

# Multiple Approaches to the Study of Bifacial Technologies

Edited by Marie Soressie and Harold L. Dibble

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*Multiple Approaches* is the publication of contributions to a symposium held at the 65th Annual Meetings of the Society of American Archaeology, held in Philadelphia in 2000. The editors assembled 13 contributions that range from the Lower Paleolithic through the Upper Paleolithic in the Old World to the Paleoindian to Late Prehistoric period in North America. The 14th contribution is an overview provided by Derek Roe. Soressie and Dibble arranged for the broad geographic and temporal scope ostensibly to provide insights into bifacial technologies that would not be attainable by focusing on a single area or period of time, and these insights would pertain to changing "technological and social system [sic] of past hunters-gatherers" (xiv).

Although Roe's summation comes at the end of the book, it is an excellent starting place, for it gives a good outline of the book's structure and the general line of reasoning taken by the authors. Roe notes that direct comparisons among all of the articles are problematic since crucial terms are often not defined or are given only very fuzzy definitions. He also lets the reader know that in the arguments followed in the book, authors sometimes miss each other's points because of unequal weight given to raw material constraints, tool functions, and curational behaviors.

Kathy Schick and J. Desmond Clark look at several aspects of Mode-1 (unifacial) and Mode-2 (bifacial) Acheulian assemblages from the Middle Awash sector of northern Ethiopia. They note that both modes of tool production occur coevally, and they suggest that the spatial separation is associated with activity variations; there is a strong association of bifaces with large animal carcasses, which reinforces the view that bifaces are butchering tools. The remarkable consistency of biface size, shape, and techniques suggest there were clear "rules" for production (p. 26).

Michael Noll and Michael Petraglia attempt to extract elements of human behavior by examining biface variability in terms of length, raw material type, and distance from stone resources for two generally contemporaneous areas of Africa (Olorgesailie) and India (Karnataka province). From the patterns that emerged from their analysis, Noll and Petraglia conclude that while learned behavior was important, there was little effort at curation, which indicates a "non-strategic planning depth" at a "cognitive level that [did] not fully anticipate long term future requirements" (p. 47).

Several of the contributions stand toe-to-toe in their conclusions, including the article by Nick Ashton and Mark White and the study by Shannon McPherron. Ashton and White examined numerous Acheulian assemblages in Britain to see how one might explain differences in the relative importance of ovate and pointed bifaces. They reject McPherron's reduction model of reduction for explaining variability in biface morphology and size, arguing that their analysis showed that the original raw material form (flakes vs. nodules, and their relative dimensions) had a stronger influence on final form and dimensions than a

sequence of human actions did. Furthermore, Ashton and White see the final, discarded shape as the original, intentional form; i.e., bifaces were shaped according to a "mental construct," and they did not undergo an evolution of forms over a presumed life history.

McPherron, in his contribution, acknowledged that raw material variability very likely had an influence on biface dimensions and shapes, but since the flint resources at Tabun Cave probably remained constant during the long Late Acheulian and Acheuleo-Yabrudian sequence, this aspect could be held as a constant. Nevertheless, there was still considerable change from assemblage to assemblage, and McPherron's reduction model seems to account for it. McPherron's argument is strengthened by looking at the bifaces not as unique objectives in themselves, but as parts of tool kits that incorporated other chipped stone implements, as his correlations of biface characteristics and the popularity of scrapers demonstrated (Fig. 3.7).

The notion that bifaces were shaped according to mental constructs as advocated by Ashton and White (pp. 119-120; Schick and Clark also hint at this in their references to "rules") is an appealing one to many, but April Nowell, Kyoungju Park, Dimitris Metaxas, and Jinah Park ask if this paleopsychological ascription is determinable in stone tool production. Arguments for standardization and symmetry as reflections of human cognition have failed to demonstrate how these aspects are to be measured and objectively evaluated. Instead, Nowell et al. contend that symmetry and standardization are understandable in terms of "raw material, blank morphology and selection, tool function, reduction, [and] technology" (p. 205).

In contrast to the lack of curation of Acheulian groups in Africa and India postulated by Noll and Petraglia (p. 46), Marie Soressie and Maureen Hays argue that biface curation was characteristic of Mousterian of Acheulian Tradition at Grotte XVI. This directly challenges Binford's concept of Neandertal "inferiority" and the "expedient technology" these hominids should have exhibited (pp. 125-126). Noting that bifaces were made beyond the confines of the cave with material from a variety of sources, and that there are clear signs of resharpening and sequential episodes of use-wear, Soressie and Hays conclude that "strategic planning" was characteristic of Neandertal groups.

Marcel Otte provides a cautionary piece that warns against superficial "genetic" relationships between forms and industries simply on the basis of the use of bifacial technologies. His comments are a good complement to the contributions by Janusz Koszłowski, on the one hand, and by Vladimir Doronichev and Lubov Golovanova on the other.

Koszłowski, for example, underscores the "reality" of the "Movius Line," which signifies a geographic segregation between areas with a history of exclusively Mode 1 (non-Acheulian) tool production from those that had a Mode 2 (Acheulian biface) history. Because eastern and southeastern Europe occurred on the Mode 1 side of the divide during the Lower Paleolithic, the appearance of the Middle Paleolithic Micoquian industry and bifacial leaf points must have been the consequence of an independent "re-invention" of biface technology since the antecedents in the area did not use it. Using the terms "evolution" and "genesis," it seems that "lithic genetics" may be playing a role in his arguments.

Doronichev and Golovanova provide an exhaustive description of Lower and Middle Paleolithic biface assemblages from the Caucasus area. Sometimes the terms are not clear, such as "convergent tools" that are distinctive of the Micoquian industry but absent in the Late Acheulian; it is likely this is due to regional terminological usage that may not have penetrated farther west or south. A map would have been useful, since the sites appear to fall very close to the "Movius Line" that Koszłowski's interpretation

depended on. In the view of Doronichev and Golovanova, the presence or absence of bifaces reflects clear behavioral differences and therefore indicates distinctive cultural groups in the Caucasus and Transcaucasus, a conclusion that has a strong Bordesian ring to it.

A strong reverberation of Otte's warning can be seen in the article by Thierry Aubry, Miguel Almeida, Maria João Neves, and Bertrand Walter. They examined variability in Solutrean projectile point and knife production in France and Portugal. Solutrean forms were remarkably consistent across the entire region, but there were also notable territorial differences in techniques and strategies used to put them into effect. Even so, they are struck by some aspects that cross-cut the entire area beyond size and shape, such as the conscious selection of translucent varieties of flint for the bifacial tools.

In North American prehistory there are parallel situations in terms of approaches of analysis and evaluation that, owing to their incongruity, can lead to widely diverging interpretations of bifacial traditions. Michael Shott describes a fundamental problem facing North American prehistorians (and archaeologists everywhere, for that matter): the lack of systematic standards in description and classification. Shott sounds a postmodern call to the "reality" of our perceptions, since many archaeologists seem to regard "types" as "natural" categories fixed in their states rather than analytical approximations; as "ideals" imposed on continuous variability to create unreal, static, discrete segments of variability that persist across a temporal continuum. Lost in all this categorization is how the tool itself may have varied during its lifetime. Although the vocabulary is very different, there are stout similarities between Shott's work and McPherron's approach.

The very early prehistoric archaeology of North America has spawned two camps of researchers who tend to see the lithic evidence as indicating either a "high-tech foraging system" or a system where the technologies of production, use, and discard conforms to a less intensive reliance on reduction and transformation of raw materials. In the former case, bifaces were "multifunctional implements . . . recycled from one form to another . . . first as cores and later as blanks for finished knives or projectile points" (p. 209). Douglas Bamforth clearly is not a member of this camp, while Jack Hofman's contribution suggests that he is.

There are a couple of key elements to Bamforth's arguments. For one, he takes issue with identifying "edge modified pieces" (usually thin flakes) as tools simply on the basis of edge damage; he contends there is a "taphonomy" of the products of debitage that all too blithely is ignored in assigning these objects to the tool category (pp. 210, 215). This is a direct challenge to Hofman's view that "many of the unifacial tools" were made on flakes produced during the shaping of bifaces (p. 229), the kind of blanks that would be most subject to "edge modification" from trampling.

Second, considerations of assemblages' bifaces and biface technologies must be undertaken "at the level of the whole site assemblage," including nonbifacial aspects of the inventories (p. 223), a call that is similar to McPherron's method in the Old World. The analysis of debitage and the process of refitting made it possible for Bamforth to reconstruct the patterns of reduction and discard; this in turn made it possible for him to conclude that bifaces did not represent a high-tech system of transformation. By contrast, Hofman's Nolan Site assemblage apparently contained no cores, and only 27 of the flakes (13%) had not been retouched to make tools. For Hofman, this is a clear indication that in a foraging strategy focused on bison hunting, suitable tool stone was a rare commodity and would be reduced and utilized as much as possible in accordance with the high-tech model.

On the editing side of the book, typos abound and demonstrate once again that a spellchecker program

does not substitute for careful proofing by authors and editors alike. Certainly Ashton and White were not really concerned with "kidnapping debitage" (p. 117), and Doronichev and Golvanova must have been impressed by a biface 1.5m long (p. 83). It is also unlikely that Kozlowski was so adamant about the information in Footnote 1 that he repeated it verbatim in the text on p. 151-152. A relatively serious event occurred in McPherron's article, where all of the tables after the first are incorrectly numbered, and therefore the tables are also not in synch with the pages of text that refer to them. ("Table 3.2" appears as Table 3.6, located 12 pages after the initial reference). The caption beneath Table 1.1 (Schick and Clark, p. 4) has a reference to a mysterious Chapter 4, and the legend in Fig. 2.3 (Noll and Petraglia, p. 35) does not conform to the information in the text. Many readers are no doubt thankful that all of the contributions appeared in English, but translation errors should have been more carefully sought out: "privileging research" (p. 165) and "preforms breaked during flaking" (Fig. 8.10) are only a couple of examples. Finally, "data" was so frequently used as a singular noun that it appears we are losing a grammatical battle.

In summary, *Multiple Approaches* provides a dramatic demonstration of the variability not only among bifacial technologies, but also of ways of examining, comparing, and interpreting them.

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