W.

1981 The Analysis of Striking Platform Geometry. *Flintknappers' Exchange* 4(2): 18-20.

[He must have got some of this from Dibble and Whittaker, but we are not cited.]
Striking platform angle [= EPA], less than 90 degrees, controls Length
Flake detachment angle [= IPH] obtuse, hard to define, dependent

Patterson, L. W.
1981 Comments on Pressure Flaking Methods. *Flintknappers' Exchange* 4(3): 9-10.

Variety of techniques briefly described

Patterson, L.W.
1981 Comments on Wear Rates of Lithic Tool Edges. *Lithic Technology* 10(1): 11-12.

Patterson, L. W.
1981 Fracture Force Changes from Heat Treating and Edge Grinding. *Flintknappers' Exchange* 4(3):6-9.

Some controlled experiments with spring percussor. Both reduce fracture force.

Patterson, L.W.
1981 The Importance of Flake Size Distribution. *Contract Abstracts* 3(1):70-72,

Biface size patterns – exponential curve weighted to small end, sim distrib all stages.
Uses size range sort similar to mine.

Patterson, L. W.
1981 Stone Pressure Flaking Tools. *Flintknappers' Exchange* 4(3): 10-11.

Work ok for short pressure, espec unifacial tools. Don't grip edges, so not long flakes.
Should be considered by analysts.

Patterson, L. W.
1982 Replication and Classification of Large Size Lithic Debitage. *Lithic Technology* 11(3):50-58.

Hard to separate diff percussion biface production techniques. Size range sorting on squares similar to my system. Tendency for lips, less concentrated bulbs on soft hammer flakes.

Patterson, L. W.
1985 Distinguishing Between Arrow and Spear Points on the Upper Texas Coast. *Lithic Technology* 14(2): 81-89.

Classification using surface pts, key attributes = thickness, neck width, and weight.
Discriminant analysis [two groups maybe, but no certainty arrow vs spear]

Patterson, Leland W.
1987 Amorphous Cores and Utilized Flakes: A Commentary. *Lithic Technology* 16 (2-3): 51-53.

Lots of reason for amorphous cores - not just random - lg flakes not needed, no specialized tools, lots of raw material, efficiency not needed, limits in raw material. Utilized flakes may be from bifaces, so few cores (eg. Archaic) - this weakens argument of Parry and Kelly that thru time increase in flakes, decrease in formal tools

Patterson, L. W.
1988 J. B. Sollberger, Archaeologist and Flintknapper. *Bulletin of the Texas Archaeological Society* 59:19-21.

Brief bio and biblio, not too useful

Patterson, L. W.
1990 Characteristics of Bifacial Reduction Flake-Size Distribution. *American Antiquity* 55(3):550-558.

Patterson, Leland W.
1993 An Introduction to Lithic Analysis. *Houston Archeological Society Journal* 105:16-25.

Patterson, Leland W.
1994 Incidental Impact Breakage of Arrow Points. *La Tierra* 21 (4): 30-38.

Soil, rock, tree, brush - similar damage to that from animal targets. Modern archery tackle and modern materials simulate ancient. Shafts split when not wrapped. No breakage when hit soil. Oak = minor tip damage. Rock = stem brk. Brush pile = lots diff. Stem breakage by bending most common.
29% of trials resulted in disabling damage

Patterson, Leland W.
1994 Prismatic Blades and Unifacial Arrow Points from 41HR184. *Houston Archeological Society Journal* 110: 1-12.

Patterson, Leland W.
1995 Analysis of Calico Lithics: A Reply to Taylor. *The Review of Archaeology* 16(1):36-39.

A pro-Calico lithics comment.

Patterson, Leland W.
1995 Chert cobble Reduction at 41 FY 56, Fayette County, Texas. *La Tierra* 22(3): 29-34.

Patterson, Leland W.
1995 Perforator Use-Wear. *Quarterly Journal of the Southern Texas Archaeological Association* 22(1): 12-16.

Patterson, Leland W.
1995 Thermal Damage to Chert. *Lithic Technology* 20(1): 72-80.

Patterson, Leland W.
1995 Use of Chert Flake as a Pressure Flaking Tool. *La Tierra*. 22(4):8-11.

Patterson, Leland W.
1995 Uses of Small Prismatic Blades in North America. *Ohio Archaeologist* 45(2): 44-47.

Brief continental survey. Emphasizes flakes and blades as early bow and arrow components.

Patterson, Leland W.
1996 Drilling Holes in Shell. *La Tierra: Quarterly Journal of the Southern Texas Archaelogical Association* 23(1): 10-13.

Patterson, Leland W.
1996 Manufacturing Variation of Gary and Kent Dart Points. *Houston Archaeological Society Journal* 114: 15-19.

Similar points, slight diffs in stem – probably same type, but result from diffs in material, technique, knapper. He replicated a few to demo.

Patterson, L.W.
1996 Secondary Color Change of Heat-Treated Chert. *Lithic Technology* 21(2):156-157.

Patterson, L.W.
1996 Temporal Trend Toward Smaller Dart Points. *Houston Archaeological Society Journal* 114: 20-22.

Possible reasons- smaller faster spears, less raw materials, efficiency in material use, cultural preferences
[no evidence, no conclusions, not useful]

Patterson, Leland W.
1998 Prehistoric Flintknapping Specialists in Texas. *La Tierra* 25 (3): 37-41.

Thin wide bifaces indicate great skill, maybe specialists among mobile hunter-gatherers. E.g. Bell-Andice dart point with deep notches and very wide and thin, Folsom fluted pts, some large thin bifaces like Gahagan biface, corner-tang knives. Ordinary pts made by ordinary people. Average knapper W/T dart pts 3-4, skilled 5.0+, required for above.
[doesn't discuss kind of specialist he thinks might be involved]

Gives dimensions for some prehistoric and Solberger specimens

Patterson, Leland W.
1998 Width-to-Thickness Ratios of Texas Dart Points. *La Tierra: Quarterly Journal of the Texas Archaeological Association* 25(4): 45-48.

Factors affecting W/T: W/T of blank, material, skill, technology, style of point. Different types vary more in W than in T, so wider pt types tend to have higher W/T. Tough material reduces W/T.

Patterson, Leland W.
1999 Comments on Manufacture of Arrow Points. *La Tierra* 26 (3): 40-43.

Pressure fluted small points, those with dorsal ridge break less.

Patterson, Leland W.
2000 Clovis Blade Technology by Michael B Collins. *Lithic Technology* 25 (1): 62-64.

Lots of his examples not from good data contexts. Blade technology problems wider than just clovis.

Patterson, Leland W.
2000 Examples of Lithic Debitage Analysis. *La Tierra* 27 (3): 38-51.

Patterson, Leland W.
2004 Smoothing of Basal Edges of Spear Points. *La Tierra* 31 (1): 77-78.

Reviews theories, recommends retouch/smoothing with stone flake.

Patterson, Leland W.
2005 Review of <u>American Flintknappers: Stone Age Art in the Age of Computers</u>, by John C. Whittaker. *Lithic Technology* 30 (1): 60-61.

Patterson, Leland W.
2005 Additional Comments on Unifacial Arrow Points. *Houston Archeological Society Journal* 128: 7-9.

Small flake pts with unifacial retouch by either raking or serrated pressure. Begin in Middle Archaic (3000-1500 BC) before bifacial arrow pts which are Late Prehistoric (post 600 AD), and contributed to pop increase in Archaic. [This would be very early for bow - why such a long gap before bifacial points since other Archaic pts were bifacial, and the b + a was successful and important?]

Patterson, Leland W.
2005 Prehistoric Bifacial Knives in Southeast Texas. *Houston Archeological Society Journal* 120:22-26.

Bifacial knives rare, most symetrical bifaces probably dart point preforms. Most knives late prehist, relate to bison processing. Tabulates examples.

Patterson, Leland W.
2007 Transport of Lithic Raw Materials. *Lithic Technology* 32(2): 151-152.

Bifaces are not the most efficient form for transporting material. Transporting the good flakes instead reduces weight by 50-66%. Many sites without cores because cores not brought to site.

Patterson, Leland W.
2007 Hunter-Gatherer Violence in Southeastern North America. *The Chesopaean* 45(4):21-23.

Ignoring evidence for bow and arrow in Archaic is like ignoring evidence of Pre-Clovis (refs). H-G violence lacks size and organization characteristic of warfare. One of several possible responses to competition for resources.

Patterson, L. W., Louis Hoffman, R. M. Higginbotham and Ruth D. Simpson
1987 Analysis of Lithic Flakes at the Calico Site, California. *Journal of Field Archaeology* 14 (1): 91-106.

Compares to experimental perc

Patterson, L. W. and J. B. Sollberger
1978 Replication and Classification of Small Size Lithic Debitage. *Plains Anthropologist* 23(40):103-112.

Quantitative study attributes of flks for information on force application, technology, size, weight, bulb, platform, force lines, bilateral symmetry, x-section symmetry. Exper: Pressure, sft ham, stand hamstone, soft hamstn, indirect perc. Concl: 1) weight and size distributions not disting types force applied. 2) lipped not reliable billet indic 3) Press and indirect perc preserve more plats. 4) If only one technique, maybe ID, but not if mixture used. 5) Recovery-sampling probs 6) Exper-more small flakes.

Patterson, L.W. and J.B. Sollberger
1986 Comments on Toth's Right-Handedness Study. *Lithic Technology* 15 (3): 109-111.

Crits his ability to use "L+R oriented" context flakes-knappers change direction and sequence. Toth assumes consistant clockwise rotation of cor in knapping, but core shape, knapper pref will influence.

Patterson, L. W. and J. B. Sollberger
1990 The Significance of Beveled Edges on Projectile Points. *La Tierra* 17(2): 37-38.

In some types of definitional significance, but also just random result of working uneven flakes and reworking damaged points.

Patterson, Patience E.
1997 A Lithic Reduction Sequnce: A Test Case in the North Fork Reservoir Area, Williamson County, Texas. *Bulletin of the Texas Archaeological Society* 48:53-82.

Pauketat, Timothy R. and Susan M. Alt
2004 The Making and Meaning of a Mississippian Axe-Head Cache. *Antiquity* 78 (302): 779-797.

Cache of 70 celts at Grossman site, 100-house upland small center near Cahokia, with ceremonial buildings and pits. Made of basalts etc from St Francois Mts in Ozarks 100-300 km SW of Cahokia. Several correlating variations in form, material, and degree of completion and use, spatially grouped in pit. Suggest individuals or social groups, some evid of village specializ and specializ within villages. Stone source accessed or controlled by Cahokia, some types of axe + stone wide distrib suggests central production, others local makers. Not a high status artifact, but intentional burial – clearance, unification, site founding or other ritual at time when C becoming a center with satellites. [Largest axe is 46 cm long, unfinished. This is the one Larry Kinsella replicated and hafted to show that it was functional, although mighty heavy.]

Pavesic, Max G.
1985 "Cache Blades and Turkey Tails: Piecing Together the Western Idaho Archaic Burial Complex." In *Stone Tool Analysis: Essays in Honor of Don E. Crabtree*. M.G. Plew, J. C. Woods, M. G. Pavesic eds. Pp 55-89. Albuquerque: University of New Mexico Press.

Technical, provenience, not too exciting.

Pavlov, Pavel, Wil Roebroeks, and John Inge Svendsen
2004 The Pleistocene Colonization of Northeastern Europe: A Report on Recent Research. *Journal of Human Evolution* 47:3-17.

Pawlik, Alfred F.
2004 An Early Bronze Age Pocket Lighter. In *Lithics in Action: Papers from the Conference 'Lithic Studies in the Year 2000'*. E. A. Walker, F. Wenban-Smith, and F. Healy eds., pp. 149-151. Oxbow Books, Oxford.

German EBA burial adult male and child, battered flint strike-a-light and 15 g piece hematite. Striations on hematite, residues on flint.

Pawlik, Alfred F.
2004 Identification of hafting traces and residues by scanning electron microscopy and energy-dispersive analysis of X-rays. In *Lithics in Action: Papers from the Conference 'Lithic Studies in the Year 2000'*. E. A. Walker, F. Wenban-Smith, and F. Healy eds., pp. 169-179. Oxbow Books, Oxford.

Birch tar mastic, Mesolithic and Neolithic.

Pawlik, Alfred F., and Wilfredo P. Ronquillo
2003 The Paleolithic in the Philippines. *Lithic Technology* 28(1): 79-93.

Payen, Louis A.
1982 Artifacts or Geofacts at Calico: Application of the Barnes Test. In *Peopling of the New World*. J. E. Ericson, R. E. Taylor, and R. Berger eds. Pp. 193-201. Las Altos: Ballena Press.

Peacock, Evan
1991 Distinguishing between Artifacts and Geofacts: A Test Case from Eastern England. *Journal of Field Archaeology* 18(3):345-361.

Discusses attributes of percussion flakes, derives from natural and human flakes some distinguishing features, describes some of an eolith collection as probably human manufacture

Peale, Franklin
1861 On the Stone Implements of the Indians of North America with a Classification and Description of the Methods of Making Them. *Proceedings of the American Philosophical Society* 8:265-272.

Ground stone, flaked stone, pts. "Pecking" [first use of term?]. Early recognition of blanks for travel as blanks, not tools. Ref to John Smith 1606 description of knapping. Shasty and W. California Inds with notched pressure flaker. Suggests beveling as "rifling"

Pearlman, David A.
1984 *Threshing Sledges in the East Mediterranean*: *Ethnoarchaeology with Chert Knappers and Dhoukanes in Cyprus.* unpublished MA Thesis, University of Minnesota.

Pearson, Claude
2008 Disturbing the Peace. *Chips* 20(2):14-15.

IL artifact hunting, 1988 law prohibits digging is good. Knapping may help stop plunder. Art should be signed.

Pearson, Georges A.
1999 North American Paleoindian Bi-Beveled Bone and Ivory Rods: A New Interpretation. *North American Archaeologist* 20(2):81-104.

Hypothesizes that 2 beveled rods together make a foreshaft, bevels at both ends make V to fit mainshaft and point respectively. [Reasonable idea but only experimented with a cast of pt. from Wenatchee.]

Pearson, Georges A.
2003 First Report of a Newly Discovered Paleoindian Quarry Site on the Isthmus of Panama. *Latin American Antiquity* 14(3): 311-322.

Cryptocrystalline quartz outcrop with preforms and flake blanks for Clovis-like points, biface manufacturing debris, also gravers, side scrapers, scraper-planes. One point fragment with possible flute [hard to tell].

Peasnall, Brian L., and Michael Rosenberg **disk**
2001 A Preliminary Description of the Lithic Industry from Demirköy Höyük. In *Beyond Tools: Redefining the PPN Lithic Assemblages of the Levant*. Isabella Caneva, Cristina Lemorini, Daniela Zampetti, and Paolo Biagi eds., pp. 363-387. Ex Oriente, Berlin.

Aceramic Neo in Tigris drainage E Anatolia, lithics link periods of Hallan semi abandoned, Çayönü established: trend toward blade dominated industry, more standardized, shift from geometric microliths to Neo points. Suggest breakdown in obsidian trade in early aceramic Neo.

Peck, Rodney M.
1986 A Flintknapper's Tool Kit from North Carolina. *20th Century Lithics* 1:97-98.

Looted site; kit contained billet, pressor, "2 deer toes for flaking", stone point "in bone handle for flaking." [Poor description.]

Peck, Rodney M.
1988 Lithic Material from the Williamson Site: Cattail Creek Chalcedony. *20th Century Lithics* 1:59-61.

Clovis, lithic raw material described.

Peck, Trevor R. and John W. Ives
1998 Late Side-Notched Projectile Points in the Northern Plains. *Plains Anthropologist* 46(176):163-193.

Pecora, Albert M.
2001 Chipped Stone Tool Production Strategies and Lithic Debitage Patterns. In *Lithic Debitage: Context, Form, Meaning.* William Andrefsky Jr., ed. Pp. 173-190. Salt Lake City, University of Utah Press.

Pedler, Catherine, Charles A. Brumbaugh, and Virgil Tonn
1999 Knap-in ! Breaking Stone with the Public. *Paper presented 64th Annual Meeting* SAA, Chicago 1999

Source of innovation, bridges to archaeology. Useful list of 1998 knap-ins [42-includes some I wouldn't]

Pelcin, A.
1997 The formation of flakes: The role of platform thickness and exterior platform angle in the production of flake initiations and terminations. *Journal of Archaeological Science* 24(12):1107.

Pelcin, A.W.
1997 The Effect of Core Surface Morphology on Flake Attributes: Evidence from a Controlled Experiment. *Journal of Archaeological Science* 24:749-756.

Pelcin, A.W.
1998 The Threshold Effect of Platform Width: A Reply to Davis and Shea. *Journal of Archaeological Science* 25:615-620.

Pelegrin, Jacques
1979 Experiments in Bifacial Work : About 'Laurel Leaves.' *Flintknappers' Exchange* 4(1) : 4-7.

Isolation of platforms described - improves accuracy, reduces breakage.

Pelegrin, Jacques, and Callahan, Errett
1981 An Interview with Flintknapper Jacques Pelegrin. *Contract Abstracts* 3(1) : 62-70.

Beginnings with Bordes. Signs work, not give away much, fears mix-up with artifacts. Mostly makes bifaces and blades by percussion. Failure rate: of 4 laurel leaves, 1 brk., 1 medium quality, 1 good, 1 very good. Platform prep – reduces force and breakage. Two components to blow 'enforcement' = down, 'arashment' = tearing out. Soft pressure against leg helps. Staging is normal, in mind.
Typology – making 'typical' tools – Levallois discussed.
Advice for beginners – learn hammerstone, biface, blades.

Pelegrin, J.
1988 Débitage expérimental par pression : "du plus petit au plus grand", in *Technologie prehistorique*, J. Tixier, Editor. CNRS: Paris. p. 37-53.

Pelegrin, Jacques
1990 Prehistoric Lithic Technology : Some Aspects of Research. *Archaeological Review from Cambridge* 9(1) :116-125.

Discusses chaines operatoires as sequence of decisions based on both "knowledge" and "know-how", allowing some assessment of mental capabilities and distinguishing specialist from ordinary production [jargony, nothing really new, but distinction of mental knowledge and physically practiced skill is useful]

Pelegrin, Jacques
1993 Tecnologia y Funcion de las Puntas de Paijan: El Aporte de la Experimentacion. *Latin American Antiquity* 4(4) : 367-382.

N. Coast Peru, long bifacial points
10 tests – refined phases, duration of work, counts and descripts of flakes, weight and traits of pts.
Social and econ interps, use as fish spears

Pelegrin, Jacques
1993 A Framework for Analyzing Prehistoric Stone Tool Manufacture and a Tentative Application to Some Early Stone Industries. In *The Use of Tools by Human and Non-Human Primates*. A. Berthelet and J. Chevaillon, eds, pp. 302-317. Clarendon Press, Oxford.

Pelegrin, Jacques
1995 Réflexions méthodologiques sur l'étude de séries lithiques en contexte d'atelier ou de mine. In *Les Mines de Silex au Néolithique en Europe: Avancées Récentes*. J. Pelegrin and A. Richard, eds, pp. 159-172. Comité des Travaux Historiques et Scientifiques, Vesoul.

Pelegrin, Jacques
2003 Blade-Making Techniques from the Old World: Insights and Applications to Mesoamerican Obsidian Lithic Technology. In *Mesoamerican Lithic Technology: Experimentation and Interpretation*, K. G. Hirth ed., pp. 55-71. University of Utah Press, Salt Lake City.

Devices for pressure with chest crutch, holding blocks instead of vice, indirect percussion between knees, and giant lever device for such blades as Canaanean. Recommends flexible pressure tools or levers, and slow, heavy blow for indirect perc. [Good article, useful.]

Pelegrin, Jacques
2006 Long Blade Technology in the Old World: An Experimental Approach and Some Archaeological Results. In *Skilled Production and Social Reproduction*. Jan Apel and Kjel Knutsson eds., pp. 37-68. Societas Archaeologica Upsaliensis, Uppsala.

Long blade production in 7 areas from France/Portugal W to Bulgaria/Syria E, using indirect percussion and lever pressure, suggests 5 technological traditions and movement of craftsmen over large areas.

Indirect perc actually not until Meso, mostly Neolithic. Pressure techniques begin Up Pal with Gravettian backing retouch and Solutrean finish, then NE Asian microblades. 7^{th} -3^{rd} mil many lever blades. Pressure blades recognizable by flat profile, very regular edges, thin. Punch blades more curved, less regular edges, more undulations or "belly" on blade.

Archaeological examples: early Neo blades of blond flint from Greece - lever. Varna Bulgaria Chalcolithic necropolis - up to 43 cm long by lever pressure w copper tip, smaller blades by punch and standing pressure locally. Syrian Canaanian blades for threshing sledges by lever w copper tip. French Chalco Forcalquier flint - lever w copper tip. Perfugas, Sardinia, and Portugal. Grand-Presigny livre-de-beurre blades - special platform prep for indirect percussion.

Pelegrin, Jacques, and Annick Richard (editors)
1995 *Les Mines de Silex au Néolithique en Europe: Avancées Récentes*. Comité des Travaux Historiques et Scientifiques, Vesoul.

Pendergast, David M.
1998 Intercession with the Gods: Caches and Their Significance at Altun Ha and Lamanai, Belize. In *The Sowing and the Dawning: Termination, Dedication, and Transformation in the Archaeological and Ethnographic Record of Mesoamerica*. S. B. Mock ed, pp. 54-63. University of New Mexico Press, Albuquerque.

119 and 126 caches, 3 kinds context: public communal structures, residential structures, monuments. Discusses some changes through time. Often little [or obscure] patterning. Some ephemeral offerings - corn pollen in water, 'empty' pits. AH has more rich caching than L. Some purpose-made pots used. Post-classic 'smash-and-scatter' ceramic offerings. Offerings at L show survival of religion despite Christianity. Offerings associated with structures' axes. Lamanai Late Classic often paired vessels but with ceremonial flints or obsidian up to 15.6 kg. [Not enough analysis of contents, ignores striking use of eccentrics at both sites, but two poor photos show flints in context.]

Penman, John T.
1977 The Old Copper Culture: an Analysis of Old Copper Artifacts. *The Wisconson Archaeologist* 58 (1): 3-23.

Perera, Victor and Robert D. Bruce
1982 *The Last lords of Palenque: The Lacandon Mayas of the Mexican Rain Forest*. Berkeley: University of California Press.

Pg. 111: "At least once a week one of the Lacandones takes a drum-and-arrows shuttle flight to San Cristobal… There have never been so many bow and arrows in Naha', none of which are used in the forest, and there have never been more ceremonial drums, all of which are silent. Formerly a symbol of cultural cohesion, the arrows and drums have become symptoms of Naha's disintegration."

Perino, Gregory
1985 *Selected Preforms, Points, and Knives of the North American Indians*. Idabel, OK: Points and Barbs Press.

Perino, Gregory
1996 Points and Barbs. *Central States Archaeological Journal* 43(4):211.

Perles, C.
1992 Systems of Exchange and Organization of Production in Neolithic Greece. *Journal of Mediterranean Archaeology* 5(2):115-164.

Perles, Catherine

1993 Ecological Determinism, Group Strategies, and Individual Decisions in the Conception of Prehistoric Stone Assemblages. In *The Use of Tools by Human and Non-Human Primates.* A. Berthelet and J. Chavaillon, eds. Pp 267-280. Oxford: Clarendon Press.

Pernicka, Ernst, Silke von Berswordt-Wallrabe, and Hilke Wagner
2008 *Original - Copy - Fake? Examining the Authenticity of Ancient Works of Art - Focusing on African and Asian Bronzes and Terracottas*. Verlag, Philipp von Zabern, Mainz.

Pernicka, Ernst, Roland Schwab, Nicole Lockhoff, and Mike Haustein
2008 Scientific Investigations of West African Metal Castings from a Collection in Bochum. In Pernicka, Ernst, Silke von Berswordt-Wallrabe, and Hilke Wagner eds, *Original - Copy - Fake? Examining the Authenticity of Ancient Works of Art - Focusing on African and Asian Bronzes and Terracottas*. pp., 80-98. Verlag Philipp von Zabern, Mainz.

Fake Benin bronzes, manipulated patinas + corrosion, impurities such as Al detected in metal.

Perpère, Marie
2000 Les pointes de La Gravette de la couche 5 de l'abri Pataud: Réflexion sur les armes de pierre dans les outillages périgordiens. In *La chasse dans la Préhistoire/ Hunting in Prehistory, Anthropologie et Préhistoire 111*. C. Bellier, P. Cattelain, and M. Otte eds., pp. 19-27. Societé Royale Belge d'Anthropologie et Préhistoire, Bruxelles.

Upper Paleolithic small points on blades.

Perriault, Jacques
1993 The Transfer of Knowledge Within the Craft Industries and Trade Guilds. In *The Use of Tools by Human and Non-human Primates.* A. Berthelet and J. Chavaillon, eds., pp. 341-353. Oxford: Clarendon Press.

[Over-analysis of simple things, no lithic info, one good quote]
Considers learning process as imitation and instruction. Vague info on French trade guilds, example from US cabinet maker.

Perrot, J.
1968 La Préhistoire Palestinienne. *Extrait du Supplément au Dictionaire de la Bible*. Letouzey and Ané, eds. Paris.

Chronol and summary, basic source; PPNB projectile points on blades.

Perry, Jennifer E. and Christopher S. Jazwa
2010 Spatial and Temporal Variability in Chert Exploitation on Santa Cruz Island, California. *American Antiquity* 75(1):177-198.

Perry, Linda
2005 Reassessing the Traditional Interpretation of "Manioc" Artifacts in the Orinoco Valley of Venezuela. *Latin American Antiquity* 16(4):409-426.

South America. Starch residue and use-wear on quartz microliths used to argue that more than manioc was grated - other root crops, so manioc not as important as previously thought. Archaeobot info considered more reliable than ethno analogy.

Perttula, Timothy K.
1993 New Folson Point Finds from Eastern Texas. *Plains Anthropologist* 38(143): 199-202.

Brief, not illustrated, distributional map

Peters, Gordon
1994 What were they Doing? *The Platform* 6(1):2-3; 6(2):5-6;6(3):2-3.

Peterson, Cynthia, ed. **pdf**
2012 Archaeological Study of Iowaville,a 1765–1824 Ioway (Báxoje) Village in Van Buren County, Iowa. Unpublished report, Office of the State Archaeologist, Iowa City.

SE Iowa, 1765-1824 Ioway village site
Saul Schwartz background and Ioway Material Culture section, pp 7-21. >100 gun parts from the site in local collections, including barrel sections, breech plugs, buttplate fragments, cocks, flashpans, frizzens, frizzen springs, lockplates, mainsprings, patchbox fragments, pistol bases, ramrod pipes, sears, sideplate fragments, triggerguard fragments, triggers, and vice caps. Disarticulated gun parts and multiple stripped lockplates indicates that the Ioway at the site repaired their own guns. >50 metal projectile points including triangular brass points, triangular iron points, and conical brass points. Absence of chipped stone projectile points perhaps indicates loss of chipped stone technology and its replacement by the metalworking technology necessary to manufacture points from metal.

When Morgan (1959:99) interviewed the Ioway chief White Cloud in 1860 "the Indians still prefer the bow and arrow to the gun for hunting buffalo. That the animal is easily killed, and the arrow does it with great certainty and that they can fire, or rather shoot, from the saddle much easier with the bow than with the gun. That the motion of the gun is liable to be unsteady, and therefore to shoot over, while with the bow they have no difficulty." Bow used by children learning to hunt too, continued into 1920s.

Peterson section on previous work and collections [lots of surface collections and metal detector looting]. Gunflints in surface collection photo p 56, 59 [shows ventral, so can't tell what type, looks like both Fr and Brit flint.] Small triangular side-notched stone points. A few test units: some stratig integrity + features under plow zone. Recovered some lithic items, gunflints, gun parts.

Gunflints (fig p 141): Brit flint, both spall + blade types [shown] also 3 amber flints. [looks like heavy wear or use in photo]. [Not clear what from private collections is in OSA collections].

Peterson, Jane, Douglas Mitchell, and M. Steven Shackley
1997 The Social and Economic Contexts of Lithic Procurement: Obsidian from Classic-Period Hohokam Sites. *American Antiquity* 62(2): 231-259.

Pueblo Grande focus with other sites. Increase obsidian use through time to Classic, both utilitarian and ritual (mortuary). No specialist workshops at P. Grande, but obsidian may move at several levels of exchange, in different forms: tools, raw, etc. Outlines different models, previous work, and ethnographic parallels [good]. Some obsidian arrived as raw (closest sources) other as finished points (Partridge Crk). Pt types (no synth for Hohokam available) – small short serrated triangle = typical, but longer narrow serrate often made of San Francisco Peaks material [= Cohonina pts]. Raw material + finished tool acquisition = not expected if just pre-made elite goods. Little evidence for different sources used by different groups within single site groups. Variety of sources, no decrease in diversity suggests no centralization of trade in obsidian, or redistribution although some redistribution may be indicated by similarily of sub-units within sites. A few burial groups assoc. with specific sources, platform mounds not = kin based small group procurement.

Petraglia, Michael D.
1994 Reassembling the Quarry: Quartzite Procurement and Reduction Along the Potomac. *North American Archaeologist* 15(4) : 283-319.

Refitting quartzite – Late Archaic
Spatial patterns – individual reduction areas, hammer, anvils, scatter suggests standing. Some for flakes for pts., some for cores.

Petraglia, Michael D.
2006 The Indian Acheulian in global perspective. In *Axe Age: Acheulian Toolmaking from Quarry to Discard*. Naama Goren-Inbar and Gonen Sharon, eds., pp. 389-414. Equinox Publishing, London.

Petraglia, Michael D., and Abdullah Alsharekh
2003 The Middle Paleolithic of Arabia: Implications for modern human origins, behaviour, and dispersals. *Antiquity* 77(298): 671-684.

Three variants identified: Mousterian of Acheulean Tradition, "pebble M" and Aterian with tanged pts.

Petraglia, Michael D., and Dennis Knepper
1996 Assessing Prehistoric Chronology in Piedmont Contexts. *North American Archaeologist* 17(1):37-59.

Point chronology

Petraglia, Michael, Dennis Knepper, Petar Glumac, Margaret Newman, and Carole Sussman

1996 Immunological and Mocrowear Analysis of Chipped-Stone Artifacts from Piedmont Contexts. *American Antiquity* 61 (1): 127-135.

Postdepositional processes did not destroy residues or use-wear.

Petraglia, Michael, Philip La Porta, and K. Paddayya
1999 The First Acheulian Quarry in India. *Journal of Anthropological Research* 55:1.

Pétrequin, Pierre and Anne-Marie Pétrequin
1993 From Polished Stone Tool to Sacred Axe: The Axe of the Danis of Irian Jaya, Indonesia. In *The Use of Tools by Human and Non-human Primates,* A. Berthelet and J. Chavaillon, eds., pp. 359-380. Oxford: Clarendon Press.

Principle tool for all purposes, especially associated with farming. Bow + arrow, axe = masculine. Digging stick and net = feminine. Sharpening male axe in groove = copulation. Adults own on average 2 axes each. Only a few men ever make journey to get axes, but all have, makers are not specialists. Exchange for journey or compensation for killing, lots symbolic usage too. [Good ethnog info on symbol, exchange, different degrees of specialization, but very weak on technology – these guys don't seem to know stone tools]

Pétrequin, Pierre and Anne-Marie Pétrequin
2011 The twentieth-century polished stone axe-heads of New Guinea: why study them? In *Stone Axe Studies III*. Vin Davis and Mark Edmonds, ed., pp. 333-350. Oxbow Books, Oxford.

Pétrequin, Pierre, Alison Sheridan, Serge Cassen, Michel Errera, Estelle Gauthier, Lutz Klassen, Nicolas le Maux, Yvan Pailler, Anne-marie Pétrequin, and Michel Rossy
2011 Eclogite or jadeitie: The two colours involved in the transfer of alpine axeheads in western Europe. In *Stone Axe Studies III*. Vin Davis and Mark Edmonds, ed., pp. 55-82. Oxbow Books, Oxford.

Pettitt, P. B.
1992 Reduction models and Lithic Variability in the Middle Palaeolithic of Southwest France. *Lithics* 13 : 17-32.

critiques Dibble model

Pevny, Charlotte
2011 What it Means to be Clovis: Part II: Reducing Clovis Bifaces. *The Mammoth Trumpet* 26(2):15-20.

2012 What it Means to be Clovis: Part V: Bone Tools and Summing Up. The Mammoth Trumpet 27(2):7-14, 20.

Bone points for both thrusting and throwing, atlatls represented by hooks. Generalized or specialized adaptation? [good discussion of bone pts, summing up Clovis lifeways issues]

Pfeiffer, Leslie S.
1998 The King of Folsom Points. *Prehistoric American* 32(1) : 21.

Brief biography of Marvin McCormick – info from C. Shewey

Pfeiffer, Michael A.
1997 Projectile Point Types: Neverending Draft Bibliography. http://wings.buffalo.edu/academic/department/anthropology April 1997

Phillips, James L.
2003 The Use of the Chaîne Opératoire Approach in the Upper Paleolithic Period of Sinai. In *Written in Stone: The Multiple Dimensions of Lithic Analysis*. P. N. Kardulias and R. W. Yerkes, eds., pp. 7-15. Lexington Books, Lanham.

Phillips, Phillip, and James A. Brown
1984 *Pre-Columbian Shell Engravings from the Craig Mound at Spiro,Oklahoma*. Peabody Museum Press, Cambridge.

Phillipson, D.W.
1969 Gun-flint Manufacture in North-Western Zambia. *Antiquity* 43: 301-403.

Modern ethnographic manufacture of bifacial gunflints with odd form of percussion technique.

Phillipson, Laurel
1997 Edge Modification as an Indicator of Function and Handedness of Acheulean Handaxes from Kariandus, Kenya. *Lithic Technology* 22(2) : 171-183.

250 Leaky 1928-1931 specimens, rolled, provenience poor. Expect use of edges and modification for that use – look for minor damage [in rolled tools?] and record location on edges, then try grips that would allow use of damaged edges [admits some subjectivity]. 54 specimens, 72 modified edges.
Sides and tips most used [but also where edges are likely to be thinnest].
[Her diagrams of grips all seem very subjective and unreliable]

Phillipson, Laurel
2001 Grindstones and Related Artifacts from Aksum, Ethiopia. *Lithics* 22: 13-21.

Ethnographic and archaeological info

Phillipson, Laurel

2004 Lithic tools, a hitherto unrecognized component of Aksumite material culture. In *Lithics in Action: Papers from the Conference 'Lithic Studies in the Year 2000'*. E. A. Walker, F. Wenban-Smith, and F. Healy eds., pp. 258-262. Oxbow Books, Oxford.

Pickering, Bob
1998 Archaeology, Insects, and Establishing Authenticity of West Mexican Figurines. *Denver Museum of Natural History Museum Quarterly* 7(2): 16-17.

short popular account of below

Pickering, Robert B. and Maria Teresa Cabrero
1998 Mortuary Practices in the Shaft-Tomb Region. In *Ancient West Mexico: Art and Archaeology of the Unknown Past*. R. F. Townsend, ed., pp. 70-87. The Art Institute of Chicago.

Since 1990s some unlooted tombs found, variable mortuary treatment becoming visible. Tomb at Huitzilapa contained 6 related individuals + many artifacts. Adult male with healed R elbow fracture had 2 jade rings = atlatl handle. Jade hook and rings with a burial [same one or another?] Exotic goods in form of tools include obsidian point and carved stone axe (photos). Discusses regional burial patterns. Mineralized fly puparia on ceramics may allow season of burial to be determined. Figurines may relate to individuals and their life cycles. Ca. 2000 bp.

Pickering, Robert B. and Ephraim Cuevas
2003 The Ancient Ceramics of West Mexico. *American Scientist* 91 (May-June 2003):242-249.

W Mex figurines from shaft tombs, looted, faked. But in tombs, flies feed on corpse, pupate on artifacts, puparia colonized by bacteria that deposit oxidized iron and manganeze, mineralizing pupae. Useful for authentication, allows sort out good data.

Pickering, Travis Rayne
2005 Book Review: Man the Hunted: Primates, Predators, and Human Evolution by D. Hart and R. W. Sussman. *Evolutionary Anthropology* 14 (4): 159-164.

Agrees with H + S that predation was major effect on early hominids, but not with their minimization of meat eating by hominids, for which finds support in stone tools, cut-marked bone, need for meat at high latitudes and cold climates, and evidence for fire perhaps as early as 1.8-1.0 mya at Swartcrans and Choukoutien [but disputed, see James 1989].

Pickering, Travis Rayne and Manuel Dominguez-Rodrigo
2006 The Acquisition and Use of Large Mammal Carcasses by Oldowan Hominins in Eastern and Southern Africa: A Selected Review and Asessment. In *The Oldowan: Case Studies Into the Earliest Stone Age*. Nicholas Toth and Kathy Schick eds., pp. 113-128. Stone Age Institute Press, Gosport IN.

Pigeot, N.
1990 Technical and Social Actors: Flintknapping Specialists at Magdalenian Etiolles. *Archaeological Review from Cambridge* 9 (1): 126-141.

Blade manufacture and refitting study, Upper Paleolithic Paris Basin, 36 artifact clusters, 25 show skilled knapping, 11 novice – lacking platform prep and core maintenance. Novice products not circulated and transformed into tools, located peripherally. Three levels of competence in ability to make long blades: best technicians, less talented, and novice where cores seem worked for own sake. Learning probably combined instruction and imitation. See Karlin and Pigeot.

Piggott, Stuart
1985 Review of <u>Prehistoric Europe</u> by T. Champion, C. Gamble, S. Shennan, A. White. *Antiquity* 59 (226) : 145-146.

"the prehistoric Europe of this book's title is inhabited not by human beings – stinking likeable witless intelligent incalculable real awful <u>people</u> – but by the pale phantoms of modern theory, who do not live, but just cower in ecological niches, get caught in catchment areas, and are entangled in redistributive systems."

Pinson, Ariane O.
2011 The Clovis Occupation of the Dietz Site (35LK1529), Lake County, Oregon, and its Bearing on the Adaptive Diversity of Clovis Foragers. *American Antiquity* 76(2):285-313.

Obsidian Clovis pts, near Glass Buttes. Repeated visits to site on transportation route between basins is incompatible with model of mobile foragers occupying new territories.

Pinson, Ariane O.
2011 Converging on a Central Place: Fluted and Stemmed Technologies in the Great Basin. *Mammoth Trumpet* 26(4):4-7.

C. Beck and T. Jones work - argue that some gracile Gt B fluted points are later than Clovis ("Sunshine Fluted") arriving and apparently coexisting with the Western Stemmed Point Tradition which is Clovis age, but of different technological ancestry (uses volcanics instead of chert for stemmed, not fluted pts, no blades, etc).

Pinson, Ariane O.
2015 Sourcing Clovis Toolstone. *Mammoth Trumpet* 30(2):5-9.

Charles (Andy) Speer work with laser ablation inductively-coupled plasma mass spectrometry on variation in Edwards Plateau chert at Gault. Regional and local variation.

Pion, G.

1987 Andouiller de cerf travaillé pour une fonction d'emmanchement de l'abri de La Fru (Savoie, Fouilles G. Pion). In *Le Main et l'Outil: Manches et Emmanchemeuts Préhistoriques.* D. Stordeur, ed., pp 151-152. Lyon: Maison de l'Orient.

Piperno, Marcello
1993 The Origins of Tool Use and the Evolution of Social Space in Paleolithic Times: Some Reflections. In *The Use of Tools by Human and Non-human Primates*. A. Berthelet and J. Chavaillon, eds. pp 254-266. Oxford: Clarendon Press.

Pires-Ferreira, Jane
1976 Obsidian Exchange in Formative Mesoamerica. In *The Early Mesoamerican Village,* K.V. Flannery, ed., pp 292-306. New York: Academic Press.

Pitblado, Bonnie L.
2003 *Late Paleoindian Occupation of the Southern Rocky Mountains: Early Holocene Projectile Points and Land Use in the High Country*. University Press of Colorado, Boulder.

Pitblado, Bonnie L.
2014 An Argument for Ethical, Proactive, Archaeologist-Artifact Collector Collaborations. *American Antiquity* 79(3):385-400.

Stimulated by Paleoamerican Odyssey conference, where some archs thought private collections shouldn't be shown. Refs 1996 SAA Principles of Archaeological Ethics document. Collaborations can be ethical, and even mandated by our ethics. Stewardship: private ownership of 'common heritage' makes us uncomfortable, but in fact many 'own the past' including museums, descendant populations [this is the closest she will come to mentioning the sequestration and destruction of the past under NAGPRA].

Range of collectors from casual to commercial looters. SAA principle of stewardship implies public good; some private collectors do serve this interest. Principle of against commercialization - pains us when something is sold, "the heartbreak …when we learn that an irreplaceable artifact has been sold to the highes bidder; it naturally feels wrong to us that something with intellectual value should be subject to sale." [What incredible arrogance and snobbery!] … "pain is magnified if…a sale may diminish an object's accessibility to science…" [ok, that's a better reason]. Issue is balance between science and sale, not always easy, we should tolerate some risk for possible scientific value, only rarely does study increase value [she may underestimate, but ok].

Collector outreach made possible her studies of Paleo sites in UT and ID. Commercial collectors don't value her info on Clovis pt; they already know monetary value (e.g. Overstreet books). But others wanted to share. Purdy study of Vero Beach carving - owner stated intent to sell, Purdy felt scientific value outweighed likelihood of increasing commercial value, she agrees [as do I, on balance, though I am skeptical of Purdy's conclusion that VB is authentic]. SAA principle intentionally workable both ways, others promote consultation with affected groups, public education, stewardship of knowledge, preservation of records, etc, all of which suggest we should interact with collectors, rather than just alienating them. We can sometimes change them too.

Clovis case study: what would we know without collectors? List of 30 important sites excav by arch, many found by non-archs, often they dug or collected, some kept finds, no record of sales of any, one site (Lehner) donated by landowners to public.

"Avoidance approach itself breaches SAA principles by failing to recognize collectors as members of a public to which archs are accountable; by neglecting to establish working relationships with a public clearly 'affected by' arch; and by failing to engage in the public ed that would teach collectors how to improve collections management and care" [and as she says elsewhere, teach them better attitude to arch]. Collectors can be allies.

Pitblado, Bonnie L., Carol M. Dehler, and Stephen T. Nelson
2006 Sourcing Quartzites from the Early Holocene Chance Gulch Site, Gunnison Basin, Colorado: A Pilot Study. *Current Research in the Pleistocene* 23:135-138.

Pitt-Rivers, Augustus Henry Lane Fox
1884 Address to the Antiquarian Section at the Annual Meeting of the Archaeological Institute, held at Lewes. *Archaeological Journal* 41:58-78.

p 65: 'a morbid reverence for the calcareous portions of miscellaneous dead bodies is not only superstitious in itself, but it greatly impedes the advancement of knowledge.' - after locals objected to some mound excavations, in Bowden 1991: 113.

Pitt-Rivers, Augustus Henry Lane Fox
1906 *The Evolution of Culture and Other Essays*. Clarendon Press, Oxford.

Pitts, Michael
1980 Later Stone Implements. *Shire Archaeology Series*. Aylesbury: Shire Publications.

British, Neolithic.

Pitts, Michael
1996 The Stone Axe in Neolithic Britain. *Proceedings of the Prehistoric Society* 61: 311-371.

Massive typological and distributional study using petrographic lit and several thou axes recorded by Pitt. Unlike most Brit axe work, includes flint. Rock classes, geology and characteristics for 1. Chert/flint 2. Fine-grained igneous 3. Metamorphosed sediments 4. Coarse and medium-grained igneous 5. Arenaceous rocks [sandstones etc] 5. Jade [Some sample problems: museum collections of varying provenance with statistical manipulation to even up samples.] Interesting table of find info through time – only about 10% come from archaeological work. Axe distribs center around sources, ie local material preferred. Flint in S Eng, fine igneous in central W (Wales, Cumbria). Large appendices list flint quarries and finds of unfinished axes and caches [apparently all unground axes assumed to be unfinished]. Little evidence of reflaking in use. [Drawings do not indicate all flake scars, hard to tell what is flaked vs ground.] Typol study of 1919 axes of well-flaked material, discriminant function sort of 25 numeric shape variables, cluster analysis. Finds 7 groups, with some overlap [none are strongly visually distinctive]. Flint dominates all groups, but 6 and 7 are almost only flint, typically small, with thin unfacetted sides, and limited grinding mostly on bit. Groups not corresp well to previous types or petrographic classes. Problems with previous typol include small samples, often local only, much overlap and variation, exclude flint. Contextual problems obscure temporal variation. Within his 7 groups, recognizes several distinct variants that prob represent local traditions or individual artisans or "workshops". [These all have examples in more than one group, suggesting problems with his classification scheme]. Axes in burials are mostly flint. [Elaborate and useful study, also illustrates and discusses some important problems with typologies in general.]

Pitulko, Vladimir, Pavel Nikolskiy, Alexander Basilyan and Elena Pavlova
2013 Human Habitation in Arctic Western Beringia Prior to the LGM. In *Paleoamerican Odyssey*. Kelly E. Graf, Caroline v. Ketron and Michael R. Waters ed., pp .13-44. Tops Printing, Inc., Texas.

Pitzen, Sarah
2001 Iowaville (13VB124): An early historic Ioway village in Southeastern Iowa. Unpublished site report, University of Iowa, Iowa City.

1770s-1820s. Cataloguing surface collection material curated by Office of State Archaeologist. pp9-10 [of 20 p] on gunflints: 130 classified following Stone. Blade forms of French and British flint, also 3 'of native manufacture'. Mostly spall form, mostly Br, some Fr, and a few 'native'.

Plankensteiner, Barbara
2008 The Contemporary Production of "Antique" Benin Bronzes in Benin City and Cameroon. In Pernicka, Ernst, Silke von Berswordt-Wallrabe, and Hilke Wagner eds, *Original - Copy - Fake? Examining the Authenticity of Ancient Works of Art - Focusing on African and Asian Bronzes and Terracottas*. pp., 178-190. Verlag, Philipp von Zabern, Mainz.

Workshops producing replicas, syncretic art forms, and fakes, often using scrap metal, each specializing in different styles. Apparently starting 1940s, florescence in 1970s + 1980s, including monumental royal figures and other innovations.

Plew, Mark G. and James C. Woods
1985 Observation of Edge Damage and Technological Effects on Pressure-flaked Stone Tools. In *Stone Tool Analysis: Essays in Honor of Don E. Crabtree,* M. Plew, J. Woods, & M. Pavesic, eds. pp 211-228. Albuquerque: University of New Mexico Press.

Idaho points – use-wear, damage, replicative experiments – palm with soft pad, palm with hard pad, finger held - last best. Hafting and use-wear experiment.

Plew, Mark G., James C. Woods and Max G. Pavesic (editors)
1985 *Stone Tool Analysis: Essays in Honor of Don E. Crabtree*. Albuquerque: University of New Mexico Press.

Plisson, Hugues
1983 An Application of Casting Techniques for Observing and Recording of Microwear. *Lithic Technology* 12 (1) : 17-20.

Castings fine enough for micropolish possible

Plisson, Hugues
1987 A propos de quelques micro-grattoirs du Paléolithique final. In *Le Main et L'Outil: Manches et Emmanchements Préhistoriques*. D. Stordeur ed., pp. 129-134. Lyon: Maison de l'Orient.

Plisson, Hugues
1987 L'emmanchement dans l'habitation no 1 de Pincevent. In *Le Main et L'Outil: Manches et Emmanchements Préhistoriques*. D. Stordeur ed., pp. 75-88. Lyon: Maison de l'Orient.

Poidevin, Jean-Louis
1998 Les Gisements d'Obsidienne de Turquie et de Transcaucasie: Géologie, Géochimie et Chronométrie. In *L'Obsidienne au Proche et Moyen Orient: Du Volcan á L'Outil*, edited by M.-C. Cauvin, A. Gourgaud, B.Gratuze, N. Arnaud, G. Poupeau, J.-L. Poidevin, and C. Chataigner, pp. 105-156. BAR International Series 738. Archaeopress, Oxford.

[Good general maps for Cappadocian obsidians, but not specific enough. It is remarkable how these people who work together do not use the same names or put the same information labels on their maps so you can correlate any of it! How do they know they are comparing samples from the same sources if they don't even use the same names and maps consistently?]

Politis, Gustavo G.
1991 Fishtail Projectile Points in the Southern Cone of South America: An Overview. In *Clovis Origins and Adaptations.* Robson Bonnichsen and Karen L. Turnmire, eds., pp 287-302. College Station: Center for the Study of the First Americans, Texas A&M University.

Pomstra, Diederik
2006 Tame Hunter/Gatherers and Wild Food: A Dutch Mesolithic Living Project. *Bulletin of Primitive Technology* 31:50-55.

8 experimenters, 4 weeks plus 4 yrs of prep and practice. Acorns, cattail, fishing. Antler and tranchet axes. [Good account, must have been fun. Met him in Leiden 2006].

Pomstra, Diederik
2007 An Axe from a Boar's Tusk. *Bulletin of Primitive Technology* 33:48-50.

Light Mesolithic adze with tusk in antler sleeve, antler drilled for thin wooden handle. Drilling antler by repeatedly scorching spot with coal to make brittle, stone drill then very easy. Adze worked well to make wooden bowl.

Pomstra, Diederik, and Annelou van Gijn
2013 The Reconstruction of a Late-Neolithic House: Combining Primitive Technology and Science. *Bulletin of Primitive Technology* 45:45-54.

Pond, Alonzo W.
1930 Primitive Methods of Working Stone: Based on Experiments of Halvor L. Skavlem. *Logan Museum Bulletin* 2(1):1-143.

p 13 - Chippewa no longer have knowledge of stone work, call arrowhead a "thunder stone." p 25: fire and water knapping dismissed [but no sources cited for f+w claims]. "Mr Skavlem's experience indicates that flint and similar rocks, when exposed to heat, become permeated with countless fire cracks which make it nearly impossible to chip them to a desired form." [but no details or systematic experiment].
p. 69: dismisses eoliths, and those who call them tools because 'they fit the hand.' [Pond had early interest in cones, fracture mechanics, stressed angle of blow more important than force, although he didn't understand platforms well.]

Pond, Alonzo W.
1962 *The Desert World*. Greenwood Press, Westport, CT.

Story of Gobi hunter with flintlock using prehist scraper as gunflint, leading Pond to find "Dune Dweller" Neolithic site p 195.

Pond, Gordon G.
1969 A Technique for Flaking Projectile Points. *Kiva* 34 (4): 237-241.

Anvil and lever method.

Pope, Mathew
2001 New Investigations at Slindon Bottom Paleolithic Site, West Sussex: An Interim Report. *Lithics* 22: 3-10.

S edge Eng, near Boxgrowe and Swanscombe; raised beach site, quarried. Acheulean assemblages – fresh or rolled.

Pope, Matthew
2004 Behavioural Implications of Biface Discard: Assemblage Variability and Land-Use at the Middle Pleistocene Site of Boxgrove. In *Lithics in Action: Papers from the Conference 'Lithic Studies in the Year 2000'*. E. A. Walker, F. Wenban-Smith, and F. Healy eds., pp. 38-47. Oxbow Books, Oxford.

Refitting bifaces at horse-butchery site. Bifaces likely discarded at loci routinely used by hominids, but transported away from single-use activity areas.

Pope, Melody K.
1994 Mississippian Microtools and Uruk Blades: A Comparative Study of Chipped Stone Production, Use and Ecnomic Organization. *Lithic Technology* 19 (2):128-145.

Pope, Melody and Susan Pollock
1995 Trade, Tools, and Tasks: A Study of Uruk Chipped Stone Industries. *Research in Economic Anthropology* 16: 227-265.

Organization – specialists or not?

Pope, Saxton
1918 Yahi Archery. *University of California Publications in Archaeology and Ethnology* 13 (3):103-152.

Pope, Saxton T.
1923 *A Study of Bows and Arrows*. Berkeley: University of California Press.

Ethnographic data. Experiments with different ethnographic bow and arrows, experiments in distance shooting, penetration of different point types.

Pope, Saxton T.
1974 Hunting with Ishi – the Last Yana Indian. *Journal of California Anthropology* 1 (2): 151-173. Reprinted from Pope, 1923 *Hunting with the Bow and Arrow.* San Francisco: J.H. Barry Co.

Making and using b+a, knapping, hunting techniques

Pope, Saxton T.
1923 *Hunting with the Bow and Arrow.* San Francisco: J.H. Barry Co. (Reprint 2007, Digireads.com Publishing, Stilwell, KS.

[Reprinted several times, my copy done badly by cheap-ass parasites exploiting out-of-copyright works, no title page, poor photo reproduction.]
Pope, MD, treated Ishi, inspired by him. Describes Ishi archery. Equipment manufacture and shooting tips. Lengthy hunting stories. 19th century ethics: predators are bad, shoot eagles and hawks, target practice and hunting at ranges 40-150 yds, etc. Demostrated that longbow and steel broadhead could kill anything, including deer, bear, moose, mt lion.

Ishi hafted pts so edge was perpendicular when arrow nocked, “did not seem to recognize that an arrow rotates.” Used straight, not spiraled fletching. Knapping described, but preferred steel pts. Carried 5-60 arrows in quiver. Shot off R side of bow [!]. Shooting range 10-50 yds for game. Comparisons: Pope and Young learned Ishi’s archery, but preferred English longbow, scored much better than Ishi at target shooting.

Pope experiments: light arrow from heavy (65 lb) bow travels 150 feet per second by stopwatch. Rotates 6 revolutions per 20 yds or 15 per second, observed by shooting 2 arrows at once off same bow, attached by thread that wound. Steel bodkin through chain mail. Obsidian points penetrate flesh better than steel because of serrations. Mechanical

bow and release experiments to test dispersion and consistency. Arrow wound cleaner and more humane than bullet wound.

Popular Mechanics
1913 *Practical Projects for the Handy Man*. Popular Mechanics Press, Chicago. (reprint 2006).

p 23 How to make a flint arrowhead. Select a fragment close to desired shape, no thicker [because can't thin, doesn't know how to really flake], hold on wood block and strike upper edge with a hammer. "cannot be distinguished from real Indian arrowheads" [Hah!].

Post, George
1996 Echoes of the Past. *Lapidary Journal* 50 (6): 43-45.

Spanish Diggings WY, prehistoric quarries. [Poor descrip, poor knapper]
Destruction of sites and removal of material, mining since 1940s. Warning about collecting artifacts.

Potter, Ben A., Charles E. Holmes, and David R. Yesner
2013 Technology and Economy among the Earliest Prehistoric Foragers in Interior Eastern Beringia. In *Paleoamerican Odyssey*. Kelly E. Graf, Caroline v. Ketron and Michael R. Waters ed., pp .81-104. Tops Printing, Inc., Texas.

Potter, Daniel
1991 A Descriptive Taxonomy of Middle Preclassic Chert Tools at Colha, Belize. In *Maya Stone Tools: Selected Papers from the Second Maya Lithic Conference*. T. R. Hester and H. J. Shafer eds, pp. 21-30. Prehistory Press, Madison.

Potter, Daniel R.
1993 Analytical Approaches to Late Classic Maya Lithic Industries. In *Lowland Maya Civilization in the Eighth Century A.D.* J. Sabloff and J. S. Henderson, eds., ppl 273-298.

"Lithic economies" focus. Obsidian sources and exchange. Need more integrated approaches, eg technol w source info. Clark shows blade width can be use to est core size. Chert: wide but patchy distrib, variable quality as limiting factors. Chert hard to source.
Extent of craft-specializ in Maya – expect variability btwn sites + crafts influenced by demand, quality of resource, and manufacturing skills.
Summarizes some sites: Colha. Rio Azul + El Pedernal, S Mex, EP producing tools for special agric, perhaps cacao. Becan – 150 chert rubble mounds assoc w residences but low density of deb = casual use, not wkshp. Xkichmook – thin biface wkshp 15 m diam x 40 cm deep, assoc w resid plat, density comp to Colha (and others listed). Another near at San Jose Xtunil, gen util bif, 18 m diam, ca 50 cm deep, comp density, assoc w resid plats in area of scattered domestic settlement. Other Puuc area sites with quarry remains but not wkshps.

"Without exception, lithic wkshps occurred during the Classic period at sites that were not occupying primary or even secondary positions within their regional settlement hierarchies." (201)

Potter, Mike
1993 Buying Material. *Chips* 5(2):10-11.

Recommends knap-ins, where beginner can buy flakes, scrounge – fits what I've seen

Potter, Mike
1993 Some Thoughts on Abrading. *The Platform* 5(2): 4-5.

Different styles and purposes

Potter, Mike
1993 The Quartz Conspiracy. *The Flint Knapper's Exchange* July – August 1993: 9-10.

humor

Potter, Mike
1994 Everything You Always Wanted to Know About Rock Saws But Were Afraid to Ask. *Chips* 6 (2): 5.

$2-3,000 Slabs hard to work.

Potts, Richard
1991 Why the Oldowan: Plio-Pleistocene Tool Making and the Transport of Resources. *Journal of Anthropological Research* 47: 153-176.

Resource transport as the key innovation

Powell, Eric A.
2008 What's the Point? The Debate Over Australia's Magnificent Spearheads. *Archaeology* 61(5):44-45.

Harrison: only common after 1885 as made for collectors, maintained as masculine art as much of culture lost. Akerman: common in past but curated and taken from sites by bower birds [and recent collectors].

Powell, J. W. [John Wesley]
1895 Stone Art in America. *American Anthropologist* 8 : 1-7.

Countering Read, 'paleolithic' in N. Am. Observed Shoshoni knapping 1869 (hammerstone percussion and antler pressure to make points) and others, notes that some contemp Inds. are "Neolithic" and others "paleolithic" but only in technology (Paleo = flaked, none polished) – not valid distinction in N. Am. – depends on tribe and material used. Pahvant and Uintah Inds make arrowheads by both chipping and grinding, thus ‘neolithic’ [unlikely - is he seeing platform preparation, or are there really ground point forms there?] Describes Holmes’ work dismissing ‘paleo’ in Trenton gravels and compares to recent preforms. P 6: “Holmes, Cushing, McGuire can make stone implements as deftly as any Indian and produce forms even superior to the best of native manufacture” [surely an exageration] [no mention of fire and water at this time]

Powell, Terry
1993 Mud and Fire – Tools of the Dugout Canoe Maker. *Bulletin of Primitive Technology* 1 (6): 15-22.

Replica SE canoe with fire, burn and scrape, stone tools, poplar. [Pretty good info, some bibliog.]

Prasciunas, Mary
2007 Bifacial Cores and Flake Production Efficiency: An Experimental Test of Technological Assumptions. *American Antiquity* 72 (2): 334-348.

Allen Denoyer knapped, she tested flakes for cutting efficiency: less than 5 gm or 7 cm2 flakes too small to use effectively. Core efficiency: Bifacial cores produce thinner flakes with higher ratio of edge to weight than amorphous cores, but also lose more material to waste in reduction. Bifacial cores do Not produce more overall cutting edge to weight, so not more efficient as has been suggested by mobility theorists, so no reason to expect mobile Paleoinds to prefer bifacial cores for cutting edge efficiency. Maybe because biface core still useful for blank when exhausted for flakes, different utility of biface thinning flakes from amorphous core flakes, etc.

Prasciunas, Mary
2011 Mapping Clovis: Projectile Points, Behavior, and Bias. *American Antiquity* 76(1):107-126.

County-level locational data, sample of W and SE states - C pt distrib correlates with modern population density, cultivated acreage, intensity of arch research, and measures of environmental productivity. Ca 2500 points in 18 states.

Prater, Adriane H.
1989 A Unique Cache of Obsidian Prismatic Blades. In *La Obsidiana en Mesoamerica*. Margarita Gaxiola G. and John E. Clark eds, pp. 157-164. Mexico: Instituto National de Antropologia e Historia.

Prentiss, William C.
1998 The Reliability and Validity of a Lithic Debitage Typology: Implications for Archaeological Interpretation. *American Antiquity* 63 (4): 635-650.

Experiments to test Sullivan and Rozen: their methods give reliable and replicable results, but of limited utility in recognizing variability in reduction activities.

Prentiss, William C.
2001 Reliability and Validity of “Distinctive Assemblage” Typology: Integrating Flake Size and Completeness. In *Lithic Debitage: Context, Form, Meaning.* William Andrefsky Jr., ed., pp 147-172. Salt Lake City: The University of Utah Press.

Prentiss, William C., Welch, James M., and Hughes, Susan S.
1985 Besant Biface Technology at the Mini-Moon Site (24DW85), Dawson County, Montana. Presented at the 43rd Annual Plains Conference October 23-26, 1985, Iowa City, Iowa.

Preston, Douglas
1995 The Mystery of Sandia Cave. *The New Yorker* 71(16)(Jan 22):66-83.

Excellent reporting, pretty conclusive that Hibben committed fraud, points themselves may be frauds.

Preston, Douglas
1997 The Lost Man. *The New Yorker* 73(16) (Jun 16):70-81.

Kennewick

Preston, Douglas
1998 Cannibals of the Canyon. *The New Yorker* 74(37) (Nov 30):76-89.

SW cannibalism

Preston, Douglas
1999 Woody’s Dream. *The New Yorker* 75(34)(Nov 15):80-87.

Woody Blackwell Clovis fraud sympathetically treated. See my book.

Prieto, Alfredo, Manuel San Roman, Flavia Morello, and Charles Stern

2005 Obsidienne Verte de Feu-Patagonie: Son Utilisation Constante Pendant 6000 Ans? In *Lithic Toolkits in Ethnoarchaeological Contexts*, edited by Xavier Terradas, pp. 19-24. BAR International Series 1370.

Pritchard-Parker, Mari A. and John A. Torres
1998 Analysis of Experimental Debitage from Hammerstone Use and Production: Implications for Ground Stone Use. *Lithic Technology* 23 (2): 139-146.

[Not very good.] Claim to distinguish debitage from use of different types of hammerstone, ex. angular vs. cobble but inadequate description of criteria, no info on debitage appearance or sample size [I suspect very small samples - hammering just doesn’t produce lots of flakes off the hammers, nor should they be very different].

Prummel, Wietske, Marcel J. L. Th. Niekus, Annelou van Gijn, and René T. J. Cappers
2002 A Late Mesolithic Kill Site of Aurochs at Jardinga, Netherlands. *Antiquity* 76:413-424.

Pryor, Francis
2003 *Britain BC: Life in Britain and Ireland before the Romans*. London, Harper Collins.

Popular/professional prehistory of Britain, well-written and personal but long and selective. Stone tools get some odd treatment, including claim that "Neanderthal people were expert craftsmen in flint" supported by bad drawing of Solutrean point! Info on experiments with wood and bronze related to Flag Fen is much better.

Pryor, Francis
1998 *Farmers in Prehistoric Britain*. Tempus, Stroud, Gloustershire, UK.

Very nice discussion of early farming, Neolithic through Bronze Age with insights from Pryor excavs in Peterborough area – Flag Fen, Etton Neo enclosure, Fengate field systems etc, and his personal sheep farming experience. Info on woodworking experiments (mostly with bronze), hafting of axes, etc.

Pryor, John H.
1988 The Effects of Human Trample Damage on Lithics: A Model of Crucial Variables. *Lithic Technology* 17 (1): 45-50.

Earlier work eg. Tringham is too simple. Scars mostly random but some grouped – scars occur on both faces, not just on the face away from the trampler. Experiments.

Pugh, Daniel C.
2001 The Aker Site (23PL43): Kansas City Hopewell Settlement Patterns, Aggregation, and Lithic Economy. *Plains Anthropologist* 46 (177): 269-282.

Flood plain, large site, periodic sedimentation – trade center, ritual landscape, social, ceremonial meeting place? But no H Interaction Sphere goods – but lots variety cherts. Social cohesion thru periodic aggregation, exchange including stone and tools. E + C MO cherts worked to late stage before transport, finished in KC with heat treatment late in process. Mostly bladelets, also thin bifaces. W cherts maybe from embedded tasks in hunting forays, or visitors from W.

Pulitzer, Don
1996 Serious Weapons for the War on Notching. *Chips* 8 (3): 8-10.

Modern tools – diamond file – steel punch

Purdy, Barbara Ann

1974 Investigations Concerning the Thermal Alteration of Silica Minerals: An Archaeological Approach. *Tebiwa* 17 (1): 37-66.

Purdy, Barbara Ann
1975 Fractures for the Archaeologist. In *Lithic Technology: Making and Using Stone Tools*. E Swanson, ed. Pp 133-141. The Hague: Mouton Publishers.

[Remarks on knapping fracture odd, useful for info on heat fracture]. Heat treatment: FL cherts alter at 350-400 C [660-752 F - too hot!], and heated Arkansaw novaculite to 600 C without seeing alteration [1112F, again too hot, should have changed or fractured]. Chert exploded at 400C when raise temp too fast. Potlids always during heating, never during cooling, so result from expansion. Cracking with crenated fracture when removed from oven without cooling at 350-400 C. [Use of such high temps is unnecessary and confusing].

Purdy, Barbara Ann
1981 *Florida's Prehistoric Stone Technology*. Gainesville: University Presses of Florida.

Purdy was early Crabtree student. Quarrying info for FL, her lit review shows use of fire rarely well documented. Her experiment showed it is damaging to flint, so not always advantageous even in quarrying. Possible apprentice evidence at Senator Edwards site (78), and may have done other activities at quarries where tools were abundant, e.g. canoes etc. Stone tools rare in S FL, suggesting also little trade. Heat damage photos, p96 potlid Fig 37, and photo of damage (crazing and cracking) from exper testing possibility of flaking by fire and water, p 125. [Knapping description poor, archaeological info ok, point types named and photo illustrated, distributions in FL, lots of boring detail on scientific instrumental analyses, mostly not well described, but some useful info]

Purdy, Barbara Ann
1991 *The Art and Archaeology of Florida's Wetlands.* Boca Raton: CRC Press.

Two atlatl hooks or spurs figured, in form short cylindrical antler section with tine as spur

Purdy, Barbara A., and H.K. Brooks
1971 Thermal alteration of silica minerals: an archeological approach. *Science* 173( ):322-325.

Original experiments re-reported above. Heat treatment provided advantages in lithic manuf. Florida cherts slowly heated to 350-400 C [too hot] and held at that temp "a desirable change occurs in fracture properties." Microcrystals of quartz are fitted closer together when melting point of intercrystalline impurities is reached. Tried also obsidian, Eng flint, AR novaculite, and pure quartz. Expers: 1. Raised temp 50 C/hr 2. Raised temp 50C/24 hrs 3. samples taken immediately out to room temp 4. samples cooled gradually 5. "Water dripped on hot stones to test the validity of historic accounts describing flaking by this method." Various tests of flaking quality and crystalline structure.

p 324 "This research also refutes the oft-quoted description of the mythical 'flaking' of stone caused by dripping water. Attempts to 'chip' by dripping cold water on hot chert resulted in a crazing of the material. Subsequent attempts to flake by pressure and percussion caused the material to crumble, and no predictable fracture was possible.” [sources vaguely cited for fire and water are Wallace and Hoebel, Holmes, Powers, Schumacher]

Puype, Jan Piet
1985 *Dutch and other Flintlocks from Seventeenth Century Iroquois Sites*. Proceedings of the 1984 Trade Gun Conference, Part 1. Rochester Museum and Science Center, Research Records 18. Rochester, NY.

Lock typology and descriptions w photos from various sites. [Unfortunately no attention paid to the flints in some of the locks – these could be important – hard to tell from photos and drawings, some appear to be bifacial = Indian make, but a couple could be British platform flints, which are not supposed to be in use at this time, and would either imply earlier intro of such flints, contradicting other evidence, or long use of old gun lock and redating of burial.]

Pyszczyk, Heinz W.
1997 Historic Metal Projectile Points in Alberta: Investigating a Penetrating Problem. *Alberta Archaeological Review* 25:25-33.

To find - he did penetration experiments

Pyszczyk, Heinz
1999 Historic Metal Projectiles Points and Arrows, Alberta, Canada: A Theory for Aboriginal Arrow Design on the Great Plains. *Plains Anthropologist* 44 (168): 165-188..

Relates metal and stone point design to performance traits [very good useful review].
All parts of bow and arrow system must match, so did system change with historic transition from stone to metal points? Varying views on change: metal pts got smaller, metal pts used Euro shapes and did not mimic stone pts, compound and solid shafts coexisted, bow + arrow both shorter with change to horseback hunting.
Reviews attributes of bows and arrows: as bow changes, so must arrow. As Plains goes from longer bow to shorter, less power so lighter arrows, unless you sinew-back a shorter bow for longer draw length and more strength, then need to strengthen arrow, and so on.
Arrow velocity, weight, and x-sectional area of point affect penetration. Heavier, slower arrow penetrates deeper, more momentum.
Retention of bow, and stone pts, varied. Several sources claiming diff between hunt and barbed war arrows.
Most documentary and pictorial sources show metal pts hafted without foreshafts [which implies solid wood shaft] while ethno collected and late prehist stone pts hafted in foreshafts [implies cane main shaft].
Using 59 specimens from Alberta Provincial Museum (Plains, metal-tipped), plus data from Thomas (1978) stone-tipped arrows, he derives a series of relationships and regression equations for shaft size, center of gravity, point to shaft ratios, etc. [useful, but much of it is estimation] Archaeological samples compared. In general, finds that metal points are longer and wider and thinner than stone, and heavier. They also get bigger through time, but his

calculated shaft sizes don't, implying that the average bow strength stays similar though shaft length and thus draw length may have been greater in prehistory. P183: "…results suggest that even though there is considerable variability in size of arrow elements or design of arrows … continual interplay of each element to the other produces arrows that have similar performance parameters….suggests that bow performance parameters remained the same as well." Metal points may relate to loss of foreshaft in reed composite form - always on solid shafts. P 184: "while arrow design changed, the performance of either the bow or the arrow differed little from one period to another."

Pyszczyk, Heinz W.
2003 Aboriginal Bows and Arrows and Other Weapons in Alberta: The Last 2,000 Years, Or Longer? In *Archaeology in Alberta: A View from the New Millenium*, edited by Jack W. Brink and John F. Dormar, pp. 46-71. The Archaeological Society of Alberta, Medicine Hat, Alberta.

Information sources: ethno-historical records, problems of analogy, artifacts, rock art. Inferring projectiles from points. Problems of point size, co-existence of different weapons. Mummy Cave (Hughes 1998) shows rapid replacement about 1300 years ago, but survived in Mexico, has good penetrating power. In Alberta, Avonlea pts ca 1800 BP believed to signal bow, but Dyck (1979) says variation in Oxbow (4500-5500 BP) and Pelican Lake (3000-1900 BP) pts might indicate bow with atlatl. Thomas, Shott methods applied by Dyck and Morlan to Sjowald site, Saskatchewan, support this. Besant and Avonlea overlap could represent diff ethnic groups with diff weapons. Children's toys possible too. Concludes point size ambiguous, but applies Shott formula to Alberta point assemblages, plots ratio of arrow to dart thru time. Back to 8000 BP pts small enough for arrows with those large enough for darts, general increase in proportion of small points thru time. [Seems to want early bow, but point size is just not good enough evidence.]
Quotes Henday account 1754 mentioning "bows, arrows, spears, and darts" as possible atlatl survival [No, "dart" would have meant 'javelin' in Henday's time.] Pictograph Cave, MT shows both guns and atlatls, but chronology ambiguous. Writing-on-Stone site, Alberta shows one possible atlatl, but undatable. Also horsemen with long, fletched spears held or thrown from end - maybe hold-over from atlatl darts, also bows with spears on end. [Don't read too much into vague and stylized rock art images.] Bow might dominate because more versatile and especially suited to small game.

Quigg, J. Michael
2011 Use-wear and Starch Residue Analyses on an In Situ Corner-Tang Knife from the Texas Panhandle: Towards an Understanding of Function. *Plains Anthropologist* 56(217):37-46.

Probably cached under a rock; others occur in burials, so perhaps ritual or high status. [This one is rather clunky, not real well made, and heavily used.] Late Archaic site component, ca 2400 BP, assoc w medium size corner notched pts. Hafting wear on proximal 1/3 near tang + notches. No identifiable specific function - cutting soft material like hide, but no starches found.

Quigg, J. Michael, Matthew T. Boulanger, and Michael D. Glascock

2011 Geochemical Characterization of Tecovas and Alibates Source Samples. *Plains Anthropologist* 56(219):259-284.

Near Amarillo and Lubbock in N Texas. Alibates: Permian silicified (agatized) dolomite, range of textures, usually banded, also mottled, red, blue, purple, brown, cream, white common, most stereotypically greyish-blue with banding of colors. Tecovas Jasper: Triassic, sim to A in texture and color, but most redder, mottled often w tiny quartz vugs. Often visually similar, but neutron activation analysis distinguishes successfully [details].

Quinn, Colin Patrick
2010 Use-Wear Under Fire: An Experimental Reexamination of Gunflint Technology. *The Michigan Archaeologist* 50-52(1-4): 249-260.

Unifacial step flaking and smoothing considered typical of gf (Kenmotsu). Brandon blade-core manuf gf more reliable than cut agate. Gf effective for 50 strikes against frizzen = 20 firings.

Exper w 5 British flints, 5 Brazilian cut agate, modern fltlk rifle, powder in pan, assume if pan ignites, shot fired [not always true]. 10, 20, 30, 50, 100 shots w diff flints, 10-70 x power micro exam, used Ahler, Kenmotsu wear types. Examined all worked edges for wear [why? Results unclear]. Used edges - more damage - blunting, polishing, flaking on agate edges. Crushing, flat flaking, and step flaking equal. Agate 1/2 as reliable at igniting powder overall. No consistent patterns of damage, intensity variable and not well indicative of length of use. After 50 strikes, few ignitions. Flint better because light serrations on edge of knapped flint improve spark production [maybe]. If could quantify damage and relate to N of shots, could relate to curation, economics, battle use, cultural diff in retouch etc. But many factors need controlled testing.

Quinn, Colin Patrick, William Andrefsky, Ian Kuijt, and Bill Finlayson
2008 Perforation with Stone Tools and Retouch Intensity: A Neolithic Case Study. In *Lithic Technology: Measures of Production, Use, and Curation*. William Andrefsky, editor, pp. 150-174. Cambridge: Cambridge University Press.

Rabinowitz, R., O. Ackermann, E. Aladjem, R. Barkai, R. Biton, I. Milevski, N. Solodenko, O. Marder
2012 Elephants at the Middle Pleistocene Acheulian open-air site of Revadim Quarry, Israel. *Quaternary International*, in press: 1-15.

Lots of elephant bone. Weathered before burial and in poor condition. ID some cut marks, one wedge-shaped tool of bone [ground?] and two flaked handaxe like tools of elephant bone.

Raczek, Teresa P.
2010 In the context of copper: Indian lithics in the third millenium BC. In *Lithic Technology in Metal Using Societies*, B. V. Eriksen ed., pp. 231-245. Arhus, Arhus University Press.

India, compares pastoralist site to agric settlement. [no illustrations!]

Raftery, Joseph
1951 *Prehistoric Ireland*. B.T. Batsford Ltd. London.

For photos, p135 of barb & tang pts drawn for *Flintknapping*.

Rahmani, Noura
2007 From Mitred Cores to Broken Microliths: In Search of Specialization During the Capsian. *Lithic Technology* 32(1):79-97.

Algeria, Mesolithic.

Railey, Jim A.
2009 Reduced Mobility or the Bow and Arrow? Another Look at 'Expedient' Technologies and Sedentism. *American Antiquity* 75(2):259-286.

Parry + Kelly (1987) proposed that as people shifted to agriculture and sedentism from Archaic hunter-gatherer lifestyles, stone tool kit became more expedient, oriented toward flake cores. Mobile folk preferred bifacial formal tools because bifaces more versatile, resharpenable, biface blanks produce more cutting edge per weight, thus less to carry. Two main problems: 1. Temporal disconnects in shift to exped technol, agric, and sedentism. 2. Prascunias (2007) exper shows bifaces not more efficient cores.

Reviews arguments about antiquity of bow and arrow; supports general intro ca 500-700 AD, atlatl may have continued in places, point size not good indicator.

Expected technological changes with bow + arrow: 1. fewer biface thinning flakes if pressure flaking pts on flakes, and fewer biface failures because small point failure less [last not true, espec if pt manuf increases with arrows as he argues earlier] 2. recovery of pressure flakes low, assemblages thus proportionally more large ordinary flakes 3. proportionally poorer materials from emph on better stone needed for larger bifaces.

Analyses complicated by 1. Incomparability of different lithic samples + typologies 2. temporal correlation anyway between sedentism + b+a. Highway 70 S NM sites offer good test - 1000 yrs continuity with <u>no change in mobility</u> - similar corn use, storage pits, lack of discrete trash/habitation areas = semi-sedentary. So now test lithic assemblage: 1. Late Archaic sites have more good stone, later Formative has poorer, later debitage larger, more primary stage, lower biface to core ratio: changes fit P+K model except NO evidence of mobility change, so must be something else. Projectile pt distributions: Archaic sites larger pts considered darts (although variable by Shott's formulae) while later site pts classify by Shott + neck width as mostly arrow, with one site + one pt type showing overlap in time and pts.

So in this region at least, change in weapon technology seems more responsible for lithic assemblage change than changes in mobility.

[Good paper, although some of the overgeneralization evident in all large explanatory theories - nothing in complex systems is that simple or without exceptions.]

Rainey, A.C.
1997 An Artist at Work. *Lithics* 17/18:15-18.

Slightly touchy-feely account of Australian Aboriginal cowboy making biface (like hand axe) in 1970 – complete absorbtion and artistic catharsis

Ramseyer, D.
1987 Emmanchements de l'outillage lithique Néolithique de quelques stations littorals du Canton de Fribourg (Suisse Occ.) In *Le Main et L'outil: Manches et emmanchements préhistoriques*. D. Stordeur ed., pp. 211-218. Lyon: Maison de L'Orient.

Ranere, Anthony J.
1975 Toolmaking and Tool use Among the Preceramic Peoples of Panama. In *Lithic Technology: Making and Using Stone Tools*. E. Swanson ed. Pp.173-210. The Hague: Mouton

Ok basic typol & functional experimental study

Ranere, Anthony J., Richard G. Cooke
1991 Paleoindian Occupation in the Central American Tropics. In *Clovis Origins and Adaptations*. Robson Bonnichsen, Karen L. Turnmire, eds. pp.237-254. Oregon: Center for Study of the First Americans.

Rankama, Tuija, Mikael A. Manninen, Esa Hertell, and Miikka Tallavaara
2006 Simple Production and Social Strategies: Do They Meet? Social Dimensions in Eastern Fennoscandian Quartz Technologies. In *Skilled Production and Social Reproduction*. Jan Apel and Kjel Knutsson eds., pp. 245-262. Societas Archaeologica Upsaliensis, Uppsala.

Rankov, Boris, ed. **gro**
2012 *Trireme Olympias: Final Report*. Oxbow Books, Oxford.

[Highly technical and boring, not at all the full summary the title led me to expect, just papers on final sea trials, modifications, textual arguments. Nothing on original construction, little on experience and training of rowers. An archaelogical experiment of such complexity and expense that it is unlikely to be repeated.]

Ranney, Tom
1999 A Stone Point Testimonial. *Bulletin of Primitive Technology* 21:41-42.

Deer hunting stories

Rapson, Gabby
2000 Three Lower Paleolithic Artifacts from the Sussey Weald. *Lithics* 22:45-46.

Rasic, Jeffrey and William Andrefsky, Jr.
2001 Alaskan Blade Cores as Specialized Components of Mobile Tookits: Assessing Design Parameters and Toolkit Organization through Debitage Analysis. In *Lithic Debitage: Context, Form, Meaning*. William Andrefsky Jr., ed. pp. 61-79. Salt Lake City, The University of Utah Press.

Rathje, William, and Cullen Murphy
2001 *Rubbish! The Archaeology of Garbage*. University of Arizona Press, Tucson.

Rasmussen, Mark
2008 Setting the Standard for Due Diligence: Scientific Techniques in the Authentication Process. In Pernicka, Ernst, Silke von Berswordt-Wallrabe, and Hilke Wagner eds, *Original - Copy - Fake? Examining the Authenticity of Ancient Works of Art - Focusing on African and Asian Bronzes and Terracottas*. pp., 19-32. Verlag, Philipp von Zabern, Mainz.

Steps in process: Provenance research - complete history of ownership and sources. Conservation history - documentation of previous conservation, restoration, analysis. Use of authoritative sources - recognized experts, reference materials supporting analysis, comparative collections. Scientific research - variety of analysis techniques. Examples: thermonluminescence applied to Nok African ceramic figurines to date - can be misleading or falsified - old material can be assembled into new pieces or added to fakes, obscured by surface treatments. Infrared and ultraviolet, computed tomography show composite nature of pieces. "A determination of 'authentic' should never be made on the basis of lack of evidence to the contrary."

Rattray, Evelyn C.
1989 Un Taller de Bifaciales de Obsidiana Del Periodo Coyotlatelco en La Hacienda Metepec, Teotihuacan. In *La Obsidiana en Mesoamerica*. Margarita Gaxiola G., and John E. Clark, eds. pp 243-252. Mexico: Institute National de Antropologia e Historia.

Ratzat, Craig
1994 Caught Knapping: The Fundamentals of Flint Knapping. VHS. NeoLithics, Springfield, OR.

Ratzat, Craig
1996 Lap Knapping with Craig Ratzat. VHS. NeoLithics, Springfield, Oregon.

[I think this is one of the best videos for teaching pressure flaking. Shows working slabs systematically, with and without grinding - this info can be applied to any pressure flaking situation. However, despite the title, it does not show the grinding process.]

Ratzat, Craig
2006 All About Rock Saws. *Chips* 18(4): 13-15.

Rau, Charles
1885 Prehistoric Fishing in Europe and North America. *Smithsonian Contributions to Knowledge* 25: 1-317.

Exhaustive study. Many mentions of stone tools of various sorts, including flint fish hooks in Scandinavia and Germany. No demonstrated examples in US.

Raugh, Stan
2001 Beyond This Point: Non-Physical Authentication Diagnostics. *Indian Artifact Magazine* 20(3):19, 72.

Collection context helps, know owner. “5000 current knappers”

Raugh, Stan
2000 The Art of Collecting Modern Lithic Art. *Indian Artifact Magazine* 19(3):19, 77.

“beauty of stone, simplicity of tools, connection with primitive past” - same as for ancient pieces.
To complete collection of types, to get a custom made piece.
Guidelines to consider: skill of knapper, material, point type - what’s hardest: fluted pts, Calf Creek (thin, deeply notched), high L/T rations, eccentrics are all desirable.
Good quality vs good replica. Traditional vs copper knappers. Knappers and shows, web, Tarp, e-bay all good places to find. Estimates 5000 knappers, 5 million pts per year [from me I think]. Signing is good for future value, to prevent fakes. Chance to “get in at ground floor” in new collecting area.

Raviele, Maria
2007 Subsistence Transformation and Thermal Pretreatment of Lithic Raw Material. *Lithic Technology* 32(1):99-114.

Schultz Site, E to L Woodland, Michigan. Intensifying use of wetland resources transitioning toward horticulture, accompanied by increased heat treatment, seen in flakes and presence of heat treatment facilities. Reduction of mobility increases use of informal tools and need for efficient use of raw material. Local material - Bayport chert - variable and poor. Shallow pits with ash interp as heat treatment pits with upper burning removed as stone recovered, near debitage concentration.

Ray, Jack H.
1981 A Test for the Quality and Quantity of Chert Nodules in Stream-Deposited Chert Sources. *Lithic Technology* 11(1):5-12.

Test 3 types cht – wide variation quality & quantity by type in Missouri, Osage River – Concludes one type good & plentiful so should be used more than others – but does not consider occurrence on sites [not very useful]

Ray, Jack H.
1984 An Overview of Chipped Stone Resources in Southern Missouri. In *Lithic Resources Procurement: Proceedings from the Second Conference on Prehistoric Chert Exploitation*, edited by S. Vehik, pp. 225-250. Center for Archaeological Investigations, Occasional Paper 4, Southern Illinois Univeristy, Carbondale.

Ray, Jack H.

2007 *Ozarks Chipped Stone Resources: A Guide to the Identification, Distribution, and Prehistoric Use of Cherts and Other Silicieous Raw Materials*. Missouri Archaeological Society Special Publication 8, Springfield, MO.

[Massively detailed and documented compilation, extremely useful.] Many photos of outcrops, chert types (some in color) and artifacts. Distribution maps. Descriptions and classification, background geology of chert types, prehistoric use, heat treatment results. Region covered includes S 2/3 of Missouri, N AR, E bit of OK, W edge of Illinois. [Descriptions and names vary somewhat from what I see used by modern knappers in MO. e.g. his Mozarkite is colored, while what knappers call M is mostly W/grey/bluish banded; his Keokuk variety of Burlington is not recognized, while the name Keokuk is used for what he calls Peoria chert.]

Early explorations - Clark noted cherts near Rocheport MO, Holmes, Schoolcraft. Indian use of Burlington and other cherts for bifacial gunflints p 3, 350. P 13-16 "Flintknapping and Related Problems" - contamination of collections by fakes (Tussinger discussed), contamination of sites, depletion of sources.

Ray, Jack H.
2010 Paleoindian and Archaic Chert Use at Big Eddy. *Missouri Archaeologist* 71:41-77.

Deeply stratified site on banks of Sac R.

Ray, Jack H.
2010 Late Archaic Staged Reduction of High-Quality Greenwood Rhyolite at the Allen Site. *Missouri Archaeologist* 71:165-198.

Ray, Jack
2011 National Register Evaluation of Site 23CE412. *Missouri Archaeological Society Quarterly* 28(1): 8-9.

Tests in deep site along Sac River, exam of amateur collections. Major component with Smith points (Late Archaic, 4230 + 40 C14). Unsharpened - long triangular blade, basal notches leaving squared barbs to length of base, mod resharp = "Barry Square Stemmed", extensive resharp = "Stone Square Stemmed", last 2 types now dropped. Example of change of form with resharpening.

Ray, Jack
2014 To the Point: Afton. *Missouri Archaeological Society Quarterly* 31(2):4-6.

Thin, pentagonal outline or realigned tip margins, narrow deep corner notches. Terminal Late Archaic (ca 3100-2750 bp). Ozarks region of SW MO, NW AR, NE OK. Burlington chert, often heated, Jefferson City chert, usually not heated.

Ray, Jack
2014 To the Point: Nebo Hill. *Missouri Archaeological Society Quarterly* 31(3):10-11.

First descrip by Shippee 1948, from pts in Kansas City area. Medium to large narrow, thickish lanceolate. Not beveled or serrated, usually not heated, unground basal edges. Originally considered E Archaic, now known Late Archaic, 3700-2800 rcybp

Ray, Jack
2014 To the Point: Sedalia. *Missouri Archaeological Society Quarterly* 31(3):9-11.

Large lanceolates with broad blade max W above midL. Sometimes light base edge grinding. Flaking random, crude to quite fine. Suggest age range 2350-1850 BC (Late Archaic). Sim to Nebo Hill but NH narrower.

Ray, P.H.
1886 Manufacture of Bows and Arrows Among the Natano (Hupa) and Kenuck (Klamath) Indians. *American Naturalist* 20:832-833. Reprinted in R.F. Heizer ed. 1976 *A Collection of Ethnographical Articles on the California Indians,* pp. 1-2. Ramona: Ballena Press.

Bows and arrows, poor information on flaking

Redding, B.B.
1879 How Our Ancestors in the Stone Age Made Their Implements. *The American Naturalist* 13(11): 667-674.

[Good info- one of the last of the "how arrowheads made" school.] Stone tools similar thru world – pressure, not blows. Wintoon Indians around Mt. Shasta – specialist? Fight for obsidian. Indirect percussion for flake blanks. Pressure with platform preparation [described, not recognized]. Sidenotches last. 40 minutes total to make point.

Redding, B.B.
1880 Prehistoric Treasures. *The Californian* 1:125-128. Reprinted in R. F. Heizer ed. 1976 *A Collection of Ethnographical Articles on the California Indians.* pp. 18-22 Ramona: Ballena Press.

Wintu knapping - obsid source, flaking, pressure, indirect perc, trade.

Redfearn, Jim
1997 Replicating Ishi Points. *Chips* 9(4):14-15.

Redfearn, Jim
1999 <u>Making the Hardin Point with Jim Redfearn</u>. VHS. Flintknapper's Corner, Washburn, MO.

Redfearn, Jim
2000 <u>Making a Dalton Point with Jim Redfearn</u>. VHS. Flintknapper's Corner, Washburn, MO.

Redfearn, Jim

2001 <u>Making a Clovis Point with Jim Redfearn</u>. VHS. Flintknapper's Corner, Washburn, MO.

Reed, Alan D.
1990 Evidence of Arrow Points from Basketmaker II Sites in Southwestern Colorado. *Utah Archaeology* 3:139-141.

Geib + Bungart (1989) identify arrow pts as early as 100 AD at Sunny Beaches site and Cowboy Cave in Glen Canyon, associate with Fremont occupation distinguished from BMII by arrow pts + single rod foundation basketry. But small pts of Rosegate form also in BMII at Tamarron site N of Durango, and SW CO, so b+a use should not be used to distinguish Fremont from BMII.

Reeder, A.
1936 Delicate Flint Implements. *Hobbies* 41(1):102.

Reeder, A.
1937a Oklahoma Notes. *Hobbies* 41(11):99.

Reports Tussinger's fakes; but accepts them and suggests Maya connection

Reeder, A.
1937b Fancy Spears May Be Fakes. *Hobbies* 41(12):101.

Now he has doubts!

Rees, Diane A.
2000 The Refitting of Lithics from Unit 4C, Area Q2/D Excavations at Boxgrove, West Sussex, England. *Lithic Technology* 25(2):120-134.

Reese, Don **from E. Jones**
1957 *Flint Chipping, Indian and Modern Style*. Beedle Publishing Co, Carlsbad NM.

24 p pamphlet "in the interest of collectors of Indian artifacts so they may experience the trials and tribulations..." etc of Indians.
4 steps: 1) Blocking [= spalling] by convenient means, seldom needed [ie he didn't know much about basic percussion]. 2) Blanking - to general size and shape by percussion of pliers [!] or pressure. Blocking may be done by fire shattering [but at least he dismisses fire + water in favor of real techniques], or by "indirect percussion." [Then a terrible description of how to do direct percussion]. Back to blanking - by percussion, including use of antler for thinning. 3) Flaking [= pressure] with antler, plastic, wood, soft metal, uses a backhand power grip "like an icepick" [and incoherent description of action]. 4) Notching - narrow metal tool.
You can go as far as you wish - even to making Folsom points [hah!], mentions variations like flaking on a bench or attaching a lever to a bench for greater pressure. [Who was this guy, and who did he know?]

Regan, Jim
1991 Greetings. *The Flint Knapper's Exchange* 1(5):11-12.

Regan, Jim
1992 An "Edging" Tool. *The Platform* 4(4):6.

Flattened copper tube for shearing

Regan, Jim
1993 A Technique for Biface Thinning. *The Platform* 5(4):5-6

Support on leg; leg pad

1993 Additional Thoughts on Abrading. *The Platform* 5(3):6.

Different abraiders for different material. Work lengthwise rather than across edge

Regan, Jim
1994 Thoughts on Notching. *The Platform* 6(2):6-8, 6(3):3-4.

Reid, Kenneth C.
1984 *Nebo Hill and Late Archaic Prehistory on the Southern Prairie Peninsula.* University of Kansas Publications in Anthropology 15.

Reid, Kenneth
1997 Gravels and Travels. A Comment on Andrefsky's "Cascade Phase Lithic Technology." *North American Archaeologist* 18(1):67-81.

Cherts in Snake R sites more likely derived from gravel than trade

Rein, Robert, Blandine Bril, and Tetsushi Nonaka
2013 Coordination Strategies Used in Stone Knapping. *American Journal of Physical* Anthropology.

Knapping does not require large forces; more efficient to stay close to threshold necessary for detatchment, small movement velocities allow greater accuracy – so skilled knappers use smaller forces to increase striking precision and economy. Proximal segments reach highest velocities first, in sequence that accelerates hand.

Measured motion in expert and novice knappers making flakes by hard hammer percussion. Experts more likely to detach flake with a strike [duh!]. Experts show much less variability in trajectory of hammerstone and velocity of body segments. No clear trend of proximal to distal sequencing in velocity. Both hands used; holding hand makes major adjustments of angle, striking hand minor.

Reitze, William T., Christina Sinkovec, and Bruce R. Huckell

2013 Folsom Technology and Tool Use at the Martin Site, North Central New Mexico. *Plains Anthropologist* 57(223):237-260.

Renaud, E.B.
1931 Prehistoric Flaked Points from Colorado and Neighboring Districts. *Proceedings of the Colorado Museum of Natural History* 10(2):1-24.

Describes “Folsom pts” (=like those found at F + probably made by same people) plus others that “exhibit characteristic elements of the real F pts” 16 good specimens, ave 22-23 mm broad, 4 mm T, finely fluted. Folsom must be <u>developed</u> form, simpler specimens [=Clovis?] likely to be earlier, but no evidence yet. Definitely Pleistocene.

Renaud, E.B.
1932 Yuma and Folsom Artifacts (New Material). *Proceedings of the Colorado Museum of Natural History* 11(2):5-18, plates I-IV.

Anderson Yuma collection and others. Designates a “Yuma” type, equiv to “Folsom type.” [Yuma includes most other lanceolates – from his description Hell Gaps, Edens, etc] [A better source for his typology than 1931, since here he illustrates each type]

Renaud, Etienne B.
1947 *Archaeology of the High Western Plains: Seventeen Years of Archeological Research.* University of Denver Department of Anthropology, May, 1947.

Pamphlet 135 pp summarizing Colo Mus Nat Hist survey in Colorado, WY, NM – suggests a “Camp Culture” – early lithics along Black Fork, WY – [actually now considered preforms]. Describes survey chronology and publications. Describes typology of Folsom [apparently including Clovis] and other “Yuma” pts. Few illustrations.

Renfrew, Colin
1968 Further Analysis of Near Eastern Obsidian. *Proceedings of the Prehistoric Society* 34:319-331.

Renfrew, Colin
1977 Alternative Models for Exchange and Spatial Distribution. In *Exchange Systems in Prehistory*, J.K. Earle and J.E. Ericson eds. Pp. 71-90. Academic Press, New York.

Renfrew, Colin
1982 Bronze Age Melos. In *An Island Polity: The Archaeology of Exploitation on Melos*. Colin Renfrew and Malcolm Wagstaff, eds., pp. 35-44. Cambridge University Press, Cambridge.

Renfrew, Colin
1982 Prehistoric Exchange. In *An Island Polity: The Archaeology of Exploitation on Melos*. Colin Renfrew and Malcolm Wagstaff, eds., pp. 222-227. Cambridge University Press, Cambridge.

Renfrew, Colin
1982 Polity and Power: Interaction, Intensification, and Exploitation. In *An Island Polity: The Archaeology of Exploitation on Melos*. Colin Renfrew and Malcolm Wagstaff, eds., pp. 264-290. Cambridge University Press, Cambridge.

Renfrew, Jane
1982 Early Agriculture in Melos. In *An Island Polity: The Archaeology of Exploitation on Melos*. Colin Renfrew and Malcolm Wagstaff, eds., pp. 156-160. Cambridge University Press, Cambridge.

Reti, Jay S.
2013 Review of Flintknapping Featuring Solutrean Technology (DVD) by Bruce A. Bradley and Flintknapping Featuring Clovis Technology (DVD) by Bruce A. Bradley *Lithic Technology* 38(2):131-133.

Reuther, Joshua D., and S. Craig Gerlach
2006 CIEP Residue Analysis of an Alaskan Archaeological Conundrum. *Current Research in the Pleistocene* 23:138-140.

Imunological assay of fluted point possibly associated with mammoth bones shows deer and caribou antisera reaction but not mammoth, suggesting association false.

Richards, Matt
1996 Brains, Bones, and Hot Springs: Native American Deerskin Dressing at the Time of Contact. *Bulletin of Primitive Technology*. 12:55-65.

Good basics, stone scrapers

Rick, John V.
1978 *Heat Altered Cherts of the Lower Illinois Valley*. Northwestern Archaeological Program, Prehistoric Records Number 2.

Rick, John W. and Jackson, Thomas L.
1992 A Funny Thing Happened on the Way from the Quarry….Analysis of the Great Blades Cache of Northern California. In *Stone Tool Procurement, Production, and Distribution in California Prehistory*. Arnold, Jeanne E. ed., pp. 5-65, Los Angeles: Regents of the University of California.

Biface quarry blank cache, in pit, different individuals represented

Ricklis, Robert A. and Kim A. Cox
1993 Examining Lithic Technological Organization as a Dynamic Cultural Subsystem: The Advantages of an Explicitly Spatial Approach. *American Antiquity* 58(3):444-461.

Ricq-de Bouard, M. and Buret, C.

1987 Traces Superficielles et Emmanchement: Premières Observations sur l'outillage lithique poli du Néolithique du Sud Mediterraneen de la France, avec quelques references au materiel du Néolithique d'Auvernier (Suisse). In *Le Main et l'Outil: Manches et Emmanchments Préhistoriques*. D. Stordeur ed., pp. 177-184. Lyon: Maison de l'Orient.

Ridings, Rosanna
1996 Where in the World Does Obsidian Hydration Dating Work? *American Antiquity* 61 (1): 136-148.

Pot Creek Pueblo, SW. Depth, which affects effective hydration temperature, introduces errors.

Riede, Felix
2009 The Loss and Re-introduction of Bow-and-arrow Technology: A Study from the Northern European Late Palaeolithic. *Lithic Technology* 34(1):27-45.

Large tanged Bromme pts + Bromme techno-complex sandwiched between earlier Federmesser and later Ahrensburgian, both with small points. Experiments by Fischer show Bromme pts usable as large arrowheads.Rozoy says bow allowed recolonization of N Europe. But B pts more likely reversion to atlatl with loss of cultural knowledge at population bottleneck after eruption of Laacher See volcano 12,920 BP. Fischer experiments not quantified enough, show typical projectile fractures on B pts, but not whether arrow or dart. Studied 632 complete pts from L Paleo N Europe. Shott discriminant function analysis classes almost all B pts as dart, Federmesser + Ahrensburg pts as arrows [But it really does NOT apply here - Shott/Thomas samples too small and not European.] Ahrensburgian evidence - wooden arrowshafts and possible bow frags, faunal data suggest rapid fire techniques [?]. Pt size ranges suggest bow + atlatl coexist in Federmesser. Atlatl may have been used against large game - elk (=moose) and giant deer *Megaloceros* because of greater impact power (Baugh) and effective distance (Churchill). But why lose the bow? Social disruption and loss of transmission of technology, only dramatic enough event is eruption of Laacher See at junction between Feder + Bromme periods - Bromme lithic tech simplified. [Interesting, possible - BUT it all relies on point size arguments - not good enough. For instance, we don't know anything about the bows - could they not have changed? And no finds of atlatl parts either.]

Riederer, Josef
2008 The Composition of Brass Objects from Benin. In Pernicka, Ernst, Silke von Berswordt-Wallrabe, and Hilke Wagner eds, *Original - Copy - Fake? Examining the Authenticity of Ancient Works of Art - Focusing on African and Asian Bronzes and Terracottas*. pp., 99-152. Verlag, Philipp von Zabern, Mainz.

Composition data for large body of genuine pieces, some temporal trends - changes in trace element concentration. Known foundries now openly produce copies; some eventually sold fraudulently. "Since English troops took away all metal objects which they could find in Benin in 1897, all objects which cannot be traced back to this event are doubtful."

Risch, Roberto
2011 Social and economic organization of stone axe production and distribution in the western Mediterranean. In *Stone Axe Studies III*. Vin Davis and Mark Edmonds, ed., pp. 99-118. Oxbow Books, Oxford.

Risch, Roberto, Nicole Boivin, Michael Petraglia, David Gómez-Gras, Ravi Korisettar, and Dorian Fuller
2011 The prehistoric axe factory at Sanganakallu-Kupgal (Bellary District), southern India. In *Stone Axe Studies III*. Vin Davis and Mark Edmonds, ed., pp. 189-202. Oxbow Books, Oxford.

Rieth, Adolf
1970 *Archaeological Fakes*. Praeger Publishers, New York.

Ritchie, Duncan and Ritchard A. Gould
1985 Back to the Source: A Preliminary Account of the Massachusett Hill Quarry Complex. In M.Plew, J. Woods, & M. Pavesic eds. *Stone Tool Analysis: Essays in Honor of Don E. Crabtree*, pp. 35-54. Albuquerque: University of New Mexico Press.

MA argillite, hornfells, slate, some flaked, extensive quarry area

Ritchie, William A.
1961 *A Typology and Nomenclature for New York Projectile Points.* New York State Museum and Science Service Bulletin 384. Albany.

Rivera, Sara Elia, Emma Macias, and Leticia Gonzalez
1989 Metodo de classificacion de puntas proyectil. In *La Obsidiana en Mesoamerica*. Margarita Gaxiola G. and John E. Clark, eds. Pp. 89-100. Mexico: Instituto Nacional de Antropologia e Historia.

Roberts, Dale E.
1999 Some Facts aren't Facts. *Central States Archaeological Journal* 46(2):13

Bentonsport IA Museum has flint fishhooks – fake! Claims invented 1880 Twin Pond VA

Roberts, Frank H. H.
1936 A Folsom Complex: Preliminary Report on Investigations at the Lindenmeier Site in Northern Colorado. *Smithsonian Miscellaneous Collections* 94(4): 1-36 plus plates.

Detailed descrip of find by Judge Collins and other collectors.
Descrip of original Folsom find. 2 forms of Folsom pt - one short [classic, prob resharpened] one long. "Grooves" long flake removed by punch, after major shaping, shown by channel flakes. Cites Holmes, says "present day experts in stone chipping may be able, thru experiment, to solve the problem of which would be more efficient method" (1 or 2 individs on punch) [but doesn't mention McCormick or any experiments. Not very detailed discussion of manufacture - can't claim it follows McC.]

P 21: “nothing to indicated whether the points were used in arrows or spears… Without evidence in the matter, archs concerned with the Folsom problem have gone on the assumption that the points were used in a shaft hurled from a spear thrower.”

Roberts, Frank H. H.
1937 Additional Information on the Folsom Complex: Report on the Second Season's Investigations at the Lindenmeier Site in Northern Colorado. *Smithsonian Miscellaneous Collections* 95(10).

By now has formalized his terminology since 1936 - consistently “fluting” and “channel flakes.” Tip left rounded until after fluting. Butt ends predominate in finds - replacement of broken pts on shafts. Yuma pt also frags found, need to standardize terminology. [He uses and gives nice figure of the classic Yuma].

Roberts, Robert B.
1988 *Encyclopedia of Historic Forts: The Military, Pioneer, and Trading Forts of the United States*. Macmillan Publishing Company, New York.

Roberts, M. B.
1986 Excavation of the Lower Paleolithic Site at Amey’s Eartham Pit, Boxgrove, West Sussex: A Preliminary Report. *Proceedings of the Prehistoric Society* 52: 215-245.

Robertson, Gail and Val Attenbrow
2008 Skin-Working at Emu Tracks 2, New South Wales, Australia: An Integrated Residue and Use-Wear Analysis of Backed Artifacts. *Lithic Technology* 33(1):31-49.

Robertson, Gail, Val Attenbrow, and Peter Hiscock
2009 Multiple Uses for Australian Backed Artefacts. *Antiquity* 83(320):296-308.

Robicsek, Francis and Donald M. Hales
1984 Maya Heart Sacrifice: Cultural Perspective and Surgical Technique. In *Ritual Human Sacrifice in Mesoamerica*, E.H. Boone ed., pp. 49-90. Washington: Dunbarton Oaks.

Cultural discussion – evid of art & lit + hist accounts; Good quotes by Landa, poem from Popul Vuh. Anatomical approaches discussed & suitability of different tools.

Robinson, Brian S., J. C. Ort, W. A. Eldridge, A. L. Burke, and B.G. Pelletier
2009 Paleoindian Aggregation and Social Context at Bull Brook. *American Antiquity* 74(3):423-447.

Robinson, H. H.
1913 The San Franciscan Volcanic Fields, Arizona. *United States Geological Survey Professional Paper* 76.

Obsidian of rhyolitic composition; SF pks & obsid of early Pleistocene age

Robinson, T. Radcliffe
1938 A Survival of Flake-Technique in Southern Rhodesia. *Man* 38 (224):208.

1 paragraph - one man described primary flaking, heated rock first.

Robinson, William J.
1976 Mission Guevavi: Excavations in the Convento. *The Kiva* 42(2):135-175.

Excav mission convento near Nogales. [mediocre job, few artifacts, little lithic except pts. - 17; mostly large-maybe old pick-ups – 3 clunky straight side-notched, but at least 3 small triangular pts – not real average for mission pts but comparable.]

Roche, H., A. Delagnes, J-P Brugal, C. Feibel, M. Kibunjia, V. Mourre, & P-J Texier.
1999 Early Hominid Stone Tool Production and Technical Skill 2.34 Myr Ago in West Turkana, Kenya. *Nature*. 399: 57-60.

Refitted cores, multiple flakes from single platform, sees this as much more complex than other early Oldowan.

Rodrigue, Alain
2004 Note on an Aterian Flint Projectile Head. *Lithic Technology* 21 (1): 87-88.

Morocco, surface find, Levallois technique, with stem.

Rodrigue, Alain
2006 Note on some Quartzite Bladelets of Assa (Southern Morocco). *Lithic Technology* 31 (2):137-138.

Rodrigue, Alain
2009 New Kind of Weapon Head in Western Sahara : The Idki Point. *Lithic Technology* 34(1) :7-9.

Little points made on bladelets, with tang, probably pre-Neolithic

Rodriguez, Francois
1989 Metodo de analisis descriptivo para el studio de instrumentos lasqueados. Presentacion y algunas aplicaciones a una coleccion litica procedente del Estado Guanajuato. In *La Obsidiana en Mesoamerica*. Margarita Gaxiola G and John E. Clark eds., Pp.71-80. Mexico: Instituto National de Antropologia e Historia.

Roe, D. A.
1994 A Metrical Analysis of Selected Sets of Handaxes and Cleavers from Olduvai Gorge. In *Olduvai Gorge 5: Excavation in Beds III, IV and the Masek Beds 1968-71*. M. Leakey and D. Roe, eds., pp 146-234. Cambridge: Cambridge University Press.

[Huge, tedious attempt to find morphological patterns – shows that Acheulean and Developed Oldowan differ, but no pictures, mass of useless stats, not even interesting manipulation.] Cite for range of handaxe sizes.

Roe, Derek A.
2006 Some Thoughts About Acheulian Cleavers. In *Axe Age: Acheulian Toolmaking from Quarry to Discard*. Naama Goren-Inbar and Gonen Sharon, eds., pp. 313-333. Equinox Publishing, London.

Overlap with handaxes, but enough differences, especially the transverse or oblique cutting edge "to suggest that their makers viewed them as a distinct type". Discusses morphological variation in both. Laments lack of use-wear studies and long time required for good ones. [good, illustrated points]

Roebroeks, Wil
2005?? Landscape Learning and the Earliest Peopling of Europe. In *Colonization of Unfamiliar Landscapes*, edited by M. Rockman and J. Steele, pp. 99-115. Routledge, London.

Roebroeks, Wil, Jan Kolen, Martijn van Poecke, and Annelou van Gijn
1997 "Site J": An Early Weichselian (Middle Paleolithic) Flint Scatter at Maastricht-Belvedere, the Netherlands. *Paleo* 9:143-172.

Roemer, Erwin
1979 Excavations at Operation 2006, A Lithic Workshop. In *The Colha Project 1979: A Collection of Interim Papers*. T. R. Hester ed., pp. 99-107. University of Texas, San Antonio.

Roemer, Erwin
1980 Operation 2007: A Preliminary Report on the Excavation of a Late Classic Maya Lithic Workshop. In *The Colha Project Second Season, 1980 Interim Report*, T. R. Hester, J. D. Eaton, H. J. Shafer eds., pp. 87-104. Center for Archaeological Research, University of Texas, San Antonio.

Small plazuela (mound complex) + lithic workshop – platform 20 x 27 m, 1 m high, 4 mounds around plaza, surface lithics including chert blades + cores. Table sort lithic debris for distinctive pieces, column sample (20 cubic cm). Deb dump >136 cm deep, spilling off edge of platform, down to sterile clay. Mound fills have artifacts but not lithic concentrations. Plaster floors of platform on debitage fill. Biface thinning flakes and blades dominate lithics; also oval biface and tranchet failures, tranchet flakes. Light but steady amount of ceramics in the debitage, Late Classic. No domestic refuse. Debitage under floors = use of waste in architecture; deb over last floor = knapping until abandonment.

Roemer, Erwin
1991 A Late Classic Workshop at Colha, Belize. In *Maya Stone Tools: Selected Papers from the Second Maya Lithic Conference*, T. R. Hester and H. J. Shafer eds, pp. 55-66. Prehistory Press, Madison.

Plazuela group with 3 mounds, 2 areas of lithic midden. Debitage off edge and side of platform, also on plaster floor, and in construction fill, but microdebitage indicates local knapping. 2x2 m test in midden. Some sherds + tools = other activities. Dominent product was oval bifaces and stemmed blades. Est 21 million pc deb from 2x2 x 1.5 m [= 3.5 mill/cubic m]. Column samples of 20x20x20 cm [but can't tell what he did with debitage analysis]. Manuf failures of bifaces (309), mostly hard hammer work. Ca. 2500 unmodified blades and 131 blade cores from making blanks for stemmed proj pts. Rapid, skilled work, span of ca 200 yrs, prob for market consumption. Complexity of defining specialization.

Rogers, Malcom J.
1929 The Stone Art of the San Dieguito Plateau. *American Anthropologist* 31(3):454-467.

Late Ind sites with arrow points, but earlier none, culture of "Scraper-Makers" defined. Plan-convex scrapers [probably cores] + biface knives, + rare crescents. Heavily patinated. Elaborate eccentric crescents, suggested hafting as ceremonial objects.

Rogers, Malcom J.
1939 Early Lithic Industries of the Lower Basin of the Colorado River and Adjacent Desert Areas. *San Diego Museum Papers*. No. 3, San Diego, CA.

Rogers, N.D.
1988 Personal Observations on Characteristics of Texas Tang Knives. *20th Century Lithics* 1:37-44.

Outlines of examples, little info

Rogers, Wendy
1990 Mesolithic and Neolithic Flint Tool–Manufacturing Areas Buried Beneath Roman Watling Street in Southwark. *London Archaeologist* 6(9): 227-231.

[Not too exciting]. Neo point, evid of early occup of Southwark.

Rogerson, S.
1927 The oldest industry in the world. *Blackwood's Magazine* 221, 525-534.

gunflints

Rolingson, Martha Ann
1964 Paleo-Indian Culture in Kentucky: A Study Based on Projectile Points. *University of Kentucky Studies in Anthropology* No. 2.

Rolland, Nicolas and Harold L. Dibble
1990 A New Synthesis of Middle Paleolithic Variability. *American Antiquity* 55(3): 480-499.

Mousterian types don't reflect cultures or toolkits – they are not discrete types, because of effects on tools of resharpening, abundance of raw material. Climate affects material availability, human mobility, and thus intensity of material use.

Romano. A.D.
1992 An East Central Minnesota Alberta Point. *The Minnesota Archaeologist* 51:27-29.

Romano. A.D.
1992 A Pine County Woodland Clay Source: Associated Artifacts and Experimental Ceramic Production. *The Minnesota Archaeologist* 51:30-36.

Romano, Anthony D.
1993 Lithic "Clues." *The Platform* 5(3):3-4.

Importance of raw material ID. Gunflint silica, info from a Clovis thereof.

Romano, Anthony D.
1994 Gunflint Silica. *The Platform* 6(1):5-7; 6(2):3-4; 6(3):5-6.

Romano, Tony and Gene Altiere
1992 If They Had It, They Used It. *The Platform* 4(4):7-8.

Aboriginal copper pressure tools in Minn. Experiments, site finds.

Romano, Anthony D. and Stephen L. Mullholand
2000 The Robert and Debra Neubauer Site (21PN186), Pine County, Minnesota: An Archaic Habitation and Copper Working Site on Mission Creek. *Minnesota Archaeologist* 59:119-140.

On Mission Creek in Pine County; Late Paleoindian, Archaic, and Woodland diagnostics, mostly Middle and Late Archaic. One of the most significant activities appears to have been copper tool manufacturing. Experimental replication of a copper clad thought to have been used as a digging stick tip. In addition, different patterns of use-wear on hammerstones related to knapping, copper hammering and cutting, pecking, and bone work. The site represents a copper tool manufacturing site probably associated with the "Old Copper" industry of the Middle and Late Archaic. Makes a good case for some stone objects not usually recognized as tools.

Rondeau, Michael F.
1979 Interpretations from Replication of the Bipolar Technique: A Cautionary Statement. *Flintknapper's Exchange* 2(3):17-18.

Crits Hardaker 1979. [not too useful, sloppy biblio]

Rondeau, Michael F.

1979 Projectile Point Analysis for the Kahorsho Site: NA 10,937, Central Arizona. Unpublished MA thesis, California State University, Sacramento.

Sinagua site close to Turkey Hills, comparable to Lizard Man. Large proj pt assemblage of typical Sinagua/Chohonina points. [Rondeau now (2000) claims that his extensive and rather "splitter" typology was an ironic comment on the New Archaeology, but still useful analysis at time].

Rondeau, Michael F.
1981 An Additional Failure Type During Biface Manuacture. *Lithic Technology* 10(1): 10-11.

Rondeau, Michael F.
1987 Bipolar Reduction in California. In *Archives of California Prehistory, California Lithic Studies 1,* GS Breschini and T. Haversat eds., pp. 41-56. Coyote Press, Salinas

Rondeau, Michael F.
1997 Technology as Context for Obsidian Hydration Studies. *Lithic Technology* 22(1):86-98.

"Artifact specific" context important – artifact type, technol type, specific surface location on artifact. Otherwise some dates seem anomalous [good point, but examples poorly explained – finding reworking of old pieces by diff size hydration bands from diff surfaces of some flakes].

Rondeau, Michael F.
2006 Revising the Number of Reported Clovis Points from Tulare Lake, Nevada. *Current Research in the Pleistocene* 23:140-142.

Anomalously large concentration, up to 370 reported, undated surface finds. But reanalysis of 103 in one collection shows only a few really diagnostic Clovis traits. [A good cautionary example of problems with non-professional collections, altho none are illustrated so no independent judgements.]

Ronen, Avraham, Barbu Lang, and Monique Lechevallier
2003 Gaining Lithic Expertise in the Epi-Paleolithic. *Lithic Technology* 28(1): 107-112.

Ground stone tools in the Levant, especially basalt grinding equipment, made from material and sources that were previously avoided for flaked stone tools, but were suddenly used without evidence of development or experimentation. No manufacture debris on Natufian habitation sites.

Roosevelt, Anna C. et al (15 others)
1996 Paleoindian Cave Dwellers in the Amazon: The Peopling of the Americas. *Science* 272: 373-384.

[not revolutionary but good] knocks others' early material to distance self – Lithics: stemmed triangular pts (previously thought Archaic). Lots of flakes various materials, in cave Pedra Pintada. Technol similar to other Paleoind: percussion, pressure, bifacial, unifacial, heat treatment, isolated platforms "prepared by pecking and grinding." Biface flakes, retouch flakes. 10 bif, 14 unif tools = 4 pts, 2 preforms. [Points are crude, not as nice as unprovenienced points shown elsewhere in article]. Lumps + drips of iron pigment in strata similar to on walls. Local legumes, Brazil nut + other seeds. Poor but diverse fauna - fish, rodent, bat, shellfish, reptiles, large ungulates - largely river resources.
Dates - lots, ca 11,200-10,500 BP. "Monte Alegre" culture - distinct but contemporary to Clovis, so Paleoindian radiation was more complex than thought.

Roosevelt, Christopher H., and Cristina Luke
2006 Mysterious Shepherds and Hidden Treasures: The Culture of Looting in Lydia, Western Turkey. *Journal of Field Archaeology* 31(2):185-198.

1980s "East Greek" exhibit at Metropolitan Museum led to legal action by Turkey and return of 'Lydian Hoard" looted material in 1990s, but looting of tumuli continues, of 397 surveyed by authors 2001, 90% show surface evidence of looting. Archaeological investigations may inspire looting or attract attention to monuments. Lion sculpture destroyed by landowner to prevent government interference. Tomb paintings copied for faking in other tombs as well as cut out and sold. Bin Tepe, Sardis, royal Lydian tomb field documented in detail: 116 tumuli, 111 with evidence illicit digging

Root, Matthew J.
1997 Production for Exchange at the Knife River Flint Quarries, North Dakota. *Lithic Technology* 22 (1):35-50.

Considers useful meaningful categories of flakes: biface thinning flake, bipolar, shatter, other, from experiments. Also uses mass analysis, multiple regressions to "unmix" and estimate production.
205 exper replications, 9 operations, including 2 skill levels of biface work, produce debitage sets, use weight and count proportions of 4 size grades - each operation should have characteristic profile.
Suggests that L. Paleo and L. Archaic in particular made more than they used = exchange production

Root, Matthew J.
2002 Heat Treatment and Knife River Flint Folsom Point Manufacture. In *Folsom Technology and Lifeways*, J. E. Clark and M. B. Collins, eds., pp.315-332. Lithic Technology Special Publication No. 4. University of Tulsa, Tulsa.

Root, Matthew J. and Jeb Taylor
2003 Clovis Points from the Missouri River Valley, North Dakota. *Current Research in the Pleistocene* 20: 72-75.

Root, Mathew J. and Leslie Davis

2006 A Possible Folsom-Midland Association in the Northern Rocky Mountains. *Current Research in the Pleistocene* 23:142-144.

Surface finds, 1 each, only Paleo points at King Site, Montana, so association not sure.

Roper, Donna C.
1979 Breakage Patterns of Central Illinois Woodland Projectile Points. *Plains Anthropologist* 24(84) pt. 1:113-121.

Relates breakage to 1) blade proportions 2) functional category 3) haft morphology. 2 most import, then 3.

Roper, Donna C., and Richard E. Hughes
2014 Source analysis of obsidian debitage from two Early Archaic sites in Nebraska. *Plains Anthropologist* 59(229):58-69.

3 specimens, all from Malad Idaho source

Rorabaugh, Adam M., and Tiffany J.
2015 Timing of the introduction of arrow technologies in the Salish Sea, Northwest North America. *Lithic Technology* 40(1):21-39.

Salish Sea, general agreement that arrow tech intro by 2500 BP, but not tested with large data sets. Apply discriminant function derived from Hildebrandt and King (2012) dart-arrow index to sample from 49 sites, spanning 5000 yrs.
Confounding issues include use of bone and hafted gound stone of similar forms to flaked, starting with Charles period, 4500-3200 BP. Not studied, need to develop different indices. Marpole phase 2400-1000 BP more diverse forms include stemmed and unstemmed medium and small chipped pts, some asymmetrical, also large hafted ground slate pts arming lances, spears, and socketed harpoons. End of M, transition toward small triangular forms, considered arrow pts. Social effects may include increased hunting autonomy, more warfare and social circumscription, rise of nucleated villages and chiefdoms. By Late period 1000 BP- present, only small, unstemmed triang chipped and ground pt forms.

Ames and others claim arrow by 8500 BP on plateau. Hare in Yukon ice material has atlatl dart dates 8400-1250 BP after which abrupt transition to arrow. H+K suggest arrows not on Columbia plateau until 2500 BP.

Apply H+K (pt T + stem W) to stemmed pts, but most pts unstemmed, so doesn't apply, so use as basis for a discrim function analysis for the unstemmed tools [does this make any sense at all?]. Curation measured using Andrefsky (2006) hafted retouch index (8 blade segments each face scored 0 = no retouch, 1 = lots, .5= medium, results summed). H+K index applied with cut-off value of 11.1 (lower than H+K original 11.8) based on break in distribution [which is very 'normal' with too small a break to be meaningful. Almost all their pts class as dart]. Grouping pts by 500-yr interval, find that arrow pts appear around 2500 BP [but almost all the pts are still "dart"]. Created discriminant function for unstemmed pts using results of their index [not adequately explained, can't evaluate it, not clear how it relates to H+K index, which doesn't apply to these points].

Max T, blade W, Max W, Haft W are most heavily loaded attributes. When apply to both unstem + stemmed pts in 500 yr intervals, arrow forms appear at 3500 BP, prevalent by 2500. Of types, small triang usually class as arrows. [Note that the large points remain dominant throughout, even into proto-historic times equal numbers.] Curation measured by HRI may cause misclassification of darts as arrows [graph shows very slight tendency for high curation scores to be closer to dart/arrow cut-off, but only slight].

Both methods overestimate N of arrows, so 2500 probably better date, corresp with increased terrestrial mammal hunting. Small harpoon pts may misclass as arrows, or ‘fletched atlatls’ [repeated annoying mistake of talking about darts as if they are the atlatls]. Bow intro 3500, common 2500, dominant after 1000 BP [not what their data shows] which correlates with faunal data showing more terrestrial mammals. But atlatl may continue as “elites continue to promote group terrestrial mammal hunting” although bow favors individualism. [This nonsense comes from Angelbeck and Cameron 2014 and others who apparently don’t know that atlatl is accurate.] Transition to bow and arrow was complex and gradual; darts and arrows often complementary. [I think the index approach doesn’t work well here, and the situation is too confused by the use of harpoons and the importance of sea mammal hunting, which promote continued use of large points, and perhaps atlatl].

Rosen, Steven A.
1981 Historic Lithic Assemblages in Israel. Paper Presented Annual Meeting Society for American Archaeology.

Rosen, Steven A.
1997 Beyond Milk and Meat: Lithic Evidence for Economic Specialization in the Early Bronze Age Pastoral Periphery in the Levant. *Lithic Technology* 22(1):99-109.

EBA Negev pastoral camp. Bead production w/microblade drills, and sandstone grinding tool production as small specialization for trade.

Rosen, Steven A.
1997 *Lithics After the Stone Age: A Handbook of Stone Tools from the Levant*. Altamira Press, Walnut Creek.

Rosen, Steven A.
2000 Dissecting a Site: Assays in Decoding Artifact Distribution in a Terminal Pleistocene Campsite in the Negev. *Lithic Technology 25(1):7-29.*

Rosen, Steven A.
2010 The Desert and the Sown: A Lithic Perspective. In *Lithic Technology in Metal Using Societies*, B. V. Eriksen ed., pp. 203-219. Arhus, Arhus University Press.

Negev pastoralists vs Mediterranean agricultural societies: functional diffs (arrow points vs sickles), differences in organization of production (less specialized pastoralists, greater continuity)

Rosen, Steven A. and John E. Clark

1996 What Mean These Stones? Thoughts on Teaching Lithic Analysis in The Core Curriculum. *Lithic Technology* 21(1):40-47.

General teaching benefits of hands-on experience. Flakes + simple core tools provide material for analysis and discussion of evolution, technology, material culture study. Can treat assemblage as site, record provenience, plot etc. Drawings a good way of looking. Typological exercises w tools or pt drawings. Field trips to quarry > discuss trade, geology, etc, or to other knappers.
Refitting exercises. Experimental design. [Nice article].

Rosen, Steven A, Aaron Shugar, and Jacob Vardi
2014 Function and Value in Sickle Segment Analysis: Odellian Perspectives. In *Contemporary Perspectives on Lithic Analysis*, M. Shot ted., pp. 116-130. University of Utah Press, Salt Lake City.

Glossy blades IDd as sickles in Levant, 3 primary specialized technologies, 3 basic types, in sequence: Chalcolithic 5th mil BC - backed truncated blades on simple prismatics. Early Bronze 3800-2000 BC - Canaanean parallel-ridged large prismatic blades. M Bronze, L Bronze, E Iron Ages 2000-1000 BC large geometric sickle segments made on blade flakes.
Gloss - IDd as sickle, produced by abrasion, found in hafted specimens. But Anderson and others suggest alternative: threshing sledges, gloss from silica gel from opal phytoliths in grain stalks, additive.
Abrasion: reduction in relief as move from interior to glossy edge. No layering in silica of gloss, lack of trapped extraneous materials. Hafted large geom IAge sickle segments show micro traces IDd by Anderson on threshing blades. Differences in gloss reflect not function but amounts of wear under different conditions - replicative experiments (espec with sickles) not long enough. Retouched, serrated pieces must be sickles; no record of any ethnog retouch of threshing sledge teeth. Early, e.g. Natufian glossy blades also before any possible use of sledges.
Retouch reflects value. Most on the Canaanean blades, products of very specialized workshops.

Rosenthal, Jeffrey S.
2002 Projectile Point Typology and Chronology in the North Central Sierra Nevada. *North American Archaeologist* 23(2):157-184.

Various obscure typologies based on Thomas criticized [mostly in grey-literature and some are typical bad California archaeology, so refs are useless]. Too many rely on comparison with other regions, have poor absolute chronology. Here evaluate 3 stratified sites in American River watershed. Points classified by proximal shoulder angle and neck width, and recommend a simple typology. Corner-notched and leaf shaped points dominate lowest levels, dating to mid Holocene, stemmed points in middle and upper strata, small arrow points (Gunther, Desert Side Notched, Cottonwood, small corner-notched) at the top. No good breaks, clinal distribution, corner-notched dart points have long distribution alongside others, but no good evidence of atlatl and bow together.

Roth, Barbara J.
1995 Late Archaic Occupation of the Upper Bajada: Excavations at AZ AA:12:84 (ASM), Tucson Basin. *Kiva* 61(2):189-208.

Debitage and tool proportions address question of curation + mobility.
[Not very exciting site, simplistic analysis - good example of Sullivan + Rozen debitage analysis and why it lets people who don't know enough lithics do weak but plausible analyses, and it misunderstands S+R too]

Roth, Barbara
1998 Mobility, Technology, and Archaic Lithic Procurement Strategies in the Tucson Basin. *Kiva* 63(3):241-262.

Roth, Barbara J.
2009 An Evaluation of Lithic Debitage Sampling at an Archaic Site in Southern Arizona. *Lithic Technology* 34(1):11-26.

Owl Head Butte Site. S+R types used for initial debitage sort. Sample representative of whole assemblage, but less so on attributes with higher interobserver error, espec platform lipping.

Roth, Barbara J. and Harold L. Dibble
1998 Production and Transport of Blanks and Tools at the French Middle Paleolithic Site of Combe-Capelle Bas. *American Antiquity* 63(1):47-62.

Raw material availability + group mobility affected blank selection, production, and transport

Roth, Walter E. **(w atlatl)**
1904 *North Queensland Ethnography, Bulletin 7:Domestic Implements, Arts, and Manufactures.* Home Secretary's Department, Brisbane, Australia.

Wood work by stone or shell. *Ficus* leaves for sanding. Fire by twirling or sawing. *Canarium* brown cedar tree gum for hafting and woomera handles. Other resins include ironwood *Erythrophloeum* and spinifex grass *Triodia*. Lengthy descrip of knapping gouge heads, knife blades, spear heads, scrapers, hand picks, and drills.
"As for the causes limiting the shape of the flakes – the short stumpy ones for making gouge heads, scrapers etc, on the one hand and the long thin ones … for knives, spear-heads, etc on the other it is impossible for me to state anything definite, nor could the natives render themselves sufficiently intelligible, even supposing they know, to enlighten me." (16) Boomerang as percussion retoucher.
Long blades hafted as spear points or in ball of resin as knives. Ground stone celts as axes, adzes, wedges in simple wrapped hafting, but "manufacture now a lost art in Queensland." Harpoons described, shown hand thrown. Wommera shown, leaf-shaped type with stone set in gum at handle, but manuf or use not described.

Rots, Veerle
2003 Towards an Understanding of Hafting: The Macro- and Microscopic Evidence. *Antiquity* 77 (298): 805-815.

Microwear experiments in hafting recognition, experimental sample of some 300 hafted tools, many different tasks, used low and high power microscopy. [Nothing real new, but good summary of important factors. No info on specific tools or industries.]

Rots, Veerle
2004 Prehensile Wear on Flint Tools. *Lithic Technology* 29 (1): 7-32.

Wear diffs between hafted (including wrapped) tools and hand-held, 14 experimental tools as examples of larger trends.

Rots, Veerle
2005 Wear Traces and the Interpretation of Stone Tools. *Journal of Field Archaeology* 30 (1): 61-74.

44 end scrapers on blades from Upper Paleolithic Verberie, France, Magdalenian. Use-wear mostly fresh hide, wetted dry hide, and dry hide [can he really tell that degree of difference?]. Some hand held, most have hafting wear, mostly from insertion into hole in a bone handle [and mostly very deep insertion, ¾ or more of surviving length]. 2 scrapers appear to have been in same handle. [I'm not convinced - probably over-detailed interpretations, and a serious problem remains: why are no handles identified? Especially, why no handles with scrapers in place, since bone apparently preserves well, and they wouldn't be that easy to pull out.] Evidence of resharpening over wear, re-use by reversing direction of hafting, discard because of exhaustion, crude retouch on one possibly = novice knapper.

Rots, Veerle and Pierre M. Vermeersch
2000 Lithics in Belgium. Some Current Research Trends. *Lithic Technology* 25(2):76-79.

Rots, Veerle and Pierre M. Vermeersch
2004 Experimental Characterization of Hafting Traces and their Recognition in Archaeological Assemblages. In *Lithics in Action: Papers from the Conference 'Lithic Studies in the Year 2000'*. E. A. Walker, F. Wenban-Smith, and F. Healy eds., pp. 156-168. Oxbow Books, Oxford.

experimental scraper/adzes

Rountree, Helen
1990 *Pocahontas's People*. University of Oklahoma Press.

Ethnohistoric glass and stone use. p 80: "Meanwhile the English continued to distrust even their Accomac friends, as shown by an order, issued Feb 8, 1628, against selling them glass bottles (Note 156). In a period when the English would not sell them firearms, the

Accomoacs were using glass to make arrowheads.” Note 156, p.307: “Projectile points made of glass have been found by archaeologists in several locations in VA.” [no repts cited].

Rovner, Irwin
1976 Pre-Columbian Maya Development of Utilitarian Lithic Industries: The Broad Perspective from Yucatan. In *Maya Lithic Studies,* TR Hester & N. Hammond eds. Center for Archaeological Research, U. Texas San Antonio, Spec. Repts 4 pp. 41-53.

Rovner, Irwin
1989 Theories & Methods in Obsidian Analysis: Methodological Problems at Trade Recipient Sites. In *La Obsidiana en Mesoamerica.* Margarita Gaxiola G, John E. Clark eds. Pp. 427-431. Mexico: Instuto de Antropolgia e Historia.

Rovner, Irwin
1989 Patrones anomalos en la importacion de obsidiana en el centro de las tierras bajas mayas. In *La Obsidiana en Mesoamerica*. Margarita Gaziola G., John E. Clark, eds. Pp. 369-374. Mexico: Instuto de Antropolgia e Historia.

Rozen, Kenneth C.
2002 A Quantitative Experiment Concerning Folsom Fluting Methods and Fluting “Success.” In *Folsom Technology and Lifeways*, J. E. Clark and M. B. Collins, eds., pp. 273-298. Lithic Technology Special Publication No. 4. University of Tulsa, Tulsa.

Rubinstein, Ruth P.
1995 *Dress Codes: Meanings and Messages in American Culture*. Westview Press, Boulder.

Rudebeck, Elisabeth
1987 Flintmining in Sweden during the Neolithic Period: New Evidence from the Kvarnby – S. Sullerup Area. In *The Human Uses of Flint and Chert.* G. Sieveking and M. Newcomer eds. Pp. 151-158. Cambridge: Cambridge University Press.

Neolithic quarries, assoc with habitation. Evidence for making axes (mid Neo) and daggers (late Neo - E. BA). Antler picks.

Ruhe, Ben
1995 Making Gunflints in Brandon, England: Last of the Masters. *Chips* 7(2):4-9.

Some basics, biog & interview F Avery – mostly agrees with mine, but some variance.

Ruhe, Ben
1996 The Last Brandon Gunflint Maker Dies: Fred Avery, April 24, 1986. *Chips* 8(3):8.

Short obituary, description of funeral.

Ruhe, Ben
1997 Obituary: Last Brandon Gunflint Knapper Dies. *Lithics* 17/18:2.

Runnels, Curtis N.
1982 Flaked-stone Artifacts in Greece During the Historical Period. *Journal of field Archaeology* 9(3):363-374.

[Good] Lists some examples, concentrates on cost of metal as reason for stone use.

Runnels, Curtis
1994 Tinderflints and firemaking in the Historical Period. *Lithic Technology* 19(1):7-16.

Different types, related to gunflint making, France, Britain, Albania reported. E Medit bifacial. Wear - battering, crushing, pieces esquilles, turned in use so wear usually bifacial and roughly rectangular form. Table + figures of Smithsonian + Greek specimens [but poorly labeled, no info on flint material].

Runnels, Curtis
2012 Review: Across Atlantic Ice by Dennis Stanford and Bruce Bradley. *Journal of Field Archaeology* 37(2):158-160.

[They convinced him. Not only that, he wants to be a leader on the bandwagon, and even a prophet:] “we must discard most older ideas about the peopling of the New World and consider the possibility of other prehistoric transoceanic contacts… and abandon the assumption that the first migrants were limited to anatomical moderns.” [Rubbish!]

Runnels, Curtis, and Norman Hammond
2012 Editorial: Palaeolithic America. *Journal of Field Archaeology* 37(2):83-85.

With publication of Bradley + Stanford’s *Across Atlantic Ice* we must reopen issue of American Paleolithic. [Remarkably foolish editorial: Solutrean hypothesis is weak to begin with, it is poor scholarship to suggest re-evaluating Calico, which was rubbish from the start, Holmes did not dismiss Abbot’s tools because he couldn’t “confirm their in situ nature” but because they were clearly early stage bifaces, not old, and same is true of many other supposed early sites. OK, we should be looking for a reasonable pre-Clovis, but not the extreme nonsense; their call for more papers on pre-Clovis is just opening JAR to a flood of poorly evaluated crap. Bandwagon jumping at its worst.]

Runnels, Curtis, Muzafer Korkuti, Michael L. Galaty, Michael E. Timpson, John C. Whittaker, Sharon R. Stocker, Jack L. Davis, Lorenc Bejko, and Skender Mucaj
2004 The Palaeolithic and Mesolithic of Albania: Survey and Excavation at the Site of Kryegjata B (Fier District). *Journal of Mediterranean Archaeology* 17 (1): 3-30.

Surface collection and test excavation of site with 1110 lithics recovered. Most local chert/flint, but a few of imported "honey flint". Mid Pal = 17 surface artifacts, Levallois flakes, scrapers etc, Szeletian biface. Mostly flakes from small cobbles producing flat cortical pieces and orange slice wedges. Up Pal = 33, cores, flks, backed blades, burins, end scrapers, percoirs, mostly on flakes rather than blades. Meso = 839, unpatinated, microliths [small blade segments], no microburin technique, cores, but mostly small flakes and flake tools. Comparisons to other regional industries; importance of open Paleo sites vs caves.

Runnels, Curtis and Tjeerd H. Van Andel
1993 The Lower and Middle Paleolithic of Thessaly, Greece. *Journal of Field Archaeology* 20(3):299-317

Mid Paleolithic kill/hunt sites on streams. Lower Paleo 400-200 kya pebble and flake tool assemblages - poor stuff. [Very geologically oriented, crummy sample of tools illustrated]

Russell, Dann J.
2005 Russell's Pendulum (A Fluting Device). *Indian Artifact Magazine* 24 (3): 60-61.

Clamp with swinging percussor, clever.

Russell, Miles
2000. Flint Mines in Neolithic Britain. Great Britain, Tempus Publishing, Stroud, Gloustershire, UK.

Russell, Miles
2003 *Piltdown Man: The Secret Life of Charles Dawson and the World's Greatest Archaeological Hoax*. Tempus, Stroud, Gloustershire, UK.

Piltdown fraud of 1912: recent thick human skull cap with doctored orang jaw "found" in gravels by Dawson. Traces Dawson's archaeological career, to show repeated pattern of small frauds and plagiarisms, each too small to attract suspicion to respected solicitor and gentleman, but each boosting his scientific reputation. Piltdown is culmination, and the biographical pattern leaves little doubt that Dawson was the hoaxer. Among early hoaxes a report on hafted stone axe and odd lithic tools that probably did not exist, a chalk mine salted with misc artifacts to become a Neolithic mine and later site, forged Roman bricks with Latin inscription. Piltdown included some eoliths and bone "cricket bat". Dawson criticized supporters of eoliths, apparently to seem objective. Woodward (Geologist, Brit Mus, Nat Hist), his partner, was taken in and became the sincere promoter of Piltdown. P succeeded because fit theoretical model of Keith, Boule, and others, although even at the time, there were some correct doubts expressed. [Nice account of Piltdown, Dawson, Victorian science].

Russell, Virgil Y.
1962 (1951) *Indian Artifacts*. Johnson Publishing Company, Boulder.

Rust, Horatio N.
1905 The Obsidian Blades of California. *American Anthropologist* 7:688-695.

with comments by Kroeber

Ruth, Susan M. and Bruce B. Huckell
2008 Raramuri Rijibara: Individual Variation in Flaked-Stone Gaming Pieces. *Kiva* 73(3):247-262.

Large basalt forms scraper or core-like, used in a tossing game like horseshoes, made by two men visiting ASM 1978. Debitage shows differences between them in motor habits, reduction strategy or skill - one makes more larger, cortical flakes, reducing more efficiently.

Rutledge, Don
1989 Modern Day Artist Errett Callahan has much in Common with Ancient Stone Age People. For Camera Press International.

[apparently a pictorial to be distributed, cut and edited ad lib. Poor - a weak rip-off of Shackleford 1987 article] “A clear & strong statement on the state of the art - at least mine” - EC

Sackett, James
1973 Style, Function, and Artifact Variability in Paleolithic Assemblages. In *Explanation of Culture Change*. Colin Renfrew, ed., pp. 317-325. Gerald Duckworth and Co, London.

Sackett, James R.
1977 The Meaning of Style in Archaeology: A General Model. *American Antiquity* 42:369-380.

Sackett, James
1982 Approaches to Style in Lithic Archaeology. *Journal of Anthropological Archaeology* 1(1):59-112.

Sackett, James R.
1985 Style, Ethnicity, and Stone Tools. In *Status, Structure, and Stratification in Current Anthropological Reconstructions*. M. Thompson, M.T. Garcia, and F. Kense eds., pp. 269-275 University of Calgary Archaeological Association, Calgary.

Sackett, James R.
1989 Statistics, Attributes, and the Dynamics of Burin Typology. In *Alternative Approaches to Lithic Analysis*. Donald O. Henry and George H. Odell eds., pp. 51-82. Archaeological Papers of the American Anthropological Association No. 1.

Saddleton, Paul
2002 A Sussex Knapper. *Chips* 14(2):8-11.

Works with beach cliff flints from chalk, describes flint in detail, mentions Phil Harding (Time Team) and John + Will Lord, but no knap-ins in UK.

Sahlins, Marshall
1972 *Stone Age Economics*. Aldine, New York.

Sahnouni, Mohamed
2006 The North African Early Stone Age and the Sites at Ain Hanech, Algeria. In *The Oldowan: Case Studies Into the Earliest Stone Age*. Nicholas Toth and Kathy Schick eds., pp. 77-112. Stone Age Institute Press, Gosport IN.

Sahnouni, Mohamed, Kathy Schick, and Nicholas Toth
1997 An Experimental Investigation into the Nature of Facetted Limestone 'Spheroids' in the Early Paleolithic. *Journal of Archaeological Science* 24:701-713.

Experiments suggest they are just heavily exhausted cores.

Saini-Eidukat, Bernhardt, Michael G. Michlovic, and Dean T. Sather
2007 Material Analysis of Lithic Flaking Debris. In Archaeology and Paleoeinvironment at the Rustad Site (32RI775). Edited by M. G. Michlovic and Garry L. Running. *Plains Anthropologist* 50(196) Memoir 37:159-167.

North Dakota site with some Woodland and Paleo, mostly early Archaic features with lithics and bison bone. Mostly Swan River Chert, possibly heated, some Knife River Flint, Lake of the Woods chert, Red River chert, rhyolite. Often from till. Thin section analysis.

Salacinski, Slawomir, and Marcin Bednarz
1995 Principaux problèmes et méthods d'études des ateliers de taille à Krzemoniki. In *Les Mines de Silex au Néolithique en Europe: Avancées Récentes*. J. Pelegrin and A. Richard, eds, pp. 15-25. Comité des Travaux Historiques et Scientifiques, Vesoul.

Salisbury, R. F.
1962 *From Stone to Steel: Economic Consequences of a Technological Change in New Guinea*. Melbourne University Press, Melbourne.

Changes in work habits and labor expenditure on different tasks, but little if any info about stone tools per se.

Salls, Roy A.
1985 The Scraper Plane : A Functional Interpretation. *Journal of Field Archaeology* 12 :99-106.

On basis of experiment + use-wear on Calif Milling Stone Horizon material argues they were processing fiber from yucca + agave. [Some of his wear may be from material on which fiber was worked.] Fiber quids as bi-product.

Sampson, C. Garth

2006 Acheulian quarries at hornfels outcrops in the Upper Karoo region of South Africa. In *Axe Age: Acheulian Toolmaking from Quarry to Discard*. Naama Goren-Inbar and Gonen Sharon, eds., pp. 75-107. Equinox Publishing, London.

Thousands of outcrops, ca 300 with Acheulian material : flakes and cores larger than later and heavily patinated. No chronometric dating. Handaxes lacking at quarry sites, but must be A because later material much different. Quarries concentrate A sites if water also present. Surface collection 1966 of Smaldeel site provides type example. At A sites with handaxes, they are made from blocks brought from quarries and worked on site. At quarries, almost only making flakes and cores, many very high platform angles. Attempts to chemically source hornsfel artifacts.

Samson, David R.
2006 Stones of Contention: The Acheulean Handaxe Lethal Projectile Controversy. *Lithic Technology* 31(2):127-135.

Accepts multi-functionality, but supports throwing hypothesis with further experiments.
 'just because it can be shown that it is possible to do something, this doesn't necessarily mean that it was done, unless use-wear or some other means of identifying function can be discerned. ' [Right, and that's a major failing of the throwing hypothesis - no other good evidence].
Attempts to enlarge sample of throws : 2 throwers, 75 throws each, using 3 handaxes, plus some with a 'minimally knapped' rock. 120/150 throws landed on edge or point, only 20% flat. Rock not considered because couldn't assess landing [what shape was it ? was it flattish ?]. Handaxe has 6 surfaces (2 edges, point, butt, 2 faces) so prob of edge/point landing = .67, and 80% actual edge/pt landing signif different. [I think this is a false probability, given irregular shape, different sizes of each 'surface'. And our flat landings are signif different from random too then.] 'This evidence supports theoretical model that has hominids throwing from distances of over 40 m. [Not really, since his average was 41.1 m, other thrower was 28.6 m., and evidence at best supports possibility of throwing]. Like cannon, massed targets make handaxe good weapon. Whittaker and McCall focus on innaccuracy, because inexperienced throwers [not true] and accuracy in O'Brien was within 2 yards left or right of trajectory, here 6 and 6.6 m for thrower 1 and 2 [which is actually really poor if you are trying to hit an animal.] Diagram shows how easy it would be to hit a 30 m long herd of animals [sure you can drop it into the herd, but hitting depends on density of animals too, so that's a false argument, and even less likely if you envision hunting flocks of birds or other small animals]. Don't need large wound, withdrawal reflex causes fall [balderdash !] Cutting fingers was only minor, callus developed. [See our response: McCall and Whittaker 2007].

Sanchez, M. Guadalupe
2003 A Synopsis of Paleo-Indian Archaeology in Mexico. *Kiva* 67(2):119-136.

Clovis points near border, mammoth kills in Basin, other possible paleo stuff not well known but some Folsom and Plano, Lerma points. Skeptical of pre-Clovis finds.

Sanders, Thomas Nolan

1990 *Adams: The Manufacturing of Flaked Stone Tools at a Paleoindian Site in Western Kentucky*. Persimmon Press, Buffalo.

Sandgathe, Dennis M.
2004 Alternative Interpretation of the Levallois Reduction Technique. *Lithic Technology* 29 (2): 147- 159.

Central L flakes (Paleolithic) regarded as core maintenance to prevent increasing convexity so centripetal flakes can be consistent. If central flake was the desired tool, why are they variable in shape, and not retouched any more often than other flakes? [Actually a clever idea, raises legit questions about assuming that L flakes were made to desired shapes. Does not entirely deal with problems of consistent forms of L in diff assemblages, and inefficiency of complex platform prep for risky technique.]

Santley, Robert S. and Thomas P. Barrett
2002 Lithic Technology, Assemblage Variation, and the Organization of Production and Use of Obsidian on the South Gulf Coast of Veracruz, Mexico. In *Pathways to Prismatic Blades: A Study in Mesoamerican Obsidian Core-Blade Technology*. K. Hirth and B. Andrews, eds., pp. 91-103. Cotsen Institute of Archaeology Monograph 45. University of California, Los Angeles.

Santone, Leonore
1997 Transport Costs, Consumer Demand, and Patterns of Intraregional Exchange: A Perspective on Commodity Production and Distribution from Northern Belize. *Latin American Antiquity* 8(1):71-88.

Colha chert tools and change thru time.

Santonja, Manuel, and Paola Villa
2006 The Acheulian of Western Europe. In *Axe Age: Acheulian Toolmaking from Quarry to Discard*. Naama Goren-Inbar and Gonen Sharon, eds., pp. 429-478. Equinox Publishing, London.

Distributions of handaxes and cleavers. Some overlap of Mousterian industries and Upper Acheulian.

Sapp, Rick
2008 *The Gun Digest Book of Firearms Fakes and Reproductions*. Gun Digest Books, Iola, WI.

Lots of fakes now, by aging modern repros, modifying genuine old guns to make a more valuable model or serial number (by removing old, adding new) or association e.g. with a battle, a person, or Indians. Dealer (26): “Most of the single action army Colts you see at smaller gun shows have been altered in some way. It is a tremendous volume; it’s horrible.”[and any other valuable types - as in artifacts, a high percent of what you see is not what you think it should be, and as in artifacts, many deny that there is a problem.]

Legitimate debates about how much and when old guns should be restored, marking restoration, keeping records, honest information at sale. [Lots of glossy pics, lots of irrelevant info on collecting and shooting reproductions pad out the useful info. Not enough details on how guns are faked.]

Sappa, Faustine, and Bertrand Roussel
2009 Les techniques d'allumage du feu des origins à nos jours. *EuroREA: Journal of Reconstruction and Experiment in Archaeology* 6:27-32.

In French: The techniques of fire starting from origins to our time. Assoc with exhibit at Terra Amata museum, Nice, France. Early disputed dates in Africa at Koobi Fora, Chesowanja. Gesher Enot Ya'aqov Israel ca 790kya a few burnt wood and flint bits. Only incontestable early dates of "domestication" of fire from real hearths, ca 400kya in Finistere at La Grotte Menez-Dregan, and 380kya at Terra Amata. After that more and more common.

Revolutionary effects: extend light + work into night, freedom from natural rhythms. Warmth, conquest of cold climates. Food more digestible, parasites destroyed, preservation by smoke (evidence at Lazaret [?]). Modify material, spears hardened (Lehringen). [Photos] of friction fire by hand, pump, bow drill, saw. Marcasite/flint + amadou (amadou found in Neolithic lake sites, with Oetzi). Flint and steel. "Briquet" [= firesteel, striker] including "chuck muck" of Tibet [where did that term come from?]. Ca 1770 Volta chemical matches.

Sappington, Robert Lee
1978 An Annotated Bibliography of Gunflints. *Northwest Anthropological Research Notes* 12:75-107.

[Good biblio to 1977]

Saraydar, Stephen C.
2008 *Replicating the Past: The Art and Science of Archaeological Experiment*. Waveland Press, Long Grove, IL.

Nice short text. Many case studies involving stone tools as well as general discussion of principles of experiments, theory of exp archaeology, etc. Case studies include Egyptian drilling, Newcomer handaxe making and blind use-wear tests, stone axes, chultuns, copper casting and smelting,

Saraydar, Stephen C., and Izumi Shimada
1971 A Quantitative Comparison of Efficiency betwen a Stone Axe and a Steel Axe. *American Antiquity* 36:216-217.

Chopping a log, measured energy expenditure with oxigen capture breathing apparatus. Steel axe, granite grooved axe in bent-wood haft, steel 6.4 times faster, 5.1 times less energy than stone. [But a small experiment, apparently only one trial of each, were they actually good enough axemen to test fairly?]

Saraydar, Stephen C., and Izumi Shimada
1973 Experimental Archaeology: A New Outlook. *American Antiquity* 38:344-350.

Promotes value of imitative experiments. More axe experiments, this time felling a plot of small trees and planting corn, compare same axes but better haft on stone: stone 3.6 times slower, used 3.3 times as much energy. [showing need for multiple trials in such experiments].

Sassaman, Kenneth E.
1992 Lithic Technology and the Hunter-Gatherer Sexual Division of Labor. *North American Archaeologist* 13:249-262. Reprinted 1998, in *Reader in Gender Archaeology*, edited by Kelley Hays-Gilpin and David S. Whitley, pp. 159-171. Routledge, New York.

If in most societies, M hunt, F gather, M use bifaces, primary tools in preceramic sites, F make and use pots in later, then Preceramic sites emph male activity, later sites tend to represent female, making comparison difficult.
Hunting is risky resource - equipment tends to be complex + formal to be ready, reliable, easily reparable. “Instruments” of gatherers are more expedient because less risk if they fail. Mobile people need to transport tools far from stone sources, need reliable, flexible tools = biface as core.
With stable residence, F hav access to stone [although he sees F as relatively immobile] at least stone not suited for bifaces. So bifaces decline except for ceremonial, replaced by simple bow and arrow tips, reflecting increase in women’s roles in raw material procurement and core reduction at domestic sites.
[I find assumption that bifaces are male tools unconvincing - not all are weapon tips, women may use weapons etc].

Sassaman, Kenneth E.
1994 Production for Exchange in the Mid-Holocene Southeast: A Savannah River Valley Example. *Lithic Technology* 19(1):42-51.

Lithic production features for 200-300 bifaces which were removed from site - argues for export industry in special (non-subsistence tool) bifaces.

Sassaman, Kenneth E.
2014 Editor’s Corner. *American Antiquity* 79(3):381-384.

Responds to Pitblado in same issue. Arch should interact with collectors, but with ethical care: Vero Beach carving sold after Purdy et al. published, a violation of our ethical responsibility not to help antiquities market. He feels scientific value of pub was also low as VB artifact has no context. Emphasizes first principle of ethics: *Stewardship*, …The underlying premise … is that no one *owns* the past, and certainly not professionals.” [but of course he has nothing to say about tribes owning and destroying the past through NAGPRA]

Sattler, Helen Roney

1988 *Hominids: A Look Back at Our Ancestors*, illustrated by Christopher Santoro. New York: Lothrop, Lee and Shepard Books.

[Juvenile science book, heavily illustrated, generally accurate and up to date for its time. However, the word “evolution” does not appear, although the scientific basis for dating and understanding of our “ancestry” is emphasized. A few odd notions have crept in: silly idea of throwing handaxes, Neanderthal burials accepted without question, Homo erectus beginnings of religion, etc - mostly to humanize the story of early hominids. The illustrations are pleasant, with many artifacts, bones, and reconstructions of life on every page, redrawn from a number of familiar sources. But the artist doesn’t know enough about prehistory, and his drawings often simply misunderstand stone tools and bones, producing crude and incorrect images.]

Saunders, Jeffrey J., George A. Agogino, Anthony T. Boldurian, and C. Vance Haynes
1991 A Mammoth-Ivory Burnisher-Billet from the Clovis Level, Blackwater Locality No. 1, New Mexico. *Plains Anthropologist* 36(137):359-364.

Worked section of ivory, now lost.

Saunders, Jeffrey J. and Edward B. Daeschler
1994 Descriptive Analyses and Taphonomical Observations of Culturally-Modified Mammoths Excavated at “The Gravel Pit” near Clovis, New Mexico in 1936. *Proceedings of the Academy of Natural Sciences of Philadelphia* 145:1-28.

Two butchered Columbian mammoths associated with the “type” specimens of Clovis points (2). Cotter, the excavator, assumes atlatl use, bone rods as foreshafts. Reinterpret sediments to indicate butchery event occurred on erosional surface during dry period, not in wet (pond) conditions. Mammoths were adult, M + F, stood 12-13 feet tall. Bones show 2-3 yrs of weathering after death. Cut marks and other damage to bones at joints, including marks interpreted as from prying apart footbones using the bone rods (gouge + compression marks from beveled tips). One rib fragment has engraved lines interpreted as abstract design [but unconvincing in the photos.] Smoothed gnaw marks interpreted as work of dogs. Elephant joints easy to dismember while fresh, so cut marks here suggest working with rigid (ie scavenged) carcass, as does the attention paid to feet. Points in upper front of body, butchery tools assoc with head and lower limbs also suggests scavenging of animals previously wounded and carrying points in their bodies.

Savage-Rumbaugh, Sue and William Mintz Fields
2006 Rules and Tools: Beyond Anthropomorphism. In *The Oldowan: Case Studies Into the Earliest Stone Age*. Nicholas Toth and Kathy Schick eds., pp. 223-242. Stone Age Institute Press, Gosport IN.

Saville, Alan
1981 Iron-Age Flintworking: Fact or Fiction? *Lithics* 2:6-9.

Critiques Smith's claim of IA flintworking at Meare West - more likely Neolithic flints included. Types, too few, context poor, etc. Takes view that flintwork pretty much ended during Late Bronze Age.

Saville, Alan
2005 Prehistoric Quarrying of a Secondary Flint Source: Evidence from North-East Scotland. In *The Cultural Landscape of Prehistoric Mines*. P. Topping and M. Lynott eds., pp. 1-13. Oxbow Books, Oxford.

Saville, Alan, and Torben Bjarke Ballin
2000 Quartz Technology in Scottish Prehistory. *Lithics* 21:45-51.

Analyses, typology of collections - quartz tools hard to classify, often bipolar. Common material in Scotland.

Sax, Margaret, Nigel Meeks, and Dominique Collon
2000 The Introduction of the Lapidary Engraving Wheel in Mesopotamia. *Antiquity* 74(284): 380-387.

ca 2000 BC using emory charged bronze to chip and file, followed by drilling, then the lapidary wheel, bow-driven, around 1500 BC.

Scheiber, Larry B.
1989a Great Moments in History: An Ode to Dirty-Hairy. *Chips* 1(3):12.

Scheiber, Larry B.
1989b Newsletter, or Psalm to the Lost Knap-in. *Chips* 1(4):13.

Scheiber, Larry B.
1989c Tips on Deep Notching of Projectile Points. *Chips* 1(2):6-7.

Thin flaker of hard copper, on hard support, grind platforms [hard to follow].

Scheiber, Larry B.
1992a Notes from the Ear-o'Corn Ooga Booga Society. *Chips* 4(1):2.

Scheiber, Larry B.
1992b The Other Side of the Story. *The Flint Knapper's Exchange* 2(2):9-11.

Decrys fakes, defends knappers - not all modern points are fakes - only if sold fraudulently. Knappers + collectors can teach each other. Replicas are good for teaching, display, hobby collecting etc. Fakes not knappers' fault - dealers do most fraud.

Scheiber, Larry B.
1993 Modern Flintknapping - Savior or Scourge? *The Flint Knapper's Exchange* July-August 1993:3.

Ethics - prima donna knappers charge too much, we should get back to fun, not money.

Scheiber, Larry
1995 More on Notching. *Chips* 7(1):9-10.

Scheiber, Larry B.
1995 More on Split Shaft Hafting. *Chips* 7(3):13.

Critiques + compliments Whittaker, defends his split technique [good drawings, should work]

Scheiber, Larry
2001 Observations on E-Notching. *Chips* 14(1):16.

Scheiber, Larry
2010 Field Surgery for Flintknappers. *Chips* 22(3):18.

using exacto knife to remove small flake from cut

Scheiber, Larry B.
2010 More on Those "Indian" Arrowheads. *Chips* 23(3):5.

Cheaper than Gramley said, thick tough material, resisted efforts to improve them. Maybe entirely by indirect percussion [no, only notches are punched] "If these Indian knappers ever start paying attention to details like heat treating and W/T ratios, it's conceivable that you'll rarely ever see another American made replica arrowhead sold ANYWHERE." [Nah, won't happen. Their market doesn't know enough to make the extra effort worth while.]

Scheiber, Laura L., and Judson Byrd Finley
2011 Obsidian Source Use in the Greater Yellowstone Area, Wyoming Basin, and Central Rocky Mountains. *American Antiquity* 76(2):372-394.

Obsidian use in historic period reflects ethnogenesis and change in group territory, with reductions in exotic obsidian trade.

Schick, Kathy D.
1987 Modeling the Formation of Early Stone Age Artifact Concentrations. *Journal of Human Evolution* 16:789-807.

Deliberate planned transport, on-site and off-site manufacture.

Schick, K. and N. Toth
1993 *Making Silent Stones Speak: Human Evolution and the Dawn of Technology*. New York: Simon and Schuster.

Schick, Kathy and Nicholas Toth
2006 An Overview of the Oldowan Industrial Complex: The Sites and the Nature of their Evidence. In *The Oldowan: Case Studies Into the Earliest Stone Age*. Nicholas Toth and Kathy Schick eds., pp. 3-42. Stone Age Institute Press, Gosport IN.

Nice outline of the state of Oldowan research, not just stone tools. Compares several typological schemes and history, lists major sites and finds, associated hominids, current research problems and issues. Many different hominins contemporary with tools starting 2.6 mya - but only a few direct associations; makers + users not clear, possibly several, although *Homo* always assumed to be tool makers. Possibly some regional differences within species. Some tools clearly used in butchering, either scavenging or hunting/power scavenging behavior debated. Other uses also evident including woodwork and plant harvest. Unmodified flakes a major component of tool kits. Raw materials transported some distances, possibly cached. Some evidence of partial working at source, movement of core to sites for further work, and preferential use of better materials. Some sites with evidence of burning, but unclear whether this is natural accident or hominin use of fire. Chimpanzee nut-cracking produces broken rocks but contra claims, they do not resemble Oldowan tools, which show clear, deliberate, and patterned flaking. Spheroids and similar tools are hammerstones [which also implies relatively long use of same tool - hours, making many pieces.]

Schick, Kathy D. and Dong Zhuan
1993 Early Paleolithic of China and Eastern Asia. *Evolutionary Anthropology* 2(1):22-35.

Good overview of lithic technology, problems, sites. Chinese are decades behind in kind of work they do. Probable hominid sites by 980,000. Chopper-chopping tool tradition ignores important flake tool component, but reflects crudity of industries, lack of hand-axe etc.

Schild, Romaald
1987 The Exploitation of Chocolate Flint in Central Poland. In *The Human Uses of Flint and Chert*. G. Sieveking and M. Newcomer eds., pp 137-150. Cambridge: Cambridge University Press.

Mined in limestone. Paleolithic, Neolithic , E Bronze. Refitting. Antler picks.

Schindler, Bill
2011 Experimental Perspectives on Prehistoric Fishing. In *Experiment and Interpretation of Traditional Technologies: Essays in Honor of Errett Callahan*, Hugo Nami, ed., pp. 381-404. Ediciones de Arqueología Contemporánea, Buenos Aires.

Migratory fish in Middle Woodland Delaware Valley – procurement experiments. Archaeol at Abbot Farm, NJ. Construction of fish weir with stone tools, living archaeol experience eating only period-approp foods. Also tried nets, hooks, spears, poison. Processed shad, dried, stored in pits. Weir – various forms made of woven saplings + net, damaged by tide in creek, no fish caught. Cast net, with notched pebble sinkers – difficult to make, worked well, but no fish caught. Poisons – green black walnut hulls, common mullein seeds, tested on a fish in still water, neither worked.

Schlanger, Nathan
1996 Understanding Levallois: Lithic Technology and Cognitive Archaeology. *Cambridge Archaeological Journal* 6(2):231-254.

Good summary + discussion of Levallois ideas and arguments.
Refits L core to show not just pre-set program, nor responses to external traits - but structured, goal-oriented action, mix of plan + responses, mental + material activities. "Standard" argument - L = cognitive ability, thus evolutionary linking Neanderthals to moderns. "Reactionary" view - L = mechanical flake core, response to each flake situation, thus Ns very different from moderns.
On "Marjories Core" 6 sets of preparation followed by L-flake removals. Innovative graphic presentation. Principle: knapper sought good distal condition each time, prepared only from sides to use this distal convexity, removed L-flakes from 2 areas at one end of core.
A plan-like principle enables action with goals, allows variation and problem solving.

Schleicher, Charles
1927 Une industrie qui disparait: La taille des silex moderne. *L'homme Préhistorique* 5-6:113-134.

gunflints in France

Schmitt, Dave N. and David B. Madsen
2005 *Camels Back Cave*. University of Utah Anthropological Papers 125. U of Utah Press, Salt Lake City.

Stratified rock shelter with Fremont and earlier remains. In regional summary p36: "...early Paleoarchaic Folsom, Clovis and stemmed pts were hafted on thrusting or throwing spears..." P 42: Fremont period, bow and arrow appear shortly after 1800 BP, rapid replacement of atlatl, more accurate, greater velocity projectile, multiple shots without spooking prey. Probably self bow first, with Rosegate points, Desert series points come later at Fremont/Late Prehist transition, maybe response to shorter arrows used with backed bows.
Good stratified series of local point types, well illustrated (Elston).

Schneider, Alan L., and Paula A. Barran
2014 The Precedent-setting Case of Kennewick Man. In *Kennewick Man: The Scientific Investigation of an Ancient American Skeleton*. Owsley, Douglas W., and Richard L. Jantz, eds., pp. 90-107. Texas A&M Press, College Station.

The disgusting story of how tribes and our government tried to prevent citizens from getting information from an archaeological find on public lands. "The safety of the skeleton was jeopardized, its discovery site ruined, and millions of dollars wasted before a series of court decisions forced the government to give scientists access to the skeleton." The Corps of Engineers was found to have mishandled every aspect of the case, and violated the law in several places (though they were never even fined); the skeleton was removed from Corps control, and after further obstruction by tribes and government, the plaintiff scientists were allowed to study – find made in 1996, finally studied 2006! [Unfortunately the concluding optimism about the precedents in this case is unjustified; I know of no other significant scientific challenges to the destruction of archaeology under NAGPRA].

Schneider, Joan S.
1996 Quarrying and Production of Milling Implements at Antelope Hill, Arizona. *Journal of Field Archaeology* 23(3): 299-311.

Schnuer, Jenna **clip**
2006 Straight Shooters. *American Way* August 2006: 64-75,

Monroe County Marble Club, KY. Handful mostly old guys maintain "Rolley Hole" game, using hand made flint marbles.

Schnurrenberger, Douglas and Alan L Bryan
1985 A Contribution to the Study of the Naturefact/Artifact Controversy. In *Stone Tool Analysis: Essays in Honor of Don E. Crabtree.* M. Plew, J. Woods, and M. Pavesic eds., pp. 133-161. Albuquerque: University of New Mexico Press.

[They apparently accept the Timlin site - in which case they don't know what they're talking about.]

Schreiber, J.P. and W.J. Breed
1971 Obsidian Localities in the San Francisco Volcanic Field, Arizona. *Plateau* 43(3): 115-119.

Schroeder, Sissel
2007 Evidence for Paleoindians in Wisconsin and at the Skare Site. *Plains Anthropologist* 52(201):63-91.

Statewide distributions of fluted points (Folsom, Clovis).

Schuler, Gary
2010 A Flintknapper's Night Before Christmas. *Chips* 22(1):23.

clever doggerel

Schultz, Jack M.
1992 The Use-Wear Generated by Processing Bison Hides. *Plains Anthropologist* 37(141): 333-351.

Experiments, use wear on expers, ethnog tools

Schumacher, Paul
1951 (1877) Stone-flaking of the Klamath River Yurok. In *The California Indians: A Source Book*. R.F. Heizer and M.A. Whipple eds., pp. 305-307. University of California Press, Berkeley. From US Geographical and Geological Survey Vol III Bull. 3(1877) Art. 17, pp 547-549.

Schwartz, A.
1914 Some suggestions for organized research on flint implements. *Prehistoric Society of East Anglia, Proceedings* 1: 449-454.

Scott, Brandon K. and Colin M. Betts
2004 Lithic Raw Material Utilization at the Lane Enclosure Site (13AM200). *Iowa Archaeology News* 54 (3): 6-7.

Oneota, 17th C, Iowa River. Embankment enclosed village. Debitage 112, tools 20 (including 10 small triangular pts).

Scott, Douglas D. and Thomas D. Thiessen
2005 Catlinite Extraction at Pipestone National Monument, Minnesota: Social and Technological Implications. In *The Cultural Landscape of Prehistoric Mines*. P. Topping and M. Lynott eds., pp. 140-154. Oxbow Books, Oxford.

Scott, George
2005 The Owyhee Obsidian Source. *Indian Artifact Magazine* 24 (2): 12-13; 24 (3): 15, 17.

Snake River area, Idaho. Aka Toy Pass, Oreana, and Brown's Castle. Moderately specific location info, generally small nodules, distrib info. Some basic obsid info.

Scott, George
2009 Timber Butte Archaeology and Ethnology. *Indian Artifact Magazine* 28(1):5-6.

An Idaho obsidian source

Scott, Karen West
1980 Antler and Bone Artifacts from the 1980 Season at Colha, Belize. In *The Colha Project Second Season, 1980 Interim Report*, T. R. Hester, J. D. Eaton, H. J. Shafer eds., pp. 317-326. Center for Archaeological Research, University of Texas, San Antonio.

including 22 antler billets, utilized on ends and often worn on sides from handling. Consistently assoc w E PostC lithic wkshps and middens. 1 antler tine pressure flaker w worn tip, Early PostC. Possible atlatl spur (drawn), L C. [bipointed and grooved, unclear to me whether it is spur or not].

Scott, Michael J.

1995 How Much is a Scraper? Curation, Use Rates and the Formation of Scraper Assemblages. *Lithic Technology* 20(1):52-72.

Paleoindian end scrapers – usewear, debitage

Seddon, D.
1966 Function of Hand Axes. *Man* N.S. 1:244-245.

Sedig, Jakob W.
2014 An analysis of non-utilitarian stone point function in the US Southwest. *Journal of Anthropological Archaeology* 34:120-132.

Ethnographic and archaeol evidence that some stone points were 'non-utilitarian' in use. Compiles ethnog accounts mostly from SW but also elsewhere in N. Am. Uses several categories of non-util use: Hunting/war ritual items, including Zuni fetishes; Death ritual and afterlife - used for cleansing, in graves, = heart of deceased deposited at place of death; Medicinal objects/safeguards against danger - more specifically witches and ghosts, exorcisms, amulets, directional guards, to find lost objects; Supernatural objects - many associations with lightning, killing monsters or witches, found in ruins, according to Hill Navajo forbidden to make stone points and relied entirely on collection of pts given to the ancestors by Horned Toad People and the Giant, Cherokee story of pts sent by sorcerers as malignant magic; Curation, Gathering, and Exchange - most tribes collected old pts for above purposes, used as gifts; Games and other rituals - used as magic in games. [His categories overlap - the real themes are use of *old* points in ritual/magic of all sorts]

No ethnog info on final deposition of non-ut pts [except graves], but for parameters of activities they might be used in.

Archaeol analysis - over 600 pts from N SW [4-corners] PII-PIII (900-1300 AD) - 9 sites, Albert Porter, Aztec, Bluff Gt Hs, Edge of Cedars, Gnatsville, Salmon, Shields Pueblo, 2 small pueblos (so biased toward Chacoan great house sites because lg sites have more pts). Indications of non-ut use - increased size, low power magnif use-wear on edges, breakage, odd provenience (but difficult data to assess, biased by excav), raw material (color, general stone types, not sourced, local = common; non-local = few sources [messy and not too useful]), typological classes as used by others. Individ variables less useful than when combined.

275 pts complete for metrics, find 44 short thick outliers, 42 long thin outliers

Breakage (58% of pts, mostly tip and base breakage, assumed to be through arrow use. Use-wear on 60.4% of 649 pts 'from having been fired' - blunting, dulling, edge rounding, smoothing = arrow use, but also 23 with sawing, 20 reused as drills.

Comparing metric outliers, short thicks had less wear than long thins, so more used, more rejuvenated. 153 pts complete with no use damage (CNU) are 24% of pts - this is category most likely to be non-ut. CNU tend to be longer than complete pts w usewear [but all pts are small and diff is small: CNU av = 256mm, CWU av = 229mm]. Long thin pts more likely to be recovered in kivas [very slight trend in bad data as he admits] Most pts of 'local' stone; most 'non-local' from Chacoan sites [categories too broad to be useful] but no evid of special use of special materials.

[Then tries to fit arch evid to his ethnog non-ut categories, with poor success] Curated pts: a few pts of old types [unclear what except a Bajada from Bluff - including such pts in his metrics messes them up]. 2 pts in jar w F burial at small site, some pts from Aztec prob w burial - both instances show odd wear/modif. Other small site has 4 pts from kiva. Burial examples outside his sample: PBonito, my Grasshopper data, Hohokam, Mimbres bowl portraying arrowhead necklace.
[Useful ethnog compilation, arch anal is ok, but shows that the odd details are more revealing than the statistical trends. I'm cited but not acknowledged; I provided early draft of Whittaker and Kamp 2016 as he began MA project, and reviewed an early version of this paper].

Seeberger, Fritz
1981 Feuerstein und Feuererzeungung. In *5000 Jahre Feuersteinbergbau: Die Suche Nach dem Stahl der Steinzeit*. Gerd Weisgerber, ed., pp. 326-328. Bochum: Deutschen Bergbau-Museum.

Flint and steel fire starters. In German.

Seeman, Mark F., Thomas J. Loebel, Aaron Comstock, and Garry L. Summers
2013 Working with Wilmsen: Paleoindian End Scraper Design and Use at Nobles Pond. *American Antiquity* 78(3):407-432.

Understanding form + function in reductive technologies from not just planned stages, but also contingencies and conditions of use. Refitting, salvage of damaged scrapers, microwear.

Seeman, Mark F. and Olaf H. Prufer
1984 The Effects of Cultivation and Collecting on Ohio Fluted Point Finds: A Cautionary Note. *Midcontinental Journal of Archaeology* 9(2): 227-233.

Finds only weakly correlate with population and cultivated acres by county. Majority of pts found by collectors NOT in their county of residence.

Selbert, Pamela
1996 Prehistoric Connection. *Lapidary Journal* 50(6):57-58, 60, 62, 64.

Dale Cannon, knifemaker interviewed. [Some inaccuracies in describing knapping, but ok]

Sellers, George Ercol
1886 Observations on Stone-chipping. *Smithsonian Institution Annual Report for 1885*. Pp. 871-891. Washington: Govt Printing Office.

[Really excellent early work, but also example of lack of scholarly communication: F. Peale 1861 cites T. R. Peale as witness + source of info. Sellers knew Peale but apparently got little info. Sellers describes pressure flaking by lever, but Webster 1889 writing in same series describes similar with a note that he hasn't seen anything like it published.]

Mentions female knappers. Early 1800s, loss of art - iron points among pre-contact groups. Info much from Catlin - chest pressure, primitive vise, trade and quarrying, hard hammer percussion, chest pressure plus perc.

Experiments - good insights, begin to suggest platforming. Recognizes that his experiments not necessarily how it was done. Debunks bevelled pt as spinner – suggests from context use as knives, also ease of bevel flaking, suggests change in form thru resharpening. Notes crushing and flaking on road, experiments with mechanical crushing to produce "drift implements" implying their natural origin.

Sellers, Mary
1973. The Secret Notebook for the Practicing Archaeologist: With Preliminary Notes Toward an Ethno-Science of Archaeology. *Plains Anthropologist* 18(60): 140-148.

Humor.

Sellet, F.
1993 Chaine Opératoire: The concept and its applications. *Lithic Technology* 18:106-112.

Semaw, Sileshi
2006 The Oldest Stone Artifacts from Gona (2.6-2.5 Ma), Afar, Ethiopia: Implications for Understanding the Earliest Stages of Stone Knapping. In *The Oldowan: Case Studies Into the Earliest Stone Age*. Nicholas Toth and Kathy Schick eds., pp. 43-76. Stone Age Institute Press, Gosport IN.

Semaw, S., P. Renne, J.W.K. Harris, C.S. Feibel, R.L. Bernor, N. Fesseha, and K. Mowbray
1997 2.5-million-year-old Stone Tools from Gona, Ethiopia. *Nature* 385:333-336.

[See Wood 1997] Oldowan tools securely dated between 2.6-2.5 mya. Trachite, rhyolite, and basalt used. Clear flakes, some hammerstones, multiple detachments on many pieces. No retouched flakes, less variable cores than Olduvai. Relatively sophisticated knowledge of concoidal fracture predicts that earlier tools will be found. No hominid assoc, *Austral. aethiopicus* and *Homo* known elsewhere from same age strata.

Semenov, S. A.
1973 *Prehistoric Technology: An Experimental Study of the Oldest Tools and Artifacts from Traces of Manufacture and Wear*. Bath: Adams and Dart.

The historical beginning for current use-wear study.

Seong, Chuntaek
2008 Tanged Points, Microblades, and Late Paleolithic Hunting in Korea. *Antiquity* 82(318):871-883.

Tanged pts on heavy blades, some bifaces, back to 30 kya, interp as knives or spear pts. After ca 17 kya, microblade assemblages without tanged pts, interp as spear point inserts.

Ca 10 kya, “arrowheads” (small triangular bifaces) appear. Early focus on large game with thrusting or hand thrown spears. Later shift to smaller game, with lighter microblade points, plus contemporary bifacial points for large game. Finally bow and arrow for small game, better in wooded environment. [Relies heavily on US lit, overgeneralization about functions and game.]

Seton, Ernest T.
1903 *Two Little Savages*. Mineola: Dover Publications Inc.

Seymour, Deni J.
2004 A Rancheria in the Gran Apacheria: Evidence of Intercultural Interaction at the Cerro Rojo Site. *Plains Anthropologist* 49 (190): 153-192.

Refuge site of 1700s in S New Mexico. Stone ramparts, huts, tipi rings. Lithic assemblage as ethnic markers, part of evidence for different cultures interacting: Cerro Rojo Complex = Apache et al., Canutillo Complex = Plains Nomad groups. CRC has notched small triangular points sim to Desert Side Notched [and some of our Flagstaff forms] – some short high notched and basal notched, some low notched. She gives new type names. CC has short broad un-notched Small Triangular Point forms and STP with concave and flared bases like some Hohokam forms.

Shackleford, Steve
1987 Blades for the Present from Methods of the Past. *Blade Magazine* Sept/Oct 1987:20-21, 50, 54-55.

Callahan interviewed and described [mediocre]

Shackley, Myra
1982 Ŧhing-Ŧhais : An Early Holocene Stoneworking Site from the Central Namib Desert. *Madoqua* 13(4) : 271-279.

Non-microlithic, Late Stone Age industry - core scrapers and flakes, assoc with ostrich eggshell beads.
Manuf on local quartzite, some non local finer stone. Rare Levallois technique cores and pts. Very primitive knapping - random blows, thick flakes, unprepared platforms, lots mistakes.

Shackley, Myra and Howard Kerr
1985 Ethnography and Experiment in the Interpretation of Quartz Artifact Assemblages from Namibia: An Optimistic Attempt. *Lithic Technology* 14(2): 95-97.

‘the most pessimistic prediction confirmed’
Hard to interpret tools, use wear and ethnog not very helpful, extremely crude.

Shackley, M. Steven

1988 Sources of Archaeological Obsidian in the Southwest: An Archaeological, Petrological, and Geological Study. *American Antiquity* 53(4):752-772.

Shackley, M. Steven
1990 The Obsidian Flaked Lithic Technology of Ishi. Lowie Museum of Anthropology, University of California, Berkeley.

[part of an exhibit catalog ? - no page numbers or full ref info.] Brief discussion, makes point that Ishi changed his knapping style and point forms from pre-contact to when in museum.

Shackley, M. Steven
1992 The Upper Gila River Gravels as an Archaeological Obsidian Source Region: Implications for Models of Exchange and Interaction. *Geoarchaeology* 7(4) :315-326.

Alluvial sources = wide distribution. Mule Creek source and unknown in E Arizona. Bipolar reduction.

Shackley, M. Steven
1994 *Little Black Rocks in the Desert: Prehistoric Obsidian in the American Southwest: An Exhibit and Catalog*. Phoebe Hearst Museum of Anthropology, University of California, Berkeley.

[Good] Petrology, outlines source element analysis. Government Mountain projectile point production. Archaic Yavapai area. Baja source at Valle del Azufre. Ethnographic Wintu story of obsidian.

Shackley, M. Steven
1994 *The Stone Tool Technology of Ishi*. Phoebe Hearst Museum of Anthropology, University of California, Berkeley.

[Catalog or pamphlet to accompany exhibit, brief, no pictures except Ishi on front.]

Shackley, M. Steven
1995 Sources of Obsidian in the Greater American Southwest: An Update and Quantitative Analysis. *American Antiquity* 60(3):531-551.

Shackley, M. Steven
1996 Elko or San Pedro? A Quantitative Analysis of Late Archaic Projectile Points from White Tanks, Yuma County, Arizona. *Kiva* 61(4): 413-432.

Argues for ethnic differences in contemporary point styles. [Not too convincing - too small sample, visually unconvincing distinction between two types.]

Shackley, M. Steven
2001 The Stone Tool Technology of Ishi and the Yana of North Central California: Inferences for Hunter-Gatherer Cultural Identity in Historic California. *American Anthropologist* 102(4):693-712.

[Excellent]. Ishi's points are more like Wintu (large Desert Side-notched) than Yahi (Gunther, small basal-notched). Reflecting contact, training, turbulent times?

Shackley, M. Steven
2005 *Obsidian: Geology and Archaeology in the North American Southwest*. University of Arizona Press, Tucson.

Shackley, M. Steven
2009 Two Newly Discovered Sources of Archaeological Obsidian in the Southwest: Archaeological and Social Implications. *Kiva* 74(3):269-280.

Bull Creek in W AZ, marekanites (Apache tears). Bear Springs Peak, Jemez Mts, NM, small very good quality marekanites, possible cultural ties between Jemez and Zuni in 17th C.

Shafer, Harry J.
1976 Belize Lithics: "Orange Peel" Flakes and Adze Manufacture. In *Maya Lithic Studies*. Thomas R. Hester and Norman Hammond eds., pp. 21-34. Center for Archaeological Research, University of Texas San Antonio Special Report 4.

Shafer, Harry J.
1979 A Technological Study of Two Maya Lithic Workshops at Colha, Belize. In *The Colha Project 1979: A Collection of Interim Papers*. T. R. Hester ed., pp. 28-78. University of Texas, San Antonio.

Operations 2001 (E Postclassic), 2006 (Late Preclassic). [See later reports for site info, this paper is essentially same info as 1985.] Details diffs in types of flake and platforms, gives proportions of diff flake types. Distings Hard Stone Hammer (single facet plat, 1%) from Soft Hammer Thinning Flakes (single fac plat 2%, mult fac plat 2%, bifaced lipped plat 24%) and Flake Fragments (71%) at Op 2001.
At Op 2006, Hard S Ham (including tranchet flakes .7%), Soft Ham T Flks (sing fac plat 1%, mult 35%, bifaced lipped 1%) Frags 62%.

Shafer, Harry J.
1979 Experimental Studies at Colha. In *The Colha Project 1979: A Collection of Interim Papers*. T. R. Hester ed., pp. 132-137. University of Texas, San Antonio.

Replication of macroflaking, axe use, tranchet bits by Crabtree, Sollberger, Goode, Bandy, Shafer. Mentioned but little description.

Shafer, Harry J.
1985 A Technological Study of Two Maya Lithic Workshops at Colha, Belize. In *Stone Tool Analysis: Essays in Honor of Don E. Crabtree*, M.G. Plew, J.C. Woods, M.G. Pavesic, eds., pp. 277-315. Albuquerque: UNM press.

[Same manuf sequence info as in others, but photos as well as drawings. See Nash 1980 for some of same debitage data, but better presented here, and analysis differs too.] Op 2001 (Early PostClassic 900-1250 AD) debitage: 744 specimens, from 20 x 20 x 20 cm sample excluding flakes < 15 mm. 530 lack platforms (71%); 24% lipped plat, 2% multifaceted plat, 2% single fac plat (all these soft hammer btf); 1% hard hammer single facet plat. Making laurel leaf thin bifaces, using antler billets.

Op 2006 (L PreC) debitage: half of a 20 x 20 x 20 cm column sample, excluding <15 mm, 1009 specimens [why is this apparently much denser than Op 2001?]. 62% no plat; 1% lipped plat, 35% multifac plat; 1% single fac plat (all these btf); 0.4% hard hammer single fac plat; 0.3% tranchet flakes. Diff from 2001 because bifacing done with soft stone hammers. Making large oval biface and tranchet bit celts.

Shafer, Harry J.
1991 Late Preclassic Formal Stone Tool Production at Colha, Belize. In *Maya Stone Tools: Selected Papers from the Second Maya Lithic Conference*. T. R. Hester and H. J. Shafer eds, pp. 31-44. Prehistory Press, Madison.

Large bifaces made exclusively with biconical limestone hammers. Good illustrations of hammers, oval biface, tranchet biface and tranchet flakes, stemmed macroblade, simple eccentric, bipointed biface, celts used as abraders.

Shafer, Harry J.
2000 The Lithic Artifacts of the Pulltrouser Area: Settlements and Fields. In *Pulltrouser Swamp: Ancient Maya Habitat, Agriculture, and Settlement in Northern Belize*. B. L. Turner and P. D. Harrison eds., pp. 212-245. University of Utah Press, Salt Lake City. (First edition published 1983, University of Texas, Austin).

Attempting to relate stone tools to raised field wetland agriculture. Local chalcedony and chert that is similar to Colha material; tools of it identical to forms from Colha workshops. Distinction: Chert = fine-grained cryptocryst, usually opaque, banded with brown or tan, grey present but rare. Cortex white to brown hydrated, sometimes chalky. Grey to reddish when burned. Chalcedony = somewhat coarser, translucent nodules, white, milky white, cream, ice-blue, light brown. White lace-like hydrated cortex. White or grey when burned. Few formal tools of chal. Oval bifaces, tranchet bit tools , and macroblade tools primary objects obtained from Colha as finished product, then resharpened, recycled. Little debitage from primary core reduction, few cortical platforms, cortex more common on chalcedony. Many resharpening flakes including some with wear or polish, lots reworked fragments of biface tools. Chipped celts with evidence of soil wear, a couple in field context = agric use. Pulltrouser a consumer for Colha production.

Shafer, Harry J. and Thomas R. Hester
1979 Lithic Research at Colha: An Overview. In *The Colha Project 1979: A Collection of Interim Papers*. T. R. Hester ed., pp. 18-27. University of Texas, San Antonio.

Shafer, Harry J. and Thomas R. Hester
1983 Ancient Maya Chert Workshops In Northern Belize, Central America. *American Antiquity* 48(3): 519-543.

Colha site in "chert-bearing zone" mass producing chert tools from 300 BC – 1250 AD. Colha, small regional center, 4 square km, 1000 BC-1250 AD. Chert outcrops along Rancho Creek, nodules up to 1 m, possible open pit quarrying, but much evidence buried or used as structure fill. Chert typically banded or mottled grey, yellowish brown or brown, opaque or faintly translucent. 89 workshops or debitage deposits recorded. Late PreC workshop debris occurs as isolated debitage mounds or sheet deposits along terraces around aguadas. Late Classic isolated deb mounds or talus along edge of platforms. Early PostC mixed with hshld middens around houses or isolated dumps. Blanks are macroflakes from nodules quarried near but not on site. Debris is almost all debitage, manuf failures, or exhausted manuf tools – hammerstones and abraders. Few ceramics but enough to date.

PreC (32 wkshps) 20 cm thick over 15 sq m, to 1.75 m thick over 350 sq m. Oval bifaces, tranchet bit tools dominate, plus macroblade pts and lg biface eccentrics. All with limestone bipoint hammerstones, typically high plat angle w cone initiation. Tranchet flakes allow est of 50,000 tools from one operation.

Classic (17 wkshps) usually off edge of residential platforms. Still oval bifaces, a few tranchet tools, smaller macroblade pts, new emph on chert blades, also thick oval biface celts w truncated end (standard utility tool).

E Post C (12) discontinuity w previous: soft hammer technique on flakes, and antler billets in deposits, laurel leaf pts and small triangular adzes, side-notched pts, tapered biface.

Other related sites: Kunahmul (3 wkshps out of 125 mounds). Chicawate or Rockstone Pond N of Altun Ha, L Classic, veneer deposits. Sand Hill site: nodules 60 cm in sand and clay in low pine area, 30 km N of Belize City, chert is fine-grained gold-brown to grey banded, patinates white, deeply weathered white cortex. Debitage and possible quarry pits, interp as primary resource, not assoc w Kunahmul (6 km away) or other known center.[source for Belize City riprap]

Colha produced 100s of 1000s of tools. Exhausted formal tools in fill indicate some local use and low cost; patterned retouch common but not patterned recycling which is common outside chert-bearing zone. Cuello, Pulltrouser, Cerros et al probable consumer sites, 90-96% of their formal tools imported Colha-like chert.

Discussion of specialization. Colha best evidence in Maya. Long importance as production site, but never really big center; perhaps Altun Ha took over as distrib center, with Colha one of several production sites. Other sites have same tools, different cherts – maybe even specialists moved out from Colha, the largest.

Shafer, Harry J. and Thomas R. Hester
1986 An Ancient Maya Hafted Stone Tool from Northern Belize. Working Papers in Archaeology 3, Center for Archaeological Research, University of Texas, San Antonio.

"Puleston Axe" from wet fill in ancient canal near San Antonio, Orange Walk District. Wooden club handle 41 cm long, with flaked chert axe blade set in socket. Blade is ovate biface 22 cm L by 7.3 cm wide, 2.0 T [quite thin]. Glossy polish on bit suggests woody plant cutting, but no edge damage, maybe agric clearance. Compares to Late Preclassic Colha forms.

Shafer, Harry J. and Thomas R. Hester
1986 Maya Stone-Tool Craft Specialization and Production at Colha, Belize: Reply to Mallory. *American Antiquity* 51 (1): 158-166.

[Explodes Mallory's critique.]
Degree of specializ as continuum, but recog of specs at Colha not just based on quantity of debitage – also disposal patterns, types of raw material + tools, technol analysis, products etc: skilled artisans producing mass of standardized product beyond own needs.
Wkshps because assoc w mounds, evid showed work on platforms, presence of microdebitage. Volume info: matrix = 99% chips. Roemer 1984 ests : 20x20x20 cm sample, ave weight = 7,680 gm = 960,000 gm/m3, compared to Mallory Copan obsid at 8900 gm/m3. Or, 39,649 pc (>3mm)/ sample = 4,956,125 pc/m3, comp to Mallory 3,500. Not quarry refuse, only biface finishing. Not communal – all same standardized tools, low failure rate = high skill, and low variation in product. Not intermittent – no humic development = continuous short span.
New ests of # of wkshps and size increased. Too many assumptions in output/time ests, but if say 36 L PreC wkshps, av 125,000 of two most common tools, total = 4.5 mill, if 250 yr span, then 18,000 tools/yr vs Mallory est 1000tools/yr. Gives some other time estimates to show much spec prod. Pulltrouser evid of consumer site.
Maya craft specialists mostly in small communities around centers, not in centers themselves. Salt + pottery other examples of specializ communities. Colha unusual in chert, also on good agric land, so not compensating for poor agric – part of regional system.

Shafer, Harry J. and Thomas R. Hester
1991 Lithic Craft Specialization and Product Distribution at the Maya Site of Colha, Belize. *World Archaeology* 23 (1): 79-97.

Defining specialists: individual who repeatedly manufactures craft product for exchange, exceeds household needs, varied amounts of time devoted to craft, expect efficiency and standardization. Chert-bearing zone in N. Belize Eocene and Miocene limestones [very young for good chert – this must be an error, everyone else says Cretaceous –see Michaels 1993] At least 3 diff strata, better chert deeper, varies from golden to mottled or banded brown or gray, trace elements can distinguish different outcrops.
Other sites not exploit "at level of craft specialists" but a few wkshps are known at other sites. Colha ca 6 sq km. several 100 mounds. Mid PreC prob "cottage industry" making formal tools like T-shaped adze for exchange. Intensive production began late PreC (36) debitage deposits as wkshp mounds and massive linear dumps on terraces of aguadas, usually overlying low platforms faced w single course of cobbles, or over middens and activity areas of Mid PreC. Making 1 – oval biface, 2 – tranchet bit tool, 3 – long parallel

sided biface (adzes), and 4 – stemmed macroblades (secular and non-sec functions). Also a few eccentrics. Tranchet flakes allow est of >75,000 tools for one wkshp. Est 4.5 million oval bifaces and tranchets over 250 yrs from Colha wkshps. Est 600 pop, so 120 adult men, so 150 tools/man/yr – much more than local need. Comp to New Guinea ethnog.

Density estimates explained: L PreC 603,000/ cubic m; Term C ca 5,000,000. [But these are not really useful, too hard to compare, remembering how hard it was to be consistent in sampling debitage deposits, their use of different standards (3 mm vs 6 mm min size counted) etc.]

Late C (>30 deposits), continuity. Oval biface (but smaller, narrower), tranchet tools, eccentrics (now usually smaller), and "general utility biface" (thick w carefully shaped bit – hafted multipurpose axe). By Terminal C times, also blades and stemmed proj pts – for atlatls, possibly = period of war. [Stretttching it].

Workshop sites at Kunahmul (7) smaller, all stages of production. Chicawate near Altun Ha has 8, Late C, possibly sim to Colha during Late C but not early.

Two areas of consumers: "primary" in N, central, and coastal Bz and Quintana Roo w utilitarian and ritual artifacts, "peripheral" in W and C Bz and into Peten, mostly large stemmed macroblades. Pic of Puleston axe. Lots of evidence of recycling. Colha may have lost control with rise of Altun Ha and became just one of other production sites like Chicawate.

Who controlled production? New Guinea axe making driven by high exchange values, and personal social needs of makers, no central control. But by Late C, Colha production unlikely just for benefit of local entrepreneurs. McAnany believes centers were markets, long-dist trade by petty traders using barter. Even if elite control of resource, local needs may have set volume of production. Learned skill, prob production lineage based.

Shafer, Harry J., Thomas R. Hester, and Thomas C. Kelly
1980 Notes on the Sand Hill Site. In *The Colha Project Second Season, 1980 Interim Report*, T. R. Hester, J. D. Eaton, H. J. Shafer eds., pp. 233-240. Center for Archaeological Research, University of Texas, San Antonio.

Nodules 60 cm in sand and clay in low pine area, recent quarrying 30 km N of Belize City, chert is fine-grained gold-brown to grey banded, patinates white, deeply weathered white cortex. Debitage and possible quarry pits, interp as primary resource, not assoc w Kunahmul (6 km away) or other known center. L Classic blades + cores, preceramic stone bowls. [Until sometime in 2000s when destroyed by concreting, this material was used as riprap on Belize City waterfront, where I and others collected.]

Shafer, Harry J. and Fred M. Oglesby
1980 Test Excavations in a Colha Debitage Mound: Operation 4001. In *The Colha Project Second Season, 1980 Interim Report*, T. R. Hester, J. D. Eaton, H. J. Shafer eds., pp. 51-70. Center for Archaeological Research, University of Texas, San Antonio.

Small deb mound not assoc w plazuela, 19 x 13 m, 1.5 high. Surface indicates completely composed of debitage, with tranchet bit tools and oval bifaces dominating production. Stratigraphy: mound of debitage (BTF w plat trim flakes <1 cm "in such quant as to form sandy-like dust") accumulated over PreC surface in Chicanel times (L PreC), with top developing small humic layer. Over this 1-1.5 m clean debitage with a few sherds and bones, Chicanel and Tepeu 3 ceramics, but little difference in debitage. Reduction of macroblade blanks to make tools, biconical limestone and chert hammers, ad hoc abraders on biface failures. Constant volume deb samples collected but not yet analyzed. BTF with facetted and coned platforms, rarely lips = hard hammer stone use. Production estimates. Secondary mound with L Classic sherds mixed with L PreC may indicate debitage was LPC origin, but used to build a mound in LC.

Sharon, Goren, and Peter Beaumont
2006 Victoria West: A highly standardized prepared core technology. In *Axe Age: Acheulian Toolmaking from Quarry to Discard*. Naama Goren-Inbar and Goren Sharon, eds., pp. 181-199. Equinox Publishing, London.

Big cores to produce side-struck flakes usable for bifacial tool blanks.

Sharp, Lauriston
1952 Steel Axes for Stone Age Australians. *Human Organization* 11(2):17-22. Reprinted many times including In *Man in Adaptation: The Cultural Present, 2nd edition*. Y. Cohen ed., pp. 116-127. Alding Publishing, Chicago. *Conformity and Conflict: Readings in Cultural Anthropology, 6th edition*. J. Spradley and D. McCurdy eds., pp. 389-403. Little Brown and Co, Boston, 1987.

[Classic] Introduction of steel axes impacted all aspects of society because stone axes were property of adult men, acquired through trade partner networks (exchanged stingray spine spears and other things). Women and youths had to defer to male authority to borrow. New steel axes obtained from missionaries, (who were also new humans) challenged belief systems and origin myths, upset trade/social connections.

Shaw, A. Batty
1981 Knapper's Rot: Silicosis in East Anglian Flint-Knappers. *Medical History* 25:151-168.

Discounts likelihood of silicosis in Neolithic - open air, stone hammers.
Gives account of knapping etc from Skertchly. Uses French sources for reports of pulmonary disease among French knappers. Collis 1919 figures 77.8% knapper deaths from silicosis vs 7-12% in general population, but Collis only considered 25 knappers over 25 years.
Checks death registers for Brandon from 1837 to present. 1838-1937 = 100 yrs, 1715 male deaths, 46% less than 10 yrs old. 91 knappers, average age 44, average age of others = 66. 82.4% knappers died from pulmonary tuberculosis, vs only 13.4% in other occupations. Collis found no wife/widow deaths from p.t. but actually there were 21, and 5 of 51 children under 10.
No p.t. miner deaths - mining not exposed to flint dust, so probably Neolithic folk were ok too.

Shea, John J.

1987 On Accuracy and Relevance in Lithic Use-Wear Analysis. *Lithic Technology* 16(2-3):44-50.

Low power is as good as high in blind tests, and faster. [Does not cite McGuire et al.]

Shea, John J.
1988 Spear Points from the Middle Paleolithic of the Levant. *Journal of Field Archaeology* 15(4):441-450.

[Good] Impact damage on Levallois flakes - contra Binford's idea that Neanderthals not hunters. [contrast with Holdaway 1989]

Shea, John J.
1990 A Further Note on Mousterian Spear Points. *Journal of Field Archaeology* 17(1):111-114.

Supports his impact evidence, crits Holdaway for overgeneralizing from his site to all Mousterian. [But misses point: Holdaway's measure is just not as good as his.]. Notes Shanidar wounded rib is possible projectile wound.

Shea, John J.
1992 Lithic Microwear Analysis in Archaeology. *Evolutionary Anthropology* 1(4):143-150.

Tools reflect hominid "activity" (function) and "identity" (style). [Good overall summary of techniques, info accessible, problems, prospects, with bibiliography. A bit jargony in places. Assigned to classes.]

Shea, J.J.
1995 Behavioral Factors Affecting the Production of Levallois Points in the Levantine Mousterian, in *The Definition and Interpretation of Levallois Variability*, H.L. Dibble and O. Bar-Yosef, eds., pp. 279-292. Prehistory Press: Madison.

Shea, John J.
1996 On the Deceptive Simplicity of Lower Paleolithic Tools. *Bulletin of Primitive Technology* 12:11-12, 94.

Hominids were strong, simple tools worked ok. Tools were versatile rather than efficient - could save energy in procurement and manufacture, but such a strategy requires more brain.

Shea, John J.
1997 Middle Paleolithic Spear Point Technology. In *Projectile Technology*, Heidi Knecht ed., pp. 79-106. Plenum, New York.

Stone tipped spears in Middle Pal = shift toward more foresight + seasonal strategy for hunting large mammals with more reliable weapons.
African Middle Stone Age has lots points - Aterian tanged + symetrical thin biface pts, also barbed bone pts 89,000. Mousterian pts more controversial, but if in Africa, why not in Europe?
Some use-wear evidence, but distribution and design evidence is better: Stone pt increases maintenance needs, so better for planned, episodic hunting - like a boar spear, 'reliable' rather than portable + easily maintained. So expect pts and hunt in areas where safer resources are scarce.
Finds more Levallois pts in Levantine Moust sites in steppe where need to hunt than in coastal areas where other resources better [flawed arguments about typology]. Should be able to test in Euro Moust too but not yet.
[A weak distributional argument tries to mask the problem that the fracture and use-wear evidence for point use of Levallois and Mousterian 'points' is not yet very good in 1997 - much better now 2014, and it looks like he was right.]

Shea, John J.
2006 The Origins of Lithic Projectile Point Technology: Evidence from Africa, the Levant, and Europe. *Journal of Archaeological Science* 33:823-846.

Pre-Upper Paleolithic projectile use is debated. Criteria for recognizing stone projectile points is subjective - tool shape and microwear. Tip cross-sectional area is ballistically important, discriminates N Am dart tips and arrowheads from spear points. Comparing TCSA values of ethnog N Am points to possible Middle + Up Pal points from N Africa (Aterian tanged points), Levant (Levallois and Mousterian points), and Europe does not support presence of projectiles before 40,000 BP - these points seem to have been on thrusting or hand thrown spears. In Levant and Europe, the L + M pts contrast with Up Pal Ksar Akil + El Wad, and Chatelperron + Font Robert + Solutrean pts, which do appear to be projectiles. In the New World and Aust, ethnog record of stone projectile points shows they are used in big game hunting and war. One or both of these may have played role in adoption of stone proj pts after 40 Kya. [Some problems: Neanderthals + kin certainly hunted large dangerous animals. Some Australian ethnog stone blade points on woomera thrown spears are very large, like Levallois points.]

Shea, John J.
2006 Child's Play: Reflections on the Invisibility of Children in the Paleolithic Record. *Evolutionary Anthropology* 15 (6): 212-216.

His learning knapping products look like Paleo tools, very small flakes + cores common in arch assemblages, juvenile antlers dominate fossils because years of shedding before deer become adult - juv knapping products should also dominate [not good argument, learning span can be short, adulthood long and productive.] Children could be competent knappers [contradicting above? - and in fact they lack certain strength + coordination basics until ca 6], learning by observation + imitation means at stone sources, which should elevate representation of learning products, learners wasteful + profligate, which may swamp mature knapping, learner products highly variable - is this partly why Paleo cultural variation hard to define?

Expect small, expedient tools from children, but little ethnog evidence. Children's activities may be more economically important than expected. Upper Paleo France recog of diff levels of knapping thru refitting analysis. Child's tools should be small, but lots of adaptive reasons why adults may make small tools too, same with expedience. Spatial segregation of child's activities may not be present or visible in Paleo sites. [Thoughtful "call for action."]

Shea, J., Z. Davis, and K. Brown
2001 Experimental Tests of Middle Palaeolithic Spear Points Using a Calibrated Crossbow. *Journal of Archaeological Science* 28(8):807-816.

Shea, John J. and Matthew L. Sisk
2010 Complex Projectile Technology and *Homo sapiens* Dispersal into Western Europe. *PaleoAnthropology* 2010:100-122. Electronic Document, URL: http://www.paleoanthro.org/journal/content/PA20100100.pdf accessed 5/2010

H.s. expansion at 50,000 years ago with complex behaviors which were earlier seen only occasionally in Africa. "Complex projectile weaponry" is "niche-broadening" allowing new resources, reduced costs. P 102 CPWs store energy extrasomatically to propel low mass projectiles at high speeds: "bow and arrow stores energy in flexion of the bow. The spearthrower stores energy in the flexion of the dart." [NO! see Whittaker 2010]. Sites in the Levant with Late Middle Paleolithic and Early Upper Paleolithic assemblages. LMP points i.e. Mousterian and Levallois points, not suitable for CPW tips, but EUP lots of small narrow stone + bone pts. Tip cross-sectional area TCSA (.5x MaxW x MaxT) [which does not consider hafting additional to this] compared to ethnog + arch specimens of known use including Thomas and Shott examples of darts (ave 58 sq mm, N = 40) and arrows (ave 33 sq mm, N = 118). Levallois points much larger than either dart or arrow TCSAs, experiments show they bounce off animal targets as arrows, work as thrusting spear tips. EUP points [on blades] in range of ethnog points [all but Ksar Akil ElWad pts are in dart range], work experimentally as arrow pts. So are earlier Middle Stone Age pts in Africa, suggesting pre-50 kya development of CPW there.

Best model is that CPW came to Levant 50 kya with populations of early *H. s.* dispersing from Africa. Why not used by earlier Neanderthal and *H. s.* pops in Levant, although they were highly carnivorous? Big game most efficient; small game, and better CPW technology to take it, may have been too costly in time for Ns. High calory requirements of Ns left them no time to develop technology. CPW also promote aggression, which promotes communication and social organization to identify friends and enemies. Ns may not have been good at symbolic behavior. CPWs gave *H. s.* advantage in exploiting more niches than Ns, and in violent encounters.

Sheets, Payson D.
1975 Behavioral Analysis and the Structure of a Prehistoric Industry. *Current Anthropology* 16(3):369-391.

Flow chart type analysis - stages in obsidian manufacture, El Salvador, Mesoamerica. [Good models of industrial stages and influences on artifact form. No info on social factors of industry.]

Sheets, Payson D.
1976 Islands of Lithic Knowledge Amid Seas of Ignorance in the Maya Area. In *Maya Lithic Studies*, T. R. Hester and Norman Hammond eds., pp. 1-10. Center for Archaeological Research, University of Texas San Antonio, Special Report No. 4.

Sheets, Payson D.
1976 The Terminal Preclassic Lithic Industry of the Southeast Maya Highlands: A Component of the Protoclassic Site-Unit Intrusions in the Lowlands? In *Maya Lithic Studies*, T. R. Hester and Norman Hammond eds., pp. 55-70. Center for Archaeological Research, University of Texas San Antonio, Special Report No. 4.

Sheets, Payson
1978 From Craftsman to Cog: Quantitative Views of Mesoamerican Lithic Technology. In *Papers on the Economy and Architecture of the Ancient Maya*. R. V. Sidrys, ed., pp. 40-71. Monograph 8. Institute of Archaeology, University of California, Los Angeles.

Sheets, Payson D.
1989 Recent Research on Obsidian in the Zapotitlan Valley, El Salvador. In *La Obsidiana en Mesoamerica*. Margarita Gaxiola G. and John E. Clark, eds., pp. 419-425. Instituto National de Antropologia e Historia, Mexico D. F.

Sheets, Payson
1991 Flaked Lithics from the Cenote of Sacrifice, Chichén Itzá, Yucatán. In *Maya Stone Tools: Selected Papers from the Second Maya Lithic Conference*. T. R. Hester and H. J. Shafer eds, pp. 163-188. Prehistory Press, Madison.

pretty much the same as Sheets, Ladd and Bathgate 1992, photos better.

Sheets, Payson D.
1993 Dawn of a New Stone Age in Eye Surgery. In *Archaeology: Discovering Our Past, 2nd edition*. Robert J. Sharer and Wendy Ashmore, eds. Mayfield Publishing Company, Mountain View. Reprinted 1998 in *Lessons from the Past: An Introductory Reader in Archaeology*. Kenneth L. Feder, ed., ppl 104-106. Mayfield Publishing Company, Mountain View.

How he got into it, archaeological back-ground, Crabtree surgery.
SEM photos comparing steel and obsidian [poor]. Obsidian 100-500 time sharper than razor, 210-1050 times sharper than scalpel [standards not clear]. Now make them of glass.

Sheets, Payson

2002 The Chipped Stone Artifacts of Cerén. The Groundstone Artifacts in the Cerén Village. In *Before the Volcano Erupted: The Ancient Cerén Village in Central America*, Payson Sheets ed., pp.139-144; 145-150. University of Texas Press, Austin.

Small peripheral Classic Maya village covered by volcanic ash, several housholds excavated.

Each hshld had relatively standard sets of obsidian tools; public buildings differed. Far down exchange system [and remarkably few tools overall]. Obsid from Ixtepeque source ca 75 km NW. Very little debitage = such villages did not make obsid tools, obtained from specialists at larger settlements. Hshld sets: 5-7 obsid prismatic blades in use, plus 4-5 unused cached in roof, a macroblade, and 2-3 scrapers. No evidence of hafting or wrapping for use. High storage of blades = childproofing + protection of edges. Positive protein test for dog, deer, human on blades. Structure 12 shamanic building had only old worn pieces = pickup "cuentecitos" collected for symbolic/supernatural connections. Blades from field + discard contexts worn, broken, patinated. Rare in activity areas = intentional safe discard.

A standard set of goundstone implements. Each hshld had a jade or greenstone axe, a mano and metate, a few grinding/pounding stones, a few donut stones (digging stick weights and perforated mortars), and misc abrading stones. Axes - no evidence of haft or haft wear [!] and prob most valuable item in houses. One hshld apparently manuf donut stones + mano/metates.

[Fascinating to see how very few stone tools these stone age households need! And no real machete equivalent, when in other Maya areas, 'general utility biface' axe forms are so common.]

Sheets, Payson
2003 The Behavioral Model in Maya Core-Blade Technology: A Historical View. In *Mesoamerican Lithic Technology: Experimentation and Interpretation*, K. G. Hirth ed., pp. 10-14. University of Utah Press, Salt Lake City.

Sheets, Payson D., John M. Ladd, and David Bathgate
1992 Chipped-Stone Artifacts. In *Artifacts from the Cenote of Sacrifice, Chichen Itza, Yucatan: Textiles, Basketry, Stone, Bone, Shell, Ceramics, Wood, Copal, Rubber, Other Organic Materials, and Mammalian Remains*. Edited by Clemency Chase Coggins, pp. 153-189. Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge.

Lots of typical Maya/Toltec dart points, mostly triangular with side or corner notches. Most corner notched ones very finely made of non-local chalcedony; Sheets thinks central Mexican connection. A few fine large bifaces, including the blade of the serpent handled knife. Some obsidian blade tools.

Sheets, Payson D. and Guy R. Muto
1972 Pressure Blades and Total Cutting Edge: An Experiment in Lithic Technology. *Science* 175:632-634.

Making blades is the most efficient use of stone in terms of cutting edge per mass.

Sheets, Payson, Kenneth Firth, Fred Lange, Fred Stross, Frank Asaro, and Helen Michelo
1990 Obsidian Sources and Elemental Analyses of Artifacts in Southern Mesoamerica and the Northern Intermediate Area. *American Antiquity* 55(1):144-158.

Shelden, Billy Joe
1997 *Knapping the Big One: Detailed Grinding and Flaking*. VHS. HGR Productions, Folsom, NM.

Shelford, Peter
1982 The Geology of Melos. In *An Island Polity: The Archaeology of Exploitation on Melos*. Colin Renfrew and Malcolm Wagstaff, eds., pp.74-81. Cambridge University Press, Cambridge.

Stratigraphy: crystalline Basement Complex of old metamorphics, overlain unconformably by sedimentary quartzose and fossiliferous carbonates of Mio-Pliocene age, only exposed in S + SW of island. Most of surface 4 periods of volcanism Pliocene to Quaternary.

Obsidian "rapid chilling of water-free acid lava" 1.5-.9 mya Plio-Pleist.

Limited metals along continental plate edges, some Fe, limited Cu zone to manganese, zinc, and galena zone.

Clay minerals from weathering + hydrothermic alteration of volcanic tuffs: bentonite (=montmorillonitic clay) for filler + drill mud. Kaolinite as direct h-t alteration of silico-aluminous volc rock, and a superficial weathering product. Perlite, weathered rhyolitic glass, used as insulation + filler.

Shelford, P., F. Hodson, M. E. Cosgrove, S. E. Warren, and C. Renfrew
1982 The Obsidian Trade: The Sources and Characterization of Melian Obsidian. In *An Island Polity: The Archaeology of Exploitation on Melos*, C. Renfrew and J. M. Wagstaff eds., pp. 182-192. Cambridge University Press, Cambridge.

Early obsid characterization demonstrated Melos material at Franchthi cave in Argolid Greece in Mesolithic and Up Pal levels = early seafaring. Obsid widespread in Aegean in Neo + early BA levels, espec S Greece, Crete, Cyclades, including waste. Used for seals, ornaments, mirrors, statue embellishments in classical times. Other possible sources on Giali Island in Dodecanese off SE coast Turkey, Antiparos in Cyclades, and Anatolia, central Europe, and W Mediterranean. [but Melos assumed primary or only for most of Aegean]

Two main sources: Sta Nychia near Ancient Melos and Demenegaki on E coast, plus green obsidian-like glass at Mandrakia on N coast. Obsid as segregations within rhyolite or rhyodacite domes; or bombs + blocks in ashflows and other clastic sequences.

At Sta Nychia dome, most as gradational lenses in rhyolitic materials, usually 7-10 cm thick, but at one locus 3.6 m thick.

At Demenegaki, also mostly gradational, in belt along cliff top. Cave gallery mining, also in bomb form. Also black volcanic glass, more andesitic in clastic sequences, with white porcellanous highly silicified tuffs [knappable? What does variation in glasses imply for characterization study?]

Mandrakia green glass not good fracture characteristics, no archeol examples.
Characterization studies [but no physical description given] - early used optical emission spectrography, this study X-ray fluorescence and neutron activation. SN and D flows significantly different chemically but not visually - both striated, lack the white flecks of Giali obsidian.
No evidence for different exploitation, occur together at Aegean sites. Melos obsidian predominates in Aegean. Antiparos source pieces too small to use. Giali source used for vases by BA Cretans. Melos obsid not much exported outside Aegean, a few pc from Nea Nikomedia (Macedonia) and Morali (Turkey) etc.

Shelley, Philip H.
1983 Lithic Specialization at Salmon Ruin, San Juan County, New Mexico. PhD dissertation, Washington State University.

Chacoans more specialization than Mesa Verdeans
Uses points, manos + metates. Discusses concept of specialization and archaeological applications.

Shelley, Philip H.
1990 Variation in Lithic Assemblages: An Experiment. *Journal of Field Archaeology* 17(2):187-193.

[Good but unsurprising] Experiment: debitage from novice vs experienced knapper. Beginners: more step fractures, stacks, thickness, fewer recovery flakes, feathers, less platform preparation.

Shen, Chen, and Shejiang Wang
2000 A Preliminary Study of the Anvil-chipping Technique: Experiments and Evaluations. *Lithic Technology* 25(2):81-100.

Shenk, Lynette O. and George A. Teague
1975 *Excavations at the Tubac Presidio*. Arizona State Museum Archaeological Series No. 85, Tucson.

chapter on lithics

Shepard, Kristopher S., and J. Simon Bruder
2000 A Glimpse at Projectile Point Assemblages from Five Archaeological Sites Situated Along the Eastern Periphery of Lonesome Valley, Arizona. In *Archaeology in West-Central Arizona: Proceedings of the 1996 Arizona Archaeological Council Prescott Conference*. T. Motsinger, D. Mitchell, and J. McKie eds., pp. 27-37. Sharlot Hall Museum Press, Prescott.

Prescott area types: M Archaic – Pinto, Bajada, Chiracahua, Gypsum Cave; L Archaic – San Pedro; Formative – minimally corner-notched ovoids; Protohistoric – Cottonwood Leaf [real crude], Desert Side-notched [Yavapai]. Mostly “fine grained basalt” espec early when pts likely to be resharpened and need to be tougher.

Shepherd, Walter
1972 *Flint: Its Origins, Properties, and Uses*. Faber and Faber, London.

[A nice readable book but some problems.] Basic geology and characteristics of flint [generally good but somewhat dated, some inaccuracies in discussing chert vs flint and basic flint fracture.] Long section on early tools and methods of manufacture [outdated and not very good – lots of inaccuracies and mistakes, bad old drawings of knapping techniques, really doesn't understand stone tools.] Good enough general section on modern uses of flint including fires [but not as early as claimed from old sources], flint+steel, gunflints and knapping at Brandon, with other sites listed and a map. The knapping process described adequately but not in great detail, good pics of products but not of knappers. Knapped building and facing stone.

Sheridan, Alison, Yvan Pailer, Pierre Pétrequin, and Michel Errera
2011 Old friends, new friends, a long-lost friend and false friends: Tales from Project JADE. In *Stone Axe Studies III*. Vin Davis and Mark Edmonds, ed., pp. 411-426. Oxbow Books, Oxford.

Sherratt, Andrew
1987 Neolithic Exchange Systems in Central Europe 5000-3000 BC. In *The Human Uses of Flint and Chert*. G. Sieveking and Mark Newcomer eds., pp. 193-204. Cambridge University Press, Cambridge.

Sherwood, Sarah C., B.N. Driskell, A. R. Randall, and S.C. Meeks
2004 Chronology and Stratigraphy at Dust Cave, Alabama. *American Antiquity* 69 (3): 533-554.

Point types include Quad/Dalton, Early Side-notched, Kirk, Eva, Benton over 7000 yr span.

Sheward, Chris
1989 Replicating the Danish Dagger Type I-C. *Chips* 1(2):8-9.

Flaked and ground before final flaking. Grinding took 4-16 hours.

Shewey, Charles
2001 A Rare Paleo Square Knives Cache. *Prehistoric American* 35(1):30-31.

Big thin rectangular knives, little info. One repaired in prehistory.

Shewey, Charley and D.C. Waldorf
1998 An Interview with Charley Shewey. *Chips* 10(3):12-20.

Early history of non-academic knappers, fakers, and collectors - pretty much what Charley told me.

Shimelmitz, Ron
2011 Lithic Industries of Prehistoric Anatolia: An Overview. In *Reflections of Ancient Anatolian Society in Archaeology: From Neolithic Village Communities to EBA Towns and Polities*. J. Yakar, ed., pp. 477-536. Homer Kitabevi, Istanbul.

[Dreadfully boring review of site by site typology and proportions of obsidian/flint, etc basics, followed by somewhat more interesting discussion of major social themes and trends. Discussion focuses on sickles [little recognition of threshing sledge presence beyond citing Anderson] and arrowheads, for which there is a typology, but incoherent and not well tied to chronology or regional variation. Persistent misuse of some concepts: bi-directional opposed platform "naviform" cores for blades for instance are incorrectly called "bipolar," and I don't think most of the people working in this area know much about practical stone tool technology. Reasonably well illustrated with drawings of typical tools. Because the map of sites in Yakar's main text is so bad, it is even hard to figure out where sites are, or patterns of obsidian vs flint use, or possible source areas.] "With a few exceptions, serious effort toward the identification and mapping of local flint sources/quarries is still lacking." p. 480.

"Bullet" pressure blade cores and microblade cores start early and continue, while naviform cores in Aceramic Neo use bidirectional flaking to produce straight blades that need little modification to make points and sickle edges. These decline in the ceramic Neolithic in favor of simpler technol and less standardized blades. Points also decline after aceramic Neo, as agric grows, also shown by increase in sickle blades. Obsidian exchange system not clear, maybe gifting + down the line, but some local centers of production getting core preforms argues other. Developing specialization shown by blade cores. Caches at Catalhuyuk and elsewhere, ritual, some very large numbers of blades. Knapping assoc w men by ethnog analogy (Australia), blades + points assoc w males and male burials. Blades relate to sickles, relate to agric, relate to "Neolithic package" changing life styles.

Shimelmitz, R., R. Barkai, and A. Gopher
2000 A Canaanean Blade Workshop at Har Haruvim, Israel. *Tel Aviv* 27: 3-22.

Early Bronze Age II-III settlement in central Israel. Rock heap = workshop debris. Surface quarrying of local flint. Flake cores as well as Canaanean cores, which are tabular, with heavily facetted platforms and detachment surface on one end. Small "core tablet flakes" removed to prep plat with a bulb for punch seat, and to isolate a ridge. Narrow core end helps with wide flat blades when sequence starts at corner, uses each resulting ridge in turn. [Useful, illustrated, but confused by clumsy explanations and some serious problems with English lithic terms, eg. they often use "blank" when they mean flake.]

Shippee, J. M.
1963 Was Flint Annealed before Working? *Plains Anthropologist* 8(22):271-272.

ref in Mandeville 1973, reports on cache or heat treatment site. [Charley Shewey told me about this 1992]

Shippee, J. M.
1966 The Archaeology of Arnold Research Cave, Callaway County, Missouri. *The Missouri Archaeologist* 28:1-107.

Excav 1955-1958 of ca 40%. Sandstone cave 120 x 70 feet, some dry deposits with organics - cloth, sandals, wooden artifacts. Material from Archaic to L Woodland, no contact period artifacts, historic use for saltpeter extraction. Good quality flint in local limestone. Fill in cave 6' deep, much disturbed, excav in arbitrary 6" levels, screened ¼" mesh [not bad for the times]. Talus deposits included mixed fill leached and discarded by saltpeter works, over loess suitable for local pottery.

Top of cave had burned wooden troughs of saltpeter leaching ca 1825. Process described. Cave deposits have Dalton, Graham Cave and unnamed thick lanceolate points, also some notched forms and Woodland forms [which are not described.]

P 18, fig 4, fig 12: Antler atlatl hook + 2 lanceolate points assoc with C14 date [on charcoal?] of 6,720 ± 300 BP or 4761 BC [uncalibrated, also context is disturbed so association not perfect, and he consistently assumes C14 dates are precise to the year, a usage no longer accepted]. [The drawings show a hook socketed to fit end of atlatl shaft, and a thick broad lanceolate point, probably Sedalia type. Also in Fig 12, two antler atlatl hooks of conical form with grooves for lashing, and a socketed antler segment that is probably an atlatl handle.] Fig 10 shows segment of cane shaft with fiber wrapping. Fig 9 shows two dart foreshafts, one with side-notched point attached with lashing of flat untwisted vegetal fiber (p.23). Both apparently from disturbed fill with later artifacts.

Shoberg, Marilyn
2010 Functional Analysis of Clovis Tools. In *Clovis Technology*. Bradley, Bruce A., Michael B. Collins, and Andrew Hemmings, eds., pp. 138-156. International Monographs in Prehistory, Ann Arbor, MI.

Microwear analysis of various specimens. Points from Gault show projectile and butchery use. Gault adze shows wood chopping, small fluted point has striated impact wear from spear use. Different angles of striation could be multiple events, but Gault staff experiment showed C point propelled by atlatl into ballistic gell changed direction in wound as shaft flexed. Blade and flake tools from Gault show diversity of uses including butchery, hide scraping, wood and bone work, grass cutting.

Shott, Michael
1986 Technological Organization and Settlement Mobility:An Ethnographic Examination. *Journal of Anthropological Research* 42(1):15-51.

Shott Michael J.
1993 Spears, Darts, and Arrows: Late Woodland Hunting Techniques in the Upper Ohio Valley. *American Antiquity* 58(3):425-443.

Shift from notched or stemmed to generally smaller triangular bifaces in eastern N. America between 1500 and 1200 B.P. often interpreted as introduction of bow and arrow.

Numerous theories of cultural change discussed: increased hunting and warfare efficiency, fall of the Hopewell, population dispersals, etc.

Test with data from two late Woodland sites. Childers site, 1295 B.P. wide range native domesticates and wild plants, mostly late notched point forms e.g. Chesser and Lowe. Woods site 950-1150 B.P., sharp increase in maize, mostly late triangular points like Levanna, Madison, Hamilton. Some overlap, but neither has small side-notched forms. Uses Thomas 1978 discriminant function to classify points as either arrow or dart. Discusses problems with this method. All of the triangular, and most of the notched points, especially from later Woods site, are classed as arrow points. Alternatives: at introduction of bow (somewhat earlier than believed), stemmed/notched points diverged into two uses, or Thomas model misclassifies some dart points as arrows (because based on small sample of darts), and because larger notched forms more likely to be reduced in size by damage and resharpening.

Ethnographic data questions assumption that bow and arrow is more efficient than spear hunting – more likely complementary. Hard to judge from experiments whether bow more efficient or effective than atlatl.

Shott, Michael J.
1994 Size and Form in the Analysis of Flake Debris: Review and Recent Approaches. *Journal of Archaeological Method and Theory* 1(1):69-110.

Shott, Michael J.
1996 Stage Versus Continuum in the Debris Assemblage from Production of a Fluted Biface. *Lithic Technology* 21(1):6-22.

Experimental point, numbered flakes, stages not evident, but multiple regression indicates that dorsal scar N, flake weight, and platform width predict removal order in reduction continuum. [Mediocre biface knapped by Garney, site excavator for Simons, apparently by soft hammer only. Hard to read - micro statistical analysis, dull. Looks like the variables do show continuum - expectable, but that doesn't rule out staging in this or other cases, although 1 biface by one knapper using single tool may show less than most.]

Shott, Michael J.
1997 Lithic Reduction at 13HA365, a Middle Woodland Occupation in Hardin County. *Journal of the Iowa Archaeological Society* 44:109-120.

Biface reduction, Maynes Creek chert, workshop site. Size distribution profile analysis.

Shott, Michael J.
1997 Stones and Shafts Redux: The Metric Discrimination of Chipped-Stone Dart and Arrow Points. *American Antiquity* 62(1):86-101.

Extends Thomas 1978 approach to classifying points as atlatl dart or arrow (using discriminant function based on ethnographic and archaeological specimens) by increasing the sample of darts (Thomas had few) and rate of successful classification.

Shoulder width of points turns out to be the most important variable for discriminating between arrow and dart points.
Arguments by Odell for Archaic flake arrow points and by Amick and Patterson for Paleoindian bows briefly discussed.

Shott, Michael J.
2000 The Quantification Problem in Stone-Tool Assemblages. *American Antiquity* 65(4):725-738.

How fragmentary tools are counted affects interpretations.

Shott, Michael J.
2002 Weibull Estimation of Use-Life Distribution in Experimental Spear-Point Data. *Lithic Technology* 27(2):93-109.

Statistical technique applied to distribution of failure rates in samples of experimental points suggest that in small points, failure rates are related to chance breakage, but heavier points with more obtuse angles survive better because they resist chance breakage and use-life relates more to cumulative attrition. Small sample of published data (3) with numbers of throws for individual points, varying techniques and goals, and differing materials.

Shott, Michael J.
2003 Chaine Operatoire and Reduction Sequence. *Lithic Technology* 28(1):95-105.

"In short, reduction sequence signifies and accomplishes all that is useful in *chaîne opératoire*, and has for many years." Starts with Holmes, further in "New Archaeology", well-integrated in US, especially lithic studies. Refs for origin of both concepts. "The concept [of *chaîne opératoire*] is at once as valuable and original as would be the introduction of *pain tranché* to those already familiar with sliced bread."

Shott, Michael J.
2005 The Solutrean Connection and New World Colonization. *Newsletter of the Iowa Archaeological Society* 54 (4): 4-8; 55 (1): 1-3.

The many reasons Clovis is unlikely to have Solutrean roots amusingly reviewed: 5-7000 yr temporal gap, lack of postulated coastal/marine adaptations, distance and difficulty of transit, superficial technological similarities, ambiguous genetic evidence. See Strauss.

Shott, Michael J.
2007 The Role of Reduction Analysis in Lithic Studies. *Lithic Technology* 32(1):131-141.

Commenting on the other papers in this issue of LT. Once again, reduction sequence = *chaîne opératoire*, there is no essential difference. Neither pays enough attention to resharpening and other modification of the finished tools.
Contra Raviele (2007) heat treatment runs opposite to idea that horticultural tools are "expedient" - it requires more effort.

Shott, Michael J.
2008 equal o nll roofht w ded l e vsbr cted: A Proposal for Conservation of Private Collections in American Archaeology. *The SAA Archaeological Record* 8(2):30-35.

Arch record, espec without private collections, is like Gettysburg address jumbled (the title). Need to preserve what info is with them. Diff kinds of collectors, problems of faking + records, stats on numbers of points in private hands discussed.

Shott, Michael J. and Jesse A. M. Ballenger
2007 Biface Reduction and the Measurement of Dalton Curation: A Southeastern United States Case Study. *American Antiquity* 72(1): 153-175.

"Expended Utility" measure of curation + use: ratio of blade width at 30 mm above base to base width - reflecting resharpening of blade from original width assumed to be sim to base width. Arkansas special context Dalton points (Sloan, Hawkins) not as curated as Oklahoma occupation context ones.

Shott, Michael J., David A. Hunzicker, and Bob Patten
2007 Pattern and Allometric Measurement of Reduction in Experimental Folsom Bifaces. *Lithic Technology* 32(2):203-217.

Reduction during "life" changes artifacts; measurements standardized as ratios with thickness work well in this case. Damage especially to thin tips of exper Folsoms fired into beef carcasses.

Shott, Michael J. and Paul Sillitoe
2004 Modeling Use-Life Distributions in Archaeology Using New Guinea Wola Ethnographic Data. *American Antiquity* 69(2):339-355.

Use-life affects size and formation of assemblages, both mean use-life and variation around the mean. Examines Wola artifact use-life and comparative survivorship using Weibull model. Estimates use-life in Paleoindian stone tools.

Shott, Michael J. and Brian W. Trail
2010 Exploring New Approaches to Lithic Analysis: Laser Scanning and Geometric Morphometrics. *Lithic Technology* 35(2):195-220.

Shreeve, James
1995 *The Neanderthal Enigma*. William Morrow and Co, New York.

extensive discussion of Bordes/Binford debate, with scurrilous quotes about Dibble!

Schroth, Adella, and Robert M. Yohe
2001 Obsidian Use and Technological Change in Rose Valley: Conclusions Based on the Analysis of Debitage from Two Sites. *Lithic Technology* 26 (1): 50-70.

Sidera, Isabelle
1995 Relations minières/habitat: Un problème de méthode le potentiel des artifacts osseux. In *Les Mines de Silex au Néolithique en Europe: Avancées Récentes*. J. Pelegrin and A. Richard, eds, pp.115-134. Comité des Travaux Historiques et Scientifiques, Vesoul.

Antler tools

Sidoroff, Marie-Louise
2011 The Ceramic Legacy of Errett Callahan. In *Experiment and Interpretation of Traditional Technologies: Essays in Honor of Errett Callahan*, Hugo Nami, ed., pp. 537-558. Ediciones de Arqueología Contemporánea, Buenos Aires.

Ethnoarchaeological research with Juan Chavarry, a potter who replicates ancient Peruvian ceramics from local clay and temper gathered in the Jequetepeque Valley on the north coast of Peru. Copies pots in Donnan + McClelland book on fineline Moche pottery. Signs + labels work on bottom, sells $20 per pot.

Sidrys, Raymond, and John Andreson
1976 Metate Import in Northern Belize. In *Maya Lithic Studies*, J. R. Hester and N. Hammond eds., pp. 177-190. University of Texas San Antonio Center for Archaeological Research, Special Report 4.

Siegel, Peter E.
1984 Functional Variability Within An Assemblage of Endscrapers. *Lithic Technology* 13(2):1-35.

Low magnification use-wear study of Eskimo scrapers - variety of functions, not just hide scraping.

Siegel, Peter E.
1985 Edge Angle as a Functional Indicator: A Test. *Lithic Technology* 14(2):90-94.

Low magnif microwear study on 67 end scrapers, no significant differences in edge angles for different functional groups.

Siegel, Peter E.
1986 More on Functional Variability Within an Assemblage of Endscrapers: A Reply to Hayden and Bamforth. *Lithic Technology* 15(2):71-77.

Sievert, April Kay
1992 *Maya Ceremonial Specialization: Lithic Tools from the Sacred Cenote at Chichén Itzá, Yucatán*. Prehistory Press, Madison.

Sievert, A. K.

1992 Root and Tuber Resources: Experimental Plant Processing and Resulting Microwear on Chipped Stone Tools. In *Préhistoire de l'Agriculture; nouvelles approaches experimentals et ethnographiques*. Patricia C. Anderson, ed. Centre National de la Récherche Scientifique, Paris pp. 55-66. and in 1999 *Prehistory of Agriculture: New Experimental and Ethnographic Approaches*. Patricia C. Anderson ed., Monograph 40, Institute of Archaeology, University of California, Los Angeles, pp. 24-32.

Sievert, April K.
1994 The Detection of Ritual Tool Use Through Functional Analysis : Comparative Examples from the Spiro and Angel Sites. *Lithic Technology* 19(2) :146-156.

Sievert, April K.
2011 *Artifacts from the Craig Mound at Spiro, Oklahoma*. Smithsonian Contributions to Anthropology 49. Smithsonian Institution Scholarly Press, Washington D.C.

Artifacts acquired from various collectors. [Very descriptive, little comparative or interpretive analysis.] Small points of various late midwestern types [but illustrated only as line drawings]. A few bifaces and large pts. Maces, including one spectacular one [but only small photo]. Four boatstones or atlatl weights 'usually assoc with earlier Woodland occups when atlatls were in greater use.' Mention of wooden fragments that may be bow or atlatl [but couldn't really tell, no illustrations]. [This was a NAGPRA inventory - has this material now been destroyed by some tribe?]

Sievert, April K. and Karen Wise
2001 A Generalized Technology for a Specialized Economy : Archaic Period Chipped Stone at Kilometer 4, Peru. In *Lithic Debitage : Context, Form, Meaning*. William Andrefsky Jr. ed., pp. 80-105. University of Utah Press, Salt Lake City.

Sigaut, Francois
1993 How Can We Analyse and Describe Technical Actions? In *The Use of Tools by Human and Non-Human Primates*. A. Berthelet and J. Chavaillon, eds., pp. 381-400. Clarendon Press, Oxford.

[Mostly long discourse, a bit muddled application of concepts, OK discussion of analogy and its risks.] Tool + material easily described but actions using tool more difficult, ignored. Should look at linked pairs: hand + tool, tool + material.

Silliman, Stephen
2003 Using a Rock in a Hard Place: Native American Lithic Practices in Colonial California. In *Stone Tool Traditions in the Contact Era*. Charles Cobb, ed., pp.127-150, University of Alabama Press, Tuscaloosa.

Replacement with metal not immediate or just functional, but reflects active choices, symbolic and other. 19th C Rancho Petaluma. Obsidian and chert used differently. Debitage + points discussed [but little detail on points, S+R-like debitage analysis].

Silliman, Stephen W.
2005 Obsidian Studies and the Archaeology of 19th-Century California. *Journal of Field Archaeology* 30(1):75-94.

Methodological issues of sourcing and hydration dating. Rancho Petaluma, N of San Francisco, 1834-1850 had 600-1000 Indian laborers, midden and camp site near main house. Historic beads, glass etc with 1300 obsid pcs, 1200 chert, and 500 other chipped stone. Lots obsid use, several sources, some manuf on site. Hydration shows reuse of older pieces too. Prehistoric use only of Annadel and Napa Valley sources, but at rancho, added Mt Conocti, Borax Lake, Franz Valley, Oakmont, and unknowns = different homeland sources of laborers, wider trade with new groups, labor movement, or other. XRF necessary to detect rare sources.

Sillitoe, Paul, and Karen Hardy
2003 Living Lithics: Ethnoarchaeology in Highland Papua New Guinea. *Antiquity* 77 (297): 555-566.

Wola horticulturalists (sweet potato, pig) routinely using flaked stone tools into 1980s, collection 1988. Most material culture perishable; stone integral to culture but secondary, not accorded any status. Men main makers and users, but women too. Streambed chert nodules, basalt hammers. No specialists, worked at home, but superstition avoids working inside. Direct percussion by men; women use bipolar; [interesting implication of gendered skill difference.] Flakes usually used unmodified or in simple lashed hafts; highly expedient, short use-life. Almost all use was in making other artifacts.

Storage/reuse/discard not much differentiated. Low value tools, small vocabulary. Contrast string – takes 50% of women's manufacturing time, but "male" artifacts of bone or stone survive better. Flaked stone lacks importance because it is locally abundant, substitutes also abundant (bamboo, wood, tusks, ground stone axes), subsistence activities don't require stone (including hunting). [Good short article, many points].

Silsby, Scott
1986 Scott K. Silsby, Flintknapper. *Flintknapping Digest* 3(1):15-20.

interview

Simmons, Scott E.
1995 Maya Resistance, Maya Resolve: The Tools of Autonomy from Tipu, Belize. *Ancient Mesoamerica* 6:135-146.

Tipu is encomienda w church on Macal R, Cayo District. [Near El Pilar]. Colonial period formal stone tools dominated by small side-notched arrow points. Most made on blades, including reused old obsid blade frags [most chert apparently but no quantities given]. Several forms of base, including unthinned platform and fractures from segmenting blade [or common blade snap in manuf]. Most points minimum retouch, usually bifacial but irregular. Base forms may represent ethnic differences in turbulent times of pop movement, warfare and ultimately successful resistance to Spanish, which was centered at Tipu.

[Ethnic marker idea is ok, but since these are very crude minimal-work points, most of the variability may just be meaningless within the small side-notched form.]

Suggests function reflected by small points is hunting small to medium game, birds, iguanas, while the few larger bifaces may reflect atlatl use. [Possible, but this is just the old 'bird point' idea – small arrow points actually are used on all sizes game. And he sees them as 'resistance' which implies human targets. Are the bifaces more likely knives? Are they, like the arrow pts, recycled older stuff?] Arrow pts show little effort, made quickly in large numbers for resistance, ethnohist source says Maya carried 400 arrows each [highly unlikely].

Simmons, Scott
2002 Late Postclassic-Spanish Colonial Period Stone Tool Technology in the Southern Maya Lowland Area: The View from Lamanai and Tipu, Belize. *Lithic Technology* 27(1):47-72.

Simons, Donald B., Michael J. Shott, and Henry T. Wright
1984 The Gainey Site: Variability in a Great Lakes Paleo-Indian Assemblage. *Archaeology of Eastern North America* 12:266-279.

Simpson, Ruth D.
1982 The Calico Mountains Archaeological Project: A Progress Report. In *Peopling of the New World*. J. E. Ericson, R. E. Taylor, and R. Berger eds., pp. 181-192. Ballena Press, Los Altos.

Singer, Clay
1987 Comments on Lithic Collections from CA-SBR-875, CA-SBR-5230 and CA-SBR-5231 in the Manix Basin, San Bernardino County, California. In *Archives of California Prehistory, California Lithic Studies 1*, G. S. Breschini and T. Haversat eds., pp. 57-95. Coyote Press, Salinas.

Singer, Clay, and Jonathon E. Ericson
1977 Quarry Analysis at Bodie Hills, Mono Co., California: A Case Study. In *Exchange Systems in Prehistory*. Timothy Earle and Jonathon Ericson eds., pp. 171-188. Academic Press, New York.

Singer, Ronald, Bruce G. Gladfelter, and John J. Wymer
1993 *The Lower Paleolithic Site at Hoxne, England*. University of Chicago Press, Chicago.

History, stratigraphy, and geology of site. Two assemblages: lower with ovate handaxes and flakes, upper with pointed handaxes, scrapers, flakes. Possible middle, whence Frere's handaxe. Deposit in water, no conjoining at all, some pieces fresh, some worn.

Microwear by Keeley (1993) - meat, hide, surprizing amount of wood work including scraping, adzing, wedging. Handaxes for butchering, but similar to flakes, suggests that they were disposable take-along tools for work away from home base, often butchering.

Sisson, Edward B.
1989 La obsidiana en el comercio del cacicazgo postclasico de Coxcatlan, Puebla. In *La obsidiana en Mesoamerica*. Magarita Gaxiola G. and John E. Clark eds., pp. 331-345. Instituto National de Antropologia e Historia, Mexico D. F.

Skak-Nielsen, Niels V.
2009 Flint and Metal Daggers in Scandinavia and Other Parts of Europe: A Re-interpretation of their Function in the Late Neolithic and Early Copper and Bronze Age. *Antiquity* 83(320):349-358.

Prestige items in male graves - often interpreted as weapons. But more likely implement for slaughter and sacrifice of cattle. Worn edges and inefficiency as evidence not weapons. But more suitable for killing and especially butchering, resharpened = long use

Skakun, N. N.
1992 Évolution des techniques agricoles en Bulgare Chalcolithique (d'apres les analyses tracéologiques). In *Préhistoire de l'Agriculture*. Patricia Anderson ed., pp. 289-304. Centre National de la Recherche Scientifique, Paris.

1999 Evolution of Agricultural Techniques in Eneolithic (Chalcolithic) Bulgaria: Data from Use-wear Analysis. In *Prehistory of Agriculture: New Experimental and Ethnographic Approaches*. Patricia C. Anderson ed., Monograph 40, Institute of Archaeology, University of California, Los Angeles, pp. 199-210.

Includes use-wear recognition of threshing sledge blades in Chalcolithic. [19th C photo of sledge and account precisely similar to Cyprus, their word is transcribed as *dikanja*, plainly from Greek *tikani* related to Cypriot *dhoukani*.] Used a 1930s sledge with new flints for experiments.

Skakun, Natalia N.
2003 Threshing sledges in the Caucasus from Prehistory to the Present. In *Le Traitement des Récoltes: Un Regard sur la Diversité du Néolithique au Présent*. P. C. Anderson, L. S. Cummings, and T. K. Schippers, eds., pp. 389-400. APDCA, Antibes, France.

Skertchly, Sydney B. J.
1879 *On the Manufacture of Gun-Fints, the Methods of Excavating for Flint, the Age of Palaeolithic Man, and the Connexion Between Neolithic Art and the Gun-Flint Trade*. Memoirs of the Geological Society of England and Wales. London. Reprinted 1984, Museum Restoration Service, Bloomfield, Ontario.

[Best and most complete source on British gunflint manufacture.]

Skibo, James M. and Michael Brian Schiffer
1995 The Clay Cooking Pot: An Exploration of Women's Technology. In *Expanding Archaeology*, edited by J. M. Skibo, W. H. Walker, and A. E. Nielsen. University of Utah Press, Salt Lake City.

Ceramics undervalued as technology because assoc with women, easy to learn, and lack mystery of process, vs stone tools which are assumed made by men by difficult processes only now being rediscovered.

Skinner, Craig E., and Kim J. Tremaine
1993 *Obsidian: An Interdisciplinary Bibliography*. International Association for Obsidian Studies Occasional Paper 1.

Skriver, Claus
2004 Use-wear Analysis of Flint Artefacts Used for Cutting Roasted Meat and Fresh Hide: A Methodological Problem? In *Lithics in Action: Papers from the Conference 'Lithic Studies in the Year 2000'*. E. A. Walker, F. Wenban-Smith, and F. Healy eds., pp. 152-155. Oxbow Books, Oxford.

Sliva, R. Jane
1999 Cienega Points and Late Archaic Period Chronology in the Southern Southwest. *Kiva* 64(3):339-367.

Late Archaic - San Pedro + Cienega points - refined typology.
SP = large, corner to side notched. C = smaller, triangular, corner notched, expanding stem, pressure flaked. Cienega subtypes: C Flared, C Long, C Short, C Stemmed.
Rework could make C Long become C short or stemmed, but average C Short not fit model.
Temporal seriation: C Short, C Long, Stemmed, Flared - C14 from 2800-1600 bp.
Thomas/Shott discriminant analysis says all Short and Stemmed, some Flared and Long = arrow points.
San Pedro phase (early) - only large points, then starting early Cienega Phase, small points too. [She thinks she sees fluctuations also, but neither dates on sites nor point sample is adequate to say more than that large and small points coexisted after SP. Lack of small points in SP is also result of too small a sample of both points and sites.]
Larger SP points may have knife functions as they coexist with arrows. So folk were experimenting with bow and arrow by early Cienega Phase (800 BC). [Earlier than most would agree, but possible although point size alone is not adequate evidence.]

Sliva, R. Jane
2006 Synchrony and Variation: Cohonina and Sinagua Lithic Technology Along U.S. 89. In *Sunset Crater Archaeology: The History of a Volcanic Landscape: Stone, Shell, Bone, and Mortuary Analysis*. Edited by Mark Elson, pp. 1-30. Anthropological Papers No. 31, Center for Desert Archaeology, Tucson.

Sliva, R. Jane
2006 Projectile Points in Regional Perspective. In *Sunset Crater Archaeology: The History of a Volcanic Landscape: Stone, Shell, Bone, and Mortuary Analysis*. Edited by Mark Elson, pp. 31-63. Anthropological Papers No. 31, Center for Desert Archaeology, Tucson.

[She assigns type names and tries to map distributions through space + time, useful try, but the data is too scant and unsystematic - her conclusions are not to be trusted very far, and she is too eager to assign new types e.g. “Cohonina Side Notched” on the basis of 4 points, which don’t look like a distinctive form anyway. She also has weird incorrect dates: for Lizard Man Village “1150-1315” and Kahorsho “1100-1300” - both not early enough and too late, simply dates Elden Pueblo “1225” when it has a long occupation, and Winona/Ridge Ruin lumped in “Winona + Padre focus” which is also wrong. She seems to have ignored Grasshopper (my work and Griffin) in her type distributions, and uses Lizard Man weakly.]

[A few notable comparisons between the US 89 sites (which are N and earlier) and our Sinagua sites around Lizard Man Village: she has very few points, 94 STPC from 20 sites, while we have more than twice that from LMV, and Kahorsho was similar; her “Flagstaff Serrated” form (triangular, concave based) is common (27/94 pts), we include these with the Cohonina forms because they grade into the Cohonina/“Red Lake” forms which are also common (21/94), while both these forms are not common for us; Cohonino forms expected to be early, but in fact occur throughout her sequence, and also late in our area as at New Caves. She has almost none of the high-notch forms that we call “Elden” and she calls “Classic Side-notched” tho she notes that they tend to be widely distrib and late, and that Justice’s subtypes occur together in one burial (Magician).]

Slotta, Rainer
1981 Flint und Flinte - Feuerstein als strategischer Rohstoff. In *5000 Jahre Feuersteinbergbau. Die Suche nach dem Stahl der Steinzeit*. Gerd Weisberger ed., pp. 349-361. Deutschen Bergbau-Museum, Bochum.

French gunflint knapping.

Slotta, Rainer
1981 Die heutige Feuersteinindustrie von Eben-Emael (Belgian). In *5000 Jahre Feuersteinbergbau. Die Suche nach dem Stahl der Steinzeit*. Gerd Weisberger ed., pp. 366-374. Deutschen Bergbau-Museum, Bochum.

Flint mining (formerly) and knapping (still in 1980) making grinding teeth/blocks for modern industrial mills.

Smith, Arthur George
1953 Beveled or "Rotary" Points. *American Antiquity* 18(3):269-270.

Beveled points do not produce “rifling” effect or spin on dart or arrow. Most points too big for arrows. Experiment as boy with archery experience, observing flight of unfleched arrows with beveled glass points - showed no rotation [crude experiment but probably right]. Beveling easiest way to shape point of poor material, sharpened held between thumb and forefinger and flaked upward [doubt he was much of a knapper either.] Beveling is result of resharpening while in haft, shown by examples of same base form with blades from excurvate + lenticular to steeply beveled and incurvate edges. Personal experiments: in short haft beveled points work well for skinning, wood work etc

Smith, Cameron McPherson
2004 Native Stone, Bone, Antler, and Hide Production Methods on the Lower Columbia River. *Bulletin of Primitive Technology* 28:71-78.

Illustrated reduction sequences abstracted from a dissertation.

Smith, Carlyle S.
1960 Two 18th Century Reports on the Manufacture of Gunflints in France. In *Indian Trade Guns*. T. M. Hamilton, ed., pp. 40-70. *Missouri Archaeologist* 22.

Dolomieu 1791, Salivet/Gillet de Laument 1797

Smith, Craig S.
1999 Obsidian Use in Wyoming and the Concept of Curation. *Plains Anthropologist* 44(169):271-291.

Smith, Geoffrey M., Pat Barker, Eugene Hattori, Anan Raymond, and Ted Goebel
2013 Points in Time: Direct Radiocarbon Dates on Great Basin Projectile Points. *American Antiquity* 78(3):580-594.

Direct dating of points by C14 dates on organic hafting material or organic bags containing points. N = 83 points from 9 sites and isolated finds, point types classified using Thomas (1981) Monitor Valley key. Most dates fit existing chronological schemes. But – one Elko Eared 7684 cal BP, 2 Large Side-notched [Elkos too] are early, suggests early emergence of those pt types in E Gt Basin. In W, 2 Rosegates with 1965 cal BP, older than usual ests. Humboldt 6707, 4565 cal BP also early. At Nicholarsen Site, NV (Hester 1974) bag contained 67 pts and 34 preforms including 21 Elko, 36 Rosegate, dates 1235 BP which is end of Elko range, beginning of Rosegate, so 2 sizes similar form in use at same time, either both bow and atlatl, or the size/type diff not very meaningful in this cache by one individual. Homogeneity suggests the latter, with one weapon system in use, not both. [From photo of 67 pts, I agree – sizes are not bimodal, and points could work with either arrow or dart.]

Smith, Geoffrey M., Pat Barker, Eugene Hattori, Anan Raymond, and Ted Goebel
2014 Identifying dart and arrow points in the Great Basin: A reply to Hockett et al. *American Antiquity* 79(3):566-569.

Their application of Hildebrandt and King (2012) method showed all Nicholarsen cache 101 pts were arrow pts, because all have same thickness, so probably no overlap between atlatl and bow. We made this point too. [Implicitly they accept the id as all arrow points; I'm not sure, but agree size variation does not support 2 different technologies].
Further argument about Elko vs Large Side-Notched form.

Smith, H. Mike
1994 Design for a Pressure Flaking Tool. *Chips* 6(2):9.

Flat metal strip in handle instead of “weak” wire.

Smith, Heather L., Jeffrey T. Rasic, and Ted Goebel
2013 Biface Traditions of Northern Alaska and Their Role in the Peopling of the Americas. In *Paleoamerican Odyssey*. Kelly E. Graf, Caroline v. Ketron and Michael R. Waters ed., pp .105-126. Tops Printing, Inc., Texas.

Smith, Captaine John
1624 *The Generall Historie of Virginia, New England, and the Summer Isles*. Michael Sparkes, London. Reprinted 1907, The Macmillan Company, New York.

p. 31, Book II (original numbers): “His arrow head he quickly maketh with a little bone, which he ever weareth at his bracert, of any splint of a stone, or glasse in the forme of a heart, and these they glew to the end of their arrows.” [Other interesting ethnographic info too.]

Smith, Martin J., Megan Brickley, and Stephany Leach
2006 Experimental Evidence for Lithic Projectile Injuries: Improving Identification of an Under-recognized Phenomenon. *Journal of Archaeological Science* 34:540-553.

Stone point wounds in bone hard to identify without embedded point. Experiments show can be done both macro and microscopically, and stone points often leave embedded fragments. Used longbow + flint points, shot into bones with some soft tissue [carcasses would have been better]. Also points attached to mechanical striker calibrated in joules (kinetic energy) to compare penetration and tangential strikes on cattle scapulae (structurally similar to human cranium). Several characteristic damage types produced by both experiments; compared to arch specimens. Internal beveling - exterior slot, interior expands [like a concoidal fracture in stone]. Embedded fragments - 14 of 32 impacts, sometimes only microscopically visible, deep and hard to remove, so likely to remain despite medical treatment. Internal striations - microscopic, inside cut, parallel to impact direction, not seen in metal slicing marks. Tangential strikes can produce wounds resembling cut or butchery marks.

Smith, Michael E., Adrian Burke, Timothy Hare, and Michael Glascock
2007 Sources of Imported Obsidian at Postclassic Sites in the Yautepec Valley, Morelos: A Characterization Study Using XRF and INAA. *Latin American Antiquity* 18(4):429-450.

Most Mexican sites have obsid from 3 or more sources. Household excavs at Yautepec show decline in obsid through time, use of multiple sources in similar frequencies, lack of elite/commoner differences - consistent with commercial exchange/market models of obsid trade: grey obsid especially not distinguishable to consumer, so purchased whatever was advantageous from different source offerings by merchants.

Smith, R.A.
1911 *A Guide to the Antiquities of the Stone Age in the Department of British and Medieval Antiquities (2nd ed.)* London: British Museum.

Smolla, Gunter
1987 Prehistoric Flint Mining: The History of Research - a Review. In *The Human Uses of Flint and Chert*. G. Sieveking and M. Newcomer, eds., pp. 127-130. Cambridge University Press, Cambridge.

Snape, S. R. and J. A. Tyldesley
1983 Two Egyptian Flint Knapping Scenes. *Lithics* 4:46-47.

Tombs reproduced, pressure with long tool. Middle Kingdom 2000-1900 BC at Beni Hasan.

Sobel, Elizabeth, and Christopher Cotter
2011 Shifting Mobility Patterns from the Late Paleoindian through Early Archaic Periods: Lithic Debitage Evidence from the Big Eddy Site. *Missouri Archaeologist* 72:21-37.

Sobolik, Kristin D.
1996 Lithic Organic Residue Analysis: An Example from the Southwestern Archaic. *Journal of Field Archaeology* 23(4): 461-469.

55 tools (retouched flakes = “scrapers or agave knives”) with residue. Phytoliths, prickly pear and grass, + yucca and sotol fiber, + rabbit and rodent and ungulate hair IDd. A few of lower edge angle tools had hafting evidence, with yucca and agave fiber. Processing desert succulents, rodents etc meat. General purpose cutting tools.

Sollberger, J. B.
1968 A Partial Report on Research Work Concerning Lithic Typology and Technology. *Bulletin of the Texas Archaeological Society* 39:95-109.

Experiments with lithic knife, abrading knife, hammer, hand axe, pick, chopper, carcass cleaver, billet and soft hammer percussion. [Subjective and amateurish but some good ideas.]

Sollberger, J. B.
1969 The Basic Tool Kit Required to Make and Notch Arrow Shafts for Stone Points. *Bulletin of the Texas Archaeological Society 40:231-240.*

Unretouched edges especially useful. [good info]

Sollberger, J. B.
1976 Bifacing Patterns on Prismatic Flakes. *Bulletin of the Texas Archaeological Society* 47:261-267.

Solberger, J. B.
1977 Fracture Theory Applied to Flaking Forces and Lithic Analysis. Paper presented at Conference on Lithic Use-Wear, Simon Fraser University, March 1977.

Sollberger, J. B.
1977 On Fluting Folsom: Notes on Recent Experiments. *Bulletin of the Texas Archaeological Society* 48:47-52.

Sollberger, J. B.
1978 Comments on Bradley "Hard Hammer - Soft Hammer: An Alternate Explanation. *Flintknappers' Exchange.* 1(3):12-14.

Cone angle determined by diameter of contact (ring crack.)

Sollberger, J. B.
1978 Lever Flaking as a Credible Alternative to Hand-held Pressure Flaking. *Flintknappers' Exchange* 1(1):6-7.

Ought to consider lever - possible in past. [No evidence except modern ability to create].

Sollberger, J. B.
1978 Save Those Broken Bifaces. *Flintknappers' Exchange* 1(2):6-7.

Sollberger, J. B.
1978 Percussion with a Flake? *Flintknappers' Exchange* 1(2):26-27.

Sollberger, J. B.
1978 Comment on Point # 13 Eden. *Flintknappers' Exchange* 1(2):30.

Sollberger, J. B.
1978 Solly's Tip Sheet #s 2 and 3. *Flintknappers' Exchange*

Thinning with soft hammer, alternate holding position - biface vertical on leg, and another pressing to counter bending.

Sollberger, J. B.
1979 Solly's Tip Sheet: Hand Anvils. *Flintknappers' Exchange* 2(1):9-10.

Flat beveled stone - for hammer, abrader, and anvil on which small tough pieces can be bifaced.

Sollberger, J. B.
1979 Untitled letter. *Flintknappers' Exchange* 2(2):5.

Sollberger, J. B.
1981 A Discussion of Force Bulb Formation and Lipped Flakes. *Flintknappers' Exchange* 4(1):13-15.

Bulb is Hertzian cone, deformed by displacement [a "pulling away" of flake?]. Hertzian cone angles depend on size of contact point: 67-120 degrees, not 135 (Faulkner).

Lip on billet flakes because fracture does not initiate at point of contact [it's partly a bending fracture initiation, his following discussion of bulb hard to follow].

Sollberger, J. B.
1985 A Technique for Folsom Fluting. *Lithic Technology* 14(1):41-50.

Sollberger, J. B.
1986 Lithic Fracture Analysis: A Better Way. *Lithic Technology* 15(3):101-105.

"Secondary compression" as in bending fracture + velocity of fracture propagation as major factors in formation of some flake features: pièce á languette, ripples, undulations, flake length. [Very good concept but description hard to follow.] Argues for concept of particulate solid rather than liquid wave model.

Sollberger, J. B.
1989 Comment on Stone Age Pressure Method of Folsom Fluting by Eugene Gryba. *Plains Anthropologist* 34(123):63-64.

[claims innaccuracies, mostly quibbles and hard to evaluate]

Sollberger, J. B.
1993 Updating Fracture Mechanics: From Hertz to Archaeology to Cones. *Bulletin of Primitive Technology* 1(6):65-66.

[Incoherent with undefined jargon. He dismisses old Hertzian concept but it's not clear what he wants instead.]

Sollberger, J. B.
1994 Hinge Fracture Mechanics. *Lithic Technology* 19(1):17-20.

Sollberger, J. B. and Errett Callahan
1978 Craftsman: J. B. Sollberger. *Flintknappers' Exchange* 1(1):12-17.

Discusses lever devices for pressure flaking. Belton, Edwards chert. Use experiments. Physics.

Sollberger, J. B. and L. W. Patterson
1976 Prismatic Blade Replication. *American Antiquity* 41(4):518-531.

Sollberger, J. B. and L. Patterson
1976 The Myth of Bipolar Flake Industries. *Newsletter of Lithic Technology* 5(3):40-41.

No control, rarely used, never as basis for industry.

Sollberger, J. B. and L. W. Patterson

1980 Attributes of Experimental Folsom Points and Channel Flakes. *Bulletin of the Texas Archaeological Society* 51:289-299.

Sollberger, J. B. and L. W. Patterson
1986 Comments on Folsom Fluting Experiments by Boldurian et al. *Plains Anthropologist* 31(113):241-244.

Considers B et al replications not accurate.

Sonnleitner, A. Th.
1925 *Die Höhlenkinder im Steinhaus*. Kosmos, Gesellschaft der Naturfreunde, Stuttgart.

Fiction "The Cave-Children in the Stone House." One of a series about 2 children lost in woods who grow up re-inventing all the stages and trappings of civilization through prehistory. They start in a cave, then a Swiss Lake Dwelling, then a stone house. At the end (this volume) the woman invents writing so they can send information with their child, who has figured out how to get back to the world. Nice illustrations by Fritz Jaeger. One of my uncle Robert Adler's favorite books as a child in 1930s Austria; when I found this by accident in a used bookstore I gave it to him.

Sorensen, Jerrel H., Kenneth G. Hirth, and Stephen M. Ferguson
1989 The Contents of Seven Obsidian Workshops Around Xochicalco, Morelos. In *La Obsidiana en Mesoamerica*. Margarita Gaxiola G. and John E. Clark eds., pp. 269-278. Instituto National de Antropologia e Historia, Mexico D. F.

Sorensen, Lasse
2010 Obsidian from the final Neolithic site of Pangali in Western Greece. In *Lithic Technology in Metal Using Societies*, B. V. Eriksen ed., pp. 183-202. Arhus, Arhus University Press.

Sorenson, Mikkel
2006 Rethinking the Lithic Blade Definition: Towards a Dynamic Understanding. In *Skilled Production and Social Reproduction*. Jan Apel and Kjel Knutsson eds., pp. 277-298. Societas Archaeologica Upsaliensis, Uppsala.

Sparkes, Brian A.
1982 Production and Exchange in the Classical and Roman Periods. In *An Island Polity: The Archaeology of Exploitation on Melos*. Colin Renfrew and Malcolm Wagstaff, eds., pp. 228-235. Cambridge University Press, Cambridge.

Speal, C. Scott
2006 Regional Economic Integration in the Coastal Maya Lowlands: The Lithic Assemblage of Saktunha, Belize. *Lithic Technology* 31(1):3-26.

Late to Terminal Classic small island community in mangrove swamp on coast not far from Altun Ha and Colha. Maya as fluctuating "decentralized" states with weak gov't apparatus

and limited economic involvement vs fully developed bureaucratic states controlling commercial exchange. "Producer-consumer" model developed at Colha posits central manufacture, distrib to regional sphere with consumers lacking evidence of manufacture - a false dichotomy. Very small site (max 10 families) but prosperous, lots trade goods, salt + fish for trade.

Bifaces (oval + General Utility Bif), small stemmed blades, and thin bifaces from Colha. Informal tools include flakes, blades, cores. 2585 pc debitage, evidence of primary working - 15-25% of debitage is primary or secondary flakes (cortical). Also BTF and "refining debris" (ie small flakes, resharpening). 70% N Bz chert, 12% N Bz chalcedony, 18% other. Debitage + prismatic blade failures show local manuf using imported N Bz chert, so not just importing finished tools. Drills + perforators also made, prob for shell work. No biface manuf failures. Cores + cortical flakes show N Bz chert obtained as nodules.

Implications: More local production than P-C model suggests, espec informal tools. Consumer sites obtaining raw material, so less restricted access. Or obtained by trade [but in fact there are numerous sources in the area, not just at Colha - quantity needed at Saktunha easily picked up between site and Altun Ha for instance]. P-C model implies consumer sites likely lack knapping skills, but at S, distinctive skillful resharpening of axe bits. Local production of household tools, wealth from coastal specializations makes obtaining formal tools by trade more efficient. Probably not highly integrated econ or great economic interdependence despite specialization and regional economic integration.

[Smallish sample, but good paper].

Speal, C. Scott
2009 The Economic Geography of Chert Lithic Production in the Southern Maya Lowlands: A Comparative Examination of Early-Stage Reduction Debris. *Latin American Antiquity* 20(1):91-119.

Spear, Chas.
1992 On Working Chert that Works Better Wet. *Chips* 4(4):3.

Pressure cooker to soak quickly. Cherts like Liston Crk Ind, some Georgetown, Dover TN, Harvester (nr St Louis) some Burlington, some Flint Ridge, work better when pores saturated.

Spear, Chas
1994 *The Illustrated Knapper*. VHS. Privately distributed.

Spear, Chas
1994 Planning and Setting Up a Knap-in. *Chips* 5(4):3.

Spear, Charles
1995 Antler Billets with a Thought for the Pocket-book. *Bulletin of Primitive Technology* 10:33.

Spear, Charles
1996 Pressure Flaking Styles. *The Flint Knapper's Exchange* 6(2):2-5.

Cartoon illustrations of several interesting lever devices as well as basics. Note a "Waldorf's" pressure jig.

Spear, Chas.
1996 Replicating Popular Point Styles. *The Flint Knapper's Exchange* 6(4):2-7.

Brief anti-faking statement. Some points "more esthetic" than others. Dovetail, Clovis, Hardin, Pedernales, Snyder, Turkey Tail described with knapping tips.

Spear, Chas.
1996 Knapping Sources/ More Common Types. *The Flint Knapper's Exchange* 6(1):2-6.

Useful summary of popular stone types, heat treatment temperatures. Sources and buying info.

Spear, Chas.
1996 A Diagnostic Knapping Journal. Privately printed and distributed.

$15 at knap-in. Some useful info, lots of typos. Statements on esthetics, uses books for "point profile" so scars, material, outline are considered as important attributes.

Spear, Chas.
1996 Paleo 'Bashed' Tools - A Story. *Bulletin of Primitive Technology* 12:14-15.

Kinda silly - simple tools for simple tasks.

Spear, Chas.
1998 On the Purpose of Learning Flintknapping. *Bulletin of Primitive Technology* 16:87-88.

Knapping is "art", could be a "Michelangelo of flintknapping". Teaching knapping is not same as process of knapping, difference between "stroke and merely a well-aimed blow." "My focus is when I am finished knapping a piece of flint, it will appear as elusive and natural as when I first picked it up." [A bit incoherent.]

Spear, Chas.
1994 Knapper's Profile: Jim Regan. *The Flint Knapper's Exchange* 1994(4):7-9.

Spears, Jim
2003 *Making the Turkey Tail*. DVD. Jim Spears Productions, Pineville, MO.

[One of the most skillful knappers makes thin biface from IN hornstone nodule, using only hammerstone and antler tools. Entirely percussion with minimal pressure edge finish and platform prep. Several weights of billet. Pressure on pad on leg. Abrades perc plats slightly with sandstone. Jim works fast but explains as he goes; however, this is not for beginner but assumes lots of basic knowledge. Competently produced, no frills. Image quality is pretty good but not always sharply focused and the sound is sometimes out of sync with the blows.]

Speer, Charles A.
2010 Understanding the Effects of Heat Treatment on Edwards Plateau Chert. *Ethnoarchaeology* 2(2):153-172.

Mechanism of effect on stone still unclear. Experiment evaluates changes in hardness and fracture toughness.

Spence, Michael W.
1967 The Obsidian Industry of Teotihuacan. *American Antiquity* 32: 507-514.

Spence, Michael W.
1981 Obsidian Production and the State in Teotihuacan. *American Antiquity* 46(4):769-788.

Spence, Michael W., Phil C. Weigand, and Maria de los Dolores Soto de Arechavaleta
2002 Production and Distribution of Obsidian Artifacts in Western Jalisco. In *Pathways to Prismatic Blades: A Study in Mesoamerican Obsidian Core-Blade Technology*. K. Hirth and B. Andrews, eds., pp. 61-79. Cotsen Institute of Archaeology Monograph 45. University of California, Los Angeles.

Spencer, Lee
1974 Replicative Experiments in the Manufacture and Use of a Great Basin Atlatl. In *Great Basin Atlatl Studies*, R.F. Heizer ed., pp. 37-60, figures 13-19. Ballena Press, Ramona.

Using stone tools, replicates a NV atlatl with weight. See Hester 1974 (site NV-WA-197). Very detailed description and evaluation of manufacture, tools and materials. Some throwing experiments – average 50-60 yards, feels good accuracy attainable, despite few trials and inexperience. [Good early atlatl paper.]

Spenneman, Dirk H. R.
1987 On the Use-Wear of Stone Adzes and Axes and its Implications for the Assessment of Humans' Handedness. *Lithic Technology* 16(1):22-27.

Good bibliog. No application to a prehistoric situation, just "how to" analyze. Increase in R handedness may reflect increased pressure for social conformity.

Speth, John D.
1972 Mechanical Basis of Percussion Flaking. *American Antiquity* 37(1):34-60.

Experiments with mechanical flaking, using glass periscope lens. [Good beginning but did not work enough with the features that interest knappers in a practical way. Dibble and Whittaker followed through with better experiments.]

Speth, John D.
1974 Experimental Investigations of Hard-Hammer Percussion Flaking. *Tebiwa* 17(1):7-36.

Speth, John D.
1975 Miscellaneous Studies in Hard-Hammer Percussion Flaking: The Effects of Oblique Impact. *American Antiquity* 40(2):203-207.

Speth, John D.
1981 The Role of Platform Angle and Core Size in Hard-Hammer Percussion Flaking. *Lithic Technology* 10(1):16-21.

Spielmann, Katherine
2002 Feasting, Craft Specialization, and the Ritual Mode of Production in Small-Scale Societies. *American Anthropologist* 104(1):195-207.

Feasting and need for prestige goods drives both production of subsistence surplus and ‘special’ artifacts which are often made by specialists. Recognized by meaningful, often exotic material, skilled crafting, quality of ‘brilliance’ or ‘enchantment’ i.e. aesthetic distinctions including unusual size, color, etc., “transformation” by accretions or modifications as passed from owner to owner “accumulating history.”
SW but primarily Melanesian examples, including stone axes.

Spradley, James P.
1970 *You Owe Yourself a Drunk: An Ethnography of Urban Nomads*. Reprinted 2000, Waveland Press, Prospect Heights.

Spurr, Kimberly, and William A. Bryce
2014 Report on Human Remains from Montezuma Well, Yavapai County, Arizona. Past Peoples Consulting, LLC, Report No. 14-101. Unpublished report on file, Tuzigoot National Monument.

Human cranium from private collection about to be thrown away under NAGPRA. Private land now in Monument, some pub Bartlett (1954:55), [site info not given here]. Elderly F (35-45?), obsid point lying against cranium when found, vertical-occipital deformation typical of Sinagua, caries and tooth wear. Three sharp-force wounds, penetrating fractures on the posterior cranium but no evidence of remodeling suggestive of healing, all trauma appears to be perimortem cause of death. Tips of all 3 pts still in bone, broken by snap, Government Mt obsidian. None penetrated skull, but one displaced interior bone that would have injured brain. Oblique angle of impact suggest woman standing above attackers or lying down. Loose 4th pt is small clunky Elden form of GM obsid, slight tip damage, not matching any of the embedded frags.

Spurrell, F. C. J.
1892 Notes on Early Sickles. *Archaeological Journal* 49:53-69.

Cited in Steenberg. Early (est?) recognition of sickle sheen. Experiments with wood, bone, corn, found only last produced sheen.

Squier, Robert J.
1953 The Manufacture of Flint Implements by the Indians of Northern and Central California. *University of California Archaeological Survey Report* 19:15-44.

Collection of ethnographic info from others, appendices by Ellis and Tarr on chert/flint terminology.

Stackelbeck, Kary L.
2010 Maximizing the Research Potential of Refit Analysis Without Replicating Pincevent: A Case Study from the Big Eddy Site in Southwest Missouri. *Lithic Technology* 34(1): 37-62.

Stafford, Barbara
1980 Prehistoric Manufacture and Utilization of Lithics from Corduroy Creek. In *Studies in the Prehistory of the Forestdale Region, Arizona*. C. R. Stafford and G. E. Rice eds., pp. 251-297. Anthropological Field Studies No. 1, Arizona State Museum.

[Classic jargon quoted in my book:] "If flake manufacture was operative, remnants of this behavioral activity should be evident in the form of..."

Stafford, Michael
1993 Some Thoughts on Danish Flint Technology. *Bulletin of Primitive Technology* 1(6):58-64.

Historical background, good info on punch technique, square axes, "stitched" daggers.

Stafford, Michael
1993 Some Thoughts on Danish Flint Technology. *Chips* 5(2):3-5.

Ok description of square axe manufacture, daggers. [Useful but sketchy, too few pictures].

Stafford, Michael
1995 *From Forager to Farmer in Flint: A Lithic Analysis of the Prehistoric Transition to Agriculture in Southern Scandinavia*.

Stafford, Michael
1998 In Search of Hindsgavl: Experiments in the Production of Neolithic Danish Flint Daggers. *Antiquity* 72(276):338-349.

Stafford, Michael
2003 The Parallel-Flaked Flint Daggers of Late Neolithic Denmark. *Journal of Archaeological Science* 30:1537-1550.

"most technically complex stone tools in the world." Type Ic early form, lanceolate with parallel pressure patterns. Experiments in production technology and its implications: simple tool kit, high skill level, discrete stages = probably specialist production.
Bronze daggers of Unetice and Beaker cultures as "stylistic inspiration" [I'm not convinced, and his illustration doesn't help. If they were really imitating bronze, then would have left flint polished - flaking emphasizes flintness of dagger.] Preforms known [not clear how they differ from variants without parallel flaking], and grinding traces on finished specimens. Bifacial percussion preform, refined by pressure, then ave 5 hrs grinding per dagger, 3 hrs pressure flaking parallel series. Ca. 10.6 hrs total, not counting flint mining.
Technological sources obscure - no good Neolithic precursors for such pressure finish, suggest independent invention over short span of a century or two after 2200 BC. However, grinding as surface finish widespread. Resharpening of ground tools by flaking may have taught knappers how such flaking behaves. Such skilled work as display = value.

Stafford, Thomas W.
2014 Chronology of the Kennewick Man Skeleton. In *Kennewick Man: The Scientific Investigation of an Ancient American Skeleton*. Owsley, Douglas W., and Richard L. Jantz, eds., pp. 59-89. Texas A&M Press, College Station.

Elaborate dating info, final conclusion for this report: 8358 $\pm$ 21 RC = two sigma calendar age of 8690-8400 calibrated BP.

Stahl, Jenny
2008 Who Were the Flintknappers? A Study of Individual Characteristics. *Lithic Technology* 33(2):161-172.

Can stone tools indicate qualities of the individual craftsman? 56 subjects made pt, filled questionaire + personality test. Standard blanks of obsidian, pressure flaking only, follow template of simple side-notched point, 40 of subjects no previous knapping - 20 min practice after training.
Various statistically signif diffs [some expectable, some incomprehensible]: Males + high athletic ability + more knapping experience remove more in alloted time, longer flake scars, but more experienced took fewer flakes per time. More artistic people + more experienced preferred flakes at angle to edge instead of perpendicular; L vs R not discernable. Different "temperament types" showed no diffs. [expectable since these are weak constructs from personality questions anyway].

Stanford, Dennis
1978 "Comment" on Point # 13, Eden. *Flintknappers' Exchange* 1(1):20-22.

Stanford, Dennis
1991 Clovis Origins and Adaptations: An Introductory Perspective. In *Clovis Origins and Adaptations*. Robson Bonnichsen and Karen L. Turnmire eds., pp. 1-14. Center for the Study of the First Americans, Corvallis.

Stanford, Dennis, Robson Bonnichsen, Betty Meggers, and D. Gentry Steele
2005 Paleoamerican Origins: Models, Evidence, and Future Directions. In *Paleoamerican Origins: Beyond Clovis*, edited by R. Bonnichsen, B. Lepper, D. Stanford, and M. Waters, pp. 313-353. Center for the Study of the First Americans, Texas A+M University, College Station, Texas.

Summarizing some of the volume, point types, including putative pre-Clovis, illustrated. Continental maps of site locations. Supports some pre-Clovis evidence, and multiple Clovis contemporary “co-traditions” - Nenana, Western Stemmed, Goshen/Plainview in N. Am. and in S. Am. Itaparica Tradition (mostly unifacial technol) in Amazon, Paijan Tradition (N coastal Peru stemmed pts), El Jobo and fluted fishtail pt traditions.

Stanford, Dennis, and Bruce Bradley
2002 Ocean Trails and Prairie Paths? Thoughts about Clovis Origins. In *The First Americans: Pleistocene Colonization of the New World*. N. Jablonski, ed., pp. 255-271. California Academy of Sciences, San Francisco.

Supposed similarities between Clovis and Solutrean, including blade technology, overshot biface thinning, etc. [None of these are illustrated, perhaps because they would be even less convincing.]

Stanford, Dennis, and Bruce Bradley
2012 *Across Atlantic Ice: The Origin of America’s Clovis Culture*. University of California Press, Berkeley.

Finally laid out in detail their case for Solutrean origins of Clovis. Very well done, but unconvincing. Much of the evidence is of dubious quality – lots of poor possibilities don’t equal one or two convincing cases. See review (Whittaker 2013).

Stanford, Dennis, Elmo Leon Canales, John Broster and Mark Norton
2006 Clovis Blade Manufacture: Preliminary Data from the Carson-Conn-Short Site (40Bn190), Tennessee. *Current Research in the Pleistocene* 23: 145-147.

Stanish, Charles
2009 Forging Ahead: Or, How I Learned to Stop Worrying and Love eBay. *Archaeology* 62(3):18, 58-60, 65-66.

In Peru, eBay has created market for cheap but good Moche etc fakes, depressing markets for looting and high end antiquities. [Naively optimistic about effect of fakes on bottomless antiquities market, ignores problems of contamination, new markets for cheap loot as well as fakes].

Stanley, Lori

2000 Recent Developments in Iowa Rock Art Research. In *1999 International Rock Art Congress Proceedings* Vol 1. P. Whitehead and L. Loendorf eds., pp. 97-104. ARARA, Tucson.

7 white points (late triangles) found in a clam shell at base of "Sacred Rock" petroglyph. ID by Ho-chunk as their "7 sacred stones" representing 7 sacred rites, "lost when tribe became disunited, to return when needed."

Stanley, Robert S.
1989 Economic Imperialism, Obsidian Exchange, and Teotihuacan Influence in Mesoamerica. In *La Obsidiana en Mesoamerica*. Margarita Gaxiola G., and John E. Clark eds., pp. 321-329. Instituto National de Antropologia e Historia, Mexico D.F.

Stark, Barbara L. and Lynette Heller
1989 La Produccion Residential de Implementos Liticos. In *La Obsidiana en Mesoamerica*. Margarita Gaxiola G., and John E. Clark eds., pp. 263-268. Instituto National de Antropologia e Historia, Mexico D.F.

Stark, Barbara L., Lynette Heller, Michael D. Glascock, J. Michael Elam, and Hector Neff
1992 Obsidian Artifact Source Analysis for the Mixtequilla Region, South Central Veracruz, Mexico. *Latin American Antiquity* 3(3):221-239.

Statham, William P.
1985 Research Documentation and Reference Collection in Experimental Lithic Technology. In *Stone Tool Analysis: Essays in Honor of Don E. Crabtree*. M. Plew, J. Woods, and M. Pavesic eds., pp. 229-242. University of New Mexico Press, Albuquerque.

Steele, James
1999 Stone Legacy of Skilled Hands. *Nature* 399:24-25.

The non-technical version of Roche et al. 1999, puts in context.

Steele, James, Angus Quinlan, and Francis Wenban-Smith
1993 Stone Tools and the Linguistic Capabilities of Earlier Hominids. *Cambridge Archaeological Journal* 5(2):245-256.

Expect a connection between similar abilities: language and tools.
Video of chopper and handaxe production, test if more difficult (accurate) motion requires more time, both for action and mental preparation. First didn't show well, but second seems to work, tool making appears less spontaneous than speaking.

Steensberg, Axel
1943 *Ancient Harvesting Implements: A Study in Archaeology and Human Geography*. Nationalmuseets Skrifter, Arckaeologisk-Historisk Raekke, Vol. 1, Kobenhavn.

Exhaustive typology, function study with experiments in hafting, using, from Stone Age to Medieval, focus on Scandinavia but other areas covered.

Steffy, Kenn, and Albert C. Goodyear
2006 Clovis Macro Blades from the Topper Site, 38AL23, Allendale County, South Carolina. *Current Research in the Pleistocene* 23: 147-149.

Stemp, W. James
2004 Maya Coastal Subsistence and Craft Production at San Pedro, Ambergris Caye, Belize: The Lithic Use-Wear Evidence. *Lithic Technology* 21 (1): 33-73.

Classic thru Historic, relatively minor variation through time. Mostly subsistence activity, and small scale craft for primarily local use. High and Low power analysis. No lithic sources on caye, mostly N Belize chert from 'Chert Bearing Zone', also chalcedony. Extensive experiments to examine use-wear.

Stemp, W. James, Ben E. Childs, S. Vionnet, and Christopher A. Brown
2008 The Quantification of Microwear on Chipped Stone Tools: Assessing the Effectiveness of Root Mean Square Roughness (RQ). *Lithic Technology* 33(2):173-189.

Sterling, Sam
2010 The Obsidian of Anadel and Napa Valley (Sonoma Co.). *Primitive Archer Magazine* 18(6): 54-59.

Photos of deposits and debitage, general info on obsidian.

Sterne, Robert
2014 COA's... My Two Cents Worth. *Indian Artifact Magazine* 33(3):37.

Need some sort of licensing board for authenticators. MO artifacts especially difficult. Shows 2 COAs on same artifact, one calling it Sedalia and giving finder and location as MO, other calling it Agate Basin from IA!

Sternke, Farina
2007 The German Quartzite Palaeolithic: An Exploration of Late Middle Pleistocene Hominid Behaviour in Relation to the Utilization of Non-flint Raw Material. *Lithic Technology* 32(1):115-130.

Stevens, Edward T.
1870 *Flint Chips: A Guide to Pre-Historic Archaeology as Illustrated by the Collection in the Blackmore Museum, Salisbury*. Bell and Daldy, London.

Early lithic info, includes ethnography, mentions experiments by Evans and others, folklore of Neolithic implements as elf stones and thunderbolts etc (87-89), throwing sticks, and section on gunflints. P 77-85 methods of making flint and stone implements: ethnog accounts of percussion and pressure quoted from Lyon, Schoolcraft, Peale, John Smith,

Torquemada (Mexican blades) Belcher (Eskimo), Catlin; demonstrations by Mr. John Evans, Prof Nilsson. [NO suggestion of fire and water at this time.]
P 564 barbed arrowhds for war, lightly attached to stay in wound [but all 2ndary refs].

Stevens, Frank
1935 Primitive Fire-Making. *Antiquity* 9(36):479-481.

Flints and strike-a-lights, Esthonia. Figure of old man lighting pipe with flint and steel. Tinders. Figure of several different firesteels. Flints still knapped Brandon, Snare exports to Spain, S. Am., and Borneo. Brandon flints found in Syria and Siberia. Kentish flint as ballast to Shanghai used for china making and strike-a-lights. SE Europe different type of flint, often enclosed in lead sheath, Turkey chief source of supply. [No info on where the Esthonian flint came from.]

Stevens, Nathan E., and Brian F. Codding
2009 Inferring the function of projectile points from the Central Coast of Alta California. *California Archaeology* 1(1):7-28.

Central Coast Stemmed Series points were dominant biface form for 5000 yrs, assumed to be dart points. Later small leaf shaped pts assumed to represent adoption of bow Middle-Late Transition Period (ca. 1000-700 B.P.). Test functional differences: expect if assumptions correct, CCSS + leaf should compare well to known dart and arrow pts respectively; and both should show use-wear evidence (i.e. impact fracture, lack of cutting etc.). If not, then leaf pts may rep arrival of atlatl, not bow [this does not follow, as dart pts suffer impact fractures too].

Compared 213 CCSS and 25 leaf from 26 sites in S CA to known pts from Shott, Thomas, Shea data. [Problems here: ‘known’ is not a great sample, not from CA, etc, and sample N of leaf pts is small]. Other measures: Tip Cross Sectional Area, geometric means of dimensions, PCA analysis.

CCSS points are smaller than thrusting spears [Shea Neanderthal data, so not a very good comparison], larger in Thickness and W, though not in L, than ‘known’ dart pts, and differ from smaller leaf pts in all dimensions, = technological shift. [The variation in CCSS is very large. This makes mean and 95% confidence very tight, and very similar to dart pts, though statistically different.] Leaf pts are signif larger than arrow pt sample, but only marginally diff from dart sample in PCA of size + shape, and in TCSA. Use-wear [again, small sample] suggests CCSS multi-functional, leaf more specialized proj pt.

CCSS are intermed in size between thrusting and dart pts, so probably thrown spears. [This does not follow at all. In particular the ‘known’ sample of darts from N. Am. are on the small side of what works, comp to e.g. Aust., and there is no javelin point sample to compare.] Supported by lack of evidence of atlatl in the arch or ethnog of region. Leaf pt may indicate late intro of atlatl, not bow, or experimentation with bow points at intro. [The leaf points are small and clunky (the CCSS are also very thick). I think they give good evidence of technol transition, but support their last conclusion, as I thought throughout that leaf pts rep transition between atlatl and bow, as old manufacture techniques are applied to smaller points. And by knappers of no great skill!]

Stevenson, Christopher M., Emily Bikowski, Hector Neff, Michael Orliac, and Colin Pendleton

2007 Investigations into the European Provenance of Historic Gunflints from Fort Christanna, Virginia, through Trace Element Chemistry. *Archaeology of Eastern North America* 35:49-62.

FC built 1714 as trading post; Virginia Indian Co abandoned 1719; native occup continued another decade. Excavs 1979-82; 2001-04 – 65 used + unused gunflints, most from plow zone. All spall/wedge type; beige, grey, black, tan flints, prob Eng or Fr origin, possible also Denmark or native. Table of L, W, T. Laser ablation-inductively coupled plasma-mass spectrometry to source. No chert in Piedmont region around FC.

Two guncock specimens: 17-18C trade lock, early doglock 1650-80. Spall type flints invented Europe ca 1630 (Faulkner 1986). Fr retouched heel, Eng did not (Kenmotsu). At FC 19 retouched heel, 14 retouch only to define sides.

French sources. Begin ca 1643, prob spalls, but no direct evidence. Blades middle 18C, but arch Ft. Pentagoet shows Fr blade type in deposits 1670-1674 (Faulkner).

English sources. Late 17C began shops by 1660, orig around London, byproduct of need for building lime after Gt Fire 1666, later more in Suffolk. End of 18C change to blade forms, influence from Fr. No blade types at FC.

Earlier studies show can discriminate diff areas of Neolithic mine/manuf for flint. Here, evaluate uniqueness of major gunflint locations in Fr (Meusnes), Eng (Brandon), and Denmark (Stevns). Fr + Eng source material from gunflint areas; Dan from coast.

Results: Only Euro material at FC, both Eng + Fr poss present. Rubidium, uranium discrim 3 main areas. FC distinct but closest to Suffolk Brit material, one specimen closest to Danish Stevns. None like Meusnes but heel form may show Fr involvement too [weak evidence]. [OK, but they needed more ambitious collection of relevant source materials for comparison to make the kind of distinctions they want to try.]

Stevenson, Christopher M., and Maria Klimkiewicz
1990 X-Ray Fluorescence Analysis of Obsidian Sources in Arizona and New Mexico. *Kiva* 55(3):235-243.

Values for 19 sources including Flagstaff area. Methods described. [No archaeological application.]

Stevenson, Christopher M., Ihab Abdelrehim, and Steven W. Novak
2004 High Precision Measurement of Obsidian Hydration Layers on Artifacts from the Hopewell Site Using Secondary Ion Mass Spectrometry. *American Antiquity* 69(3):555-568.

Describes technical details of hydration. Samples from several contexts. Agreement with C14 dates, but variation. Mound 11 cache was formed over ca 6oo yrs, finally deposited 4th C AD in mortuary context. Accumulation and limited distribution of obsid = high value ritual good, pathway to power, not mark of ascribed social rank.

Steward, Julian H.
1937 *Ancient Caves of the Great Salt Lake Region*. Bureau of American Ethnology Bulletin 116. Smithsonian Institution, Washington D.C.

Lots of wooden knife hafts, one with use as fire drill hearth. Lots of arrows, foreshafts mostly blunt hardwood points, a few notched for small points. [Proj pts include Desert Side Notched types, poorly illustrated. Material in both caves described appears to be mostly later Shoshonean stuff].

Stewart, Charles D.
1923 The Arrow-Maker. *The Atlantic Monthly* 131:799-810.

Desire of Indians for iron, account of Capt Cook - trade routes as evidence. Halvor Skavlem described - showing Indians how to make points because wise Indians now have no knowledge of knapping. "When the age of iron came in, the age of stone went out the door..." Loss of points no great matter, Skavlem can make in 11 minutes. Pressure flaking on a slotted block - good description. Skavlem not for profit, a "lover of nature, with no ulterior motive." [Focus on Skavlem, with philosophical ramblings, but pretty good early popular account of knapping.]

Stiles, Daniel
1979 Paleolithic Culture and Culture Change: Experiment in Theory and Method. *Current Anthropology* 20(1):1-21.

Stiger, Mark
2006 A Folsom Structure in the Colorado Mountains. *American Antiquity* 71(2):321-351.

Mountaineer Site near Gunnison. Folsom + Archaic artifact clusters on high mesa top. Round structure 4-5 m diam as soil stain in dug depression 40-50 cm below modern surface, with part bedrock edge. Slabs apparently used around edge, possible central hearth, burnt daub frags with aspen? impression. Nearby area cleared of rocks, with possible hearth and poss postholes. 35,000 piece lithic assemblage, no bone artifacts. Mostly local quartzite. 68 pts and preforms. In structure mostly ears and short frags, cleared area has larger frags, some with impact fractures. Preform tips and refitting channel flakes, 287 total channel flks, most in structure. 100s bone frags in structure, some assoc with stone anvil and hammerstone. Bone collagen C14 ca 10,400 BP, normal Folsom range.
Experimental structure built and burned looks sim to site.
Refitting flakes shows manuf of crude biface (removed) and blades on site. Probably winter occupation because otherwise daub would wash away. Maintenance of site evidenced by discard patterns.

Stock, Janet Ann
1979 A Preliminary Study of Bone and Antler Artifacts from Colha, Belize. In *The Colha Project 1979: A Collection of Interim Papers*. T. R. Hester ed., pp. 145-147. University of Texas, San Antonio.

[brief notes only]: most from Op 2001, preservation excellent, 165 pc, 21 bone, 144 antler. Manuf debris, 18 complete and 11 frag antler percussors. 115 tines, only 4 used, others discard.

Stocks, Denys A.
1993 Making Stone Vessels in Ancient Mesopotamia and Egypt. *Antiquity* 67(256):596-603.

Experimental stone drilling with copper tube and stone rasp drill.

Stocks, Denys A.
2001 Testing Ancient Egyptian Granite-Working Methods in Aswan, Upper Egypt. *Antiquity* 75(287):89-94.

Cutting and drilling rose granite with copper saw, tubular copper bit bow drill, flint chisels. Lots of work but effective. Dry quartz sand works best as abrasive with copper tools.

Stocks, Denys A.
2003 Immutable laws of friction: preparing and fitting stone blocks into the Great Pyramid of Giza. *Antiquity* 77 (297): 572-578.

Experiments with simple surface measuring tools and friction reduction.

Stone, Lyle M.
1970 *Gunflints from Eighteenth Century Fort Michilimackinac, Michigan: A Formal Analysis and Description*. Conference on Historic Site Archaeology Papers, 1970, Vol. 5.

Storck, Peter L.
1991 Imperialists without a State: The Cultural Dynamics of Early Paleoindian Colonization as Seen from the Great Lakes Region. In *Clovis Origins and Adaptations*. Robson Bonnichsen and Karen Turnmire eds., pp. 153-162. Center for the Study of the First Americans, Corvallis.

Stordeur, Danielle
1987 Manches et Emmanchements Préhistoriques: Quelqes Propositions Préliminaires. In *La Main et l'Outil: Manches et Emmanchements Préhistoriques*. D. Stordeur ed., pp. 11-36. Maison de l'Orient, Lyons.

Stordeur, Danielle, ed.
1987 *La Main et l'Outil: Manches et Emmanchements Préhistoriques*. Maison de l'Orient, Lyons.

Stordeur, Danielle, and Patricia Anderson-Gerfaud
1985 Les Omoplates Encochées Néolithiques de Ganj Dareh (Iran): Étude Morphologique et Fonctionnelle. *Cahiers de l'Euphrate* 4:289-313.

Notched scapulae used as harvesting tools.

Storey, William K.

2004 Guns, Race, and Skill in Nineteenth-Century Southern Africa. *Technology and Culture* 45(4):687-711.

Friendly groups portrayed as unskilled and harmless, foes as skilled and dangerous - so if accounts are biased, how do you assess technological skill? [And that of course affects assessment of the technology itself too.] “Practice” (how guns were used in storing, carrying, displaying as well as fighting and hunting) was ideological too - as seen in discourse and efforts to control spread of guns. Use involves “mimeomorphic” skills (loading, firing etc) that are routine, and “polymorphic” skills (shooting at game) that respond to circumstances. Mimeomorphic skills for using flintlocks replaced by better technology, so shooters could hone polymorphic skills, but manufacture required more skill. Burchell 1812 predicted guns would drive out game, forcing people into agriculture.

Boer smiths adapted heavy caliber flintlock guns to African game. Muzzle loaders, reliable and not needing special ammo, remained in use into late 19C. Martini-Henry finally outmoded locally adapted muzzleloaders. Breechloaders and reduction of game led to deterioration of skill in Boers.

Under British, Africans were portrayed as technologically incapable at same time as dangers of them owning guns were a worry. Gun ownership related to citizenship - conservatives wished to deny to Africans, making Boer states more comfortable with confederation with British colony. Liberals downplayed African skill (and thus danger); conservatives who claimed Africans were incompetent nevertheless portrayed them as skillful and thus too dangerous with firearms and tried to make them 2nd class citizens by disarming them.

Stothert, Karen E.
1983 Review of the Early Preceramic Complexes of the Santa Elena Penninsula, Ecuador. *American Antiquity* 48(1):122-127.

Reviews Lanning’s early complexes supposed 12-17,000 BP, dismisses them.
Modern crushing/knapping for concrete construction reinforcement produced artifacts.

Struve, Edwin
2014 Kennewick Man and NAGPRA. *Indian Artifact Magazine* 33(4):41-44.

A New Jersey Indian opposed to NAGPRA gives perspective on NJ Indian politics - lots of individuals and groups creating dubious Indian identities. Belief of archaeologists and Inds caring about their history that NAGPRA was a compromise and would not destroy archaeology. OJ Simpson case 1994 radicalized many - showed potential for DNA that could test, might show many with high % Indian blood were not enrolled tribal members, while many who were had little Indian descent, so new push to destroy skeletal remains as fast as possible "where they could rot away quickly and pose no further threat to the hegemony of enrolled tribes." Unenrolled Inds usually took oposite position: The unseemly haste with which the priviledged enrolled Indians wanted to destroy all DNA evidence was seen by unenrolled Inds as a self-serving and hypocritical use of religion as the last refuge of greedy scoundrels." [But sadly we actually never did hear much opposition from Ind groups].

Struve, Edwin
2014 Kennewick Man and NAGPRA, part 2. *Indian Artifact Magazine* 34(1):41-45.

More about secrecy of “New Jersey’s hush-hush stealth repatriation program.” Lost Nation Mohegan in Vermont wanted to preserve all bones, but Univ VT archy’s were repatriating to VT Abenaki, not recognized by govt, destroying. Cases reported by Becker 2008 J of Mid Atlantic Arch. Sales of repatriated objects to Japan and Germany in secrecy. OK Lenape won’t recognize VT Lenape (their homeland). “NAGPRA has proven yet another instrument that divides and conquers.” Problems of documenting his own ancestry through mother’s connections and documents.DNA tests 2002 showed mom with “Ainu” genes, so maybe connection to Kennewick. Mom also opposed destruction of evidence “only stupid people do that.” “NAGPRA made us both ashamed of our ignorant fellow Indians.” Roots of NAGPRA in “AIM’s fundamentalist racism” and bullying of those who disagreed.

Stuart, George E.
1989 Copan, City of Kings and Commoners. *National Geographic* 176(4):488-505.

Amazing eccentrics with diety faces on stalk - good color photo pp 492-3.

Storm
2007 Sculpting Soft Stone Using Stone Age Incision, Abrasion, and Drilling Techniques. *Bulletin of Primitive Technology* 34:63-66.

Largely photo essay, tips.

Stout, Dietrich
2002 Skill and Cognition in Stone Tool Production: An Ethnographic Case Study from Irian Jaya. *Current Anthropology* 43 (5): 693-722.

Central New Guinea adze making. River cobble quarry, bifacial hard hammer knapping to roughout, finished by grinding. “Skill acquisition is process of learning how to act in order to solve a problem rather than one of acquiring some rigid motor formula.” Thinking and doing are both part of continuum of necessary behaviors. Technology occurs with structured physical and social contexts providing “scaffolding”. Individuals learn socially. Artifacts themselves encode some of the information necessary to understand and use them.
Langda plateau. Minority of men are knappers, in 1999, three experts, three apprentices, one experienced but less skilled. All right handed. Quarry in river, some locations symbolic signif, locally controlled. Ownership of sources prevents overuse. Stone choice discussed, relative merits of strength vs aesthetics. Percussion with hammerstones, platform preparation by battering and rubbing, and flaking. Pretty much all knapping is conducted in group, with discussion, comment, and teaching apprentices. Knappers keep some roughouts, but most are collected and redistributed by “head adze maker” for finishing. Very elaborate specialized vocabulary. Demand now reduced, but knapping still a source of pride and identity. Takes 10 years to reach high level of skill, apprents often make non-functional pieces for practice. Knappers are emotionally committed to craft, speak of

esthetic pleasures "flake peels off like sweet-potato skin" etc. They tell narratives of problem solving in knapping. Stone seen as living. Knapping genealogies recounted.

Skill differences visible in "inability to control proportions of finished product… mainly from difficulty in narrowing [he must mean thinning] the piece." Tricks like platform preparation and removing steps by punching with broken flake. "Experts display understanding that, although embodied in practical action, may be considered conceptual in scope." [He means strategic understanding at all levels of process as well as physical skill]. Experts more consistent in where they knap, espec in working on dorsal ridge which is difficult and ignored by beginners, expert's flakes are larger, thinner, more elongate, and steeper EPA. Long narrow blade-flakes off bit are exclusively expert. General guidelines for evaluating knap skill: 1) Relatively large thin flakes with high platform angles, partly because better manipulate core morphology 2. Consistent forms, standardization. 3) Difficult skills, here, broad thin bifaces. 4) Selective raw material choice.

Human evolution implications: knapping requires mental skills, templates, planning, sequenced action, problem solving, all of which best acquired thru social learning, requires a lot of time in learning, so formal apprenticeships often.

[He wastes a lot of words on his learning framework theory and human evolution implications which are the least useful part of a generally excellent study, one of the best available accounts of ethnographic knapping. Fascinating description of aboriginal knapping and its social context – sounds remarkably similar in many ways to modern knappers.]

Stout, Dietrich
2006 Oldowan Toolmaking and Hominin Brain Evolution: Theory and Research Using Positron Emission Tomography (PET). In *The Oldowan: Case Studies Into the Earliest Stone Age*. Nicholas Toth and Kathy Schick eds., pp. 267-306. Stone Age Institute Press, Gosport IN.

Stout, Dietrich and Sileshi Semaw
2006 Knapping Skill of the Earliest Stone Toolmakers: Insights from the Study of Modern Human Novices. In *The Oldowan: Case Studies Into the Earliest Stone Age*. Nicholas Toth and Kathy Schick eds., pp. 307-320. Stone Age Institute Press, Gosport IN.

Stout, Dietrich, Nicholas Toth, and Kathy Schick
2006 Comparing the Neural Foundations of Oldowan and Acheulean Toolmaking: A Pilot Study Using Positron Emission Tomography (PET). In *The Oldowan: Case Studies Into the Earliest Stone Age*. Nicholas Toth and Kathy Schick eds., pp. 321-332. Stone Age Institute Press, Gosport IN.

Stow, Dorrik A. V.
2005 *Sedimentary Rocks in the Field: A Color Guide*. Academic Press, San Diego.

'Chert is the general term for fine-grained siliceous sedimentary rock of biogenic, biochemical or chemogenic origin." Producing pure chert from impure siliceous ooze or sediment usually requires diagenic purification, i.e. recrystallization and movement of minerals that often obscures primary depositional features.

Straus, Lawrence Guy
2002 Selecting Small: Microlithic Musings for the Upper Paleolithic and Mesolithic of Western Europe. In *Thinking Small: Global Perspectives on Microlithization,* edited by Robert Elston and Steven L. Kuhn, Archeological Papers of the American Anthropological Association 12, pp. 69-82.

Straus, Lawrence Guy
2005 The Upper Paleolithic of Cantabrian Spain. *Evolutionary Anthropology* 14(4):145-158.

Paleo envir N coast Spain = forest, lots game. Chronology. Few good Mousterian sites yet. Continuity, similarity, or confusion among late Moust, Aurignacian, and Chatelperronian. Gravettian scarce. Solutrean much more abundant, response to Late Glacial Maximum, which spurred technol developments including new foliate, stemmed, and shouldered pts, spear thrower, eyed bone needle, and toward end, antler pts edged with bladelets. C14s from 20.5 - 16.5 kya. Territorial differentiation in point types, with exotic materials, and finely flaked points moving, possibly by gift or trade. Climate moderation in Magdalenian leads to abandonment of ‘expensive’ Solutrean points in favor of more low-investment, reusable antler pts and replaceable bladelet edges.

Strezewski, Michael
2006 Patterns of Interpersonal Violence at the Fisher Site. *Midcontinental Journal of Archaeology* 31(2):249-280.

Illinois, Woodland village 1125-1300, with mounds and housepits, badly excavated by amateur long ago, poorly treated skeletal material reanalyzed. Skulls of both sexes with celt punctures [oddly, most are on the right side], and a couple with flint “spike” or biface embedded - spiked club. Scalping.

Stuart, George E.
1989 Copan: City of Kings and Commoners. *National Geographic* 176(4):488-505.

Stuckey, Sarah D., and Juliet E. Morrow
2013 Sourcing Burlington Formation chert: Implications for long distance procurement and exchange. *The Quarry* 10:20-29.

American Bottom, St Louis area, B cherts very variable in color, fossils, quality, etc. Burlington-Keokuk materials hard to distinguish too. Consider here Ray’s Generic and High Ridge (both from Crescent area) varieties of Bc. [They collected from the same areas B Hunt and I did in1994, but confuse the names knappers use - Crescent is the whitish material from near the quarry areas, HR is the colorful material near but elsewhere.] Wide use reported from distant sites by macroscopic ID; can we really tell? Using FTIR Fourier Transform Infrared Spectroscopy - pass IR light thru sample, peaks appear at specific wavelengths of different molecular bonds. Grind samples - destructive. Samples from 9 locations to compare MO (sources) and AR (poss 2ndary sources in LaFayette Formation).

Some same, some not [so not very useful, and don't know what elements the peaks represent!]

Stueber, Daniel
2011 The Use of Indirect Percussion with Stone Punches for Manufacturing Rectangular Cross Section Type 1 Adzes during the Moa-Hunter Period of the Maori Culture in New Zealand. In *Experiment and Interpretation of Traditional Technologies: Essays in Honor of Errett Callahan*, Hugo Nami, ed., pp. 325-343. Ediciones de Arqueología Contemporánea, Buenos Aires.

Suarez, Rafael
2006 Comments on South American Fishtail Points: Design, Reduction Sequences, and Function. *Current Research in the Pleistocene* 23:69-72.

More technological flexibility in manufacture than Clovis. Use as knives in some cases.

Suarez, Rafael
2011 Movilidad, acceso y uso de agata traslúcida por los cazadores-recolectores tempranos durante la transición pleistoceno-holoceno en el norte de Uruguay (ca. 11,000-8500 A.P.). *Latin American Antiquity* 22(3):359-384.

Quarry + workshop sites for commonly used agate, making blades and bifaces, including Fishtail points.

Suhm, D. A. and E. Jelks
1962 *Handbook of Texas Archaeology: Type Descriptions*. Texas Archaeological Society Special Publication 1.

Sullivan, Alan P.
1995 Artifact Scatters and Subsistence Organization. *Journal of Field Archaeology* 22(1):49-64.

Uses his debitage analysis techniques, so not very useful.

Sullivan, Alan P.
2001 Holme's Principle and Beyond: The Case for Renewing Americanist Debitage Analysis. In *Lithic Debitage: Context, Form, Meaning*. William Andrefsky ed., pp. 192-206. University of Utah Press, Salt Lake City.

Sullivan, Alan P., Robert Cook, Matthew Purtill, and Patrick Uphus
2001 Economic and Land-Use Implications of Prehistoric Fire-Cracked Rock Piles, Northern Arizona. *Journal of Field Archaeology* 28 (3-4): 367-382.

Fire-cracked rock piles here are not mescal roasting, but plant processing and other activities of several periods. Some debitage analysis [largely useless because of his

methods], notes that protohistoric points occur at these sites, but not at nearby pueblo ruins, suggesting avoidance of ruins by later people.

Sullivan, Alan P., and Kenneth C. Rozen
1985 Debitage Analysis and Archaeological Interpretation. *American Antiquity* 50(4):755-779.

[The most damaging article ever written in lithic studies, parent of dozens of worthless analyses because the methods are interpretively weak to begin with, but temptingly easy to apply by people who really don't know much about stone tools.]
Other lithic analytical categories: primary, secondary, tertiary flakes based on cortical percent are not reliably applied [true enough]. Same for technological typology eg "biface thinning flake". Too much interpreter bias, so we should use "interpretation free categories": complete flake, broken flake, flake fragment, debris, based on whether 1) single interior surface present/absent, 2) point of percussion p/a, 3) margins intact yes/no. Then proportions of different categories reflect different technological processes, eg. lots of broken flakes reflects biface manufacture.
St Johns and Pitiful Flats (AZ) example from Sullivan's dissertation.
[But of course all the categories are to some extent interpretive, even if more consistently applicable than traditional typology, and worse, things like flake breakage reflect many other factors besides manufacturing process or products, including raw material quality and subsequent damage by trampling etc. True, the technological typology categories are only statistically valid, but anyone with lithic knowledge can immediately see the difference between assemblages with lots of biface work and those without, for instance. To use the S+R typology, you must add a large input of other information to the mass analysis of S + R categories, and this other info always includes assumptions which are often poorly described and usually weakly supported. In other words, you can use S+R categories to describe an assemblage consistently and compare assemblages, but not to understand and interpret them in any useful way. If you can't tell the difference between a biface thinning flake and a hard hammer flake, you should not be doing a lithic analysis, any more than a faunal analyst who can't tell the difference between jack and cottontail rabbits. This is lithic analysis for idiots, which is why it became popular. Competent analysts shouldn't use it.] [for other reasons why see Amick and Mauldin 1997]

Sundstrom, Lars
2003 *Det Hotade Kollektivet: Neolitiseringprocessen ur ett ostmellansvenskt perspektiv. (A Collective in Peril: The Process of Neolithisation from an Eastern Central Swedish Perspective.)* Coast to Coast Project Book 6, Uppsala.

In Swedish and English. Axes symbolically represent development of Neolithic social ideology of collective ideas shared by independent farmers. Axe production is all similar, a shared technology, but each small community makes their own from local materials.

Sundstrom, Lars
2004 A Collective in Peril: The Process of Neolithisation from an Eastern Central Swedish Perspective. . In *Coast to Coast – Arrival: Results and Reflections*. Helena Knutsson, ed., pp.183-197. Coast to Coast Project Book 10, Uppsala.

Surovell, Todd, A., Nicole M Waguespack, and Marcel Kornfeld
2003 A Note on the Functions of Folsom Ultrathin Bifaces. *Current Research in the Pleistocene* 20: 75-77.

refit shows biface smashed to make blanks for Folsom points

Susman, Randall L.
1991 Who Made the Oldowan Tools? Fossil Evidence for Tool Behavior in Plio-Pleistocene Hominids. *Journal of Anthropological Research* 47:129-151.

arch and hand bones and contexts suggest both *Paranthropus* and *H. habilis* made tools, P to process plant foods.

Swanson, Earl H.
1966 An Introduction to Crabtree's Experiments in Flint Knapping. *Tebiwa* 9(1):1-2.

general comments, anecdotal

Symens, Nicole
1986 A Functional Analysis of Selected Stone Artifacts from the Magdalenian Site at Verberie, France. *Journal of Field Archaeology* 13(2):213-222.

microwear - lots of bone working
spatial distributions around hearth

Szuter, Christine R.
2000 Gender and Animals: Hunting Technology, Ritual, and Subsistence. In *Women and Men in the Prehispanic Southwest: Labor, Power, and Prestig*e. P. L. Crown, ed., pp. 197-220. School of American Research Press, Santa Fe.

Projectile points occur in female burials [compiled refs, but missed some, and symbology of pts differs for large and small pts], but evid for women hunting big game in SW is weak, but may have input to technol (eg. feathers) and prep of meat. Iconographic assoc may be 'mother of animals' rather than 'woman the hunter.'

Tabarev, Andrew V.
1994 The Ustinovka Industry in the Stone Age of the Russian Far East: 40 Years of Discoveries. *Lithic Technology* 19(1):21-34.

Tabarev, Andrei

1997 Paleolithic Wedge-Shaped Microcores and Experiments with Pocket Devices. *Lithic Technology* 22(2):139-149.

Microblade experiments with vises and pressure.

Taçon, Paul S. C.
1991 The Power of Stone: Symbolic Aspects of Stone Use and Tool Development in Western Arnhem Land, Australia. *Antiquity* 65:192-207.

[Very interesting]. Stone is assoc with ancestors and power - their bones, also with male power and hunting. Material choice and change thru time is influenced by symbolism - good quartzite is “kidney fat” a desirable food and symbol.

Taçon, Paul S. C.
2008 Rainbow Colour and Power among the Waanyi of Northwest Queensland. *Cambridge Archaeological Journal* 18(2):163-176.

Importance of color in culture argued. Rainbow Serpent, powerful mythological creature in N Australia, depicted as bands of color in rock art, related to sexuality, power, geological formations + tool stone with color or banding. Most of this seems to be Holocene development in Aust, after 4000 kya, at which time, climate change, intro of dingo and spearthrower as well.

Tagg, Martyn D.
1994 Projectile Points of East-Central Arizona: Forms and Chronology. In *Middle Little Colorado River Archaeology: From the Peaks to the People*. A. T. Jones and M. D. Tagg eds. *The Arizona Archaeologist* 27:87-115.

Typology from Apache-Sitgreaves National Forest, S and E of Homolovi

Tait, Lawson
1874 Feathering in Flint Weapons. *Nature* July 30:245.

Notices twist/bevel on points = “feathered”. “…if the weapon was propelled with any great rapidity, its revolution would be a matter of necessity and would result in a greater steadiness in its line of trajectory.” Experiment: made plaster cast, cut sections to show symmetry of “spiral.” Flint tends to fracture with “spiral” anyway, but often deliberate = primitive invention of rifling.

Takaoglu, Turan
2005 Coskuntepe: An Early Neolithic Quern Production Site in NW Turkey. *Journal of Field Archaeology* 30 (4): 419-433.

Neolithic village supplemented subsistence with specialized production based on abundant local stone resource, ca 6000 cal BC. Also marine resources from nearby coast, including pebbles for sling shots; shift from arrowheads to sling stones in mid Pottery Neolithic of Turkey. Saddle quern manuf debris includes hammerstones, broken preforms, flakes.

Tankersley, Kenneth B.
1989 A Close Look at the Big Picture: Eastern Paleoindian Lithic Resource Procurement in the Midwestern United States. In *Eastern Paleoindian Lithic Resource Use*, edited by C.J. Ellis and J. C. Lothrop, pp. 259-292. Westview Press, Boulder.

Tankersley, Kenneth B.
1994 The Effects of Stone and Technology on Fluted Point Morphometry. *American Antiquity* 59(3):498-510.

Thickness does not correlate with other metrics, variation in T results from variety of materials and percussion thinning (rather than pressure as in Folsom).
[Last is too simple, first not demonstrated - he asserts without info that some materials worked thinner than others - he needs to look at single sites to control temporal/spatial variability, and only then the differences in material. I peer reviewed this, he made cosmetic changes but still missed the point.]

Tankersley, Kenneth B.
1994 Clovis Mastic and its Hafting Implications. *Journal of Archaeological Science* 21:117-124.

Amber used as hafting mastic, recognized on obsidian Clovis point, surface find, Hoyt Site, Oregon. Use of amber may be another trait shared by Clovis and Upper Paleolithic of Europe.
Insoluble in organic solvents except xylene, microscopically similar to amber.
Longitudinal scratches in flute - to improve grip of mastic and bone foreshaft, especially useful on slippery obsidian.
Amber is not as sticky as resin, but will melt, and can be found where there are no living conifers.
[But finding conifers shouldn't have been a problem for Clovis. Much more likely this is resin that became "amber" in the 12,000 years since its use. See also Beck 1996: amber does not melt, won't work as adhesive.]

Tankersley, Kenneth B.
1995 Seasonality of Stone Procurement: An Early PaleoIndian Example in Northwestern New York State. *North American Archaeologist* 16(1): 1-16.

Brief, uses geol + soil + site setting to argue stone was worked not in Fall to early Spring, so probably late Spring + Summer to 'gear up' for hunting.

Tankersley, Kenneth B.
1996 Archaeological Paradigms, Provincialism, and Semantics: A Reply to Beck's Comments. *Journal of Archaeological Science* 23: 455-458.

Beck is too provincial and restrictive in his definitions of amber. "Amber is a tree resin that has lost some of its volatiles." Fossil resins [no age info given] from Plains area do indeed melt. [Tankersley still misses the point – he has never established whether the adhesive used on the Clovis point was fresh or "fossilized" (ie "amber" in his very broad definition) at the time of use. Occam's Razor suggests fresh resin: more common, widely used, easy to use.]

Tankersley, Kenneth B.
1998 Variation in the Early Paleoindian Economies of Late Pleistocene Eastern North America. *American Antiquity* 63(1): 7-20.

Stone tool sources for MidW + NE as seen on 1) stone procurement sites 2) base camps 3) food procurement sites.
Uses ratios of various tools and debitage types to sort site types + regional variation
Clovis was 'technology based [=consistent over large area] and tied to animal behaviour, not like modern hunter/gatherers who are geographically based = economically tied to particular area

Tankersley, Kenneth B.
2002 *In Search of Ice Age Americans*. Gibbs Smith, Publisher, Salt Lake City.

Personal account of some Clovis research (Crook County and other caches, Sunrise Ochre Mine) with background on Clovis. [Mixed bag but mostly a failure. Some nice popular archaeology with lots of pictures. Excellent photos of Fenn, Crook, and other Clovis artifacts. However, full of sloppy errors and info stated so poorly as to be misleading e.g. his comments p.80 on atlatls, misdating of European bow and arrow, incoherent jumble of information on possible pre-Clovis sites, weak explanations of basics like scientific method and dating techniques, estimate p 155 of "tens of thousands of modern flint knappers," etc etc. He also wastes a lot of time fawning over collector Forest Fenn, including a large irrelevant section whitewashing Fenn's looting of San Lazaro Pueblo. There are no references, bibliography, or even recommended readings, so who knows where some of his more dubious info comes from. He seems to favor Solutrean origins in some of his evidence, and use of term "Ice Age Americans" which avoids any implication of origins, but you can't really tell, he never states a clear conclusion. Information on caches and on Blackwell hoax is useful, but hyped, and he gives some other poorly documented scurrilous stories about archaeological faking.]

Tankersley, Kenneth B., Michael R. Waters, and Thomas W. Stafford
2009 Clovis and the American Mastodon at Big Bone Lick, Kentucky. *American Antiquity* 74(3):558-567.

New dates and stratigraphy: fossils span 1,200 yrs 11k-12,200 RC BP. Mastodon + Clovis overlapped but only one possible cut mark, and a number of C pts dispersed in the deposits, no direct evidence of hunting mastodon.

Tanner, Clara Lee
1968 *Southwest Indian Craft Arts*. Tucson: University of Arizona Press.

Taylor, A. J.
1980 Excavations at Kunahmul. In *The Colha Project Second Season, 1980 Interim Report*, T. R. Hester, J. D. Eaton, H. J. Shafer eds., pp. 241-250. Center for Archaeological Research, University of Texas, San Antonio.

Small monumental center and mounds around a lake, ledges and nodules of chert occur naturally, used for building and tools. 4 lithic prod areas tested briefly; all stages of manuf, unlike Colha. Operation 1 in lithic wkshp mound, 10 m diam, 55 cm deep, adjoining small mound. Op 3 had cobble platform with debitage deposits on and beside. Op 4 15 m diam, 50 cm deep deb mound. Op 5 mound 15 m diam, 50 cm deep, debitage on a layer of packed sherds at bottom. All similar L Classic materials.

Taylor, Jeb
1995 Letter to the Editor. *Bulletin of Primitive Technology* 9:9.

Argues for primitive only - no modern techniques
Idealizes primitive society as ‘balance + contentment’
‘World would be better off if Edison had spent a lot of time weeding his vegetable garden and Einstein spent more time fishing’

Taylor, Jeb
1996 Some Thoughts on Heat Treatment of Chert. *Indian Artifact Magazine* 15 (2): 8.

Probably not before Archaic although lots of fakes are.
Some fakes heated after flaking, so exterior is grainy, interior glossy, the opposite of right look.

Taylor, Jeb
1997 Some thoughts on Clovis Culture beveled bone rods. *Indian Artifact Magazine* 16 (1): 30-31, 65.

As foreshaft for Clovis pt - good arguments. Counters Gramly ‘sled runner’ idea.

Taylor, Jeb
1998 Understanding Patina. *Prehistoric Antiquities Quarterly* 18(2): 58-59.

Discusses faking

Taylor, Jeb
1998 Some Thoughts. *Indian Artifact Magazine* 17(3): 52-53.

Tales of fakes, estimates that 20% of all artifacts for sale are fakes. Some cautions + tips.

Taylor, Jeb
2000 The Skyline Site…A Closer Look. *Indian Artifact Magazine* 19(3): 6-7, 73-74.

1973 Earl Moore published ‘Silent Arrows’ - Oregon caches of ‘ceremonial’ eccentrics and effigy flints - They are Faked !
But ... recently they were repatriated to Cow Creek Umpquas under NAGPRA.
They deny that the artifacts are faked, claim had them authenticated, won’t reveal who, nor will local archaeologists who also don’t want to support authenticity.
[Silhouettes are only illustrations - but even so they look pretty obviously fake]

Taylor, Jeb
2000a Letter Addressed to the New Yorker, Attention David Carey. *Indian Artifact Magazine*, 19(1): 4, 80-81.

His side [he was a ‘victim’of a related Blackwell scam], so here he crits NY article on it.

Taylor, Jeb
2000b More on the Blackwell Affair, *Indian Artifact Magazine* 19(2): 61-62

Taylor, R. E.
1976 *Advances in Obsidian Glass Studies*. Park Ridge: Noyes Press.

includes Ericson et al articles

Taylor-Montoya, John J.
2006 Late-Paleoindian Occupation of the Gault Site, Central Texas: The Lithic Evidence from the 1991 and 1998-2000 Investigations. *Current Research in the Pleistocene* 23:149-151.

post-Clovis points

Teltser, Patrice A
1991 Generalised Core Technology and Tool Use: A Mississipian Example. *Journal of Field Archaeology* 18(3): 363-375.

Uses debitage, shows that not all general core technol is the same. Unfortunately uses Sullivan + Rozen.

Texier, J.-P.
1984 Un debitage experimental de silex par pression pectorale a la bequille. *Bulletin de la Société Préhistorique Française* 81(1):25-27.

Thieme, Hartmut **Burling**
2005 The Lower Paleolithic Art of Hunting: The Case of Schoningen 13 II-4, Lower Saxony, Germany. In *The Hominid Individual in Context: Archaeological Investigations of Lower and Middle Paleolithic Landscapes, Locales, and Artefacts*. Clive Gamble and Martin Porr (eds.), pp. 115-132. Routledge, London.

Buried lakeside site with organic mud and peaty layers. Dates ca 400,000. Interp as hunting site with >20 horses, 8 wooden spears, stone tools, other organics. Spears are fir + pine saplings, trimmed, point at base of tree, smoothed, 1.8-2.5 m long, weight 1/3 from tip, so throwing weapon. Shorter piece (.78m) sharp on both ends, interp as throwing stick for bird hunting. Also burnt worked wood interp as spit, several hearths. Possible cleft haftings for stone tools [not detailed, no photo] from diff layer.

Implications: Complex hunting of herd of fast large mammals = complex society, communication. Specialized hunting technology, complex tools, variation = fit to individuals. But abandoned them, maybe symbolic reason? Control of fire, processing of lots of meat implies drying/smoking = storage. Hides = clothing, shelters. All abilities usually assigned only to more modern humans.

Thirault, Eric
2005 The Politics of Supply: The Neolithic Axe Industry in Alpine Europe. *Antiquity* 79 (303): 34-50.

Ground axes, exchange and sources.

Thomas, David Hurst
1970 Archaeology's Operational Imperative : Great Basin Projectile Points as a Test Case. *University of Carlifornia (Los Angeles) Archaeological Survey Report* 12: 27-60.

Thomas, David Hurst
1976 A Diegueno Shaman's Wand: An Object Lesson Illustrating the 'Heirloom Hypothesis.' *Journal of California Anthropology* 3 (1): 128-132.

Ethnographic use of wand with attached ancient Elko point.

Thomas, David Hurst
1978 Arrowheads and Atlatl Darts: How the Stones Got the Shaft. *American Antiquity*. 43(3): 461-472.

Looks at American Mus Nat Hist specimens of hafted points to determine relationship between shaft and hafting area of point, uses discriminant analysis to derive formula to separate atlatl darts from arrow points. 118 ethnographic arrows, 14 Pueblo Bonito arrows, but atlatl dart foreshaft sample very small (10, of which 9 SW, 1 CA) His equations classify the specimens about 86% correctly (7 of 10 for darts, 115 of 132 for arrows). Single variables show statistically significant differences between mean darts and arrows in most dimensions of point size and foreshaft diameter. [Problems: small sample, specimens from all over, but not random distribution either (e.g. SW darts), so may not apply well to any one prehistoric site, or different regions. Also, arrows all late, may not reflect transitional types well.]

Thomas, David Hurst
1981 How to Classify the Projectile Points from Monitor Valley, Nevada. *Journal of California and Great Basin Anthropology* 3 (1): 7-43.

Thomas, David Hurst
1983 The Archaeology of Monitor Valley: 2. Gatecliff Shelter. *Anthropological Papers of the American Museum of Natural History* 59 (1).

Background for point typology.

Thomas, David Hurst
1986 Contemporary Hunter-Gatherer Archaeology in America. In *American Archaeology, Past and Future: A Celebration of the Society for American Archaeology 1935-1985*, edited by D.J. Meltzer, D.D. Fowler, and J. A. Sabloff, pp. 237-276. Smithsonian Institution Press, Washington, D.C.

Importance of midrange theory to link concepts with observable phenomena.
Discovery is overrated - facts useless without correct interpretation. Lots of praise for Binford. Too many simplistic interpretations in recent archaeol.
Mid-range theory in lithics particularly neglected. [He's very down on 'cognitive' lithic studies e.g Young + Bonnichson]. Experiments don't demonstrate reality of behaviour but only one possibility. [He's particularly critical of emphasis on technology + idea that reduction sequences or other patterns are culture specific - he's wrong here, since they plainly are]. Optional foraging theory discussed.

Thomas, David Hurst
1986 Points on Points: A Reply to Flenniken and Raymond. *American Antiquity* 51(3):619-627.

Dismisses Flenniken's argument that because points can be damaged and reworked into different types, they are not good chronological markers, defends utility of temporal types.
- sloppy application of Thomas types to experimental points - a typology is only good if consistently applied
- 'phony logic of replication' = Flenniken + Raymond 'did not reproduce 'a tangible aspect of prehistoric behavior', they only 'demonstrated one possible way of accomplishing a task.' Notes for instance a point with base broken off that was rehafted without reworking.
- some types are not rejuvenatable into other types (e.g. Cottonwood Triangular) - so the wider claim that all chrono-types are unstable is wrong
- a morphological type, no matter how defined, if tested against stratigraphy, C14 etc, is still a useful chronological marker, even if use-life can modify its form. These types are 'heuristic, not explanatory'.
- 'flintknapper's fundamental conceit' that technol approach improves any typology - no, sometimes technol attributes will work chronologically, but that is independent of type.

Thomas, David Hurst
1989 *Archaeology, 2nd edition*. Holt, Rinehart, and Winston, Fort Worth.

cited for general info on sourcing

Thomas, Jonathan, Grant McCall, and Katina Lillios
2009 Revisiting the Individual in Prehistory: Idiosyncratic Engraving Variation and the Neolithic Slate Placques of the Iberian Penninsula. *Cambridge Archaeological Journal* 19(1): 53-72.

Thompson, Jessica C., Nawa Sugiyama, and Gary S. Morgan
2008 Taphonomic Analysis of the Mammalian Fauna from Sandia Cave, New Mexico, and the 'Sandia Man' Controversy. *American Antiquity* 73(2):337-360.

Pretty complete, Hibben kept most stuff. Most material accumulated by non-human agency, but some pieces show human modification, but not on the extinct species, so no good Paleoindian associations.

Thompson, Marc
1991 Flaked Celt Production at Becán, Campeche, Mexico. In *Maya Stone Tools*. T.R. Hester, H.J. Shafer, eds., pp 143-154. Madison: Prehistory Press.

E. Mexico NW of Belize, medium ceremonial center. Low mounds of chert nodules and fragments. 77 mounds surface collected, 2 tested, 60-80 cm deep. 68% of nodules unmodified. Most nodules too small for celts, 50% too poor quality. Flakes and blanks 80% good quality. Decortication flakes = 80% of complete flakes. Large bulbs, heavy abrasion = hard hammer flaking. 373 blanks, 21 celt preforms, most end-shocked. 15:1 blank:preform ratio = low rejection rate after early work.
"Flaked stone celts" [his preferred term] hafted as axes, evidence of different uses including in soil, iconography - maybe small hatchets symbolic, large celts utilitarian.
Mounds on ridgetops and assoc with housemounds, none in civic center or in bajos. Mounds = "raw material reserves and workshops for nodule reduction" for primarily celts. Late Classic. Presence of poor material suggests unskilled labor collected, skilled labor worked. Differs in quality and types from Colha; chert not good enough for eccentrics or blades.

Thompson, Marc
1996 Correlation of Maya Lithic and Glyphic Data, *Lithic Technology* 21 (2): 120-133.

Celts of flaked stone, ground stone, copper - utilitarian + symbolic.
Iconographic association with lightning, Chac, sacrifice, war, Venus.
Cauac sign (= notch) means earth, stone, flaked into 'eccentrics'.
Baat = celt, batab = axe man, title of a lord. Baat glyph = cut, chop, decapitate
[Interesting, but badly written]

Thoms, Alston V.
1993 Knocking sense from old rocks: Typologies and the narrow perspective of the Angostura point type. *Lithic Technology* 18(1-2):16-27.

Lithic typology developed out of ceramic typology, where types are generally 'finer-grained' reflecting shorter temporal intervals, functional, spatial, and contextual resolution - more stylistic attributes for instance. Lithic types 'coarser-grained', but points of demonstrated temporal value. However, types must be carefully and consistently defined. Angostura type is one that is poorly defined and definition has varied over time and by analyst, thus it is not very useful.

Thoreau, Henry David
1906 *The Writings of Henry David Thoreau*, edited by Bradford Torrey, vol 12, Journals March 2, 1859-November 30 1859. Houghton Mifflin Company, Boston and New York.

quoted on permanence of stone arrowhead

Thornberry, Russell
2010 The Final Frontier. *Primitive Archer Magazine* 18(5):10-14.

Mexican mule deer taken with stone point, primitive bow, short range.

Thurmond, J. Peter
1990 A Small Clovis Assemblage from Western Oklahoma. *Plains Anthropologist* 35 (129): 291-297.

1 point, 4 flake tools, probably a tool kit.

Thurmond, J. Peter, and Don G. Wyckoff
1999 The Calf Creek Horizon in Northwestern Oklahoma. *Plains Anthropologist* 44(169): 231-250.

Middle Archaic 5500-4500 BP. Large, deep barbed, point or knife, often resharpened = Andice, Bell in Texas. Notching practice pieces. Distribution in OK from collector information. Mimics Paleoindian evidence - small bands, large territories, big game hunting (bison), and sophisticated lithics.

Tiesler, Vera and Andrea Cucina
2006 Procedures in Human Heart Extraction and Ritual Meaning: A Taphonomic Assessment of Anthropogenic Marks in Classic Maya Skeletons. *Latin American Antiquity* 17(4): 493-510.

Exam of several skeletons from Becan, Calakmul, Palenque, sacrificed "attendants" to high status burials. Cut marks on front of lower thoracic vertebrae, indicating violent perimortem action consistent with opening body below sternum (sternum and front of ribs lack damage) and removing heart through diaphragm by cutting with biface knife or similar instrument. Experimented on cadavers with obsidian bifaces [but no details of tools given]. Other openings more difficult to access heart or lack skeletal evidence. This "transdiaphramatic approach" would not always leave skeletal marks; with lack of attention and poor preservation this would explain dearth of direct evidence for heart sacrifice. [Interesting but unnecessarily technical language.]

Tindale, Norman B.
1941 The Hand Axe Used in the Western Desert of Australia. *Mankind* 3 (2): 37-41.

Bloc on bloc percussion, chopping down tree.

Tindale, Norman B.
1985 Australian Aboriginal Techniques of Pressure-flaking Stone Implements: Some Personal Observations. In *Stone Tool Analysis: Essays in Honor of Don E. Crabtree*. MG Plew, JC Woods and MG Pavesic eds. Pp. 1-33. Albuquerque: UNM Press.

Work in 1953. Platform preparation. Quarrying. Heat treatment. Pressure technique and tools. Trade. Hafting.

Tingle, Martin
1987 Inferential limits and surface scatters: The case of the Maddle Farm and Vale of the White Horse fieldwalking survey. In *Lithic Analysis and Later British Prehistory: Some Problems and Approaches*. A.G. Brown and M.R. Edmonds eds, pp 87-100. B.A.R British Series 162: Oxford.

Tipps, Betsy L.
1987 *Cultural Resource Investigations at Hard Rocks, Arizona: Data Recovery and Ethnohistory Along the Turquoise Trail Road Project*. P-III Associates, Salt Lake City.

CRM rept, 2 Anasazi, 1 Navajo site. Typical lithics – almost no points, debitage includes bipolar, varying materials. [Grey lit, but not bad].

Titmus, Gene L.
1980 Large Obsidian Boulder Reduction. *Flintknappers' Exchange* 3(3):21-22.

[Useful, but uses “cone principle” with 80-90 degree cone, which is not correct] Favors slow, heavy blow, continuous “pushing” without rebound.

Titmus, Gene L.
1985 Some Aspects of Stone Tool Notching. In *Stone Tool Analysis: Essays in Honor of Don E. Crabtree*, edited by M. Plew, J. Woods, and M. Pavesic, pp. 243-264. University of New Mexico Press, Albuquerque.

Descriptions of a variety of techniques: “end of tool, edge of tool,” indirect percussion. Distinctive notching flake debitage. [Descriptions of techniques confused and hard to follow]

Titmus, Gene L.

2002 An Analysis of the Folsom Preform. In *Folsom Technology and Lifeways*, J. E. Clark and M. B. Collins, eds., pp. 227-246. Lithic Technology Special Publication No. 4. University of Tulsa, Tulsa.

Titmus, Gene L.
2003 The Maya Eccentric: Evidence for the Use of the Indirect Percussion Technique in Mesoamerica from Preliminary Experiments Concerning Their Manufacture. In *Mesoamerican Lithic Technology: Experimentation and Interpretation*, K. G. Hirth ed., pp. 132-146. University of Utah Press, Salt Lake City.

[Best info on eccentric manufacture] Discusses manufacture, emphasizing sequencing and strategy. Large eccentrics only possible by indirect percussion. Typical debitage could be identified. Experiments used obsidian and copper, discusses also antler, wood, and other possible tools.

Titmus, Gene L.
2003 *Mexica* Blade Making with Wooden Tools: Recent Experimental Insights. In *Mesoamerican Lithic Technology: Experimentation and Interpretation*, K. G. Hirth ed., pp. 72-97. University of Utah Press, Salt Lake City.

Titmus, Gene and Errett Callahan
1980 Craftsman: Gene Titmus. *Flintknappers' Exchange* 3(1):19-25.

[Boring]. Different holding positions [mentioned but not explained]. Fine pressure work.

Titmus, Gene L. and James C. Woods
1986 An Experimental Study of Projectile Point Fracture Patterns. *Journal of California and Great Basin Anthropology* 8(1): 37-49.

[Note individual variation: L vs R patterns]
Use vs manufacture breakage of Elko corner-notched forms. Manufacture: perverse [and bending] breaks, mostly barb or stem in notching. Effects of hafting. [Not enough statistical treatment.] Surprisingly long survival of some points in use, but 70% damaged by 1 throw, average 2.1 throws. Bending fracture most common, especially at neck, espec in yielding material. Crushing - mostly distal and marginal [includes impact flutes] and hard materials. Shearing [burination] espec on barbs and in somewhat yielding material eg wood.

Titmus, Gene L. and James C. Woods
1991 Fluted Points From the Snake River Plain. In *Clovis Origins and Adaptations*. Robson Bonnichsen and Karen L. Turnmire, eds. Pp 119-132. Corvallis, Center for Study of the First Americans.

Typology and distribution in OR, some functional and technological speculation and experiment.

Tixier, Jaques

1974 *Glossary for the Description of Stone Tools, With Special Reference to the Epipaleolithic of the Maghreb*. Translated by M.H Newcomer. Newsletter of Lithic Technology Special Publication Number 1.

Tobey, Mark Hathaway
1986 Trace Element Investigations of Maya Chert from Belize. Papers of the Colha Project Vol. 1, Center for Archaeological Research, University of Texas, San Antonio.

Some ability to distinguish specific outcrops and locales, cited in Shafter + Hester 1991.

Todd, I. A.
1980 *The Prehistory of Central Anatolia I: the Neolithic Period*. Goteborg, B.A.R.

Cited in Balkan-Atli for obsidian sources described by Payne, maps thereof.

Tolstoy, Leo
1953 *What is Art? and Essay on Art*. Translated by Aylmer Maude. Oxford University Press, London.

cited in discussion of art, *American Flintknappers*

Tomaskova, Silvia
2005 What is a Burin? Typology, Technology, and Interregional Comparison. *Journal of Archaeological Method and Theory* 12 (2): 79-116.

Tomka, Steve. A.
2001 The Effect of Processing Requirements on Reduction Strategies and Tool Form: A New Perspective. In *Lithic Debitage: Context, Form, Meaning.* William Andrefsky Jr. ed., Pp 207-223. Salt Lake City, The University of Utah Press.

Tomka, Steve A. and Elton R. Prewitt
1993 “What do I call thee?” Projectile point types and archaeological interpretations: Perspectives from Texas. *Lithic Technology* 18(2):49-58.

Questions use of point typologies as representing ‘cultures’ or chronology because types are clusters of attributes that respond to technology, function, and style in unknown ways and not necessarily together.

Toner, Mike
2006 Impossibly Old America? *Archaeology* 59(3):40-45.

Good short balanced summary, focus on Goodyear at Topper site in SC where he claims tools 50,000, but mentions critics, also Solutrean argument, Collins at Gault, others.

Topping, Pete
2004 The South Downs Flint Mines: Towards an Ethnography of Prehistoric Flint Extraction. In *Towards a New Stone Age: Aspects of the Neolithic in South-East England*. J. Cotton and D. Field eds., pp. 177-190. Council for British Archaeology Report 137.

Brief description of some Am. Indian mining practices, mostly Plains, especially Minnesota pipestone, used to suggest parallels to Neo flint mining. Emphasizes that mining was socially bound, probably by specialists, with ritual importance. British flint mine info mostly from unpublished Cissbury shafts [with others mentioned but not adequate detail or refs]. Possible return of some used artifacts as "renewal" ritual, structured deposits of tools, human bone, etc with probable parallels to tombs. A couple of apparently female burials raise questions of gender in mines. Mines not just for flint (could have been obtained more easily [although if Longworth and Varndell are right, enormous amount of flint was obtained]), but represent social renewal (training of miners, connection to ancestors), fertility, propitiation of earth or ancestors, liminal spaces with little evidence of habitation, source of symbolically important axes. [Interesting and there are some parallels, but his main interpretations don't need N.A. ethnography - he uses very limited selection; fire and smoke purification relates to tobacco and doesn't apply well to Neolithic Europe, and his American sources over-emphasize role of specialists in knapping which is contradicted by most arch and ethno evidence.]

Topping, Peter
2005 Shaft 27 Revisited: An Ethnography of Neolithic Flint Extraction. In *The Cultural Landscape of Prehistoric Mines*. P. Topping and M. Lynott eds., pp. 63-93. Oxbow Books, Oxford.

Similar to 2004. Useful appendix of specific ethnog info he used.

Topping, Peter
2007 *Grime's Graves*. English Heritage, London.

Short site guide. Descriptions of the excavated mines, mining techniques, good reconstructive drawings. Mention of Brandon gun flint knappers.[Met PT at WAC 2008]

Topping, Peter and Mark Lynott, eds
2005 *The Cultural Landscape of Prehistoric Mines*. Oxbow Books, Oxford.

Topping, Peter and Mark Lynott
2005 Miners and Mines. In *The Cultural Landscape of Prehistoric Mines*. P. Topping and M. Lynott eds., pp. 181-191. Oxbow Books, Oxford.

Torrence, Robin
1982 The Obsidian Trade: The Obsidian Quarries and Their Use. In *An Island Polity: The Archaeology of Exploitation on Melos*. Colin Renfrew and Malcolm Wagstaff, eds., pp. 193-221. Cambridge University Press, Cambridge.

Evaluates economic models for exploitation, assuming that "largest part of exchange system can be studied with least effort by reconstructing behavior at one site, the material source" [a dubious assumption, ignoring equifinality and assuming that different production behavior elsewhere would necessarily structure work at the quarry]
Contrasts "commercial trading theory" to "direct access theory" and attempts to test hypotheses [all very 1970s]. CTT suggests obsid as source of wealth for Phylakopi, assumes profit from obsid exchange, which requires control of source in competitive market system, visible in e.g. boundaries + facilities + defenses at source and at port, long large-scale extraction which is specialized and sophisticated, with special tools, standardized products and waste, low incidence of errors, different production stages, etc. DAT (Renfrew) assumes no fixed rates of exchange or organization, or even necessarily profit motive, obsidian not valuable enough to explain expansion of trade at Phylakopi in BA. In Neo + eBA, consumers came directly to obtain, later more likely reciprocal down the line exchange moved obsid.

Results at Sta Nychia and Demenegaki sources: No structural remains or domestic pottery, no evid of boundaries = no direct control, workers travel from other settlements for short times. Most obsid quarried at rhyolitic outcrops (Shelford's gradational types) with bands of variable thickness. Scored different deposit types for ease of exploitation and intensity - some pref for easiest + most productive source type, but all types used = not local knowledge or industrial specialization. No sophisticated equip or techniques. Small pits and shafts dug, but tools minimal - a few rhyolite cobble tools, hammerstones, + perhaps some big obsid flakes. Macrocore production for further work off site [presumed to be pressure blades] dominates, but cores not very standardized [nor are they datable, could be Neo when pressure not used according to others]. Dimensional analysis of flakes (primary, 2nd, tertiary) - high variability = not standardized production. Variable techniques of core preparation = not standardized [although this could depend on variability of material]. Est .2% rejection of cores, low rate. Surface flake totals estimated: SN 50 million, D 31 million, thus est 3-5 million macrocores produced at each, or total 1,300 metric tonnes, or 133 man-days/yr for 3,000 yrs, so probably not full time specialists. Attempts to recognize diff areas used for diff parts of sequence - no marked spatial variation. Overall, no support for commercial model, small visits by consumers more likely. Phylakopi may have profited indirectly, but not by controlling obsid sources, production, or exchange.

[not much detail of sources and no description of qualities of obsidian, and her plans do not have enough landmarks on them to fit to the sites today when visited 9/07. Check her book.]

Torrence, R.
1983 Time Budgeting and Hunter-Gatherer Technology. In *Hunter-Gatherer Economy in Prehistory*, G. Bailey, ed. Cambridge University Press: Cambridge. p. 11-22.

Torrence, Robin
1986 *Production and Exchange of Stone Tools: Prehistoric Obsidian in the Aegean*. Cambridge, Cambridge University Press.

Torrence, R.

1989 Re-Tooling: Towards a Behavioral Theory of Stone Tools. In *Time, Energy and Stone Tools*, R. Torrence, ed. Cambridge University Press: Cambridge. p. 57-66.

Torrence, Robin
2002 Thinking Big About Small Tools. In *Thinking Small: Global Perspectives on Microlithization*, edited by Robert Elston and Steven L. Kuhn, Archeological Papers of the American Anthropological Association 12, pp. 171-190.

Torres, Dennis
1984 Ishi. *Central States Archaeological Journal*, October 1984: 175-180.

Torres, John
1998 Lithic Procurement in the Eastern Mojave Desert and the Use of the Juan Obsidian Clast Source. *Lithic Technology* 23 (2): 85-89.

Small clasts. Early - dart pts, percussion core/flake production like chert.
Late - small arrow points, bipolar flakes, smaller clasts for blanks.

Torres, John A.
2000 Changing Lithic Technology During the Basketmaker-Pueblo Transition. In *Foundations of Anasazi Culture: The Basketmaker-Pueblo Transition*. Paul F. Reed, ed., pp. 221-229. University of Utah Press, Salt Lake City.

[Interesting but example of extreme mobility-linked explanation]. Cove-Redrock Valley (near Prayer Rock) data to show distinctive Anasazi technology recognizable by BM-P transition, highly evolved and adapted to specific needs. BM II-III becoming sedentary agric. AZ-I-26-34 typical of hunt-gath technol at 585 ± 190 BC: dart pts, bifacial cores for flake production, formal curated tools most common tools, exotic raw materials, = mobility. By later BM times, similar in dart pts, flake tools, some bifacial cores, but tool production trajectory diff - relates to sedentism. Mobility = bifacial cores of high quality curated material, which are too costly as become sedentary, shift to local prospecting embedded in other activity, and “expedient” reduction of cobble cores. Mean flake tool length constant thru time, but mass decreases [seems odd since biface core flakes ought to be thinner than ordinary flakes, but explains as follows:] From BM III, multidirectional cores decrease, cores become more patterned and unidirectional = efficiency in reduction and make better expedient tools. [Still doesn’t explain why trend begins in Archaic.] BM dart pts - Elko + similar types, differ only in that II made from BTF and III made from cobble core flakes. Rapid transition to bow with arrow pts appearing 500-600 AD in BM III, made on core flakes, Rosegate + similar types, small forms of earlier types. Replaced by smaller side-notched pts by early P I, because smaller pts have longer range for big game.

Toth, Nicholas
1985 Archaeological Evidence for Preferential Right-handedness in the Lower and Middle Pleistocene and Its Possible Implications. *Journal of Human Evolution* 14: 607-614.

Toth, Nicholas
1985 The Oldowan Reassessed: A Close Look at Early Stone Artifacts. *Journal of Archaeological Science* 12:101-120.

Experimental studies: 1) many "core tools" are by-products of flake manufacture, not tools themselves, 2) flakes and retouched flakes essential tools, 3) simple technology - not necessarily reflect hominid cognitive ability 4) lots of curation, 5) hominids not necessarily dependent on stone tools for survival

Toth, Nicholas
1987 Behavioral Inferences from Early Stone Artifact Assemblages: An Experimental Model. *Journal of Human Evolution* 16:763-787.

Complex curation and foresight involved

Toth, Nicholas
1987 The First Technology. *Scientific American* 256 (4):112-121.

Koobi Fora experiments. Flakes as important as core tools.
"I wanted to make and use the entire range of artifacts ...to reconstruct...the entire universe of technical possibilities available to our early ancestors..." [not possible!]
Early material selection - reject flawed, but use lava/chert in local proportions - not selecting one.
Forms (Oldowan) do not equal mental templates - not intentional forms, but had mastered concepts of <90 degree platform and <90 degree blow. Right hand preference already developed [poor arguments]. Low cortex = carrying cores.

Toth Nicholas, Desmond Clark, and Giancarlo Ligabue
1992 The Last Stone Axe Makers. *Scientific American* (July 1992): 88-93.

[Calls them axes, but adzes more correct. Good article.]
N. Guinea, Langda, mountain agriculturalists. Axes by specialists + sons. Each man owns 2 or more, each woman 1or more.
Andesite 1-2 hrs from village, blanks made at quarry, 5-10 per ½ hr work. Three stages: 1) crude biface blank at river + quarry 2) at village or field hut do fine flaking by hard percussion, but looks like "soft hammer" in results, often done in work groups 3) final flaking at home. 30-50 minutes total, 10-20% breakage.
Grinding on slabs from 6 hrs distant. About 1 hr for polished bit. Rub with red pigment. Regrind when dull, bring broken adze home because "feel sorry" for them. Use for gift, bride price. Today 3 stone axes for one metal. Traded at distance. Only other stone tools are ground slate knives for a few purposes.

Toth, Nicholas and Kathy Schick, editors
2006 *The Oldowan: Case Studies Into the Earliest Stone Age*. Stone Age Institute Press, Gosport IN.

Toth, Nicholas, Kathy Schick, and Sue Savage-Rumbaugh
2006 A Comparative Study of the Stone Tool-making Skills of *Pan*, *Australopithecus*, and *Homo sapiens*. In *The Oldowan: Case Studies Into the Earliest Stone Age*. Nicholas Toth and Kathy Schick eds., pp. 155-222. Stone Age Institute Press, Gosport IN.

Toth, Nicholas, Kathy D. Schick, E. Sue Savage-Rumbaugh, Rose A. Sevcik, and Duane M. Rumbaugh
1993 Pan the Tool-Maker: Investigations into the Stone Tool-Making and Tool-Using Capabilities of a Bonobo (*Pan paniscus*). *Journal of Archaeological Science* 20:81-91.

Are early hominid capabilities much beyond apes? Kanzi learned by observing knappers flaking then opening box, being verbally encouraged when he tried, and trial and error as he attempted to make sharp flakes to cut open containers to access rewards. He preferred better stone and quickly learned to discern which edge sharpest [how? eye alone or feel?]. Began with weak and clumsy freehand percussion, improved with practice. Developed on own technique of throwing core to floor or onto another rock to break. [Did he throw anything else? What form was the core - not easy to break stone that way. Robin Cleland says used material from Africa, just flat chunks. Did he ever use core to cut?]. Very simple “cores” with battered edges, few and small flakes removed [and most removals must not have been very useful]. [They don’t state much interpretive conclusion, but the evidence of learning and judgement are fascinating, although Kanzi never approaches ability of Oldowan industry makers.] Limited progress because 1) little experience so far 2) musculo-skeletal structure 3) cognitive constraints - so how much of each?

Toth, Nicholas and Michael Woods
1989 Molluscan Shell knives and Experimental Cut-Marks on Bones. *Journal of Field Archeology* 16(2): 245-249.

Flaked shell. Makes cuts like stone, explains lack of stone at some African paleo butcher sites.

Towner, Ronald H and Miranda Warburton
1990 Projectile Point Rejuvenation: A Technological Analysis. *Journal of Field Archaeology* 17(3):311-321.

Experimental rejuvenation and manufacture - different debitage. Different types of pressure flakes - platform preparation (shearing), pressure flaking (thinning), notching.

Tozzer, Alfred M.
1941 Landa’s Relación de las Cosas de Yucatán. *Papers of the Peabody Museum of American Archaeology and Ethnography* 18. Harvard University: Cambridge.

Quote on use of knives in sacrifice in Robicsek and Hales 1984

Trachman, Rissa M.

1999 An Additional Theoretical Perspective on Obsidian Polyhedral Core Platform Rejuvenation. *Lithic Technology* 24(2):119-125.

Dos Hombres, Belize. Tomb with 23,073 obsid artifacts. Analysis of 5,711 blades and cores. Grinding/pecking around circumference of core near or at platform. Pecked up to 1.5 mm deep. Hypothesis: scoring like a glass cutter to break and rejuvenate the core.

Trachman, Rissa M.
2002 Early Classic Obsidian Core-Blade Production: An Example from the Site of Dos Hombres, Belize. In *Pathways to Prismatic Blades: A Study in Mesoamerican Obsidian Core-Blade Technology*. K. Hirth and B. Andrews, eds., pp. 105-119. Cotsen Institute of Archaeology Monograph 45. University of California, Los Angeles.

Consumer site distant from source. Production debris from fill overlying tomb, N = 23,074. Pecking and scoring around cores to break off for platform rejuvenation by bending fracture, experimental replication with Titmus. Makes small blades. Workshop debris but used in secondary ritual deposit.

Trachman, Rissa M. and Gene Titmus
2003 Pecked and Scored Initiations: Early Classic Core-Blade Production in the Central Maya Lowlands. In *Mesoamerican Lithic Technology: Experimentation and Interpretation*, K. G. Hirth ed., pp. 108-119. University of Utah Press, Salt Lake City.

Trainer, T. Mason
1995 Retouch Cutters from the South Nellie Site. privately reproduced + circulated ms.

Trainer, T. Mason
1995 Additional Retouch Oblique Scrapers from the South Nellie Site. Privately reproduced and circulated ms.

Trainer, T. Mason
1995 Retouch Oblique Scrapers from the South Nellie site (Cs 62): A Largely Preceramic Multicomponent Valley Workshop Site. Privately reproduced and circulated ms.

Trainer, T. Mason
1996 Retouch Lithic Tools from a Preceramic Workshop near Nellie, Ohio U.S.A. Privately reproduced and circulated ms.

Trainer, T. Mason
2001 Comparison Data for Retouch Lithic Tools from Preceramic Workshop Sites Near Nellie, Ohio, U.S.A. Manuscript Volume, privately distributed.

[Excessively elaborate discussion of flake tools, but useful photos of tools, etc, and points.]

Treganza, Adan E. and Leonard L. Valdivia

1955 The Manufacture of Pecked and Ground Stone Artifacts: A Controlled Study. *Reports of the University of California Archaeological Survey* 35, Berkeley.

Experiments, steatite ornament manufacture, time info

Trevino, Sergio
1990 *GrainCollection: Humans' Natural Ecological Niche*. Vintage Books, New York.

[Crackpot, hilarious bad reasoning that did not even catch on with popular press]. Grain grows at the height of human hands, can be harvested using simple stone tools to strip. Early stone tools are not useful for butchering, handaxes have no edges and show no wear and no one knows what they were used for. Tools don't change much for long time, so not related to human development of intelligence. Human teeth adapted like some other primates (cites Jolly) for seeds. No evidence of hunting until Wurm's (sic) glaciation. Graincollector thinking reflected in Bible, and humans were good and pure until they started killing and eating animals. [The color plates of happy non-violent human ancestors, depicted as beautiful white people with little body hair and bouncy playboy breasts, carrying babies while butterflies play around them, are the best part of this book, and show its roots in Sunday school literature and vegetarian political agendas.]

Tringham, Ruth
1971 *Hunters, Fishers, and Farmers of Eastern Europe 6000-3000 B.C*. London: Hutchinson and Co. Ltd.

cite for hafted microlith Fig 4 p 39, used *Flintknapping*

Tringham, Ruth, G. Cooper, G. Odell, B. Voytek and A. Whitman
1974 Experimentation in the Formation of Edge Damage: A New Approach to Lithic Analysis. *Journal of Field Archaeology* 1: 171-196.

Cite for early use-wear studies.

Trinkhaus, Erik and William W. Howells
1979 The Neanderthals. *Scientific American* 241 (6): 118 -133.

Trinkaus, Erik and Pat Shipman
1993 *The Neandertals: Changing the Image of Mankind*. NewYork: Alfred A. Knopf.

Tripcevich, Nicholas, and Daniel A. Contreras
2011 Quarrying Evidence at the Quispisisa Obsidian Source, Ayacucho, Peru. *Latin American Antiquity* 22(1):121-136.

Widely distrib in Peru Andes. 34 + quarry pits up to 80 m across. Early stage reduction at source, but much of the material was removed as intact nodules or after minimal reduction. Nodules in situ and 2ndary deposits up to 30 cm.

Trotta, Paul
1996 Some Thoughts on Conservation. *Chips* 8(4):8-9.

Trout, Matt
1997 The Rhinehart-McGee Flaking Jig. *Chips* 9(2):3-5.

Good diagram and explanation of historic Grey Ghost tool.

Trout, Matt
1999 Heat Treating for the Telepathically Challenged: A Systematic Approach to Heat Treating. *Chips* 11(1):15-20.

Prefers long slow heat treatment, success depends on temperature, pressure, time. Small increments - experiments with time and heat change. [Gives good explanation of physics].

Truncer, James
2004 Steatite Vessel Age and Occurrence in Temperate Eastern North America. *American Antiquity* 69(3):487-513.

Tsirk, A.
1974 Mechanical basis of percussion flaking: some comments. *American Antiquity* 39(1):122-130.

Tsirk, Are
1979 Regarding Fracture Initiations. In *Lithic Use-wear Analysis*. Brian Hayden ed., Pp 83-96. New York: Academic Press.

Bending fractures defined, they initiate soft hammer flakes.

Tsirk, Are
1981 On a Geometrical Effect on Crack Front Configuration. *International Journal of Fracture* 17:185-188.

Crack fronts advance more under thicker parts of blades (ridges). Models this phenomenon.

Tsirk, Are
1988 Formation and Utility of a Class of Anomalous Wellner Lines on Obsidian. In *Advances in Ceramics vol 22: Fractography of Glasses and Ceramics*, ed by V.D. Frechette and James R. Varner, pp 57-69. Westerville, The American Ceramic Society.

Associated with stress pulse generated by secondary fracturing behind primary fracture front. Use as velocity and directional indicators.

Tsirk, Are

1989 On Flow Characteristics, Environment Factors, and Fracture Marking Related to Obsidian Flaking. In *La Obsidiana en Mesoamerica*. Margarita Gaxiola G., John E Clark, eds., pp 137-146. Mexico: Instituto Nacional de Antropología y Historia.

Tsirk, Are
1996 Hackles Revisited. In *Fractography of Glass and Ceramics III*. J.R Varner, V.D Frechette, G. Quinn eds., pp 447-472. Westerville, The American Ceramic Society.

More fractography, detail, lots of photos.

Tsirk, Are
1997 On Flintknapping. MS of presentations at Tarta University, Estonia, 1997.

Set of lectures, heavy emphasis on fractography [some useful, some incomprehensible].

Tsirk, Are
2009 Notes on a Fractography Guide. *Lithic Technology* 34(1):3-6.

Tsirk, Are
2009 A Knapping Dilemma with Transverse Blade Breakage. *Lithic Technology* 34(2):111-118.

Tsirk, Are
2010 Popouts and Related Fractures. *Lithic Technology* 35(2):149-170.

Bending, compression, and other fracture mechanic issues.

Tsoraki, Christina
2011 Stone-working traditions in the prehistoric Aegean: The production and consumption of edge tools at Late Neolithic Makriyalos. In *Stone Axe Studies III*. Vin Davis and Mark Edmonds, ed., pp. 231-244. Oxbow Books, Oxford.

Tubb, Kathryn W., editor
1995 *Antiquities Trade or Betrayed: Legal, Ethical, and Conservation Issues*. Archetype Publications Ltd, London.

Tuck, Catherine, and Peter Topping
2005 Virtually Prehistoric: Seeing Beneath the Surface at Grime's Graves Neolithic Flint Mines, Norfolk. In *The Cultural Landscape of Prehistoric Mines*. P. Topping and M. Lynott eds., pp.192-197. Oxbow Books, Oxford.

1995 surface mapping. Mines cover at least 6 hectares, 433 backfilled shafts, pits, waste dumps on rise, lower land no surface traces. Greenwell's pit excav 1868, 1970s, laser 3D model [records = quality of good close photo]. Use for interactive display, calculate quantity of flint. [but foolishly they don't give us that estimate]

Tucker, Gordon C. Jr.
1980 Quantitative Affirmation of Intuitive Typology. *Tebiwa Miscellaneous Papers in Regional Anthropology* No. 22

Quantitative typology of projectile points - size and hafting changes important in the transition from dart to arrow point in the Great Basin.

Tunnell, Curtis
1979 Don't Be a Knapping Vandal. *Lithic Technology* 8(1), also reprinted as untitled letter, *Flintknappers' Exchange* 2(2):2 (1979), and in *Bulletin of Primitive Technology* 5:71 (1993).

Working with Texas quarries. Appeal to knappers: don't contaminate with modern debitage, don't collect or use artifacts, collect stone only from disturbed areas. Sources being rapidly overexploited by growth of knapping and commercial sale of stone.

Turek, Jan
2011 Stone axes in the Bohemian Eneolithic: Changing forms, context and social significance. In *Stone Axe Studies III*. Vin Davis and Mark Edmonds, ed., pp. 385-398. Oxbow Books, Oxford.

Turner, Robert
2013 *Flint Knapping: A Guide to Making Your Own Stone Age Toolkit*. The History Press, Stroud, Gloustershire, UK.

[Too bad, could have been a nice little book, but there are so many problems, some on every page, that it can't be recommended. Illustrations mostly ok, but not great. Those he uses at the end of the book in 'Illustrating Your Flints' are pretty good - why are most of those elsewhere so poor? Worst problems are incorrect or confusing angles of blow on diagrams explaining flaking, and not enough information for a beginner to start effectively. He suggests Hertzian cone angle as way of visualizing flaking angles - that's ok, but then why are so many diagrams wrong? Many mistakes and innaccuracies in describing stone materials. For instance, the flint used in lighters is not really flint. Good advice on safety in several places. Endshock misunderstood, incorrect use of some archaeological terms like 'bipolar' and 'crested blade.' Explanations of pressure flaking have some good points like aiming pressure at first knuckle of holding hand, but he seems to work with glass slabs and doesn't do them right or explain a good thinning sequence, so he produces ugly flat points. Overall his knapping skills seem to be competent but not great. He includes a long comment on beginning by Mark Ford, who seems to be trained in same tradition of glass slab working. Levallois technique poorly explained in two places, and he claims it produced arrowheads! Organization is confused, including a chapter titled 'Introduction to American Flint Knapping' that begins a section on that topic, but is entirely about Danish daggers. The following chapter on US point types has horrible drawings and inadequate descriptions of a number of midwestern types. Short section by DC Waldorf on modern American knapping. Turner seems to have visited a midwest knap-in, been impressed by US skills and art knapping, but doesn't understand it well. Bibliography of 8 entries, only a couple useful, not included are my books, or any current archaeology or lithic studies that would be useful to a beginner or support some of his prehistory. Turner seems to be an amateur who demos and teaches knapping at a couple of institutions.]

Turner, Victor
1969 *The Ritual Process: Structure and Anti-Structure*. Aldine Publishing Co., Chicago.

Turkowski, Lucian
1969 Peasant Agriculture in the Judean Hills (concluded). Palestine Exploration Quarterly. 101(101-112).

mention of threshing sledges

Turnbow, Christopher A.
2009 Diagnostic Arrow Points of the Mimbres. *Newsletter of the New Mexico Archeological Council* 2009-4:10-16.

Defines several types, starting with Mimbres Corner Notched (550 to 1000s), small, narrow to broad notches, straight to convex edges, convex base. Diablo Corner Notched (550-700 AD) thin, deep narrow corner notches, wide blade, small stem, straight base. Some large enough for small dart points. [This is like the early arrow pts in Anasazi area, probably transitional, although dating early for bow.] Then three STPC types: Swartz (low side notches, narrow blade) Cosgrove (multi side notches or serrations) Hinton (low, wide side notches and concave base) go into 1100s and 1200s.

Turner - Pearson, Katherine
2008 The Stone Site: A Waco Indian Village Frozen in Time. In *Land of Our Ancestors: Studies in Protohistoric and Historic Wichita Cultures*, edited by T. Baugh and S. M. Perkins. *Plains Anthropologist* 53(208) Memoir 40:565-576.

Abandoned 1770s on cusp of contact. Lots trade beads and gun parts, few ceramics. English + French gun parts, Fr + Spanish flints. Fr flints of rounded spall style, Spanish are rectangular bifacial and at least some of local stone.

Turner, Ellen Sue and Thomas R. Hester
1985 *A Field Guide to Stone Artifacts of Texas Indians*. Austin: Texas Monthly Press.

Turpin, Solveig A. and Leland C. Bement
1992 Skyline Shelter and Devils Triangular Dart Points: Evidence for a New Component of the Lower Pecos Early Archaic Sequence , Southwest Texas. *Plains Anthropologist* 37 (138): 41-57.

Triangular dart points, evidence for hafting and use-damage, manufacture at site, associations, connections to Mexico and south.

Tuttle, John

1988 Heat Treating of Various Lithic Materials. *20th Century Lithics* 1:80-81.

Rambling personal examples.

Twiss, Katheryn C.
2007 The Neolithic of the Southern Levant. *Evolutionary Anthropology* 16(1):24-35.

Tycot, Robert H.
2003 Determining the Source of Lithic Artifacts and Reconstructing Trade in the Ancient World. In *Written in Stone: The Multiple Dimensions of Lithic Analysis*. P. N. Kardulias and R. W. Yerkes, eds., pp.59-85. Lexington Books, Lanham.

Review of methods, Mediterranean obsidian focus.

Tyler, D.E
1986 *Earliest Man of America in Oregon, U.S.A*. Discovery Books, Ontario.

[Crackpot, badly written.] Pliocene Man in Oregon [quarry debris and geofacts mistaken for ancient tools]. Human and other life originated spontaneously from volcanic chemicals [!].

Ulke, Titus
1929 The Artifacts of the Potomac Valley Indians. *American Anthropologist*, n.s. 31(1):122-129.

Describes stone tools of all sorts [not useful]. Bannerstones as ceremonial.

Unger-Hamilton, Romana
1989 The Epi-Paleolithic Southern Levant and the Origins of Cultivation. *Current Anthropology* 30 (1):88-103.

Microwear study of sickle blades: Experimental harvesting of wild grains, exam of 761 prehist blades. Notes variability in yield of wild grains, confusing effects of weeds in fields. Short time available. Soil conditions affect ease of harvest and striations on blades. Most early sickle blades used for grain harvest, but other uses also seen.

Unger- Hamilton, Romana
1992. Experiments in Harvesting Wild Cereals and Other Plants. In *Préhistoire de l'Agriculture: Nouvelles Approaches Experimentales et Ethnographiques*. Patricia C. Anderson, ed., pp. 211-224. Centre Nationale de la Récherche Scientifique, Paris.

1999 Harvesting Wild Cereals and Other Plants: Experimental Observations. In *Prehistory of Agriculture: New Experimental and Ethnographic Approaches*. Patricia C. Anderson ed., Monograph 40, Institute of Archaeology, University of California, Los Angeles, pp. 145-152.

Tried different types of sickles. Some crops don't sickle well. Presence of soil affects wear. Thin stems, ie wild, work best with unretouched sharp edge; small teeth are better on thicker domestic stems.

Unger-Hamilton R., R. Grace, R. Miller, and C. Bergman
1987 Drill bits from Abu Salabikh, Iraq. In *Le Main et l'Outil: Manches et Emmanchements Préhistoriques*. D. Stordeur ed., pp. 269-285. Lyon: Maison de l'Orient.

United States Census Bureau
1995 *Statistical Abstract of the United States*. United States Census Bureau, Washington, DC.

Unrath, G.
1987 The Burins from Umingmak: How to Use Thumbnaiil Sized Tools. In *LeMain et l'Outil: Manches et Emmanchements Préhistoriques*. D. Stordeur ed., pp. 145-146. Lyon: Maison de l'Orient.

Valdez Jr., Fred
1989 An Analysis of Obsidian from the Copan Valley Project, 1975-1977: A Preliminary Statement. In *La Obsidiana en Mesoamerica*. Margarita Gaxiola G. and John E. Clark , eds., pp. 81-88. Mexico: Instituto National de Anthropogia e Historia.

Valdez, Fred, and Daniel R. Potter
1991 Chert Debitage from the Harvard Copán Excavations: Descriptions and Comments. In *Maya Stone Tools: Selected Papers from the Second Maya Lithic Conference*. T. R. Hester and H. J. Shafer eds, pp. 203-206. Prehistory Press, Madison.

Valla, F.R.
1987 Les Natoufiens connaissaient-ils l'arc? In *Le Main et l'Outil: Manches et Emmanchements Préhistoriques*. D. Stordeur ed., pp 165-174. Lyon: Maison de l'Orient.

[In French] Did the Natufians know the bow? Mid East Epipaleolithic/Mesolithic 10,500-8300 B.C. Older research skeptical, more recent receptive, oldest bow and arrow specimens Stellmoor, Germany, 8500 B.C. No proof possible for Natufian, but small flint armatures (lunate microliths), light bone points with and without flint edges, and grooved stone possible shaft straighteners are all what one might expect with bow and arrow.

Vallin, Luc, Bertrand Masson, and Jean-Paul Caspar
2001 Taphonomy at Hermies, France: A Mousterian Knapping Site in a Loessic Context. *Journal of Field Archaeology* 28 (3-4): 419-436.

Middle Paleolithic debitage clusters show higher rates denticulates and notches, which have no use-wear and may result from trampling and other taphonomic processes.

Vallin, Luc, and Bertrand Masson

2004 Behaviour Towards Lithic Production During the Middle Palaeolithic: Examples from Heries Le Champ Bruquette and Hermies Le Tio Marché (Pas-de-Calais, France). In *Lithics in Action: Papers from the Conference 'Lithic Studies in the Year 2000'*. E. A. Walker, F. Wenban-Smith, and F. Healy eds., pp. 6-25. Oxbow Books, Oxford.

Refitting allows more realistic view of living surfaces, showing that Mid Pal did have structured occupation space with specialized production sites and internal organization of individual sites.

Van Arsdale, Scott
1995 Letter. *Chips* 7(2):1.

Van Arsdale, Scott
1996 Avoiding Silicosis. *Chips* 8(1):21-22.

Van Arsdale, Scott
1999 Flake Over Grinding or Fake Over Grinding. *Chips* 11(1):6.

Objects to articles in Missouri Conservationist in which knapper Tim Murphy says ground preforms are not good knapping. FOG is still art, requires skill, not just replicating. Don't demean others!

Vance, Elizabeth D.
1987 Microdelitage and Archeological Analysis. *Archaeology* 40 (4): 58-59.

1-.063 mm. Indicates location of knapping in structures.

Van den Dreis, Monique, and Annelou van Gijn
2005?? The Representativity of Experimental Usewear Traces. In *Siliceous Rocks and Culture*, edited by A. Ramos-Millan and A. M. Bustillo, pp. 499-513. Universidad de Granada.

van der Vaart, Sasja
2009 Bell Beaker Wrist-guards Reconsidered: A Research into their Functionality and Possible Uses. unpublished BA thesis, Faculty of Archaeology, University of Leiden.

Examined 15 Dutch specimens, microwear. Variety of forms, materials, but several slate. No rivets. Often but not always assoc with inside L arm of burial. Wear in holes shows some were fastened to arm or other material with cord. Experimental manufacture not difficult: 200-100 minutes. Trial by archers: work for wrist-guard. Probably symbolic importance, but some at least practical too. Early bow dates: earliest Dutch bow Mesolithic 4900 cal BC, 4 others from Neo/EBA 2900-1700. All self bows, D-shape x-section.

Van Gennep, Arnold
1960 *The Rites of Passage* (translated by Monika B. Vizedom and Gabrielle L. Caffee). Routledge and Kegan Paul, London.

Van Gijn, Annelou
1992 The Interpretation of Sickles: a Cautionary Tale. In *Préhistoire de l'Agriculture: Nouvelles Approaches Experimentales et Ethnographiques*. Patricia C. Anderson, ed., pp. 363-372. Centre Nationale de la Récherche Scientifique, Paris. and in 1999 *Prehistory of Agriculture: New Experimental and Ethnographic Approaches*. Patricia C. Anderson ed., Monograph 40, Institute of Archaeology, University of California, Los Angeles, pp. 254-259.

Netherlands bifacial crescentic tools with gloss on both edges identified as sod cutters rather than sickles.

Van Gijn, Annelou
2005??? A Functional Analysis of Some Late Mesolithic Bone and Antler Implements from the Dutch Coastal Zone.

Van Gijn, Annelou
2006 Implements of Bone and Antler: A Mesolithic Tradition Continued. In *Schipluiden: A Neolithic Settlement on the Dutch North Sea Coast c. 3500 CAL BC. L. P.* Louwe Kooijmans and P. F. B. Jongste, eds., pp. 207-224. Analecta Praehistorica Leidensia 37/38. Leiden University, Leiden.

Metapodial awls and chisels, groove and splinter technique for working antler, antler sleeves and axes. Use-wear, fine wood working and basketry tools.

Van Gijn, Annelou
2006 Ornaments of Jet, Amber, and Bone. In *Schipluiden: A Neolithic Settlement on the Dutch North Sea Coast c. 3500 CAL BC. L. P.* Louwe Kooijmans and P. F. B. Jongste, eds., pp. 195-205. Analecta Praehistorica Leidensia 37/38. Leiden University, Leiden.

Jet (lignite, burnable) washed up on shore, complete production sequence represented. Amber rarer. Small flint drills.

van Gijn, Annelou
2010 Not At All Obsolete! The Use of Flint in the Bronze Age Netherlands. In *Lithic Technology in Metal Using Societies*, B. V. Eriksen ed., pp.45-60. Arhus, Arhus University Press.

van Gijn, Annelou
2010 *Flint in Focus: Lithic Biographies in the Neolithic and Bronze Age*. Sidestone Press, Leiden.

Use-wear and contextual study allows detailed 'life histories' of individual artifacts which reveal social information. [Fine book with lots of info, excellent illustrations.]
Info on elf-stones, lightning connections of flints, use of axes, ritual.

Van Gijn, Annelou, and Jaap Boon
2006 Birch Bark Tar. In *Schipluiden: A Neolithic Settlement on the Dutch North Sea Coast c. 3500 CAL BC. L. P.* Louwe Kooijmans and P. F. B. Jongste, eds., pp. 261-266. Analecta Praehistorica Leidensia 37/38. Leiden University, Leiden.

A lump with tooth marks. For hafting, as seen on some stone tools, and water proofing. Produced by heating in absence of oxygen, probably in pottery. Spectrographic analysis shows mixed with beeswax, so access to honey, maybe managing wild bees.

Van Gijn, Annelou, and Rob Houkes
2006 Stone, Procurement and Use. In *Schipluiden: A Neolithic Settlement on the Dutch North Sea Coast c. 3500 CAL BC. L. P.* Louwe Kooijmans and P. F. B. Jongste, eds., pp. 167-193. Analecta Praehistorica Leidensia 37/38. Leiden University, Leiden.

net sinkers, hammerstones, grinders, querns, axes, pyrite + flint fire kit in grave. Use-wear and residue.

Van Gijn, Annelou and Marcel J. L. Th. Niekus
2001 Bronze Age Settlement Flint from the Netherlands: The Cinderella of Lithic Research. In *Patina: Essays Presented to Jay Jordan Butler on the Occasion of his 80th Birthday*, edited by W.H. Metz, B.L. van Beek, and H. Steegstra, pp. 305-320.

Van Gijn, Annelou and Daan C. M. Raemaekers
1999 Tool Use and Society in the Dutch Neolithic: The Inevitablility of Ethnographic Analogies. In *Ethno-Analogy and the Reconstruction of Prehistoric Artefact Use and Production*, edited by L. R. Owen and M. Porr. Urgeschichtliche Materialhefte 14:43-52. Mo Vince Verlag, Tubingen.

Van Gijn, Annelou, Veronique van Betuw, Annemieke Verbaas, and Karsten Wentink
2006 Flint, Procurement and Use. In *Schipluiden: A Neolithic Settlement on the Dutch North Sea Coast c. 3500 CAL BC. L. P.* Louwe Kooijmans and P. F. B. Jongste, eds., pp. 129-166. Analecta Praehistorica Leidensia 37/38. Leiden University, Leiden.

A few high quality imported flints, mostly local rolled pebbles of unknown source. Tools for hide work, cereal harvest, ornament making, fire starting = activities of complete households. Polished axe fragments, blades of import. Triangular and leaf shaped arrow points [very simply made] with impact and striated use wear, sometimes traces of hafting mastic tar. Strike-a-lights are long clunky blade flakes with steep retouch around perimeter, sharpish end with wear consisting of multitude of small impact fractures and linear matt rough polish, with glossy surfaces elsewhere. Set of 3 with pyrite in hand of burial.

van Gurp, Gerald, Timothy J. Hutchinson, and William A. Alto
1990 Arrow Wound Management in Papua New Guinea. *The Journal of Trauma* 30(2):183-188.

Mostly patients were tribal fighting victims; bush knife, axe, + arrow wounds, latter most common, so far no gun wounds. Two-part arrows, total L 1 m, bamboo with wooden points 10-30 cm L, no fletch. Black palm wood bows, bamboo strip strings. [Still fighting much as seen by Gardner 20 yrs earlier.] Government intervention “has become ineffective in recent years…relies on a mobile police riot squad that indiscriminantly burns houses and kills livestock of the warring parties.” Reviewed all arrow wound cases for 1987, N = 90, 83 adult male, 4 women, 3 boys. Orbit, thoracic cavity, popliteal fossa considered vulnerable favorite targets. Wounds to head + neck (16), arm (7), chest (40), abdomen (10), leg (37). Wood points not visible by X-ray. Only 4/90 died; several case studies detailed.

VanNest, Julieann
1985 Patination of Knife River Flint Artifacts. *Plains Anthropologist* 30 (110 pt 1): 325-339.

Patination reviewed. Patina of KFR through desilicification, discusses factors affecting rate.

VanPeer, Philip
1991 *The Levallois Reduction Strategy*. Madison, Prehistory Press.

Levallois = a concept, strategy rather than a single morphology - assymetrical volume, with upper (flake) surface and lower (platform) surface. End products produced from proximal platform only, while other plats around perimeter used for preparation - so longitudinal approach axis. Convex upper surface maintained, allows large removal end products, but means only a few possible. End product shape partly and intentionally determined by preparation methods - resulting in different patterns - flakes, blades, or points.

VanPool, T., C. VanPool, R. Antillon, R. Leonard, and M. Harmon
2000 Flaked Stone and Social Interaction in the Casas Grandes Region, Chihuahua, Mexico. *Latin American Antiquity* 11 (2) : 163-174.

Compares cores and debitage at Paquime and Galeana (similar lg site 40 km away). Concludes P had different and better stone, thus unlikely that were part of same sphere, so Paquime not as widely influential as DiPeso thought. [Flawed by poor methodology: use of Sullivan and Rozen debitage categories and failure to look directly at tools.]

Vanzetti, A., M. Vidale, M. Gallinaro, D.W. Frayer, and L. Bondioli
2010 The Iceman as a Burial. *Antiquity* 84(325): 681-692.

Spatial analysis of distribution of artifacts suggests was an intentional burial on small stone platform. Artifacts and body distributed downslope, inconsistent with deposition at position of body, but consistent with movement by ice and water. Burial explains unfinished tools, grass mat better as shroud than cape. Hand wound was healing, arrow wound fatal, so different events. Last meal was cultivated grain, gut pollen suggests roaming different altitudes in Spring, but ice pollen shows formation in late summer - early fall. So, died at low altitude in April, stored in ice or cold spot, forming limited adipocere and mummifying

until burial at high altitude in Aug/Sept. Covered with snow, later warming when body and goods slumped into depression below platform, body moving in semi-melted ice. Contrary to ‘disaster theory’ this means goods not necessarily snap shot of one man’s equipment or ‘mountain survival kit.’
[Statistics opaque to me, but plans of site show patterns clearly. Notable that as the US throws away our archaeology, Europe celebrates the ancient dead and they continue to teach as new ideas develop.]

Vargiolu, Roberto, Hassan Zahouani, and Patricia C. Anderson
2003 Étude tribologique du processus d’usure des lames de silex et fonctionnement du tribulum. In *Le Traitement des Récoltes: Un Regard sur la Diversité du Néolithique au Présent*. P. C. Anderson, L. S. Cummings, and T. K. Schippers, eds., pp. 439-454. APDCA, Antibes, France.

[In French] Use-wear study of flint blades and the function of threshing sledges.

Varndell, Gillian
2005 Seeing Things : A. L. Armstrong’s Flint Crust Engravings from Grimes Graves. In *The Cultural Landscape of Prehistoric Mines*. P. Topping and M. Lynott eds., pp. 51-62. Oxbow Books, Oxford.

Scratched animal motifs on chalk and cortex, Armstrong excavs early 1900s. Armstrong believed Grimes Graves was Paleolithic. None of the designs stands up to modern examination – only found while he was digging, natural and accidental lines enhanced with Chinese White, not consistent with Paleo style or Neo finds. Fake or wishful thinking.

Vaughan, Patrick
1985 *Use-Wear Analysis of Flaked Stone Tools*. Tucson : University of Arizona Press.

Vaughan, Patrick C.
1985 The Burin-Blow Technique: Creator or Eliminator? *Journal of Field Archaeology* 12(4): 488-496.

Burins as tools, also as backing, determined by microwear. [Good bibliog on burins.]

Vaughan, Patrick C.
1987 Wear Analysis of a Lower Magdelenian Flint Assemblage from Southwestern France. In *The Human Uses of Flint and Chert*. G. Sieveking and M. Newcomer eds, pp. 111-114. Cambridge: Cambridge University Press.

Vaughan, P.C
1987 Positive and Negative Evidence for Hafting on Flint Tools from Various Periods (Magdelenian through Bronze Age). In *Le Main et l’Outil: Manches et Emmanchements Préhistoriques*. D. Stordeur ed., pp. 135-144. Lyon: Maison de l’Orient.

Vaughan, P., C. Jarrige, and P. Anderson-Gerfaud

1987 Sickles and Harvesting Motions in Baluchistan (Pakistan). In *Le Main et l'Outil: Manches et Emmanchements Préhistoriques*. D. Stordeur ed., pp. 311-318. Lyon: Maison de l'Orient.

Vehik, Susan
2002 Conflict, Trade and Political Development on the Southern Plains. *American Antiquity* 67 (1): 37-64.

Lithic material among ritual/status/trade goods include obsidian, Florence A chert, Alibates, KS Flint Hills chert. [Photo shows large biface looks like WY Tiger chert but form different from my SW examples, context apparently after 1450.]

Vehick, Susan
2007 The Yellow Creek Cache: Implications for Understanding Caching Decisions. *Plains Anthropologist* 52(201):93-107.

Large number tools (beveled knives, end scraper, small triangular arrow point), bifaces, debitage of Florence A chert from 225 km distant. Late prehistoric bison hunting expedition cache from Lower Walnut focus villages in S Central KS. Items of limited usefulness cached, suggests factors include disposal of excess materials as well as availability of materials at home and area through which hunters moved.

Vemming, Peter
2010 Early guns and gunpowder - experiments and ethnoarchaeological research. *EuroREA: Journal of Reconstruction and Experiment in Archaeology* 7:23-26.

Known in China by 1000 AD, Bacon in England mentions 1267. Sulphur extraction and trade stations in Iceland in the 14th C; begun by 1100 for wine production, not until after 1300 demand for gunpowder. European cannons in battle by 1350. Rapid adoption and spread. Experiments show more effective than thought; main reason for non-dominance was difficulty of supply of reliable powder + ingredients.

Medieval Center and Danish Army since 2001, replica of small Loshult gun - oldest surviving gun in world, fromSweden. Experiments with gunpowder recipes using ingredients produced by traditional methods - charcoal, sulphur from Iceland, saltpeter from Chile. Not yet successful at producing saltpeter from animal dung. Sicily succeeded Iceland as sulphur source until UT in US [no dates given]. Natural saltpeter from Bengal, sources recorded, but access too dangerous today, but documented similar along Ganges near Calcutta.

The canon: first replica bored out. Next cast by bell foundry experimenters U Denmark. S India, Bangalore casters used lost-wax, still 350 yr old techniques, taught Danes. Experiments continue.

Verbaas, Annemieke and Annelou van Gijn
2007 Use-Wear Analyses of the Flint Tools from Geleen-Janskamperveld. *Analecta Praehistorica Leidensia* 39:173-184.

Verbaas, Annemieke and Annelou van Gijn

2007 Querns and Other Hard Stone Tools from Geleen-Janskamperveld. *Analecta Praehistorica Leidensia* 39:191-204.

Use wear analyses

Verrey, Robert
1981 Heat Treatment of Flint Run Jasper. *Flintknapper's Exchange* 4(2): 14-17.

Villa, Paola
1990 Torralba and Aridos: Elephant Exploitation in Middle Pleistocene Spain. *Journal of Human Evolution* 19: 299-309.

Not good evidence of hunting elephants, but clear evidence of organized, planned butchery, probably by first access to carcass, scavenging with tools and materials brought and reworked on site. Crits Binford. [Cite for association of hand-axes with butchery event in Whittaker and McCall.]

Vishnyatsky, L.B.
1994 "Running ahead of time" in the development of Paleolithic industries. *Antiquity* 68(258): 134-140.

[Good ideas, badly written]
Pre-Aurignacian and Amudian, Howiesons Poort industries as precocious blade industries - no real explanation yet, but notes that many things run ahead, e.g. pottery + stone grinding in Upper Pal [metal at Catalhuyuk]. Some technology known but not used much, not necessary? So it doesn't shift from "invention" to "innovation." Implies punctuated evolution of culture, and cultural continuity may be masked in periods when lots of new innovations are adopted.

Volkov, P.V.
2000 New Aspects of Research in Experimental Paleolithic Archaeology. *Archeology, Ethnology, and Anthropology of Eurasia* 4 (4): 30-37.

Stereotypical/habitual behavior varies by individual (skilled vs novice) and by ethnic group - ie culturally preferred (stylized) choices among solutions to common technical problems leave different *chaine operatoires*. Knapping examples:
Novice knappers: multiple strokes on same spot, poor platform preparation.
Ethnic differences in holding preferences and position are likely [not detailed].

Vuillemey, M.
1987 Un Emanchement Hypothétique: Fiction ou Réalité? In *Le Main et L'Outil: Manches et Emmanchements Préhistoriques*. D. Stordeur ed., pp 323-326. Lyon: Maison de L'Orient.

Waddington, Clive

2004 *The Joy of Flint: An Introduction to Stone Tools and Guide to the Museum of Antiquities Collection*. Museum of Antiquities, University of Newcastle-upon-Tyne.

[Pictorial introduction to British lithic archaeology. Some nice photos, but text is sloppy, many of the diagrams are outdated and poor, little info on knapping and how tools were made. Diagram of flintlock which claims to be from my *Flintknapping* book is hideously and inaccurately misdrawn. Could have been a good intro if more care had been taken.]

Wadley, Lyn
2005 Putting Ochre to the Test: Replication Studies of Adhesives that may have been used for hafting tools in the Middle Stone Age. *Journal of Human Evolution* 49:587-601.

Ochre + backed tools back 300 kya, but not necessarily symbolic. Blombos Cave 77 kya shell ornaments + engraved ochre = earliest symbolic behavior, but also ochre has other functions. Antibacterial, useful in tanning. Successful adhesives need an inert powder "loading agent" which helps mix wax + resin, harden.
Sibudu cave MSA tools with ochre on prox end. Experimental hafting with Acacia resin + hematite (blob haftings, some with twine, various mastic preparations), tools used to chop bark for 6 minutes. Acacia resin is thin and water soluble, needs drying, drys brittle. Added ochre makes less brittle, less soluble, as does added beeswax. [A few too many small variables were varied, and overall subjective experiment, but useful.] Brittle unloaded resin might release a point in a wound; loaded resin hold a point for repeated thrusts. MSA people manipulated ingredients purposefully.

Wadley, Lyn
2010 Compound-adhesive manufacture as a behavioral proxy for complex cognition in the Middle Stone Age. *Current Anthropology* 51, supplement 1:S111-S119.

Builds on 2005. Compound adhesives in S Africa by 70,000 ya, attaching segments to hafts, in varying positions, which requires mental rotation of artifacts. Disparate ingredients, irreversible process transforming the mastic. Artisan holds in mind what needs to be done, what has been done, carries out multiple tasks leading to a goal or template. So complex mental abilities but not necessarily symbolic behavior. [Although claims language, (which is inherently symbolic), must be used to teach the process. That's arguable too.] Experiments with *Acacia* gum, runny fresh, brittle when dry. Brittle might be desired for points to detach in wound [dubious – hafting must be strong enough to penetrate, brittle attachment would be poor choice.] Adding ochre as evidenced on some segments makes stronger, less brittle. Drying at fire also, but requires care and skill. No set recipe, must respond to conditions. [Never explained why *Acacia,* which seems poor choice of resin. No pics, so can't evaluate the experimental haftings.]

Wadley, Lyn, Bonny Williamson, and Marlize Lombard
2004 Ochre in Hafting in Middle Stone Age Southern Africa: A Practical Role. *Antiquity* 78 (301): 661-675.

Ochre in very early African sites: evidence for symbolic use like body paint? Maybe, but also useful antibacterial in tanning. Sibudu Cave MSA 60,000-20,000 BP ochre on tool butts, assoc with hafting wear and plant resin and starch residues, argues for hafting mastic. In resin glue, ochre helps prevent brittleness and emulsifies mixes of wax and resin. Even if not symbolic, indicates sophisticated technol involving planning, combining ingredients, heating, hafting.

Wagner, Mark J.
2003 In All the Solemnity of Profound Smoking: Tobacco Smoking and Pipe Manufacture and Use among the Potawatomi of Illinois. In *Stone Tool Traditions in the Contact Era*. Charles Cobb, ed., pp.109-126, University of Alabama Press, Tuscaloosa.

Wagstaff, Malcolm
1982 Post-Classical Exchange. In *An Island Polity: The Archaeology of Exploitation on Melos*. Colin Renfrew and Malcolm Wagstaff, eds., pp. 236-244. Cambridge University Press, Cambridge.

Wagstaff, Malcolm and Siv Augustson
1982 Traditional Land Use. In *An Island Polity: The Archaeology of Exploitation on Melos*. Colin Renfrew and Malcolm Wagstaff, eds., pp. 106-134. Cambridge University Press, Cambridge.

Wagstaff, Malcolm, Siv Augustson, and Clive Gamble
1982 Alternative Subsistence Strategies. In *An Island Polity: The Archaeology of Exploitation on Melos*. Colin Renfrew and Malcolm Wagstaff, eds., pp. 172-180. Cambridge University Press, Cambridge.

Wagstaff, Malcolm and John F. Cherry
1982 Settlement and Population Change. In *An Island Polity: The Archaeology of Exploitation on Melos*. Colin Renfrew and Malcolm Wagstaff, eds., pp. 106-134. Cambridge University Press, Cambridge.

Wagstaff, Malcolm and John F. Cherry
1982 Settlement and Resources. In *An Island Polity: The Archaeology of Exploitation on Melos*. Colin Renfrew and Malcolm Wagstaff, eds., pp. 246-263. Cambridge University Press, Cambridge.

Wagstaff, Malolm, and Clive Gamble
1982 Island Resources and Their Limitations. In *An Island Polity: The Archaeology of Exploitation on Melos*. Colin Renfrew and Malcolm Wagstaff, eds., pp.95-105. Cambridge University Press, Cambridge.

Waguespack, Nicole M. and Todd A. Surovell
2003 Clovis Hunting Strategies, or How to Make out on Plentiful Resources. *American Antiquity* 68 (2): 333-352.

Review of faunal evidence supports specialized big-game hunting.

Waguespack, Nicole M., Todd Surovell, Allen Denoyer, Alice Dallow, Adam Savage, Jamie Hyneman, and Dan Tapster
2009 Making a Point: Wood- versus Stone-Tipped Projectiles. *Antiquity* 83(321): 786-800.

Stone points widely used - must be advantageous. But also costly - cites experiments showing high breakage rates in use. Wooden tipped arrows very common ethnographically, even for large game or war, so must be effective.
Experiment - 6 wood tip, 6 stone tip modern cedar arrows (the stone tipped arrows would have been a bit heavier, but statistical tests say no correlation between mass and penetration) fired from fixed modern “compound” [cam and cable] bow at ballistic gel target with/without hide cover, to test penetration and accuracy, at distance of 16.75 m. Stone penetrated 9-10% better, but all penetrated more than 200 mm. Accuracy virtually identical. So is slight stone tip penetration advantage significant? Ethnog shows most assoc with large game, so maybe. And also better medium for symbolic/identity signalling.

Waite, E. G.
1874 The First Trade. *Overland Monthly* 7: 185-186.

Ethnographic info: Klamath Indians, pressure flaking.

Walde, Dale A.
2006 Avonlea and Athabaskan Migration: A Reconsideration. *Plains Anthropologist* 51(198):185-197.

Multiple pottery associations show that Avonlea points are not a good marker of any single (Athapaskan) ethnicity.

Waldorf, D.C.
1980 Untitled Letter. *Flintknappers' Exchange* 3(2):1-2.

Waldorf, D. C.
1984 *The Art of Flint Knapping, 3rd edition*. Moundbuilder Arts and Trading Co., Branson, MO.

fire and water: p 5: Indians had mostly forgotten real technique; those who had not, wanted to fool white man and preserve secrets of their culture. Burroughs popularized in Beasts of Tarzan. Seems logical to those who see effects of heat and water in nature. But “with experimentation it is soon found that, when acting on flint, these elements are uncontrollable. Flint being a fine grained rock will crack and check when heated and suddenly cooled, while large masses of the stone will explode, making this process a very dangerous one.” [same passage in eds 4, 5.]

Waldorf, D. C.
1988 Square Sectioned Axes: A Lesson in Indirect Percussion. *20th Century Lithics* 1:2-7.

Manufacture sequence. Indirect percussion platforming.

Waldorf, D. C.
1988 The Flint Daggers of Denmark. *20th Century Lithics* 1: 48-58.

Rambling intro, summary of typology from Lomberg with comments. Mentions styles, signs of use.

Waldorf, D.C.
1989a An Interview with Jim Spears. *Chips* 1(1):3-5.

Waldorf, D.C.
1989b Dr. Flint: Comments on Notching. *Chips* 1(3):8-10.

Waldorf, D.C.
1989c Editorial. *Chips* 1(1):1.

Waldorf, D.C.
1989d Marking Your Points. *Chips* 1(2):3.

Waldorf, D.C.
1990 From the President. *Chips* 2(1):2-6.

Waldorf, D.C.
1991 Finding the Pony. *Chips* 3(1):2-4.

Waldorf, D.C.
1992 *Caught Knapping*. VHS. Mound Builder Books, Branson.

Waldorf, D. C.
1992 Water Treatment and Onondaga Chert. *Chips* 4 (4):3.

New York material, works better wet, usually doesn't heat treat well.

Waldorf, D. C.
1992 Hertzian Cone Angle Gauge. *Chips* 4(4):9-10.

Useful for judging angle of blow.

Waldorf, D.C.
1993 *The Art of Flint Knapping. 4th ed*. Mound Builder Books, Branson.

Waldorf, D.C.
1994 Destination Denmark. *Chips* 6(1):3-5.

Waldorf, D.C.
1994 Some Notes on Danish Flint. *Chips* 6(1):10.

Different kinds, qualities, sources, uses.

Waldorf, D.C.
1994 Whatever Happened to Flint Knappers Guild International? *Chips* 6 (2): 1-2.

Discusses new knapping organizations, apologizes that FKGI never got going.

Waldorf, D.C.
1995a Machine Pressure Flaking (or How to Win a Tasmanian Virgin). *Chips* 7(1):6-7.

Waldorf, D.C.
1995 Who's Da Judge? *Chips* 7(1): 4-6.

New York knapping contest discussed.

Waldorf, D. C.
1996 On Antler. *Chips* 8(2):4.

Warns of game laws limiting possession of antler.

Waldorf, D. C.
1996 On Ethics. *Chips* 8 (2): 3.

Recommends signing points and honesty, scoffs at excessive purism.

Waldorf, D.C.
1996 Notching in Theory. *Chips* 8 (3): 11-12.

Useful advice on notching.

Waldorf, D.C.
1996. Of Ballast and Washing Machines: A Fantasy. *Chips* 8(1):2-18.

Fantasy of a sailing ship trip to trade washing machines for Danish flint - a literary knapping day-dream.

Waldorf, D. C.
1997 The Olive Branch Site Excavation in November 1996. *Chips* 9(1): 2-8.

"Funded by Mound Builder Books"
Early Archaic Dalton and other material, Alexander Co, Illinois. Gramly and volunteers, excavs in 1988-89 with Leakey Foundation, Nat'l Geographic funding. This time "salvage" excavations tidying up after looters. Illustrated inventory of best finds, points at all stages

of manufacture. Competent description of material use and manufacturing problems. Possible training pieces.

Waldorf, D. C.
1997 Grey Ghosts and Old Timers . *Chips* 9(1): 9-11.

Info on McCormick, Rhinehart, Warren [ok] and Tussinger [vague]. [Mostly similar to what I got from C. Shewey, who is also Waldorf's source.]

Waldorf, D. C.
1997 More on C-Notching. *Chips* 9(4): 15-17.

Waldorf, D. C.
1997 Clovis and Overshot Flaking Techniques. *Chips* 9 (4): 3.

Waldorf, D.C.
1998 *Roasting Rocks: The Art and Science of Heat Treating – The Recipe Book*. Mound Builder Books, Branson.

Useful discussion and especially suggested temperatures for a wide range of materials

Waldorf, D.C.
1998 *Roasting Rocks: The Art and Science of Heat Treating, with D.C. Waldorf*. VHS. Mound Builder Books, Branson.

Waldorf, D.C.
1998 Thor's Toothpick: A Type IV-B Danish Dagger. *Chips* 10 (2):

Describes types of dagger, then blow-by-blow of his manuf of this one - >15 hrs of work over 4 days.

Waldorf, D. C.
1999 Adena Points. *Chips* 11(1):10-14.

Different types of Adena pts illustrated by his work.

Waldorf, D.C.
2000 Clovis Points Then and Now. *Chips* 12(4):11-19.

Waldorf, D.C.
2000 *Novaculite – From Pit to Point with D.C. Waldorf* . VHS. Flintknapper's Corner, Washburn, MO.

Waldorf, D.C.
2000 *Thebes Points and Their Variants*. VHS. Flintknapper's Corner, Washburn, MO.

Waldorf, D.C.
2001 *Getting Started in Flintknapping with D.C. Waldorf*
. VHS. Moundbuilder Books, Branson, MO.

Waldorf, D.C.
2001 A Little More on Heat Treating Ohio Flint Ridge Flint. *Chips* 13 (1): 10-14.

Mentions articles condemning him as faker in Ohio Arch 1979. Variable material over short distance – 3 grades: A) chalcedony, waxy, B) Chert, less good but workable raw, C) rough, hard to work raw. Hard stone, but now likes water treat instead of heat for good stuff. Used to heat in pit with charcoal briquets, now kiln, see his recipe book. Chalcedony 450-<600, chert up to 650.

Waldorf, D.C.
2001 Broad Points. *Chips* 13(1): 14-18.

Perkiomen, Ashtabula etc.

Waldorf, D.C.
2001 Type V-A Dagger, Scott Young Collection. *Chips* 13 (2): 10-17.

Late type Danish Neolithic dagger, 1950-1850 BC. Stitching on edges of handle only in V's while IV's have facial handle stitching – this looks like IV but has problems on face of handle, so not stitched. Reconstruct stages of manuf: mottled beach flint, small cones at end of handle from rolling. Bifacial percussion blade, punch square handle, then pressure, some grinding. [Good detailed descrip and photos and drawings]

Waldorf D.C.
2001 Triangular Arrow Points. *Chips* 13 (3): 13-19.

Madison and related regional types, simple, basic instruction given, 3 female knappers asked to make (Val, Angela Hopkins, Jane Moreland).

Waldorf, D.C.
2001 Lithic Technology for Castaways. *Chips* 13(4): 17-19.

Tom Hanks in movie on volcanic island accidentally breaks rock to discover tool. Best for survivalists is simple flake tools. Avoid “strike on anvil” technique – dangerous. Making a flake axe.

Waldorf, D.C.
2002 Some Early Archaic Corner Notched Serrated Points. *Chips* 14 (1): 10-15.

Several related types: Kirk, Amos, Pine Tree, Charlston, Stillwell. Details of some different serration types.

Waldorf, D.C.
2002 Decatur Fractured Base Points. *Chips* 14(2): 12-18.

Kirk variant, burinated base.

Waldorf, D.C.
2002 Hopewell Ross Points and the Vortex of Sequences, part 1. *Chips* 14 (4): 6-14.

Problems of replicating. Thinks only one or two knappers can. Series of good photos, Field Museum and other specimens.

Waldorf, D.C.
2003 Hopewell Ross Points Part II. *Chips* 15 (1): 9-20.

Prob few expeditions, 1400 miles to Yellowstone and Bear Gulch sources, maybe traded tobacco. Suggests one master knapper did all the major work, plus others worked less desirable pieces. At Hopewell 10,044 pc, 660 lbs obsid. Discusses arch info. Experimental replication – 4/10 successful – direct perc not work, only punching, takes 10-15 hrs on largest. Edge-opposite scars – same pattern both faces. [Good details, illustrations, biblio]

Waldorf, D.C.
2003 Type I Daggers. *Chips* 15 (2): 12-13.

Photos of his replicas, working on dagger book.

Waldorf, D.C.
2004 Fluted Drills and Reamers from the Vail Site. *Chips* 16 (1): 15-21.

Clovis site, Maine, possible kill and camp loci, work by Gramly. Drills made from broken pts of local chert. Specimens and replicas illustrated. Experiments w bow drill and "gimlet"

Waldorf, D.C.
2004 Two Artifacts: Same Time – Different Places. *Chips* 16 (2): 16-19.

Benton point, KY and hollow axe (adze) from Denmark. Described with some cultural context, Val's drawings.

Waldorf, D.C.
2004 Antler Prongs for Copper Pressure Flakers. *Chips* 16 (2): 20-21.

Cuts rods out of old billets, hafts in handle with set screw like copper. Antler tips used duller than copper because work best on less heavily ground stone edges.

Waldorf, D.C.
2004 Meadowood Points. *Chips* 16 (3): 15-20.

Waldorf, D.C.
2004 Some Classic Late Woodland Notched Points. *Chips* 16(4):8-13.

Intrusive Mound, Jack's Reef Pentagonal, others. Notching with beaver teeth not likely, copper or deer ulna works well.

Waldorf, D.C .
2005 *Art of Flintknapping Video Companion*. VHS. Mound Builder Books, Branson.

Waldorf, D.C.
2005 Copper Versus Antler: Pro, Con, and In Between. *Chips* 17 (1): 4-12.

Some hist of Cu, est now 85-90% knappers. DC learned on antler, didn't like Cu until needed to teach Angela Parker daggers. Easy transition from antler to cu. Diffs in flakes: Cu more broken flakes, more errailleur, shattered prox ends, cone cracks, fewer lips. Solid Cu acts like hammerstone, needs continuous plat or pronounced spur plat. Copper boppers (Cu caps) are in between, and can be close to antler. Cu needs heavier plat prep, eg ground continous plats, espec with soft material. This leaves larger bulb negatives and deltas. Harder to get long flakes with Cu, but less biface breakage.

Waldorf, D. C.
2005 Val Waldorf: Nobody Did It Better. *Chips* 17 (3): 4-11.

Personal tribute obituary and biographical info, 9/1/54 to 4/28/05.

Waldorf, D. C.
2005 Some Early Archaic Bifurcated and Lobbed Base Points. *Chips* 17 (3): 13-21.

Kirk, MacCorcle, LeCroy and others.

Waldorf, D. C.
2005 Arrow Points of the Southern Scandinavian Middle Neolithic. *Chips* 17 (4): 7-16.

Begins with prehist fiction. Different types of points described and figured from a book. Pts made on bipolar cylindrical cores [bidirectional, not bipolar]. Replication described. Punched blades, stemmed flake and triangular cross-section points with stitched ridges which require copper. These prob effective piercing leather + wool armor.

Waldorf, D.C.
2005 Afton Points and the Art of Thinning Small Tabular Blocks. *Chips* 18(1):10-15.

Waldorf, D.C.
2006 *The Art of Flint Knapping, 5th edition*. Mound Builder Books, Branson, MO.

Exactly same as fourth, except added final section on copper tools.

Waldorf D.C.
2006 Bifaces of the Southern Scandinavian Neolithic and Early Bronze Ages Part I. *Chips* 18(3):8-15.

Flat bifaces appear late first half of Early Neolithic ca 3500 BC. with early thin-butted square axes. Bifacial work flourished with daggers of Late Neo 2400 BC, but here discuss other bifaces. Dolkstaves: copies of bronze halberds [not accurate copies anyway] resemble some daggers but relatively thick, some asymmetrical. Variety of pt forms resemble American. Hollow based points. Fish hooks, apparently authentic in Denmark, but also fakes as old as 200 yrs.

Waldorf D.C.
2006 Bifaces of the Southern Scandinavian Neolithic and Early Bronze Ages Part II. *Chips* 18(4):8-12.

Sickles, almond shaped preforms found along coasts, used ones develop crescent shape + gloss, found in caches. “Meat knives” and unusual dagger variants. Composite sword replica made for Tom Holck - flint bifacial edges on a wood or bone frame, only one complete specimen known.

Waldorf, D.C.
2007 Making a Super-Sharp Edge by Way of Pressure or Percussion Flaking. *Chips* 19 (1):12-18.

Plat prep by small bevel, then paralell flake in same direction as bevel. [I think initiating by bending] leaving very sharp edge. Antler press works best. Can also do by perc w small billet for resharpening, seen on Mid Paleolithic tools.

Waldorf, D. C.
2007 Story of An Axe. *Chips* 19 (2): 14-17.

Nice Danish polished axe with bending fracture and old resharpening scars from use. Axes <10 inches “working” axes, those >10 ceremonial in caches and graves.

Waldorf, D.C.
2007 Patience, Perseverance, and Understanding. *Chips* 19(3):12-16.

Fiction, Hopewell boy learns to knap, conveys some of rules + philosophy.

Waldorf, D. C.
2007 *D.C. Waldorf’s Guide to the Flint Daggers of Southern Scandinavia and North Germany*. Mound Builder Books, Branson.

History of study, archaeology and typology, then focus on practical problems of manufacture of different types. Well illustrated with photos and drawings by Val Waldorf, of both replications and archaeological specimens.

Personal background; dagger replication beginning in Europe and US early 1980s. Callahan, Stafford influences.

Waldorf, D.C.
2008 Notching: An Overview, Part I. *Chips* 20(1):10-13.
2008 Notching: An Overview, Part II. *Chips* 20(2):10-13.
2008 Notching: An Overview, Part III. *Chips* 20(3): 16-18.

I. Definitions. II. Tools and types of notches. III. Details of technique.

Waldorf, D. C.
2008 A Visit to the Peoria Chert Quarries of N.E. Oklahoma. *Chips* 20(4):4-7.

DC and his "apprentice" Perry Wilbur. Ron Fuller used to work, at site of prehist quarry, now Ratzat owns 7.5 acres. Digs out of clay, from Tahlequah Member of Moorefield Formation above the Burlington-Keokuk (Banks). Also called Keokuk. Harder to work raw than Burlington, holds a lot of water that must be driven off before heating. Complex heating recipe given. Raw grey becomes cream with pinkish, little red spots common.

Waldorf, D.C.
2009 Marking Points with a Vibrating Electric Engraver." *Chips* 21(1):7-9.

Errett + DC marking since 1970s. Problems, resharpening tips.

Waldorf, D.C.
2009 Cover Story: Points of Inspiration. *Chips* 21(1):10-18.

Old points as teaching specimens and inspiration for knappers; his have typical "finding" stories associated with them.

Waldorf, D.C.
2009 Marked Points: Mini Monuments. *Chips* 21(2):9-13.

Mark pts and keep records: monument to self and memories of Val, demonstrates no intent to defraud, tracking ownership.

Waldorf, D.C.
2009 The Good Ol' Rebel: Remembering Dane Martin. *Chips* 21(2):14-23.

Knapping promoter, partner with Waldorfs + wife Mary in *Chips* and Knappers Corner webpage, etc.

2010 From the Editor. *Chips* 22(1): 4-5.

20% decline in subscribers – internet etc. "Gay Blade" by James Howell – multicolored glass with painted armadillo tail handle, Gramly books on Vail and Cumberland (he thinks C is pre-Clovis)

2010 What to Do with a Kentucky Blue Flint Nodule. *Chips* 22(1): 14-16.

aka Sonora chert, St Genevieve member of Slade Formation, round nodules with golf-ball like pits, blue to black inside. Made several pts

2010 Display Cases: Making Your Points Look Better. *Chips* 22(1): 10-13.

2010 A New, Improved Guillotine Power Flaker. *Chips* 22(2):10-12.

2010 Points of Inspiration: Comberland Point Casts Tell a Story. *Chips* 22(2): 12-15.

different stages of fluting. Gramly thinks some Cumberlands pre-date Clovis

2010 Cumberland Points Part II. *Chips* 22(3):10-15.

with comments on calendar age of Clovis and Cumberland by Gramly - Dave Walley, using "infrared laser spectroscopy" to measure energy in points stored by radioactive decay to compare artifacts of similar materials for relative age. Detects fakes if surface energy is same as deeper. TN paleo pts of Ft Payne chert show Cumberland 2-3,000 yrs older than Clovis. Describes and illustrates points from Dutchess Quarry Cave assoc with extinct beaver etc, and from Trinity Site.

Waldorf, DC
2010 Flint Sweethearts. *Chips* 22(4):4-6.

Teaching two women and making flint rings. Begin teaching with small pressure points, minimal kit.

2010 The 20th Anniversary of the Richey Clovis Cache Expedition, East Wenatchee, Washington. *Chips* 22(4):8-18.

Discovered while ditching apple orchard, 1987, supposedly 19 pieces, including 6 C pts, but maybe not all given to owner Richey, and excav not completed. Mehringer did initial excav but felt needed major project, Richey just wanted it done. Richey was offered $20,000 each for large pts, wanted them back from museum. Mehringer would not give commercial advice, did not cooperate with later Gramly dig. Richey asked MG to dig, MG issued first state permit under new law to excav on private land, Mehringer stirred up Colville Federated Tribes who protested when arch team including Waldorfs arrived. MG wore bullet-proof vest, DCW and Jim Fell carried guns. Gramly operation with Buffalo Museum of Science and N Central WA Museum "seamless". DC and others got honor of removing pieces as excav, Val drew. [political situation was murky and not enough detail given to judge this one-sided view]

Waldorf, DC
2011 Cover Story: "Escort to the Underworld" - A Complex Mayan Eccentric Replicated by Dan Theus. *Chips* 23(1):8

photo comps to original - replic smaller, a bit less delicate looking at same scale. Orig in Dallas Museum of Art. Crocodile/canoe/water monster/horned serpent carries Maize God to underworld. Theus used brown Pedernales chert, 11.75" long, 5"W, 9/16" T. Took 47 hours, after 3 failures, punch and pressure on perc biface.

Waldorf , DC
2011 The Richey Clovis Cache, Part II. *Chips* 23(1):10-20.

Artifacts to Buffalo for analysis for 2 yrs, digging rights sold to Washington State Hist Soc for $250k, Richey donated artifacts to offset tax gain, moratorium on digging expired 2007, but no work likely because of stipulations by land owners and Indians. Gramly left Buffalo Mus, started Am Soc for Amateur Arch, published site through his own Persimmon Press, Val's orig drawings sold, Gramly sold notes to collector who donated to TX A+M. [The theme of problems at this site: everyone involved wanted to make money.] Rumors of other nearby finds. Agate sources near Ephrata, 35 m away, and a diff agate prob from Battle Mt area N NV. "Evidence that some were cooked." At least 3 knappers, one L handed. Val pics of artifacts, DC discussions. 14 bone rods: foreshafts, spear pts, sled runners, or he favors wedges tightening hafting for big Clovis knives. Blood residue tests showed bison, deer, rabbit, human, no megafauna, but bone rods are mammoth.

Waldorf, DC
2011 The Badger Mountain Clovis. *Chips* 23(1):21.

Largest Clovis, found 7.5 miles from Richey C cache site in 1946. OR obsidian.

Waldorf, DC
2011 Great Knap-ins of the Past: The Stone Tool Craftsman Show. *Chips* 23(1):22-23.

Est. 1988 by Jack Holland. Then 1990, K Wallace becoming knapper, organized 1991 event. Growth from there detailed.

2011 Valerie Waldorf: The Making of a Master Illustrator. *Chips* 23(2): 8-14.

2011 Scar Patterns: An Illustrated Guide. *Chips* 23(2):16-19.

2011 Great Knap-ins of the Past: The Early Texas Knap-ins. *Chips* 23(2):22-23.

That hosted by Don Kyleberg. Origins of term "knap-in".

2011 Scar Patterns: An Illustrated Guide Part II. *Chips* 23(3):6-11.

Illustrates + discusses good examples of ordered flaking, including Sweetwater biface, Turkey tail, some Clovis, Archaic, and patterned pressure on PaleoInd, Danish dagger, Gerzian knife.

2011 Great Knap-ins of the Past: The First Fort Osage Knap-ins. *Chips* 23(3):22-23.

DCW + Val first went 1985. B Hunt organizer, interested when wife got stone cross, learned from Bollinger, Kinsella, Klostermeier in late 70s and early 80s. Moved to Kansas City, met Shewey, Eklund, Morton, Motley, Meister, Dixon, McCardie, Dreisoerner, first knap-in 1984 at Ft O, until 2003. Made video Sp 1992. At height, largest knap-in with 200 knappers.

Waldorf, D. C.
2011 Waldorf in his Own Words. *Chips* 23(4):3-7.

"I … found salvation in rediscovering the lost art of flintknapping…" b. 1951, OH, country interests, history/prehist, 1965 1st experiments with glass knapping. Howell Time-Life book w Bordes photos, Bordes on TV ca 1968. In college thru Viet war, met Val, selling points as self taught knapper, banned from Arch S of OH meetings as result. Married Val 1974, moved to Branson MO to set up "The Flint Shop" > "Mound Builder Arts + Trading Co." Art of Flint Knapping1974 or 75, Flint Types of Continental US 1976. 1985 Art of Prim Bow and Arrow, Story in Stone 1987. Early knap-in videos, then 1993 VHS Art of FK Video Companion. 20th Century Lithics 1988, then took over Harwoods Flint Knapping Digest 1989, renamed as Chips, accompanying "Guild" didn't work, nobody wanted organization. From 90s to 2003 w Martins, up to 1200 subscribers, now down to 500. Knappers Corner webpage now off too, but www.flintknapping.info will take over.

Waldorf, D. C.
2011 Arrow Heads from Bottle Bottoms. *Chips* 23(4):9-12.

Fleischmann yeast bottles - flat bottoms. Chisel breaks out bottom. Trim w hammer, inside up, leaves bevel so first flakes thin inside hump. 30-45 min to finished pt.

Waldorf, D. C.
2011 Instrument Assisted Fluting of Multiple-Channel Clovis Points. *Chips* 23(4):13-24.

Various fluting techniques illustrated, point examples old + new, Val drawings.

2011 The Queen's Hill. *Chips* 23(4):25-27.

Old excavated mound in Jutland with dagger and local folklore.

Waldorf, DC and Marquardt Lund
2010 Knapper's Profile: An Interview with Marquardt Lund. *Chips* 22(3): 5-7.

b.1962, learned mostly by self, archy degree Hamburg 1985, construction manager now

Waldorf, DC and Angela Parker
2006 A Beginner’s Guide to Learning Flint Knapping. *Chips* 18 (2): 12-16.

Knowledge learned from books etc, plus know-how only from practice. Tools - traditional or copper, need books + videos [list includes only their own] Percussion or pressure first, chert or obsidian? Depends, recommend heated cherts. Abrasion of platforms, deltas explained. Other tips.

Waldorf, D. C., and Valerie Waldorf
1985 *The Art of Making Primitive Bows and Arrows*. Mound Builder Arts and Trading Co., Branson.

Waldorf, Val
1989a Knap-in News. *Chips* 1(4):10.

Waldorf, Val
1989b Rocky Hollow Knap-in, 1989. *Chips* 1(2):10.

Waldorf, Val
1989c The Flint Knapper's Back Seat. *Chips* 1(1):13.

Waldorf, Val
1993 Other Knap-in News. *Chips* 5(4):3.

Waldorf, Val
1993 Book Review: The Nature and Subsequent Uses of Flint, the Basics of Lithic Technology, by John W. Lord. *Chips* 5 (4): 8.

Friendly uncritical review. Focus on formation of flint.

Waldorf, Val
1996 Silicosis: Some Medical Information. *Chips* 8 (1):21.

Waldorf, Val
1999 “Flint Costs What?!!” *Chips* 11(4):23-25.

Waldorf, Val
2003 Chips: A Look Back. *Chips* 15(2):14-16.

15th yr, early years with bad computers, hand paste-ups etc. 1994 Martins joined.

Waldorf, Val, and D.C. Waldorf
1987 *Story in Stone: Flint Types of the Central and Southern U.S*. Mound Builder Books, Branson.

Good overall typology of many points with excellent drawings by VW.

Walker, Elizabeth
2004 Rocks, Residues, and Use-Wear: An Introduction. In *Lithics in Action: Papers from the Conference 'Lithic Studies in the Year 2000'*. E. A. Walker, F. Wenban-Smith, and F. Healy eds., pp. 75-77. Oxbow Books, Oxford.

Walker, Phillip L.
1978 Butchering and Stone Tool Function. *American Antiquity* 43 (4): 710-715.

Experiments, attempts to quantify different tool form effectiveness. Prefers unretouched flakes.

Wallace, Ernest, and E. Adamson Hoebel
1952 *The Comanches: Lords of the Southern Plains*. University of Oklahoma Press, Norman.

Cite for using Lehmann's claim of fire-and-water knapping

Wallace, Ken
2004 Right Up My Alley. *Indian Artifact Magazine* 23 (3): 13-14.

A couple NY hammerstones with knapping wear.

Wallentine, Douglas
1988 *Making Indian Bows and Arrows… The Old Way*. Eagles View Publishing Company, Liberty.

Good how-to, no knapping info.

Walthall, John and Brad Koldehoff
1998 Hunter-Gatherer Interaction and Alliance Formation: Dalton and the Cult of the Long Blade. *Plains Anthropologist* 43(165): 257-274.

As there are more groups, there is less mobility, need for alliances for security against scarcity - exchange spouses and ritual goods, ceremonial exchange (= "valuables"). Expect male-oriented since they meet others, hunt symbolism important. Dalton 10,500-10,000 BP in Mississippi Valley - points, awls, adzes for dugout canoes. Sloan Points - source = Crescent Chert in Missip/Missouri confluence - so made of specific local high quality material, oversized = non-functional, high skill and labor, found in limited area along river in cache/burial contexts.

Walton, Kenneth
2006 *Fake: Forgery, Lies, and eBay*. Simon Spotlight Entertainment, New York.

Walton, a lawyer, tells of his downfall and rebirth. Sucked into selling art on eBay by crooked friend, goes from dodgy descriptions, to making shill bids to raise price on own auctions, selling faked paintings for friend, finally forging signature on a painting. When it is bid up to $130,000, investigations begin. It is easy to sell dishonestly on ebay, and to pass fakes to buyers hoping to find undiscovered or underpriced pieces.

Warmuskerken, Roger F.
2001 *Abo Knapping Techniques*. VHS. Privately produced.

Warner, Ken
1986 Return to a Sharper Time. In *Knives '86*, edited by K. Warner, pp. 32-35. DBI Books Inc, Northbrook.

Callahan's knives profiled.

Warnier, Jean-Pierre
1980 Trade Guns in the Grassfields of Cameroon. *Paideuma* 26:79-92.

Flintlock + percussion muzzleloaders "dane guns" common, fired in celebration, obtained pre-colonial coastal trade with Euro merchants buying slaves + ivory, later palm oil, in exchange for salt, cloth, ironwares, guns, powder. Info 1977-78, ca 100 guns, elderly informants. Many repairs, but will describe original guns + sources.

Currently local smiths make percussion muzzleloaders ca 24 gauge, from discarded car drive shafts, all parts by one smith, illegal but common. Lock imitates flintlock except for percussion cock. Halfstocked.

Before cars, imported barrels from Calabar. Better, no proof marks, fullstock guns, cock + brass of French type, imitating Belgian guns from after 1850s. Local smiths tried to fake imports but unreadable marks. Now proud of local work.

Before ca 1900 in Calabar and 1940 in Cameroon, whole gun imported. Two types: *afurukwan* light flintlock trade gun prob made in Belgium, now rare; *tafana*, smoothbore flintlock of British make, marked Tower but lower quality than India Pattern muskets, made Birmingham after 1813 (proof marks) and before about 1840. Earlier and later guns from Birmingham were of such poor quality that probably none survived.

Warfare: Observed misfire 2-3 out of 4 shots today – poor maintenance, locally made ill-fitting flints. Flints only made today in chiefdom of Big Babanki [no details]. Crude iron and other balls, poor powder, wornout guns, fear of bursting, poor aim. Musket only useful in volley, Cameroon had no such tactics. Bows not in use, gunmen supported by spearmen. Gun more useful in defense; helped small chiefdoms resist pressure of larger polities. Gun also important wealth + display item, still today.

Warren, Richard
1978 Untitled letter. *Flintknappers' Exchange* 1(3):4.

Was, Marcin
2006 Some Remarks on Contacts Between Late Mesolithic Hunter-Gatherer Societies as Reflected in their Flint Technology: A Case Study from Central Poland. In *Skilled*

Production and Social Reproduction. Jan Apel and Kjel Knutsson eds., pp. 315-322. Societas Archaeologica Upsaliensis, Uppsala.

Waters, Michael R., Steven L. Forman, Thomas A. Jennings, Lee C. Nordt, Steven G. Dreise, Joshua M. Feinberg, Joshua L. Keene, Jessi Halligan, Anna Lindquist, James Pierson, Charles T. Hallmark, Michael B. Collins, and James E. Wiederhold
2011 The Buttermilk Creek Complex and the Origins of Clovis at the Debral L. Friedkin Site, Texas. *Science* 331:1599-1603.

Just downstream from Gault. Stratified below Folsom + Clovis layers w diagnostic points and consistent OSL dates. BC Complex material assoc w OSL dates 13.2-15.5 ka: 56 tools, 2268 macrodebitage, 13,204 microdebitage pieces. Tools all Edwards Plateau chert [local], include 12 bifaces, discoidal core, flake tools, bladelets and blade frags, pc hematite. Debitage includes biface thinning flakes, a few overshot. Assemblages like this and elsewhere possible ancestral to biface + blade dominated Clovis. [No explanation of differences or similarities - I don't see why it could not be Clovis]. Humans in New World by 15.5 ka, probably before.

Waters, Michael R., Charlotte D. Pevny, and David L. Carlson
2011 *Clovis Lithic Technology: Investigation of a Stratified Workshop at the Gault Site, Texas*. Texas A+M University Press, College Station.

Waters, Michael R., and Thomas W. Stafford Jr.
2007 Redefining the Age of Clovis: Implications for the Peopling of the Americas. *Science* 315:1122-1126.

Traditional dates: 11,500-10,900 RCBP. But reanalyze and new - 43 dates from 11 sites with Clovis assemblages in secure contexts and good datables, including human bone from Anzick. New date range: Clovis begins ca 11,050 RCBP, ends ca 10,800. Calibration uncertain, but max date span 13,250 cal BP to 12,800 cal BP (= 11,250-10,800 cal BC), so about 450 yr span. But using youngest cal date for oldest site and oldest date for youngest site, calculate minimum range of 13,125-12,925 cal BC, or only 200 calendar years, probably the true range. Geog range of sites shows no date trend, C appears synchronously across US at 11,050 RCBP. Could be rapid spread thru ice-free corridor; Nenana biface + blade industry at Broken Mammoth in AK dates 300 yrs earlier and could be ancestral. Alternatively, rapid spread of technol thru existing populations.

Proboscidians assoc w 7 of well dated sites, last mammoth date in US 10,900 RCBP, so extinction of elephants coincides with florescence of Clovis, but later Clovis, Goshen, Folsom have only bison. Goshen dates overlap late or all Clovis. Arlington Springs skeleton from Santa Rosa Island has no artifacts but also overlaps Clovis, shows use of boats, probable contemp coastal adaptation. Fishtail and other early S. Am. material also overlaps Clovis, implies a pre-Clovis entry, supported by early dates (12,500 RCBP) from Monte Verde in S. Am. and butchered mammoths in Wisconsin (13,500 RCBP).

Waters, Michael R., and Thomas W. Stafford Jr.

2014 Redating the Mill Iron site, Montana: A reexamination of Goshen Complex chronology. *American Antiquity* 79(3):541-548.

MI and other G sites new dating: 10,450-10,175 B.P. So *not* coeval with Clovis or early Folsom, contemp with middle and late Folsom on Plains, as earliest dated non-fluted points, used by populations overlapping with Folsom pops in some places. Plainview is still poorly dated.

Waters, Michael R. and Thomas W. Stafford, Jr.
2013 The First Americans: A Review of the Evidence for the Late-Pleistocene Peopling of the Americas. In *Paleoamerican Odyssey*. Kelly E. Graf, Caroline v. Ketron and Michael R. Waters ed., pp. 541-560. Tops Printing, Inc., Texas.

Watson, Virginia Drew
1995 Simple and Significant: Stone Tool Production in Highland New Guinea. *Lithic Technology* 20(2): 89-99.

Watson, William, and G. de G. Sieveking
1968 *Flint Implements: An Account of Stone Age Techniques and Cultures*. London:British Museum Publications Ltd.

Watts, Joshua
2013 Traces of the Individual in Prehistory: Flintknappers and the distribution of projectile points in the Eastern Tonto Basin, Arizona. *Advances in Archaeological Practice* 1: 25-36.

Uses flake scar orientation on 149 small triangular points to recognize analytical “individuals” or “nano-scale technological styles.” Then show that Roosevelt Phase Salado 1275-1325 AD sites in Tonto Basin can be grouped by points made by “individuals” to show relationships between sites and clusters over larger area. Attempted clusters assuming different numbers of knappers (i.e. point scar similar “individuals”) but got similar groupings of sites, supporting the usefulness of the microtraditions. Settled on 21 clusters (“individuals”) as best. “many individuals were probably not crafting only one style of point” or using one material type, perhaps diff styles had diff functions. [I reviewed this paper. It’s a good try, methodologically and theoretically interesting, and the next step needed in identifying and using the ID of individual knappers, but I have doubts about conclusions. The clusters of points IDd as individuals are statistically obscure, and not intuitively satisfying to a knapper – Fig 7 shows 13 pts of one cluster – look quite different to me, and not just in form– this is the crux of the problem, and of theoretical interest: does one knapper (or a microtradition) really make so many different point forms, in which case typologies and ethnic markers etc are suspect, or can we really only trust “individuals” from limited contexts like burials? I also suspect the flake scar measurements are too affected by the short, hard to measure, and limited variability scars near the tips. Need to test methods on experimental points by modern knappers, and limited context groups like my Grasshopper burial sets.]

Watts, Steve
1991 The Society of Primitive Technology Organized. *Bulletin of Primitive Technology* 1(1):7.

Watts, Steve
1994 The Manufacture of Primitive Thrusting Spears. *Bulletin of Primitive Technology* 7(1):19-21.

1. No tools - bend and break splintery wood. 2. Sharpened with a hand axe. 3. Sharpened by fire + stone scraping.

Watts, Steve
1996 Handaxemanship. *Bulletin of Primitive Technology* 12:36-41.

Experiments with 46 knappers at Schiele Museum 6th Annual Knap-in.

Watts, Steve
1996 A Quick Guide to Classic Old World Paleolithic Chopper and Handaxe Forms. *Bulletin of Primitive Technology* 12:28-29.

[Too quick!]

Watts, Steven M.
2004 *Practicing Primitive: A Handbook of Aboriginal Skills*. Gibbs Smith, Publisher, Layton, UT.

Short illustrated section on knapping basics and some tools, particularly handaxes.

Watts, Steven M.
2006 Mesolithic Axe-Makers Workshop (HAF08/05), Lejre Research Center, Denmark. *Bulletin of Primitive Technology* 31:56-58.

Tranchet bit and antler axes. Where were axes in US Paleoindian period? Maybe antler, or "early stage" bifaces then reworked.

Watts, Steve
2007 Power Tools of the Lower Paleolithic. *Bulletin of Primitive Technology* 33: 51-55.

Replica handaxes of Danish flint, used for butchery, digging, wood chopping. Cleaver best wood chopper, could be hafted in bent wood handle as real axe.

Watts, Steve
2011 A Tribute to Errett Callahan. In *Experiment and Interpretation of Traditional Technologies: Essays in Honor of Errett Callahan*, Hugo Nami, ed., pp. 29-33. Ediciones de Arqueología Contemporánea, Buenos Aires.

Wayman, Joseph L.
2010 Foot Cutters: A New Hypothesis for the Function of Acheulean Bifaces and Related Lithics. *Lithic Technology* 35(2):171-194.

Handaxes and cleavers were multipurpose but primary use was as game traps - set vertically to injure animal feet. Ethnographic analogies with stakes and spears, possible archaeological examples of game stakes include Clovis bone rods, Star Carr 'harpoon' points. Explains finds of great numbers in same place, stratigraphic overlay, closeness to water, freshness of many specimens, occasional upright finds. Ovates could be set with point down, and animal foot would rotate them up so cutting edge and point struck back of hoof. [This allows him to see all forms as usable in all positions. Possibly interesting idea, but very unlikely and unconvincing. Why suppose this as the primary function rather than one among many? Too much special pleading, exaggerating and stereotyping the archaeological record. Models and simple experiments with boards do not suffice as a test - this needs real hunt testing, which is not likely to happen as it would be cruel.]

Weaver, Muriel Porter
1981 *The Aztec, Maya and Their Predecessors: Archaeology of Mesoamerica, 2nd edition*. New York: Academic Press.

Cite for general Mesoam, Teotihuacan info.

Web, Esmee
1983 Deriving the Simple from the Complex: What Might the Earliest American Artefacts Look Like? *Lithics* 4:34-42.

Expects to find pre-Clovis as flake tools (derived from Middle Paleolithic). Problems with bone tools, eg Old Crow - not clearly human manufacture. Calico - mostly clearly not artifacts. Skeptical of real early entry.

Weber, C.D.
1981 Wooden Pressure Flakers. *Flintknappers' Exchange* 4(1):10.

Webster, Clement L.
1889 Ancient Mounds in Iowa and Wisconsion. *Smithsonian Institution Annual Report for 1886/1887*. Pp. 596-602. Washington: Government Printing Office.

Crudely describes some mounds. Ethnographic info. Flint-chipping by Pottawatomie of E Iowa. Pressure by lever. "W. Territories" flaking of hot stone.
"Large numbers of these mounds have been explored and the record given to the world of science, while perhaps a still larger number have been explored and the records and relics lost."

Webster David, AunCorrine Freter and David Rue
1993 The Obsidian Hydration Dating Project at Copan: A Regional Approach and Why it Works. *Latin American Antiquity* 4(4): 303-324.

Good example of multiple variables that must be controlled - source, site elevation, deposit depth, soil RH and pH, no burning. Authors argue that hydration dating works well.

Webster, Gary S.
1980 Recent Data Bearing on the Question of the Origins of the Bow and Arrow in the Great Basin. *American Antiquity* 45(1): 63-66.

Conventional date is 1500 BP, Fremont introduce bow and arrow.
Dry Creek Rockshelter stratigraphic info shows Rose Spring/ Eastgate [assumed] arrowpoints as early as 3300 BP, mix with atlatl pts (Elko, Pinto etc), so atlatl not immediately supplanted.

Wee, Ken
2001 Flint + Steel Challenge - Concluded. *Bulletin of Primitive Technology* 21: 84-86.

Marcasite + fungus fire demonstrated possible.

Weedman, Kathryn
2002 An Ethnoarchaeological Study of Stone-Tool Variability Among the Gamo Hideworkers of Southern Ethiopia. In *Le Travail du Cuir de la Préhistoire a Nos Jours, XXII Rencontres Internationales d'archéologie et d'histoire d'Antibes*. F. Audoin-Rouzeau and S. Beyries, eds, pp. 131-141.

Scraper variation: function or style? Gamo social org differs from Konso: 3 castes, with hideworkers, ironsmiths, and grindstone makers in lowest.
Gamo make no different tools for specific functions, nor based on raw material, but distinguish unused vs used-up scrapers in sorting test. Scrapers reduced ave .64 cm [ie not much from ca 3.4 cm mean unused length]. Edge angle mean changes from 50 degrees unused to 67 used-up. Chert and obsidian used. Diff villages prefer diff colors of chert and overall scraper morphology.

Weedman, Kathryn
2002 On the Spur of the Moment: Effects of Age and Experience on Hafted Stone Scraper Morphology. *American Antiquity* 67(4): 731-744.

Ethnoarchaeological study of Gamo, Ethiopia obsidian hide scrapers. Spurs on scrapers reflect inexperience or waning strength of user rather than being functional. Experienced workers help less experienced workers, blurring the line between experience and standardization.

Weedman, Kathryn
2005 Gender and Stone Tools: An Ethnographic Study of the Konso and Gamo Hideworkers of Southern Ethiopia. In *Gender and Hide Production*. Lisa Frink and Kathryn Weedman eds., pp. 175-195.

Scrapers associated with hides, usually women's work: debates over scraper morphology + function ignore gender differences as explanatory variable. Males stereotyped as stone tool makers.

Gamo compared to Konso. Gamo: Hideworkers are males, learn from fathers, in lowest social cast of 3 patrilineal + endogamous, but in exog lineage villages. Learn at 12-13 yr old as apprentice to fathers, virilocal residence means domestic units in village have microtraditions. Each has own quarry. Collect chert, trade for obsidian. Two types handles cross-cut some social divisions, but villages seem to use one or other. Scrapers flaked and resharpened with iron, some minimal, some "formal" tools. Can't identify own scrapers in sorting sets from their village, but villages partly differ in form and color of scrapers.

Konso: 2 castes, craftsmen lower than farmers, but more fluid. Predominantly female hideworkers (87F/25M). M make more bags + shields, F more clothing, bedding, bags for crops + child carry. M self-taught, F learn from mothers, F more likely (19%) to use stone, M more iron or glass (8% use stone). Marriage less restricted, but patrilineal and virilocal, women learn from women, so less localized learning + residence, microtraditions not expected. Chert preferred by stone users, but also quartz + chalcedony. Local resources now, shared among users, formerly chert traveled farther. One village prefs quartz. Some village diffs in scraper morphology but less than Gamo.

Weedman, Karen J.
2006 An Ethnoarchaeological Study of Hafting and Stone Tool Diversity among the Gamo of Ethiopia. *Journal of Archaeological Method and Theory* 13(3):189-238.

Hideworkers are part of lowest of 3 casts, not supposed to own land, "impure" like smiths and potters, no social mobility, endogamous. But mediators between life and death, so serve in ritual, eg circumcisers, and have own argots.

Stone-tool using hide workshops known from Axum AD 100. Early ethno-arch 1970s documented manuf, material (obsidian) + wear but not ethnic variability until Brandt et al. 1990s.

Gamo area - interviewed 180 hideworkers in 115 villages, in depth study of 30 in 4 villages. Chert scrapers, 2 forms of handle: *zucano* is oval donut shaped*, tutuma* is stick. Work on commission (own no cattle), but impure so elder kills cow, hideworker skins. Small payment + offal, skull, horns, feet, tail. Dry, process later in rainy season, rewet, scrape, soften with butter. Takes 4 hrs, 4.5 scrapers, multiple resharpenings. Learn from fathers, develop patri microtraditions.

Zucano users - Chert from river quarry 2-4 hrs away, bring back as scraper blanks. Worked with iron bars. Scraper hafted in socket with tree resin + ash. Work and store inside house, careless about debitage but women collect and dump near thorny bushes to keep kids away.

Tutuma users - split stick hafting, scraper secured with cordage, so no need to modify lateral edges to fit socket. Source 2-4 hrs away, bring back cores to make flakes as needed at home. Different house form, work + store outside in garden, debitage all over.

Zucano scrapers larger, more retouched, more formal tools before use. Tutuma, smaller, more just utilized flake, but develop retouch as sharpened. Use of 2 different scraper handle forms… results in 2 distinct scraper morphologies, unique methods of procurement and production, and differences in use of household space…" p 208 [No, only the first was demonstrated, can't blame everything on scrapers!]

Lowland cattle hides thicker + rougher than highland, but efficiency of scraper types similar. Formerly the *tutuma* handles used for sheep/goat hides. Political changes include attempts by Marxist-Leninist gov't in 1970s to ban local symbols like s/g hide clothing, now also being replaced by manuf products, and s/g hides more valuable for export. Some areas using both handles now use only *tutuma*, choosing to abandon *z* instead. Marriages may enhance access to wood and resin resources. Gamo 70% use glass, <1% metal, and 30% chert. Glass less trouble to get espec if live at distance from chert source or buy in market [markets not mentioned before or explained]. Glass said to tear hides more, chert or long distance obsidian preferred [how does obsidian fit with above?]. Chert from basaltic highlands [that makes little sense - geology not explained]. Chert resource distribution does not explain patterns of handle variability.

Scraper handle distrib reflects identity - membership in ritual/political districts, regions, and migration patterns. [Interesting example of "entanglements" of a techno-complex. Many writing errors, some funny: "He then straps the hide onto a frame and methodologically removes the inner fat from the hide using a hafted scraper." p.198]

Weigand, Phil C.
1970 Huichol Ceremonial Reuse of a Fluted Point. *American Antiquity* 35:365-367.

Weigand, Phil C.
1989 Notes Concerning the Use and Reuse of Lithic Materials among the Huichols of Jalisco. In *La Obsidiana en Mesoamerica*. Margarita Gaxiola G. and John E Clark, eds, pp. 465-466. Mexico D.F: Instituto National de Anthropologia e Historia.

Symbolic, ceremonial uses of lithics and other stuff - all old things associated with ancestors.

Weiner, Jurgen **RLeubben trans ms**
1981 Die Flintminen von Çakmat-eine im Austerbeen beg riffene haute noch produzierende Feuersteinindustrie in Nordwest Anatolien. In *5000 Jahre Feuersteinbergbau Die Suche nach dem Stahl der Steinzeit*, Gerd Weisberger, ed. pp. 383-395. Bochum. Deustchen Bergbau-Museum.

The Flintmines of Cakmak - A Dying Concept Still Produces a Flint Industry in NW Anatolia. Mining is about gone, knapping almost (in 1980). [Very similar to Cypriot in techniques, not much social info] Flint was dug similar to Brandon, even tools similar.

Weiner, Jurgen
1986 Flint Mining and Working on the Lousberg in Aachen (Northrhine-Westphalia, Federal Republic of Germany). *International Conference on Prehistoric Flint Mining and Lithic Raw Material Identification in the Carpathian Basin*, pp. 107-122. Budapest.

see notes for other Weiner articles

Weiner, Jurgen

1990 Intra-site Analysis by Refitting Lithic Artifacts from a Flint-workshop on the Neolithic Flint–mine "Lousberg" in Aachen (Northrhine-Westfalia, FRG). In *The Big Puzzle: International Symposium on Refitting Stone Artifacts*. E. Cziesla, S. Eickhoff, N. Arts, D. Winter eds. Pp. 177-196. Bonn.

Tabular coarse flint, made into axes exclusively. Hammerstones and antler. .32 tons debitage, >40,000 pc $\geq$ 2 cm in a unit 7.5 m square by .4 m deep. Refit flint + rock + antler, 2 years. 2% of all flint artifacts refitted. To one axe 75 flakes, allow to see complete tab of raw material, flakes distributed in front of a stone seat.

Weiner, Jurgen
1990 Retouching Tools Made of Red Deer Antler: Evidence from a Flint-Workshop at the Late Neolithic Flint-Mine "Lousberg" in Aachen (Northrhine-Westphalia, FRG). In *Le Silex de sa Genèse á l'Outil*. M. R. Séronie-Vivien and M. Lenoir, eds, pp. 505-512. CNRS, Paris.

Knapping tools for flint axes = hammerstones - flint and sandstone. 3 antler flakers - crown, using brow tine or beam as handle. Wear described, including grip polish. 1 Beam segment with shaft hole for wooden handle, with crown as hammer, other end split notched to recieve stone axe or pick - for removing cortex - pecking seen on some cortical flakes.

Weiner, Jurgen
1994 Well on my back - An update on the Bandkeramik wooden well of Erkelenz-Kückhoven. *NewsWARP* (Newsletter of the Wetland Archaeology Research Project) 16: 5-17.

Preserved wooden artifacts pictured and discussed: shovel, hoes, bow and arrow parts.

Weiner, Jurgen
1995 Les outils d'extraction à encoches en silex et pierre de la mine Néolithique final du Louseberg, Aachen (Rhénanie septentrionale-Westphalie, Allemagne). In *Les Mines de Silex au Néolithique en Europe: Avancées Récentes*. J. Pelegrin and A. Richard, eds, pp. 93-106. Comité des Travaux Historiques et Scientifiques, Vesoul.

Simple notching of flint and stone blocks makes minimal hafted quarry hammer.

Weiner, Jurgen
1997 A Bandkeramic Settlement with Wooden Well from Erkelenz-Kückhoven, Northrhine-Westphalia (FRG). In *Le Néolithique Danubien et ses Marges entre Rhin et Seine*. Supplement aux Cahiers de l'Association pour le Promotion de la Recherche Archéologique en Alsace, pp. 401-405.

Wooden artifacts briefly described: hoes, picks, spade, buckets, bow fragments, no lithic info.

Weiner, Jurgen
1997 About Steels, Flint and Tinder. *Spark International*, 4:1-4.

Review of *Firesteels* by Cacciandra and Cesati for collector journal [?] Marcasite makes longer lived sparks than steel, works better with fungus.

Weiner, Jurgen
1997 Pyrite vs Marcasite, Or: is Everything that Glitters Pyrite? (With a Structured Bibliography on Firemaking Through the Ages). *Bulletin de la Société Royale Belge d'Études Géologiques et Archéologiques* 37: 51-79.

Pyrite (FeS2) in cubic crystals vs marcasite (FeS2) in rhomboidal crystals, less blocky and forming nodular shaped masses. Marcasite better than hard, dense smooth pyrite crystals. Archaeological finds are all marcasite, not pyrite.

Weiner, Jurgen
1997 Notched Extraction Tools Made of Rock and Flint from the Late Neolithic Flint Mine "Lousberg" in Aachen, Northrhine-Westphalia (Germany). *Préhistoire Européenne* 10:193-207.

Weiner, Jurgen
2005 Another Word on Pitch: Some Comments on a "Sticky Issue" from Old Europe. *Bulletin of Primitive Technology* 22:20-27.

Hafting adhesives. Use of unaltered resins not documented archaeologically, at least in Europe. Bitumen unaltered was used. Birch pitch or tar is processed and dominates in Europe, with examples from 80,000 BP Mousterian site, lots Meso + Neo. Too many experiments use "loaded pitch" [= tempered pine resin] without arch documentation. Experiments that show something works do not show it was used prehistorically. [He's a bit obsessed on this; it's true, but in N. Am. we should expect the simple and obvious rather than the obscure and technologically complex]. Birch pitch would be possible in most of US but not documented. Recipe for manufacture of birch pitch under modern conditions.

Weiner, Jurgen
2012 Dreschschlitten. In *Steinartefacte vom Altpaläolithikum bis in die Neuzeit*, edited by Harald Floss, pp. 973-980. Kerns Verlag, Tübingen.

Threshing sledges.

Weiner, Jurgen
2012 Flintensteine. In *Steinartefacte vom Altpaläolithikum bis in die Neuzeit*, edited by Harald Floss, pp. 961-972. Kerns Verlag, Tübingen.

Gunflints.

Weiner, Jurgen
2012 Feuerschlagsteine und Feuererzeugung. In *Steinartefacte vom Altpaläolithikum bis in die Neuzeit*, edited by Harald Floss, pp. 943-960. Kerns Verlag, Tübingen.

Strike-a-lights and fire starting, flint and steel, and pyrites.

Weinmerster, Garry
2001 The Drake Clovis Cache. *Indian Artifact Magazine* 21 (3): 50-52, 80.

Found in blowout in Colorado 1977: 13 nice Clovis points, 8 acquired by Smithsonian Inst, 5 still in private hands. Mostly Alibates, probably a cache but context mostly lost. Long and narrow finished pts, no assoc blades or bifaces. Color photo and front cover.

Weisgerber, G.
1987 The Ancient Chert Mines at Wadi el-Sheikh (Egypt). In *The Human Uses of Flint and Chert*. G. Sieveking and M. Newcomer eds., pp. 165-172. Cambridge University Press, Cambridge.

Early Dynastic and pre-Dyn extensive mines, Seton-Carr and others examined. Separate heaps for different types = specialists.

Weisgerber, G.
1987 The Technological Relationship Between Flint Mining and Early Copper Mining. In *The Human Uses of Flint and Chert* G. Sieveking and M. Newcomer eds. Pp. 131-136. Cambridge University Press, Cambridge.

Weissner, Polly
1983 Style and Social Information in Kalahari San Projectile Points. *American Antiquity* 48 (2): 253-276.

Not lithic but good info on ability to distinguish other’s points, adherence to own individual style even if functionally inferior, social meanings of style in artifacts. [Classic]

Weitzel, Celeste, Nora Flegenheimer, Jorge Martínez and Mariano Colombo
2014 Breakage Patterns on Fishtail Projectile Points: Experimental and Archaeological Cases. *Ethnoarchaeology* 6(2):81-103.

Fishtail projectile points (Fell 1), dated 11,000-9,500 14C yr BP in South and Central America, considered diagnostic of the early peopling of the continent. Experimental observations of impact breakage patterns on fishtail projectile point replicas compared with archaeological points from the Cerro El Sombrero Cima site, in the Argentinian pampas, which exhibit a high breakage ratio and suggest that impact was a major cause of breakage in the assemblage. The position of these fractures is also briefly compared to patterns described by J. Bird (1969) for fishtail projectile points from Ecuador and Southern Chile. FTTP experiments briefly described - local orthoquartzite, atlatl dart, thrusting spears against sheep carcass. 297 shots, one point survived 103 [making it too large a part of the sample] others showed variable survival, often breaking at stem/blade juncture, which is similar to archaeological specimens. Extensive table of fracture type definitions and distributions on specimens. Most of the types of damages known to result from projectile point use were observed, with the exception of impact burination. Considered diagnostic of

impact: impact flute, step terminating bending fractures and spin-off fractures. Points on both hand thrown spears and darts broke during use, but darts propelled with the spearthrower exhibited more damage, a combination of fracture types related to impact and a higher frequency of fracture types usually considered diagnostic of impact.
The most frequent type of fracture was bending.

Welch, Bob
1993 Shattemuc - River Which Flows Both Ways. *Chips* 5 (3): 8-10.

Imaginative scenario of prehistoric knapping [not bad].

Wells, H.G.
1899 "A Story of the Stone Age," In *Tales of Space and Time*. New York: Doubleday and McClure.

Fiction in which primitive men hurl "smiting stones" [= handaxes] in war.

Wenban-Smith, Francis
2004 Behaviour and Cognition in the Lower and Middle Paleolithic: Introduction. In *Lithics in Action: Papers from the Conference 'Lithic Studies in the Year 2000'*. E. A. Walker, F. Wenban-Smith, and F. Healy eds., pp. 1-5. Oxbow Books, Oxford.

Wenban-Smith, Francis
2004 Bringing Behaviour into Focus: Archaic Landscapes and Lithic Technology. In *Lithics in Action: Papers from the Conference 'Lithic Studies in the Year 2000'*. E. A. Walker, F. Wenban-Smith, and F. Healy eds., pp. 48-56. Oxbow Books, Oxford.

Behavioral and cognitive info from palimpsest sites. Red Barns, England, lithic site with handaxe manufacture and removal implies capacity of Acheulean to anticipate future tool needs and "gear-up."

Wendt, Dan and Anthony D. Romano
2008 Replicated Copper Socketed Hammers, Percussion Insets, and Bars: Effectiveness as Percussion Flint Knapping Tools. Paper presented at Lake Superior Archaeological Conference March 14, 2008.

Float copper common, can be hammered and annealed. Past archaeols and collectors did not recognize or collect any but most formal tools. Recent collection examinations show pressure flakers (Whittaker and Romano), scrap from copper working (Romano and Mulholland), and now lump copper hammers, large "nails" with flattened and worn heads, and flat bars. All show roughening, mushrooming, and facetting typical of modern knappers' copper tools. Rectangular cross sections are best way to forge metal. Inserting a point into wood or making a socket are both techniques used in other prehistoric copper tools. Experimented with all these, replicated wear patterns. The "nail" forms can be inserted into wooden handles, best at 45 degrees from end. Bars work for indirect percussion on lap. [see Frank 1992].

Wendt, Dan and Anthony D. Romano
2009 Experimental Application of Hammer and Bar Flint Knapping to Knife Lake Siltstone from Northern Minnesota. *Minnesota Archaeologist* 68:21-38.

Two person indirect percussion knapping with antler and copper bars. IP produces short wide flakes with deep bulbs so bifaces look "rugged." Possible CU prehist tools ID'd.

Wenger, Etienne
1998 *Communities of Practice: Learning, Meaning, and Identity*. Cambridge University Press, Cambridge.

Wenker, Chris T.
2004 Native American Archaeology on the Paunsaugunt Plateau. In *Bryce Canyon National Park: Archeology of the Paunsaugunt Plateau*, edited by Chris Wenker, pp.115-178. Intermountain Cultural Resources Management Professional Paper No. 69. Department of the Interior, National Park Service.

Relies heavily on point data, see Irwin 2004, also debitage and other artifacts analyzed for land use patterns thru time.

Wentink, Karsten
2006? Neolithic Depositions in the Northern Netherlands. in press unknown.

Hoards - peat bog and other watery finds, Dutch TRB (Funnel Beaker Culture) 3400-2850 cal BC. Axes of N German and Danish flint and manuf, no evidence local manuf. Rectangular cross-section, differs from oval axes of Atlantic tradition (S Nlnd), which occur in graves but not in hoards when they reach the N. 20 hoards w multiple axes, roughouts, flint nodules, tools, plus probable single depositions. 9 = TRB, 8 = subsequent Single Grave Culture. Look for patterns in all diff contexts: 1038 total stone + flint axes from hoards, sites, graves, etc, 69 axes for microwear + residue analysis. Stone axes tend to be discarded larger, because flint sharper, suitable for fine work. Axes from wet contexts larger than those from dry. Local axes of smaller poor flint (max 150 mm) not temporally distinguishable. TRB axes from graves smaller than from wet contexts, usually used or reworked. Extremely lg (>200 mm) flint axes not usable, break w endshock, and most hoard axes unused and >250 mm. Ethnog examples of outsize ritual artifacts - Kimberley pts, kula arm rings. So lg axes produced for ritual trade into Ndrlnds, unpolished or if small, partly polished but not on the edge, no use-wear. Lack of polish signified ritual purpose. No TRB axe >215 mm had use-wear. Grave axes often used and/or resharpened. Unused axes wear on ridges + edges from wrapping in soft material during transport or ritual, and often red ochre residue on edges. [He showed me that SGC axes have rounder x-sections and polish into depressions - intentional, from soft material, and often running parallel to edges on sides, but on face vertical and only on part exposed after hafting. Distributional study.

Wentink, Karsten, Annelou van Gijn, and David Fontijn

2011 Changing contexts, changing meanings: Flint axes in Middle and Late Neolithic communities in the northern Netherlands. In *Stone Axe Studies III*. Vin Davis and Mark Edmonds, ed., pp. 399-408. Oxbow Books, Oxford.

Wenzel, Kristen E. and Phillip H. Shelley
2001. What Put the Small in the Arctic Small Tool Tradition: Raw Material Constraints on Lithic Technology at the Mosquito Lake Site, Alaska. In *Lithic Debitage: Context, Form, Meaning*. William Andrefsky Jr, ed. Pp. 106-123. Salt Lake City, The University of Utah Press.

Wescott, Daniel J.
2014 Reconstructing Habitual Activities by Biomechanical Analysis of Long Bones. In *Kennewick Man: The Scientific Investigation of an Ancient American Skeleton*. Owsley, Douglas W., and Richard L. Jantz, eds., pp. 232-248. Texas A&M Press, College Station.

Cross-sectional geometry of bones compared to that of known populations. KM was a relatively large man; ca 173 cm tall (5'9") and 73 kg (150 lbs). Strong bones overall, especially powerful legs, relatively stronger than arms. Legs indicate "intense terrestrial mobility" but stronger femur than tibia suggests maybe in water, or less rugged terrain. Left femur stronger than right, from "ground force reaction supporting his weight during the rapid deceleration following a throw."

Humeri are too asymetrical to indicate rowing. Right handed. Strong humerus and assymetry consistent with spear throwing, atlatl, or throwing stick [and probably lots of other activity – too much of this seems too specific to me, too many opportunities for equifinality].

Wescott David
2001 Setting the Stage. *Bulletin of Primitive Technology* 21:11.

"Ideas to advance the field of flintknapping." 1. know your history - roots of your knapping style and knowledge, then move beyond divisions. 2. Know your basics. 3. Be clear about your intentions - challenge self, uphold principles, sign work. 4. Foster education - be inclusive.

West, Kristopher
2011 Erret Callahan: A Biographical Overview. In *Experiment and Interpretation of Traditional Technologies: Essays in Honor of Errett Callahan*, Hugo Nami, ed., pp. 21-27. Ediciones de Arqueología Contemporánea, Buenos Aires.

b. 1937. Boy scouts. Trained in art, painting. Diss at Catholic U in DC: Pamunkey Housebuilding 1981, experimental study. "1973, Callahan and his students continued their experimental work at the Wagner Basalt Quarry project in northern Arizona, where they constructed and lived in a reproduction DesertArchaic encampment". Self taught knapper 1956-66, then met Crabtree, Sollberger, Titmus, Pelegrin [circumstances not explained]. Ethical statements. Scandinavian work, daggers etc. Piltdown Productions marketing his crafts, non-traditional obsidian knives, scalpels 1984. Founded 1989 Soc of Primitive Technol.

Westbury, William, and C. Garth Sampson
1993 To Strike the Necessary Fire: Acquisition of Guns by the Seacow Valley Bushmen. *The South African Archaeological Bulletin* 48(157):26-31.

Documentary sources: 1770s trekboers moving in, supported by Dutch authorities with lots guns and ammo, including flints. *Sun ei* people acquired by theft/raid + from runaways. By 1809 most good waterholes occup'd by Europeans, forcing contact, guns as gift/trade, Euros armed servants and herders. Percussion guns arrived 1830s, cartridge guns 1860s, Winchester repeater 1870.
Archaeol, Abbot's Cave: very small Fr flint – pocket pistol or rifle size [uses Skertchly sizes + other info], two black Brandon blade flints of Carbine, Musket size, heavily worn or reused as strike-a-lights. Lead sheet bits, probably flint pads. Lead droplets poured on sand to make shot [pretty crude – accidental drops instead?]. A couple percussion caps. .577 conical bullet. .303 jacket and case from 1895-1908. Arch evidence of guns scarce, late.

Whallon, R. J.
1978 Threshing Sledge Flints: A Distinctive Pattern of Wear. *Paléorient* 4:319-324.

Heavy polish over battering from setting in sledge, rounding of edges.

Wheat, Joe Ben
1954 Crooked Ridge Village, AZ: W:10:15. University of Arizona Social Science Bulletin 24.

"Simple flakes (which are not so commonly studied by archaeologists as they should be) were often used a time or two and then discarded. Because they are not well finished tools, they have been too frequently rejected in the field; yet, they offer much information on primitive techniques." [This quote is ironic because it is his last word on the subject.]

Wheat , Joe Ben
1967 A Paleo-Indian Bison Kill. In *New World Archaeology: Readings from Scientific American*. E.B.Zubrow et al. eds. pp.213-221. San Francisco: WH Freeman and Co. (Scientific American January 1967).

Olsen-Chubbuck site, almost 200 bison killed, driven into arroyo, some completely butchered, others partly, a few at bottom untouched. Systematic butchering, leaving piles of sorted parts. Calculations of meat quantity - some 60,000 lbs meat, could support 150 people for ca 1 month, depending on assumptions. Cody Complex [Plano] points: Scottsbluff, 1 Eden, Milnesands - demonstrate contemporaneous cultural variation as one type grades into another.

Wheat, Joe Ben
1972 *The Olsen-Chubbuck Site: A Paleo-Indian Bison Kill*. Memoirs of the Society for American Archaeology 26. *American Antiquity* 37(1): part 2.

[The detailed professional publication of this site.] Here the points are called Firstview (new type) and San Jon after extensive review of "Yuma" aka Cody aka Plano point typology. [His earlier designations are more consistent with modern usage.]

Wheat, Joe Ben
1977 Technology, Typology, and Use Patterns at the Jurgens Site. *The Museum Journal* 17:126-139.

Colorado, Paleoindian Agate Basin and Kersey Complex cultures [No C14 dates cited]. Bison butchering and other animals, base camp, chipping floors.
  Flake traits distinguish different manuf techniques. Small 'petalloid' flks pressure finish, med petalloid = final preform prep by press or indirect perc, Wide Platform Thinning flks = early stage direct perc, Small Plat Thin = 2ndary thinning by indirect perc. [and some other unusual terms. A higher level of distinction than usually made, but probably not far off in recognition of staging, unreliable in ID of technique.] Patterned scars on Kersey pt [= Scottsbluff/Eden related] from final small petalloid removals. Finished pt use-life often included break + resharpen. Use-wear shows secondary butchering use, so probably mounted in short foreshafts.
  Two kinds atlatl hooks recovered [illustrated but not described]: 1. cut antler - hollow cylinder with nub for hook on perimeter [like some SE forms], and 2. curved piece of bison molar core, which could be lashed on shaft with curved tip up for hook. [Both plausible, but no details given to confirm.]

Wheeler, Richard P.
1965 Edge-Abraded Flakes, Blades, and Cores in the Puebloan Tool Assemblage. *Memoirs of the Society for American Archaeology* No. 19:19-29.

Ca 10-13% of utilized flakes etc from Pueblo I to PIII Wetherill Mesa edge-abraded. Classifys into 38 "styles" by # edges abraded, flaked, + utilized plus flat or round abraded edges. 15% just abraded edges, 58% ≥1 edge abraded + nicked or use-flaked. 124 flat, 99 round edges, only 4 had both.
  Experiment: scrape yucca, split sumac, scrape bark, cut bone + ceramic sherds, incise sandstone - only last produced similar wear, but incised ss rare in sites. Grooved ss can be broken by blow guided by groove - to make blanks for mano, metate etc or building stone. [Convincing]

White, Al
1996 The Long Knives of Pressigny. *Chips* 8(1):19-20.

White, Andrew A.
2006 A Late-Stage Fluted Biface from the Central Ohio Valley. *Current Research in the Pleistocene* 23:151-153.

White Carol

1995 La Grotte du Vallonnet. Evidence of Early Hominid Activity or Natural Processes? *Lithics* 16:70-77.

Hominid evidence poor: few “tools” - mostly pebbles with single removal and other very simple forms duplicated by nature in Miocene conglomerate source nearby.

White, Gavin
1971 Firearms in Africa: An Introduction. *Journal of African History* 12(2):173-184.

Less impact than expected. Historical bias to think guns invincible against those lacking them, sign of civilization and “industrial prowess,” can’t be maintained by those who can’t make them. In Africa, initial success in war, then decline as others acquired them. Require individual training, and sometimes restructure of society. Local manuf rare comp with East; gunpowder more commonly local. British powder increased over time in saltpeter content and thus speed of combustion, but dangerous for poor barrels. Brandon made flints for Africa trade at least to 1970, now discontinued. Little info on guns made specifically for Africa, but many obsolete military guns traded there. Guns for crop protection provide practiced users, but flintlock musket good enough to scare + shoot pests, and cheap, so durable. Intro of maize related to intro of guns. “long history of trade guns in Africa is drawing to a close” not much time to record old users.

White J. P.
1968 Ston Naip Bilong Tumbuna: The Living Stone Age in New Guinea. In *La Préhistoire: Problèmes et Tendances*. F. Bordes + D. de Sonneville-Bordes eds., pp. 511-517. Centre National de la Recherche Scientifique: Paris.

Ethnographic knapping, bipolar technique.

White J. Peter and H. Dibble
1986 Stone Tools: Small-Scale Variability. In *Stone Age Prehistory*. G. N. Bailey and P. Callow eds., pp. 47-53. Cambridge University Press, Cambridge.

White J. P. and D. H. Thomas
1972 What Mean These Stones? Ethno-taxonomic Models and Archaeological Interpretations in the New Guinea Highlands. In *Models in Archaeology*, D. Clarke ed., pp. 275-308. Methuen, London.

White, Mark J.
2006 Axeing cleavers: reflections on broad-tipped large cutting tools in the British earlier Paleolithic. In *Axe Age: Acheulian Toolmaking from Quarry to Discard*. Naama Goren-Inbar and Gonen Sharon, eds., pp. 365-386. Equinox Publishing, London.

Cleavers are “not a distinct, intentionally different form but part of the overall variation within handaxes/bifaces that emerges from a common technological process.”

White, Stephen W.

1975 On The Origins of Gunspalls. *Historical Archaeology* 9:65-73.

White, Stephen W.
1976 *The French Gunflint Industries*. Unpublished MA thesis, University of Calgary, Alberta, Canada.

Summary of history of industry. Records of 20-30 million flints per yr in Napoleonic times, France the major world producer. Main centers at Meusnes, central France but others in S, total some 168 furnishing to military. Decline after 1820, by 1850 most of market in colonies. By early 1900s, quarries exhausted, WWI almost finished industry, last gunflint workers were at Meusnes ca 1931. Brief comp info on other countries, eg Denmark, which made gunspalls but despite fine flint and gov't prizes offered to increase production, never learned to make blades. Germany made ground agate gunflints in 1790s to 1800s, and knapped flints. Typology of French flints. Good line illusts.

Whiting, Adrian P.
n.d. An Ancient Blade

Whittaker, John C.
1981 Archeology in Yosemite National Park: The Wawona Testing Project. *Western Archeological and Conservation Center Publications in Anthropology 18*. Tucson: National Park Service, WACC. (Also available National Technical Information Service).

Obsidian studies, especially projectile point manufacture, debitage analysis showing numerous biface thinning flakes but no bifaces, presumably because imported obsidian was used to last bit.

Whittaker, John C.
1981 Stone Artifacts. pp. 114-117 in Fratt, Lee, 1981, Excavation in the South Convento of Mission Tumacacori. Tumacacori Excavations 1979/1980: Historical Archaeology at Tumacacori National Monument, Arizona. *Western Archeological and Conservation Center Publications in Anthropology 17*. Tucson: National Park Service, WACC.

Whittaker, John C.
1984 *Arrowheads and Artisans: Stone Tool Manufacture and Individual Variation at Grasshopper Pueblo*. PhD. Dissertation, Department of Anthropology, University of Arizona. Ann Arbor: University Microfilms.

Individual variation distinguished by flake scar patterns and other attributes. Individual sets in burials, one room with manuf sequence. Another room with many points of different forms = male work room, clan house. No evidence of economic centralization or craft specialization in the stone tools.

Whittaker, John C.

1986 Projectile Points and the Question of Specialization at Grasshopper Pueblo, Arizona. In *Mogollon Variability* edited by C. Benson and S. Upham. New Mexico State University Museum Occasional Papers 15, pp. 121-140.

Whittaker, John C.
1987 Explosive "Rocks" Found in Collection. *Iowa Archaeological Society Newsletter* 37(4):4.

black lumps turn out to be gun powder from unknown provenience

Whittaker, John C.
1987 Individual Variation as an Approach to Economic Organization: Projectile Points at Grasshopper Pueblo, Arizona. *Journal of Field Archaeology* 14(4):465-480.

Whittaker, John C.
1987 Making Arrowpoints in a Prehistoric Pueblo. *Lithic Technology* 16(1):1-12.

Grasshopper Pueblo point technology

Whittaker, John C.
1988 Lithic Technology, Subsistence, and Mobility at Black Mesa: Review of "Prehistoric Stone Technology on Northern Black Mesa, Arizona" by W.J. Perry and A.L. Christenson. *Lithic Technology* 17(1):53-55.

Whittaker, John C.
1989 The Bronze Age: Experiment in Teaching Prehistory. *NLA News* 6(2):12-13.

Whittaker, John C.
1989 Experimental Fishing at the Amana Fish Weir. *Iowa Archaeological Society Newsletter* 39(1):1-2.

Whittaker, John C.
1990 The Not-so-sweet Smell of Zooarchaeology. *Grinnell Magazine* 23(2):25-26.

Whittaker, John C.
1990 Going Once! Going Twice! *Iowa Archaeological Society Newsletter* 40(3):1-3.

Essay on artifact auction, collections, and ethics

Whittaker, John C.
1992 The Curse of the Runestone: Deathless Hoaxes. *Skeptical Inquirer* 17(1):57-63.

Why some folk still believe in the Kennsington runestone: ethnic pride and economics.

Whittaker, John C.

1992 Hard Times at Lizard Man. *Archaeology* 45(4):56-58. Reprinted 1997, 1998 in *Annual Editions: Archaeology 97/98*, and *98/99*, edited by Linda L. Hasten, pp. 51-53, McGraw-Hill, Guilford.

Whittaker, John C.
1993 Slotting a Wooden Shaft to Hold a Stone Point. *Chips* 5(4):4-5.

Whittaker, John C.
1993 Dealing with Museums. *Bulletin of Primitive Technology* 6:71-72.

Whittaker, John C.
1994 *Flintknapping: Making and Understanding Stone Tools*. University of Texas Press: Austin.

Whittaker, John C.
1994 The Bronze Age in Grinnell: Experiments in Teaching Prehistoric Technology and Observations on Primitive Axes. *Bulletin of Primitive Technology* 8:47-51.

Whittaker, John C.
1995 Silica on Celluloid: Some Current Flintknapping Videos. Lithic Technology 20(2):149-152.

Whittaker, John C.
1996a Primitive Technology Experiments: Further Comments. *Primitive Technology Newsletter* 2:5-6.

Whittaker, John C.
1996b Reproducing a Bronze Age Dagger from the Thames: Statements and Questions. *London Archaeologist* 8(2):51-54.

Whittaker, John C.
1996 Athkiajas: A Cypriot Flintknapper and theThreshing Sledge Industry. *Lithic Technology* 21(2):108-119.

Whittaker, John C.
1997 Red Power Finds Creationism: Review of *Red Earth, White Lies* by Vine Deloria Jr. *Skeptical Inquirer* 21(1):47-50. Reprinted, *Indian Artifact Magazine* 17(2):55, 60-61, 6 (April 1998).

[*Red Earth* is a disgusting piece of politically motivated dishonest pseudo-scholarship, and racist besides. Deloria should no longer be considered a serious scholar by anyone. He uses exactly the same rubbish arguments as Biblical creationists to argue that white scholars are all bigotted fools and Indians are pure and spiritual, claiming that traditional accounts of “we were created here” are accurate, including memories of dinosaurs etc.]

Whittaker, John C.

1997 "Here Come the Anthros": What Good is an Archaeologist? In *Anthropology Matters: Essays in Honor of Ralph A. Luebben*, edited by J. Andelson, pp. 101-110. Grinnell College: Grinnell, Iowa.

Whittaker, John C.
1999 Alonia: The Ethnoarchaeology of Cypriot Threshing Floors. *Journal of Mediterranean Archaeology* 12(1):7-25.

Whittaker, John C.
1999 Frank Cushing: A Young Knapper in 1879." *Chips* 11(1):8.

Whittaker, John C.
2000 Alonia and Dhoukanes: The Ethnoarchaeology of Threshing in Cyprus. *Near Eastern Archaeology* 63(2):62-69.

Whittaker, John C.
2000 Old Brains and Modern Sentiments: Ishi and Others. *Anthropology Newsletter* 41(7):4.

Whittaker, John C.
2000 Test Excavations at Kryegjata B (Site 003). In *Mallakastra Regional Archaeological Project Third Season Preliminary Report*, edited by Jack Davis and Sharon Stocker, pp. 4-9. Available at University of Cincinatti Classics Department Mallakastra Regional Archaeological Project web site http://river.blg.uc.edu/mrap/MRAP/

Whittaker, John C.
2001 Knapping Building Flints in Norfolk. *Lithic Technology* 26(1): 71-80.

Whittaker, John C.
2001 "The Oldest British Industry:" Continuity and Obsolescence in a Flintknapper's Sample Set. *Antiquity* 75(288):382-390.

Gunflint knappers adapted to sell to the antiquities and collector trade as gunflints became obsolete. They had a hard time reproducing pressure flaked points with a technique not used in gunflint making.

Whittaker, John C.
2001 From Gunflints to Arrowheads. *Chips* 13(3):11-12.

Whittaker, John C.
2002 Flintknapping: Today's Ancient Craft. *Primitive Archer* 10(4):21-22.

Whittaker, John C.
2003 Threshing Sledges and Threshing Floors in Cyprus. In *Le Traitement des Récoltes: Un Regard sur la Diversité du Néolithique au Présent*. P. C. Anderson, L. S. Cummings, and T. K. Schippers, eds., pp. 375-388. APDCA, Antibes, France.

Whittaker, John C.
2004 *American Flintknappers: Stone Age Art in the Age of Computers*. University of Texas Press, Austin.

Ethnography of modern non-archaeological knappers and their world.

Whittaker, John C.
2005 Review of *LaHarpe's Post: A Tale of French-Wichita Contact on the Eastern Plains*, by George Odell. *Lithic Technology* 30 (1): 61-63.

Whittaker, John C.
2005 Hunting Squirrels in College Land. *Anthropology News* 46 (5): 64. Reprinted 2006 *The Grinnell Magazine* 38(4): 28.

Whittaker, John
2005 Bits of Bogus Science Preceding Piltdown: Review of Piltdown Man: The Secret Life of Charles Dawson and the Worlds' Greatest Archaeological Hoax by Miles Russell. *Skeptical Inquirer* 29 (1): 50-51.

Russell shows that Dawson was responsible for a whole series of small frauds in his career as gentleman scholar. There is thus little doubt that he was the creator of the Piltdown fraud too.

Whittaker, John C.
2007 Introduction. In *Primitive Methods of Making Stone Tools According to the Experiments of Halvor L. Skavlem*, by Alonzo Pond. Logan Museum Bulletin Vol II No. 1 (1930). Reprinted 2007 Gustav's Library Vintage Reprints.

2007 Late Survival of Atlatls in the American Southwest? *The Atlatl* 20(1):10-12.

2007 Clovis Atlatls? Hemmings' Evidence from Florida Rivers. *The Atlatl* 20(3):14.

2008 Turkish Flint Mines. *Chips* 20(2):5-9.

Whittaker, John C.
2009 Review of Woman the Toolmaker: Hideworking and Stone Tool Use in Konso, Ethiopia, by Belkin, Brandt, and Weedman. *Ethnoarchaeology: Journal of Archaeological, Ethnographic, and Experimental Studies* 1(2):217-219.

Whittaker, John C.
2010 Weapon Trials: The Atlatl and Experiments in Hunting Technology. *Designing Experimental Research in Archaeology: Examining Technology Through Production and Use*, Jeff Ferguson, editor., pp. 195-224. University Press of Colorado, Boulder.

Whittaker John C.

2010 Larry Kinsella Receives the Crabtree Award. *Chips* 22(3):23.

2010 "Comment on Shea and Sisk's "Complex Projectile Technology.""
PaleoAnthropology 2010:L0007-L0008. Electronic document, URL:
http://www.paleoanthro.org/journal/content/PA2010L0007.pdf

Whittaker, John C.
2011 Cushing's Key Marco Atlatls: Reconstructions and Experiments. *Ethnoarchaeology*, 3(2):139-162.

Documentation of existing specimens and history, replication of different versions to show problems of reconstructing archaeological specimens for experiments.

Whittaker, John C.
2011 Getting a Grip on Bronze Age Swords: Statements and Questions in Replicative Experiments. In *Experiment and Interpretation of Traditional Technologies: Essays in Honor of Errett Callahan*, Hugo Nami, ed., pp. 57-73. Ediciones de Arqueología Contemporánea, Buenos Aires.

Reproductions of prehistoric artifacts occur at many levels of skill and usefulness. All perform two functions: making statements of what we believe about the form and uses of the object, and asking or answering questions through experimentally solving problems of manufacture, use, or context. Making a reproduction of British Bronze Age sword as example.

Whittaker, John C.
2012 Lithic Scholars and the "Other" Knappers. *Lithic Technology* 37(1):51-56.

Non-academic knappers and knap-ins provide resources, colleagues, amicable public. Ebay offerings are major market, lots fakes, destructive force on sites.

Whittaker, John C.
2012 Ambiguous Endurance: Late Atlatls in the American Southwest? *Kiva* 78(1):79-98.

VanPool and others suggest atlatl use continued late in SW, but mostly on basis of occasional large points. But this is not good enough, all available dates on atlatls are early, there is no iconographic evidence of late use, and no finds in spite of 1000s of late sites with organic preservation.

Whittaker, John C.
2013 Review of Slings and Slingstones: The Forgotten Weapons of Oceania and the Americas, by Robert York and Gigi York. *American Antiquity* 78(1):199-200.

2013 Comparing Atlatls and Bows: Accuracy and Learning Curve. *Ethnoarchaeology* 5(2):100-111.

2013 Review of Across Atlantic Ice, by Dennis Stanford and Bruce Bradley. *Journal of the Iowa Archaeological Society* 60:35-36.

Makes their case, enough evidence to take it seriously, but much is based on insecure evidence like the Cinmar biface found offshore by dredging, allegedly like Solutrean bifaces, possibly associated with datable mammoth bones, but .... Etc. I remain very skeptical.

2014 Clovis Atlatls. *The Atlatl* 27(2):13-16.

Lithic articles relating to threshing sledges and sickles in:
van Gijn, Annelou, John C. Whittaker, and Patricia C. Anderson, editors.
2014 ***Exploring and Explaining Diversity in Agricultural Technology***, (EARTH Vol. 2). Oxbow Books.
Chapter 1: Introduction: The Dimension of Tools, Skills and Processes: Exploring Diversity. (pp. 3-15) Patricia C. Anderson, Annelou Van Gijn, John C. Whittaker and François Sigaut
Chapter 4.5: Experiments with harvesting techniques: Neolithic sickles and uprooting. (pp. 106-108) Patricia C. Anderson and John C. Whittaker
Chapter 5.1: Threshing Processes and Tools: Introduction. (pp. 135-137) John C. Whittaker
Chapter 5.2: Threshing Floors in Cyprus. (pp. 138-139) John C. Whittaker
Chapter 5.4: The Manufacture and Use of Threshing Sledges. (pp. 143-146) John C. Whittaker
Chapter 5.10: Blades, Sickles, Threshing Sledges, and Experimental Archaeology in Northern Mesopotamia. (pp. 163-170) Patricia Anderson and John C. Whittaker
Chapter 5.16: Conclusions. (p. 185) John C. Whittaker
Chapter 10.4: Some principles of technological decline: the case of the *tribulum*. (pp. 357-358) John C. Whittaker

Whittaker, John C.
2014 Atlatls are Levers, Not Springs. *Bulletin of Primitive Technology* 48:68-73.

Whittaker, John C.
2015 Fire-and-water knapping: Origins of a lithic folk tale. *Lithic Technology* 40(1):40-51.

Originated after 1900 (see Nagle 1914, Eames 1915), popularized by Edgar Rice Burroughs in *Beasts of Tarzan* (1916). Probably not of native origin.

Whittaker, John C.
2015 Arrowheads, Folklore, and Documentary Evidence. *Plains Anthropologist*, in press.

Whittaker, John C.
2015 The Aztec Atlatl in the British Museum. *Ancient Mesoamerica* in press.

Whittaker, J., D. Caulkins, and K. Kamp
1998 Evaluating Consistency in Archaeological Typology and Classification. *Journal of Archaeological Method and Theory* 5(2):129-164.

Variability among observers in applying any typology is a problem rarely examined. Tested a group of SW archaeologist for consistency in applying Sinagua ceramic typology. Found broad agreement on the more inclusive categories, much disagreement on fine distinctions.

Whittaker, J., A. Ferg, and J. Speth
1988 Arizona Bifaces of Wyoming Chert. *The Kiva* 53(4):321-334.

Large bifaces of Tiger Chert in late prehistoric SW pueblos

Whittaker, J. and L. Fratt
1984 Continuity and Change in Stone Tools at Mission Tumacacori, Arizona. *Lithic Technology* 13(1):11-19.

Whittaker, John C. and Matt Hedman
1996 Fort Osage Knappers: Survey Results. *Chips* 8(2):5.

Whittaker, John C. and Matt Hedman
1997 How Knappers Learn: Survey Results. *Chips* 9(3):10.

Whittaker, John and Eric Kaldahl
2001 Where the Waste Went: A Knapper's Dump at Grasshopper Pueblo, Arizona. In *Lithic Debitage: Context, Form, Meaning*. William Andrefsky, ed., pp. 32-60. University of Utah Press, Salt Lake City.

Analysis of a room full of large bifaces and points and the debris from their manufacture.

Whittaker, John, and Kathryn Kamp
1985 Drained Lakes and Small Sites: Rock Creek Lake. *Journal of the Iowa Archaeological Society* 32:91-102.

Whittaker, John, and Kathryn Kamp
1992 Sinagua Painted Armbands. *Kiva* 58(2):177-187.

Whittaker, John and Kathryn Kamp
2005 ISAC Sport and Science. *The Atlatl* 18(2):1-4.

Whittaker, John C. and Kathryn A. Kamp
2006 Primitive Weapons and Modern Sport: Atlatl Capabilities, Learning, Gender, and Age. *Plains Anthropologist* 51(198):213-221.

Modern sporting scores analyzed to provide a reasonable idea of what atlatls are capable of in terms of accuracy, ease of learning.

Whittaker, John, and Kathryn Kamp
2007 How Fast Does a Dart Go? *The Atlatl* 20(2):13-15.

Whittaker, John C., and Kathryn A. Kamp
2011 Long and Short: Reconstructing Key Marco Atlatls. *The Atlatl* 24(1):21-22.

Whittaker, John C., and Kathryn A. Kamp
2015 Editorial Reflections: Roots and Mentors. *Ethnoarchaeology: Journal of Archaeological, Ethnographic, and Experimental Studies* 7(2):

Remembering Bill Rathje and knapper Tony Romano

Whittaker, John C. and Kathryn A. Kamp
2016 Flint from the Ancestors: Ritualized Use of Stone Tools in the Prehistoric Southwest. In *Archaeological Variability and Interpretation in Global Perspective* edited by Alan Sullivan and Deborah Olszewski, University Press of Colorado, in press.

Whittaker, John, Kathryn Kamp, Melissa Badillo, Zerifeh Eiley, Jennifer Thornton, and Alexander Woods
2002 Excavations at Chiik Nah, A Maya Housemound at El Pilar, Belize. Unpublished report, Institute of Archaeology, Belize.

Whittaker, John C., Kathryn A. Kamp, Anabel Ford, Rafael Guerra, Peter Brands, Jose Guerra, Kim McLean, Alex Woods, Melissa Badillo, Jennifer Thornton, and Zerifeh Eiley
2009 Lithic Industry in a Maya Center: An Axe Workshop at El Pilar, Belize. *Latin American Antiquity* 20(1):134-156.

Biface production site, small industrial-scale axe making right in ceremonial center. Estimates of production from debitage.

Whittaker, John, Kathryn Kamp, and Emek Yılmaz
2009 Cakmak Revisited: Turkish Flintknappers Today. *Lithic Technology* 34(2):93-110.

flint mines and threshing sledge blade knapping, interviews with retired miner/knappers give similar picture to what Bordaz recorded in the 1960s

Whittaker, J., S. Koeman, and R. Taylor
2000 Some Experiments in Petroglyph Technology. In *1999 International Rock Art Congress Proceedings, Volume 1: Papers Presented at the 12th International Rock Art Congress, Ripon, Wisconsin, May 23-31, 1999*. P. Whitehead and L. Loendorf, eds., pp. 155-167. Tucson: American Rock Art Research Association.

Controlled timed experiments show most petroglyphs would require little labor. Pecking works well even for details; no need for ‘chisels’ or indirect percussion techniques, and they do not in fact work well.

Whittaker, John and Andrew Maginniss
2006 Atlatl Flex: Irrelevant. *The Atlatl* 19(2):1-3.

High speed photos show that the flex of an atlatl in the throw imparts no extra velocity to the dart.

Whittaker, John and Grant McCall
2001 Handaxe-Hurling Hominids: An Unlikely Story. *Current Anthropology* 42(4):566-572.

Experiments showed that handaxes do not work as throwing weapons, contrary to Calvin and O'Brien

Whittaker, John C. and Ron Mertz
2011 Introducing the Missouri Atlatl Association. *Missouri Wildlife* 72(3):10-11.

Whittaker, John C., and Anthony D. Romano
1996 Some Prehistoric Copper Flaking Tools in Minnesota. *The Wisconsin Archaeologist* 77(1):3-10.

Whittaker, John C., and Michael Stafford
1999 Replicas, Fakes, and Art: The Twentieth Century Stone Age and its Effects on Archaeology. *American Antiquity* 64(2):203-214. Reprinted 2000 in *The Arkansas Archaeologist* 39:19-30 (1998 issue).

Wickham-Jones, Caroline R.
1986 The Procurement and Use of Stone for Flaked Tools in Prehistoric Scotland. *Proceedings of the Society of the Antiquaries of Scotland* 116:1-10.

Wickham-Jones, Caroline R.
2000 An Unusual Flint Point from Kinbeachie Farm, The Black Isle, Scotland. *Lithics* 21:16-19.

Archaic American point in collection, no arch info

Wickham-Jones, Caroline R., and P. C. Woodman
1998 Studies on the Early Settlement of Scotland and Ireland. Quaternary International 49/50:13-20.

ca 9000 BP, earliest dates for Scotland = Rum, 8590 ± 95 BP.

Wilk, Richard
1976 Work in Progress at Colha, Belize, 1976. In *Maya Lithic Studies: Papers from the 1976 Belize Field Symposium*. T. R. Hester and N. Hammond, eds., pp. 35-40. Center for Archaeological Research, University of Texas at San Antonio, Special Report 4.

Wilke, P.J.
1996 Bullet-Shaped Microblade Cores of the Near Eastern Neolithic: Experimental Replicative Studies, in *Neolithic Chipped Stone Industries of the Fertile Crescent, and Their Contemporaries in Adjacent Regions*, S.K.K.a.H.G.K. Gebel, Editor.Ex Oriente: Berlin. p. 289-310.

Wilke, Philip J.
2002 Bifacial Flake-Core Reduction Strategies and Related Aspects of Early Paleoindian Lithic Technology. In *Folsom Technology and Lifeways*, J. E. Clark and M. B. Collins, eds., pp. 345-370. Lithic Technology Special Publication No. 4. University of Tulsa, Tulsa.

Wilke, Philip J.
2007 Review of Mesoamerican Lithic Technology: Experimentation and Interpretation, edited by K.G. Hirth. *Lithic Technology* 32(2):219-232.

Wilke, Philip J., J. Jeffrey Flenniken, and Terry Ozbun
1991 Clovis Technology at the Anzick Site, Montana. *Journal of California and Great Basin Anthropology* 13 (2):242-272.

112 pc with 2 fragmentary juvenile skeletons.
Reduction sequence and strategies: lg bifacial cores to produce 1) flakes 2) ultimately a point. Pts made from broken biface cores + flakes from them. Large cores usually heat treated.
2 lg pts with original flake surface on most of one face.
Most fluting by pressure.
Beveled bone rods = 1) foreshafts? - but don't hold points straight. 2) composite spear shafts? - but too fragile. 3) points themselves? -not effective. Suggest composite pressure flaker handles, with antler pt attached by bevel, resin, and sinew [unconvincing, and why no evidence of this antler point then?] - doesn't preserve as well as bone or ivory [but others say rods are elk antler]. Experiment produces rim damage to handle if pt allowed to wear down, flk scars match arch pts of Clovis type. [Overshot thinning common on points, mentioned, but not seen as intentional strategy.] Size of cache shows C carried lots of stone, perhaps because they were colonizing new territory.

Wilke, Philip J., and J. Jeffrey Flenniken
1991 Missing the Point: Rebuttal to Bettinger, O'Connell, and Thomas. *American Anthropologist* 93(1):172-173.

Shouldn't expect weight differences in point types, because existing points, including Elkos, have all been reworked from something larger [all? - nonsense!]. Sites don't show evidence of point types in sequence [even worse nonsense! - unusually dumb comments.]

Wilke, Philip J. and Leslie A. Quintero
1994 Naviform Core-and-Blade Technology: Assemblage Characteristics as Determined by Replicative Experiments. In *Neolithic Chipped Stone Industries of the Fertile Crescent*. H. G. Gebel and S. K. Kozlowski eds., pp. 33-60. Berlin, Ex Oriente.

'Ain Ghazal Pre-Pottery Neolithic material and replic expers to look at knapping choices and products. Bi-directional, opposed-platform percussion blade cores to produce straight blades for use as tools or blanks.

Up Pal roots eg Ksar Akil, Mureybit. PPN common all over Near East, declined with pottery Neo.

Replic several hundred cores of obsid + Edwards Plateau flint, following AG examples. At AG pristine cortical surfaces = mining flint, best quality, avoiding rolled etc. Raw form affects debitage: Large nodules produce much biface thinning flakes, small flat need only minimal prep, lots cortical deb. Basic shape triangular biface with platform angles for blades around 50 degrees. One long bifacial edge confined by flat faces, facette at each end used to strike platform flake (broad blade in form), then from these platforms, blades in both directions starting with a lame a crete. Blade platforms heavily prepared and isolated to give slightly convex core face and "punctiform" ie very small platform, blade straightness maintained by smaller ridge straightening flakes also usable, espec for microliths. Blades detached by direct percussion with glancing blow of hammerstone, held against leg, not fixed as indicated by lack of abraded faces, common overshots. Bladelets and "upsilon" blades are usable as tools but are biproducts, not goals.
[Admirably clear description of process and reasons, accompanied by good photos of arch + replic specimens]

Wilkins, Jayne, Benjamin J. Schoville, Kyle S. Brown, and Michael Chazan
2012 Evidence for Early Hafted Hunting Technology. *Science* 338:942-946.

Kathu Pan 1, S. Africa. Fauresmith late ESA or early Middle Stone Age, dates ca. 500 kya. Points [Levallois or Mousterian type]. Damage is symmetrical, mostly to tips, diagnostic impact fractures "distal step-terminating bending fracture," tip cross-sectional perimeter values – all compare well to experimental spear, known Holocene proj pts. Basal modification for hafting. Interp as thrusting spear, poss assoc with *H. heidelbergensis* common ancestor of H. s. and Neanders.

Will, Richard T.
2000 A Tale of Two Flint-Knappers: Implications for Lithic Debitage Studies in Northeastern North America. *Lithic Technology* 25(2):101-109.

Willey, Gordon R.
1972 *The Artifacts of Altar de Sacrificios. Papers of thePeabody Museum of American Anthropology and Ethnology* 64(1). Harvard University Press, Cambridge.

Eccentrics and bifaces from caches etc.

Willey, Gordon Randolph
1993 *Selena*. Walker and Company, New York.

Novel by one of the 'grand old men' of American archaeology. Written after his retirement, it is a somewhat oldfashioned and maybe even geriatric mystery - memory and change are themes on Willey's mind. The lead character Colin is a 72 yr old retired archaeologist, who returns to the hometown he left as a child, and Selena, the love of his youth. His various relatives (everyone is connected in the good old southern elite way) are at odds over an island they own and intend to sell, but cousin Charles wants to dig into the prehistoric mound Colin partly excavated at the beginning of his career. It isn't revealing too much to say that unexpected bodies will be found. Pleasant but not too exciting. At least the archaeology and academic glimpses are not absurd.

Willey, Gordon R., William R. Bullard, John B. Glass, and James C. Gifford.
1965 *Prehistoric Maya Settlements in the Belize Valley. Papers of the Peabody Museum of American Anthropology and Ethnology* 54. Peabody Museum, Cambridge.

Williams, Emily, Shannon R. Ryan, and Jack L. Hofman
2006 Westfall: Non-local Lithics at a Folsom Workshop/Camp Site. *Current Research in the Pleistocene* 23:153-155.

Williams, Jim
2009 Ishi Rediscovered. *Chips* 21(3):16-22.

Ishi's pts show no evidence of abrading platforms or shearing. Instead, debitage shows "recessed platform" preparation [small notch lowers plat edge - effect is similar to isolating - but leaves strong serration - not clear how that is tidied up] Maybe grinding was rare in prehistory. Waldorf comments on trying the technique too.

Williams, Jim
2010 Stone Age Knapping of the California Indian. *Chips* 22(1):17-22.

some attempts to replicate early accounts

Williams, Jim
2011 Cracking the Dalton Code and How to Make a Cache of Points. *Chips* 23(3):12-17.

Pressure technique to get "hollow-ground" appearance. Caches likely made in stages, maybe using apprentices for early work.

Williams, John Llewellyn, Jane Kenney, and Mark Edmonds
2011 Graig Lwyd (Group VII) assemblages from Parc Bryn Cegin, Llandygai, Gmynedd, Wales – analysis and interpretation. In *Stone Axe Studies III*. Vin Davis and Mark Edmonds, ed., pp. 261-278. Oxbow Books, Oxford.

Williams, Scott
2010 Monhantic Fort Gunflints: Continuity or Change in Mashantucket Pequot Lithic Manufacturing Patterns Due to European Contact. Unpublished MA thesis, University of Connecticut, http://digitalcommons.uconn.edu/gs_theses/13

[Not too useful; he had right idea, but inadequate methods + evidence].
Monhantic Fort is late 17C Pequot fortified village, King Philip's War, built 1666, ca 1000 lithics. Witthoft sequence of types not correct now, use 4 types: Chip = amorphous chunk of stone, not uniform 1580-1665 in Europe, to 1680 in N. Am (Luedtke 1999).Bifacial = not in Eng, Fr, or N Europe (not "Nordic"), common N. Am = Native made, also made in

Albania, Portugal, Spain to 19C. Spall = "wedge" "Dutch" "gunspall" made both Fr and Eng. Fr of translucent br flint, detailed heel + side retouch, Eng of E flint, squared shoulders, little retouch.1600s-early 1800s. Blade gunflints = "flake", both Fr and Eng, diff material, Fr single edge, rounded heel, Eng square, diffs in use of stake affect morphology. Fr 1663-1820,1920s final. Eng. Ca 1775, but lacking in Rev War Am sites, peak 1850s, still made. [lacks Abergavenny]. Blade flints poss also made in Russia.

Native flints followed traditional methods, bifacial pressure flaking, variety of materials. In NE, 1625-1700, later in the west, to 19C.

Recognition problems for early flints, but lithics from MF all from Euro ballast flint, so not precontact. Kenmotsu types usewear on gunflints. Strike-a-light morphol + use sim to gunflints. Barnes says concave use edge, bifacial as turned in use. Site also has utilized debitage flakes of Euro flint.

Macroscopic, microscopic (40x) and replicative studies: "Sullivan and Rosen typology… to determine production methods…" [so he doesn't know much about lithic analysis, tho later lists problems with the typology – so why use it?]. Replic: small nodules of Brandon flint smashed on anvil stone, suitable pieces retouched by bipolar technique, hammerstones. Tried 4 flints in repro gun, observed sparks [no powder, no ignition; so doubt he has flintlock experience]. Shows chip gunflints were very usable. Previous usewear removed when flint flipped and reused. Damage to heel from contact with screw.

Arch specimens: 54 from Monhantic [table distinguishes "spall gunflint" and "native gunflint" only, doesn't indicate which were bifacial.]; and 11 from Aptucxet Trading Post [chip vs gunspall, 2 quartz, others Euro flint]. Also 36; 6 "strike-a-lights and utilized flakes" distinguished from gunflints by diff usewear. Usewear: on gunflints = Kenmotsu's findings, i.e. unifacial step flaking, with flat flaking on lower surfaces of working edges (contact with frizzen). Also smoothing, blunting and crushing of edges. No metal or leather residue. 14 specimens with rejuvenation. Replicated ones similar. Strike-a-lights should show concave edge, bifacial + invasive flaking.

Debitage analysis using S+R typology, 812 pc. – lots of debris, twice as many broken flakes as whole. Stats for different areas. Tools: 91 = 55 gunflints (39 native, 16 gunspalls), 19 s-a-l, 23 utilized flakes. S+R analysis suggested core reduction dominated, but some 2ndary reduction [this is the kind of conclusion S+R is NOT good for – why did he decide they were smashing nodules + using bipolar?]. Pequots made gunflints, discarded at home when used.

Most small, pistol size, but since worn, not sure, and small flints could be used in large guns if needed. Bipolar not surprising; Pequot losing lithic skills, small raw material. [Bipolar is quite likely, but his evidence for it is not clear, and the one tiny nodule from the fort is not good enough evidence that the material was all small]

Williams, Thomas Joseph

2014 Testing the Atlantic Ice Hypothesis: The Blade Manufacturing of Clovis, Solutrean, and the Broader Technological Aspects of Production in the Upper Palaeolithic. Unpublished PhD dissertation, University of Exeter.

Willig, Judith A.

1991 Clovis Technology and Adaptation in Far Western North America: Regional Pattern and Environmental Context. In *Clovis: Origins and Adaptations*. Robson Bonnichsen and Karen Turnmire eds., pp. 91-118. Oregon State University, Corvallis.

Willoughby, Charles
1901 Antler-Pointed Arrows of the South-Eastern Indians. *American Anthropologist*, n.s. 3(3): 431-437.

Peabody Museum, ethnog, prob collected late 1600s-early 1700s. Use of stone rare - no good sources, replaced by metal. Copper point hafted on arrow with drilled hole instead of notches.

Willoughby, Charles
1902 Prehistoric Hafted Flint Knives. *The American Naturalist* 36(421):1-6.

Illustrates specimens from SW caves, mentions others in various collections. Flaked blades in slots in wooden handle, most with mastic "probably *Larrea mexicana*" [probably not]. A few with lashings too. One 'saw' one double-bladed, a couple at odd angles. 3 probable foreshafts for atlatl spears, compared to Mexican depictions. [No provenience info of course.]

Willoughby, Charles C.
1903 Primitive Metal Working. *American Anthropologist*, n.s. 5(1):55-57 .

Experimented making Hopewell ear ornament with primitive methods, stone hammer and annealing native copper nugget.

Willoughby, Charles
1922 *The Turner Mound Group of Earthworks, Hamilton County, Ohio*. Papers of the Peabody Museum of American Archaeology and Ethnology, Vol 8, No. 3. Harvard University. Cambridge, MA. (Reprinted 2007, Gustav's Library, Davenport IA.)

Elaborate Hopewell burial mounds. Goods include 11 micaceous schist imitation flaked blades with ground or carved flake scars.

Willoughby, Pamela R.
1985 Spheroids and Battered Spheres in the African Early Stone Age. *World Archaeology* 17(1):44-60.

Wilmsen, Edwin
1970 Lithic Analysis and Cultural Inference: A Paleo-Indian Case. *Anthropological Papers of the University of Arizona No. 16*. University of Arizona Press, Tucson.

Edge angles as evidence of function

Wilmsen, Edwin, and Frank H. H. Roberts
1978 Lindenmeier, 1934-1974: Concluding Report on Investigations. *Smithsonian Contributions to Anthropology* 24. Smithsonian Institution Press, Washington D.C.

Wilson, Michael C., John Visser, and Martin P. R. Magne
2011 Microblade Cores from the Northwestern Plains at High River, Alberta, Canada. *Plains Anthropologist* 56(217):23-36.

Assoc with Scottsbluff points, unusual industry. Cores are rectangular tabular bifaces, platform made by burinating one corner. Blades up to about 10 cm. Suggests PaleoArctic tradition connections.

Wilson, Lucy
2007 Terrain Difficulty as a Factor in Raw Material Procurement in the Middle Palaeolithic of France. *Journal of Field Archaeology* 32(3): 315-324.

Distance measures can't consider world as flat sheet, must include terrain which affects effort of travel. Vaucluse area, limestone with flints. Two sites: Bau de l'Aubesier and La Combette. Measures of energy in calories/km for different slopes used [but seem to have lots of problems]. Hypotheses generally confirmed: greater distance, greater difficulty reduces use of stone sources compared to easier sources.

Wilson, Lucy
2007 Understanding Prehistoric Lithic Raw Material Selection: Application of a Gravity Model. *Journal of Archaeological Method and Theory* 14(4):388-411.

Prehistoric source choice based on both geologic/geographic traits of source, and human factors. G/G characteristics (quality, size, abundance) can be quantified as "attractiveness" value in gravity model to predict which sources preferred. Where deviate from model, human factors involved (direction of travel, time available, social restrictions etc). Paleolithic Vaucluse, S. France.

Wilson, Thomas
1888 Fraudulent Spear or Arrowheads of Curious Forms. *American Naturalist* 22:554-555.

Unknown maker, new eccentrics made from old points. Sell for 2 - 50 cents. There oughta be a law...

Wilson, Thomas
1891 Forms of Ancient Arrowheads. *The American Anthropologist* 4:58-60.

Hard to distinguish between knives, spears, and arrowheads. No prehistoric specimens found with hafts, so can't tell. So classify without functional distinction, by shape only.

Wilson, Thomas
1896 Piney Branch (D.C.) Quarry Workshop and its Implements. *The American Naturalist* 30(359-360):873-885, 976-992.

Argues against Holmes interpretation as blanks. Holmes says these are rejects, but they are regular in form so must be intentional. No evidence of true age except form of tools. [Part of his problem is he didn't know how a thick biface could be thinned, therefore doesn't consider them parts of the same sequence of manufacture.]

Wilson, Thomas
1898 *Prehistoric Art: or, the Origin of Art as Manifested in the Works of Prehistoric Man*. Report of National Museum for 1896, U. S. Government Printing Office, Washington D.C.

front plate of stone celt in wooden handle from MI.
"Bannerstones" and birdstones, unknown use, prob ornamental.
p 425: "the art of flint chipping, so far as it applies to small flint or glass arrowheads… is well known and is or has been practiced by many persons in the U.S." mentions a couple modern knappers, no names. TW warned against fakers 1888, "which warning seems to have been acted upon by both makers and purchasers, and the industry in that part of the country has practically died out. It is continued in Oregon." But large leaf-shaped thin implements have never been reproduced.
Paleolithic carvings [spear throwers + parts considered "poniards"]
Ethnographic and prehistoric musical instruments.

Wilson, Thomas
1898 Class A, Beveled Edges. *The American Archaeologist* 2:141-143.

Beveled pts [like Thebes] - experiments to show they give rotary motion – put museum specimens on unfletched shafts and dropped from Smithsonian tower. Also tried mounted and moved through water and simple wind tunnel using a fan. All showed rotation. Considers them arrow points. Most beveled to produce counter-clockwise rotation. "Whatever may have been the intention of the maker of the arrow-heads… in their flight through the air the beveled edges produced a rotary motion." It would be easier to use twisted fletching, but of 1000 arrows in Smithsonian, not more than a dozen have such. Since you can turn arrowhead in making, bevels do not indicate handedness.

Wilson, Thomas
1899 *Arrowpoints, Spearheads, and Knives of Prehistoric Times*. Report of the United States National Museum for 1897:811-988. Washington DC. (Reprinted 2007, Skyhorse Publishing, New York).

[Reprint has one of the ugliest covers ever put on a book of archaeology: totally bogus "arrows" by some ignoramus designer .]
Superstitions about arrowheads all over Europe, Asia, Africa, reflect long disuse. Source in thunder/lightning, protects against. "Elf-darts" in Britain, protect/cure magical attacks. [Many good refs and stories]. Such superstition not in US because we know Indians. Indians use arrowheads as talismans, but transition to metal very rapid.
Mines and quarries in Europe, describes Grimes Graves and Brandon gun flint industry. Strike-a-lights still in use in Paris. Quarries at Flint Ridge.
Material - [early use of thin sections to distinguish.] Flint, chert, quartzite, argillite.

Early knapping demos to learned societies by Evans, Capitan. Percussion, hammerstones. Pressure, ethnog tools of bone and antler, hafted, and prehistoric European of flint [probably a strike-a-light.]

Classification: triangular, oval, stemmed, peculiar. Class IVA "peculiar, beveled" [mostly Archaic Thebes pts etc, some huge]. P. 168-169 Experiments: haft and drop from tower, in water, in wind from fan, to show bevel spins projectile. Why, when it would be easier to spin by fletching - but only a few of 1000s of arrows in National Museum have spiral fletching. "Curious" forms, for "art" [plate of small effigy forms supposedly from CA and midwest includes many that look fake to me.]

[He mentions arrows, spears and javelins frequently, but never atlatls, although he must have known of them at the time from Nuttall, Cushing, and others at the Smithsonian. Compiles knapping accounts; no mention of fire and water at this time.]

Wilson, Thomas
1901 Arrow Wounds. *American Anthropologist* 3:513-531.

Examples from Europe, arch U.S.
Army Museum specimens mostly metal points, none poisoned.
Multiple anecdotes from medical records and other accounts, some result in skull in Army Museum, others recovered. [Overall tone much more optimistic or at least less gruesomely detailed than Bill, which he cites, but note that lots of patients died.]
p. 529: "A paper by W. Thornton Parker, M. D., describes the arrow and its mode of manufacture [not well or in much detail - JW], and magnifies the malignity of arrow-wounds. The author explains the apocryphal difference between hunting- and war-arrows, saying: "The head of the war-arrow is shorter and broader than that of the hunting-arrow, and is attached to the shaft at right angles with the slot which fits the bow-string, the object being to allow the arrow in flight more readily to pass between the human ribs, while the head of the hunting-arrow, which is long and narrow, is attached perpendicularly to the slot, to allow it to pass readily between the ribs of the running buffalo." [Does not explain why he considers this apocryphal or the wounds exaggerated]

Windmiller, Ric
1973 The Late Cochise Culture in the Sulphur Spring Valley, Southeastern Arizona: Archaeology of the Fairchild Site. *Kiva* 39(2):131-169.

Chiricahua-San Pedro phase transition. Base camp. Point types. Features.

Windmiller, Ric, and Bruce B. Huckell
1973 Desert Culture Sites Near Mormon Lake, Northern Arizona. *Kiva* 39(2):199-211.

10 preceramic sites - hunting blinds and campsites. Points and a few other lithics.

Winfrey, James
1990 An Event Tree Analysis of Folsom Point Failure. *Plains Anthropologist* 35(129):263-272.

Counts attempts by channel flakes, adds types of failures: total success rate 52-55% (lower than experimenters). Fluting, especially second side, most dangerous step in manufacture.

Wingerson, Lois
2008 Rock Music: Remixing the Sounds of the Stone Age. *Archaeology* 61(5):46-50.

Music is universal but doesn't survive well. A few instruments or possibles. Cave art correlating with acoustic resonance areas and stone formations that ring when struck. Aurignacian bone flutes. Carved lithophones from China.
Cross, Zubrow, and Cowan examining flint blade chimes. [Not very convincing stuff, nor substantial article].

Winters, Howard D.
1984 The Significance of Chert Procurement and Exchange in the Middle Woodland Traditions of the Illinois Area. In *Prehistoric Chert Exploitation: Studies from the Midcontinent* edited by B. M. Butler and E. E. May, pp. 3-22. Center for Archaeological Investigations, Occasional Paper 2, Southern Illinois University, Carbondale.

Wiseman, Regge N.
1992 The Other End of the Network: Alibates Material West of the Plains/Pueblo Frontier. *Plains Anthropologist* 37(139):167-170.

Plains Alibates (3 flakes) from TX in NM at obsidian resource areas.

Wiseman, Regge N., Dorothy Griffiths, and James V. Sciscenti
1994 The Loco Hills Bifacial Core Cache from Southeastern New Mexico. *Plains Anthropologist* 39(147):63-72.

8 bifacial cores or "quarry blanks" cf Paleo/Early Archaic. Discusses advantages of bifacial cores, Plains caches, caching behavior.

Wisner, George
2008 The Silver Beach Elk Site: A Case of Misleading Association. *Mammoth Trumpet* 23(2):1-4, 8.

Gainey/Clovis fluted pt and elk bones on lake bottom not assoc, bones date 350-500 RCYBP. [See Hudson 2006, 2007]

Wisner, George
2014 The Cody Complex: All About Bison Hunting ... and Much More. *Mammoth Trumpet* 29(3):18-20.

"Toolkit" terminology – Cody knife, Scotsbluff, Eden, Alberta points.

Witcher, Gerald

1997 *Counterfeiting Antique Cutlery*. National Brokerage and Sales, Inc, Brentwood, Tennessee.

How to recognize counterfeit antique pocket knives, for the collector. Huge and detailed - [proves that any old thing of value is likely to have fakers fooling people].

Witold, Migal
2006 The Macrolithic Flint Blades of the Neolithic Times in Poland. In *Skilled Production and Social Reproduction*. Jan Apel and Kjel Knutsson eds., pp. 387-398. Societas Archaeologica Upsaliensis, Uppsala.

Witthoft, John
1968 Flint Arrowpoints from the Eskimo of Northwestern Alaska. *Expedition* Winter 1968: 30-37.

Site looting, reuse, sale, modification by Eskimo. Breakage patterns - slow heavy bow vs light fast Indian bow. Two-handed compound flaker, ethnographic account of knapping - lashed down.

Witthoft, John
1956-1957 The Art of Flint Chipping. *Ohio Archaeologist* 6(4), and 7(1-3).

Rambling discussion of various techniques, typology, and comparisons. [I think it continued in subsequent issues.]

Witthoft, John
1966 A History of Gunflints. *Pennsylvania Archaeologist* 36(1-2):12-49.

Wobst, H. Martin
1977 Stylistic Behavior and Information Exchange. In *Papers for the Director: Research Essays in Honor of James B. Griffin*. C. Cleland ed., pp. 317-342. Academic Press, New York.

Woerner, Michael C.
1980 Descriptive Analysis of the Obsidian from Operation 2012, 1980 Season. In *The Colha Project Second Season, 1980 Interim Report*, T. R. Hester, J. D. Eaton, H. J. Shafer eds., pp. 301-312. Center for Archaeological Research, University of Texas, San Antonio.

Op 2021 Late Classic housemound. 445 pc, 70% waste flakes, some blades and core bits, interp as from blade manufacture from small prepared cores in small wkshp along edge of platform. Stats given.

Wolff, Christopher B.
2013 Review of <u>Clovis Lithic Technology: Investigation of a Stratified Workshop at the Gault Site, Texas</u> by Michael R. Waters, Charlotte D. Pevny, and David L. Carlson *Lithic Technology* 38(2):126-127.

Wood, Bernard
1997 The Oldest Whodunnit in the World. *Nature* 385:282-283.

[see Semaw et al 1997] Comment on find of earliest stone tools at 2.5 mya in Gona, Ethiopia, and 2.3 mya at Hadar. No tools found assoc w *Australopithecus africanus* finds in >2.9 mya strata. Hadar jaw from tool strata AL666-1 assigned to *Homo rudolphensis*. But shouldn't rely on "guilt by association." *H. r.* goes to *H. ergaster*, without expectable change in tools, with Oldowan lasting 2.5-1.5 mya. But *Paranthropus* + similar forms span the time, have continuing dental adaptation, consistent with continuing tool adaptation.

Woodall, J. Ned
2004 Gunflints and other Lithic Artifacts from 31CR314 Queen Anne's Revenge Site. North Carolina Office of State Archaeology Research Report and Bulletin Series QAR-B-04-01.

7 lithics, only 3 analyzable: 1 ovate, unifacial retouch, possible spall gunflint or strike-a-light, patinated , not Fr or Eng but maybe Euro flint. 2 similar but rectangular. 3 spall gunflints of black flint w brown inclusions, not distinctive to source, small – poss used up. ['Blackbeard' Edward Teach, 1718]

Woodall, J. Ned, Stephen T. Trage, and Roger W. Kirchen
1997 Gunflint Production in the Monti Lessini, Italy. *Historical Archaeology* 31(4):15-27.

N Italy, limestone plateau, Cretaceous flints in secondary deposits. Villages on ridge tops, pasture on flats, woods below include chestnuts harvested and ground for flour. Flint cleared from fields, piled on periphery. Local ordinance prohibited knapping in cultivated or inhabited areas. Verona and river transport ca 20 km so gunflint industry had market, even larger market N in Tyrol. Austria lacked good gunflint, so smuggling assured. Sites around village of Ceredo. 30x30m debitage scatter at one, others in rock shelters.
Ca 75 cm deep loose debitage. 17 complete + broken gunflints out of sample analyzed. All but one platform/blade type, one spall type possibly for strike-a-light. Describes British + French manuf; no info on exact methods used at Ceredo available. Cores discoidal for strike-a-light flints or tabular for gunflint blades. No stratig separation so not for spall vs blade gunflints. [Debitage sounds like Brit blade type waste, photos look like Brit flints too, though blades shorter.] Flint yellow, identical to French in appearance. [But they don't seem to round the heel like Fr.]

Woodall, J. Ned, and Giorgio Chelidonio
2005 Gunflint Workshop Traces in the Lessini Mountains (Verona, Italy): Flintknappers and Smugglers at the End of the Venetian Republic. In *Stone Age - Mining Age*.

N Italy, limestone plateau, Cretaceous flints, yellow and visually like French. Small knapping stations utilizing field clearance nodules, probably part time. Larger businesses existed closer to Verona. Tabular blade cores, blades sectioned on stake using roulette hammer - "platform" gunflint i.e. British form [don't look quite as neat in photos] and

possibly some spall gunflints or strike-a-lights. Distinctive attributes distinguish from prehistoric knapping: tabular cores, lenticular tertiary flakes [popped off of bulb] because of pointed metal hammer, crushed platforms, segmented blades with demi-cones from stake.

Woods, James C.
1987 *Manufacturing and Use Damage on Pressure Flaked Stone Tools*. unpublished MA thesis, Idaho State University.

Experiments with breakage of hafted knives and points. Large sample of replicas made by Woods and Titmus - good visible individual scar pattern differences, handedness.

Woods, James C.
2011 Gene L. Titmus: A Legendary Figure in Idaho Archaeology. *Bulletin of Primitive Technology* 41:92-93.

Obit. Worked for Idaho Power, knapped as hobby. Met Crabtree 1959, SAA Crabtree award 1999. Experiments with Folsom a specialty. Died May 2010.

Woods, James C. and Gene L. Titmus
1996 Stone on Stone: Perspectives on Maya Civilization from Lithic Studies. In *Eighth Palenque Round Table 1993*. M. G. Robertson ed., pp. 479-489. The Pre-columbian Art Research Institute, San Francisco.

Nakbe in Peten, Guatemala. Excav since 1989, 276 chipped artifacts [Impossibly few – are they just using part, or excavs not recognizing, or?] 92 or 33% are general utility bifaces, many from building fill. Wear and exper suggest limestone shaping.
Experiments: 1) axes used in limestone quarry. 2) replication of eccentrics. Neither is as much labor as assumed, so extravagant use of rare raw material is better indicator of specialization than labor investment.
"General Utility Biface" = 1/3 of tools. Use in quarry - almost as good as steel picks. Eccentrics - 2-19 hrs depending on size and complexity. GUBs similarly difficult [Not So!]. No manufacturing details given for eccentrics.

Woodward, Ann, John Hunter, Rob Ixer, Fiona Roe, Philip J. Potts, Peter C. Webb, John S. Watson, and Michael C. Jones
2006 Beaker Age Bracers in England: Sources, Function and Use. *Antiquity* 80 (309):530-543.

Of 58 known, 26 studied. Assoc with beakers (18/58), barb and tanged pts (7/58), copper/bronze daggers (11/58), a few apparently on arms, others not. Three main types: A-rounded 2-hole, B - rectangular flat 2-4-more holes, C - rectangular waisted concavo-convex 4 holes. Three have gold capped rivets [other rivets not noted], and at least one has scoring for thong between end holes. Petrography relates to Wales and Lake District axe stone and slates. Certain outcrops may have had spiritual importance. Irish examples favor red jasper. Some damaged or reworked, but rarely show use-wear. Interp as symbolic more than functional, rivets would prevent use. [not really, and see van der Vaart 2009]

Woodward, Ann, and John Hunter
2011 An Examination of Prehistoric Stone Bracers from Britain. Oxbow Books, Oxford.

Woodward, Arthur
1960 Some Notes on Gun Flints. In *Indian Trade Guns*, T. M. Hamilton ed., *Missouri Archaeologist* 22:29-39.

Wormington, H. Marie
1949 *Ancient Man in North America, 3rd edition*. The Denver Museum of Natural History, Denver.

Worsham, Charles
1993 Making Fire with a Pump-Drill. *Bulletin of Primitive Technology* 1(6):44-47.

Wright, G. Frederick
1896 Fresh Relics of Glacial Man at the Buffalo Meeting of the A. A. A. S. *The American Naturalist* 30(358):781-784.

1) Trenton, NJ - argillite tools in "glacial" sand below flint tools of modern types - Putnam and Volk. 2) Ohio - relics in "drift" - 20 feet down - neolithic axes.

Wright, R. V. S.
1972 Imitative Learning of Flaked Stone Technology: The Case of an Orangutan. *Mankind* 8:296-306.

Wyatt, J.
1870. Manufacture of gunflints. In *Flint Chips: A Guide to Prehistoric Archaeology as Illustrated by the Collection in the Blackmore Museum, Salisbury,* Edward Stevens, London: Bell and Daldy, 578-590.

Wyckoff, Don G.
1996 The Westfahl and Engle Bifaces: Isolated Finds of Large Bifaces on the Southern Plains. *Plains Anthropologist* 41(157):287-296.

Texas flint in OK. Westfahl - thin, Folsom association. Engle - thicker, probably Archaic "biface core." [Poor drawings, no photos]

Wyckoff, Don G.
2005 Recent Lithic Technological Studies on the Southern Plains and Adjacent Regions Part I: Identifying and Sourcing Raw Materials. *Lithic Technology* 30 (2): 89-105.

Review of situation since Banks 1990, focus on newly recognized materials. Ozarks; Coastal Plains Antlers Formation fine silicified sandstone. Edwards Plateau cherts of central Texas including Georgetown and Owl Creek/Ft Hood with many varieties. Alibates long known, but little info on actual exploitation, and confused by look alikes and wide alluvial spread of Alibates pebbles up to 500 miles, into Caddoan/Spiro range, so not all need be trade.

Wyckoff, Don G.
2010 Hunter-Gatherer Chert Use along the Southwest Flank of the Ozarks. *Missouri Archaeologist* 71:79-112.

Wymer, John J. and Ronald Singer
1993 Flint Industries and Human Activity. In *The Lower Paleolithic at Hoxne*. R. Singer, B.Gladfelter, J. Wymer eds., pp. 129-138. University of Chicago Press, Chicago.

2 assemblages - lower with ovate hand-axe and flakes, upper with pointed hand-axe, scrapers, flakes. Possible middle from which Frere's hand-axe came. Bones with cut marks, clusters - on or near living surfaces.

Wymer, John J. and R. G. West
2001 A Levallois Flake from Somersham, Cambridgeshire. *Lithics* 22:11-12.

Grey flint with "chert inclusions" [?]

Wynn, Thomas
1979 The Intelligence of Later Acheulean Hominids. *Man* 14:371-391.

Piaget and stone tools. Spatial concepts similar to modern humans.

Wynn, Thomas
1981 The Intelligence of Oldowan Hominids. *Journal of Human Evolution* 10:529-541.

Not too smart, roughly gorilla level. Stone tools show, following his use of Piaget learning models.

Wynn, Thomas
1985 Piaget, Stone Tools, and the Evolution of Human Intelligence. *World Archaeology* 17(1):32-43.

[OK, but I'm not real convinced by his Piaget model]
Uses Piaget stages of childhood learning 1)sensorimotor - animal, infant, coordinated motor action 2) pre-operational intelligence - project action to future, review past, but only in sequences, act only on one quality of thing at at time- not multivariate or pre-correcting - trial and error only. 3) Operational thinking - coordinating multiple variables (abstract geometric relationships like cross-sections) pre-correct errors in actions before performing them.
Oldowan choppers fit stage 2 - simple sequential actions, random forms.

Acheulean handaxes are stage 3 - bilateral symetry (abstract form is pre-planned), symetrical cross-section, perceiving simultaneous multiple effects of a flake.

Wynn, Thomas
1989 *The Evolution of Spatial Competence*. Illinois Studies in Anthropology No. 17. Urbana: University of Illinois Press.

Wynn, Thomas
1993 Handaxe Enigmas. *World Archaeology* 27(1):10-24.

Hand-axe implications for symbolic behavior - intentional products, but not signs, don't require grammar-like rules, or symbolic instruction to learn. Consistent with a "mimetic" culture.

Wynn, Thomas
2002 Archaeology and Cognitive Evolution. *Behavioral and Brain Sciences* 25:389-438.

Evolutionary sequence of ape-level spatial abilities with first stone tools 2.5 million years ago, then early handaxes 1.5 show a higher level of ability, followed by another major step ca. .5 mya with late handaxes. Different evolutionary contexts, first shift associated with change to open country adaptive niche in early *Homo erectus*, second assoc with no clear adaptive shift but with invasion of more hostile environments and appearance of systematic hunting. But these are not modern hunter gatherers. The measure of cognitive ability he focuses on is symmetry as marker of intentional manipulation of form. [Followed by commentary from a couple dozen mostly psychologists, with a few anthropologists. Including Calvin with his hand-axe throwing fantasies again, now expanded to include a new just-so story where *Homo erectus* forgets how to throw handaxes, but repeatedly rediscovers the use by finding old ones in the river beds.]

Wynn, Thomas and Frederick L. Coolidge
2010 How Levallois Reduction is Similar to, and Not Similar to, Playing Chess. In *Stone Tools and the Evolution of Human Cognition*, April Nowell and Iain Davidson, eds., pp. 83-103. University Press of Colorado, Boulder.

"Expertise" is driven by cognitive system of long-term working memory, in which retrieval structures (cues) stored in l-t m are activated in working (short term, active attention) memory, where they are associated with info acquired by practice to produce efficient complex behavior. Expertise does not rely on symbols or language. Analysis of "Marjorie's core" from Maastricht-Belvedere by Schlanger (1996) chaine operatoire shows elements of retrieval structure no different from that of modern artisan. Within overall "umbrella plan" including conditions and goals, knapper improvises response to immediate conditions using cognitive cues like distal convexity to know what action is appropriate. Compared to "faconnage" structure of earlier biface. Learning Levallois probably required active teaching, but not language. In comp, a Boxgrove handaxe partial refitting shows more local response to problems with an overall goal, but not structured into sub-routines like Levallois. Many more less efficient removals, and selecting good flakes as well as making biface, which requires more working memory [maybe]. [Why is this literature so riddled with jargon?]

Wyoming State Museum
2014? Here and Now: Wind River Artists. Video (14 min) accompanying display.

Annin Soldierwolf, who IDs as Northern Arapaho, does beading competently, also has hunting gear on display. In video says grandfather taught him arrowhead making by dripping water from a plume on heated rock. He never says, but implies that this is how he made those on display. He holds a group of points, possibly old, in his hand and rattles them while talking, apparently to give background "knapping" or arrowhead noise. Shows different sizes of point, saying small for game like rabbits, larger for deer. Hunting gear seems mostly there to give him "traditional" credibility – says he hunts with his arrows and a modern fiberglass recurve. On display are his quiver and 5 arrows. Three have stone points, small, triangular, poorly flaked as near as can be seen, certainly not by fire and water. The other 2 have "fishing" points which are sort of bone forks, not resembling anything seen elsewhere and also dubious. His haftings are also clunky and poor.

Yahnig, Carl
2004 Lithic Technology of the Little River Clovis Complex, Christian County, Kentucky. In *New Perspectives on the First Americans*. B. T. Lepper and R. Bonnichsen, eds., pp. 111-117. Center for the Study of the First Americans, College Station, TX.

Comparisons to support Stanford and Bradley Solutrean connection. 555 blades and some cores, just like European Upper Pal [No, they aren't, they look nothing like Solutrean!]. Bifaces thinned by outrepassé flaking.

Yalçinkaya, Işın
1998 Découvertes Paléolithiques en Obsidienne en Anatolie Orientale. In *L'Obsidienne au Proche et Moyen Orient: Du Volcan á L'Outil*, edited by M.-C. Cauvin, A. Gourgaud, B.Gratuze, N. Arnaud, G. Poupeau, J.-L. Poidevin, and C. Chataigner, pp. 235-240. BAR International Series 738. Archaeopress, Oxford.

13 pc from Cavuslar (Bingol) and 1 from Komurcu, surface finds, handaxe and Levallois cores.

Yerkes, Richard W.
2003 Using Lithic Analysis to Study Craft Specialization in Ancient Societies: The Hopewell Case. In *Written in Stone: The Multiple Dimensions of Lithic Analysis*. P. N. Kardulias and R. W. Yerkes, eds., pp.17-34. Lexington Books, Lanham.

Dalton tools standardized types each for diff task, high quality, meet technol criteria expected of specialization, but not social contextual criteria. Hopewell microdrills assoc w craft specializ, but bladelets not produced by specialists. Mississippian microblades assoc w specializ, both independent and attached.

Yerkes, Richard W.
2009 Microwear Analysis of Chipped Stone Artifacts from the Excavations. *Midcontinental Journal of Archaeology* 34(1):109-122.

Seip Earthworks, Hopewell, Ohio. Most tool use ad hoc, most polish reflects meat and hide.

Yesner, David R., and Georges Pearson
2002 Microblades and Migrations: Ethnic and Economic Models in the Peopling of the Americas. In *Thinking Small: Global Perspectives on Microlithization*, edited by Robert Elston and Steven L. Kuhn, Archeological Papers of the American Anthropological Association 12, pp. 133-162.

Yildirim, Bahadir and Marie-Henriette Gates
2007 Archaeology in Turkey, 2004-2005. *American Journal of Archaeology* 111:275-356.

Survey of all work, mention of work at lithic sites, espec obsid sources, destruction of sites by dams and looting.
Türbe Höyük Ubaid phase 4th mil BC thousands of worked and rough obsid pieces, suggests site as outpost between L. Van sources and Mesopotamia, but structures destroyed by later stuff.
Boğasköy (Hattusha) Hittite capital, experimental reconstruction of 65 m stretch of city wall with fortifications 12 m high, took 11 mo, 64,000 mud bricks.
Kaletepe Deresi in Capadocia, excavs by Nur Balkan-Atli around Gölüdağ, worlds largest obsidian source, Paleolithic including Acheulean obsidian handaxes

Yohe, Robert M.
2009 Analysis of Flaked Stone Artifacts. In *Archaeological Laboratory Methods: An Introduction*. Mark Sutton and Brooke Arkush, eds., pp. 45-74. Kendall Hunt, Dubuque, IA.

[Clear enough, adequate definitions of most important terms. Illustrations rather crude, mostly ok, but for defining flake attributes totally inadequate. Cites Sullivan and Rosen but thankfully does not use their methods; however, the debitage classes/flake types used in sample analysis sheet are somewhat bizarre and depend on the poorly illustrated platform types. Mentions experimental knapping but did not include my books in refs for students. Usable, but needs help.]

Yonker, Suzanne
2001 Dale Cannon helps design New Flintknapping Exhibit at the Smithsonian. *Chips* 13 (4): 15-16.

Effusively praises his art. June in WA to help plan display of artifacts. Opening set for 2004. Knapping as one of Indian arts. M. Stafford as archaeological knapper. Use as study collection display. Same Cannon beginning story as he told me. Est 5000 knappers [is this my figure again?]. Smithsonian purchases 8-10 of his pieces.

York, Robert, and Gigi York
2011 *Slings and Slingstones: The Forgotten Weapons of Oceania and the Americas*. Kent State University Press, Kent, Ohio.

Useful survey of N. Am. and Oceanic slings, focus somewhat on shaped slingstones as only really diagnostic artifact. Needs some practical info on how slings work and experimental study of stones and slinging in general. Reviewed (Whittaker 2013).

Young, Biloine W., and Melvin Fowler
2000 *Cahokia: The Great American Metropolis*. University of Illinois Press, Urbana and Chicago.

[Nice summary of Cahokia archaeological evidence and interpretation with a personal view from Fowler, amusing gossipy descriptions of archaeologists involved.] Discussions of hoes, projectile points, Mound 72 etc.

Zaidner, Yossi, Dotan Druck, and Mina Weinstein-Evron
2006 Acheulo-Yabrudian handaxes from Misliya Cave, Mount Carmel, Israel. In *Axe Age: Acheulian Toolmaking from Quarry to Discard*. Naama Goren-Inbar and Gonen Sharon, eds., pp. 243-266. Equinox Publishing, London.

Small handaxes as at Tabun. Typically focus on shaping tip, indicating that function was more important than symmetry. Use of different blanks led to variation in form of handaxe. Boundaries between handaxes made on flakes, unifaces, and scrapers are indistinct.

Zalewski, Marek
1995 Utilisation du silex zoné de krzemionki et l'influence de ses gisements sur les réseaux sédentaires préhistoriques. In *Les Mines de Silex au Néolithique en Europe: Avancées Récentes*. J. Pelegrin and A. Richard, eds, pp.167-172. Comité des Travaux Historiques et Scientifiques, Vesoul.

Zhilin, Mikhail
2011 Review of Tools and Economy of the Eneolithic Farmers of Southeastern Europe (in Russian) by N.N. Skakun. *Lithic Technology* 36(1):89-91.

Zilhão, João
2006 Neanderthals and Moderns Mixed, and it Matters. *Evolutionary Anthropology* 15(5):183-195.

Symbolic behavior predates both Aurignacian and anatomically modern Homo in Europe. Some early moderns have anatomical features not found in Africa, suggesting admixture.

Zorich, Zach
2009 Finding Treasure and Losing History. *Archaeology* 62(2) :12-13.

Discovery Channel’s *Treasure Quest* follow’s Odyssey Marine Exploration Co’s looting of shipwrecks, ignoring issues.

Zurro, Debora, Roberto Risch, and Ignacio Clemente Conte
2005 Analysis of an Archaeological Grinding Tool: What to Do with Archaeological Artefacts ? In *Lithic Toolkits in Ethnoarchaeological Contexts*, edited by Xavier Terradas, pp. 57-64. BAR International Series 1370.

Use-wear and residue analysis (starch grains) on mano from Mali.