



CHICAGO JOURNALS

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For Anthropological Research, Inc.

On Mousterian and Natufian Burials in the Levant

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Source: *Current Anthropology*, Vol. 34, No. 2 (Apr., 1993), pp. 170-172

Published by: [The University of Chicago Press](#) on behalf of [Wenner-Gren Foundation for Anthropological Research](#)

Stable URL: <http://www.jstor.org/stable/2743976>

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On Mousterian and Natufian Burials in the Levant

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In their review of Mousterian and Natufian burials in the Levant, Belfer-Cohen and Hovers (CA 33:463–73) argue that bias has prevented the recognition of burials of archaic *Homo sapiens*. We have three serious problems with their review and with their conclusions. First, they misrepresent our own publications on the topic. Second, they fail to appreciate the nature and implications of negative evidence. Third, their basic mode of argumentation, focussing on the motives of scholars rather than on data or logic, seems to us to have no place in scientific debate.

Belfer-Cohen and Hovers state (p. 469) that "intentional burials are recognized only when Middle Palaeolithic human remains are of anatomically modern individuals, since on the basis of their biological resemblance to modern humans they are granted the capacity for complex behaviour such as mortuary practices and intentional burials." They go on to use our work as an example of such bias: "A case in point is the paper by Chase and Dibble (1987) . . . [in which it is concluded] that the Qafzeh/Skhul hominids may be accredited with some symbolic behaviour (e.g., intentional burial) simply because of their allegedly later age and the classification as *H. sapiens sapiens*." This quotation contains three major misrepresentations of our position:

1. In our 1987 article, we unequivocally accepted the evidence for intentional burial of archaic *H. sapiens* at no fewer than nine sites: La Ferrassie, La Chapelle-aux-Saints, Roc de Marsal, Amud, Tabun, Kebara, Shanidar, Kiik-Koba, and Teshik-Tash. We also said (1987:272)

that "the actual number of cases where intentional burial is more or less certain is small compared to the total number of individuals found to date, but this is undoubtedly due to problems of preservation and, sometimes, to problems in recovery." These conclusions hardly sound biased in Belfer-Cohen and Hovers's sense.

2. We have never argued that archaic *H. sapiens* lacked the capacity for symbolic behavior, and, in fact, on a number of occasions we have stated our view that archaic *H. sapiens* had such a capacity (see Chase and Dibble 1987:285; 1990; Dibble and Chase 1990:242). However, we have also maintained a distinction between possessing a capacity and using it (a distinction that Belfer-Cohen and Hovers fail to address), and so our arguments have been focused on the realization of that capacity and its expression in the material record.

3. We did accept the evidence of grave goods at Qafzeh and Skhül, but not because they were associated with anatomically modern *H. sapiens*; nor did we reject the evidence for grave goods with other Middle Paleolithic burials because of the simplicity of the artifacts. Belfer-Cohen and Hovers miss our point concerning the distinction of grave goods from other archaeological materials. "It is important to remember that the occurrence of artifacts in graves is almost inevitable if the graves are dug through and refilled with sediments containing artifacts" (Chase and Dibble 1987:274). Thus, the interpretation of artifacts associated with a burial as being offerings demands other criteria besides their mere presence, especially if such objects exist in other contexts in the site. Furthermore, their presence should not be more easily interpretable in taphonomic terms.

Our acceptance of the interpretation as grave goods of the associated objects from Skhül and Qafzeh was due to the nature of their association with the skeletons (the boar's mandible being reported as clasped in the hands of Skhül 5 [McCown 1937:104] and the antler as *déposé sur les mains* of Qafzeh 10 [Vandermeersch 1970:299]). We could not think of any taphonomic or other explanation that was as plausible as a symbolic one (though others may be more skeptical [Lindly and Clark 1990]). Thus it was *not the morphology or age of the skeletons* that led us to conclude that these artifacts may have represented grave goods. While we did note that these clearest cases of grave goods were all associated with modern hominids, this observation is not an example of bias.

The problem of identifying grave goods brings us to the question of what to do with negative evidence. We all seem to agree that burials of archaic *H. sapiens* fail to provide unequivocal evidence (especially unquestionable grave goods) that would make their symbolic nature certain. There are four possible explanations of the lack of such evidence: a lack of any symbolic behavior, a failure to use material media for symbolism (symbols having been used in language and gesture without being expressed materially), destruction of all physical evidence for symboling (much of which may have been on nondurable media such as wood, pigment, or hide), and a failure (or, rather, inability) of archaeologists to iden-

tify evidence of symbolism because it resembles non-symbolic material remains. The problem is to decide whether the lack of evidence is significant (i.e., attributable to the first of these causes). We tend to believe that it is, while Belfer-Cohen and Hovers argue for the other three explanations, for example, that there are nonmaterial mortuary rites among modern peoples (p. 464), implying that the same might be true for archaic *H. sapiens*, that isolated skeletal fragments may represent disturbed intentional burials (pp. 464 and 469) or that traces of burial pits, for example, may not be visible because of the nature of the sediments (p. 467), and that "the mundane objects associated with Middle Paleolithic skeletal remains *may* reflect the relative simplicity of the material culture" (p. 470).

Nevertheless, the issue remains one of negative evidence, a problem that we have recently discussed in some depth (see Chase and Dibble 1992). Although we cannot repeat all of our arguments here, we will point out that the assessment of negative evidence depends on both the question under investigation and the philosophical or epistemological bent of the researchers. When one is dealing with the origin of a trait, negative evidence cannot simply be dismissed, since the earlier period will be characterized by a lack of evidence for that trait. It is for this reason that the *documentation* of the origin of some behavior or trait demands some positive evidence.

Those who deny the significance of negative evidence argue, in effect, that a particular behavior could have existed without recognizable direct evidence. This is an unfalsifiable and therefore unscientific position. It should be noted that we are not talking about a lack of evidence due to insufficient sample size, since no amount of excavation can ever disprove such a conclusion if the phenomenon in question is not reflected in some way that is directly measurable. If we find 10, 100, or even 1,000 Neandertal burials without clear grave goods, one of the last three explanations listed above remains plausible. In contrast, finding just 1 case with clear grave goods will falsify the hypothesis that no such behavior took place. What is really needed is the derivation of new test implications based on new classes of data (from paleoneurology, comparative psychology, or ethology) or involving new ways of analyzing existing data that may provide positive evidence. It is simply not possible to choose between two hypotheses when all one has is negative evidence.

These two points emphasize the scientific approach that we are taking in regard to this problem as opposed to a more humanistic approach that is not encumbered by rigor of demonstration or the need for falsifiability. We tend to favor simpler explanations over more complex ones and to view unsupported or (especially) unsupported ideas with some degree of skepticism.

It is for all three of these reasons that we consider the lack of evidence significant.

At the same time, we are generally supportive of Belfer-Cohen and Hovers's use of alternative, falsifiable hypotheses for the existence of nonsymbolic burials. We

agree with them that it is unlikely that burial began for hygienic reasons, but they still do not consider our earlier suggestion (Chase and Dibble 1987:276) that these early burials may have had to do with interpersonal affection and/or respect for the deceased. Ethological studies of our nearest relatives, the chimpanzees, show that they too have very strong emotional ties and that death can have a strong impact. Goodall (1986:102–3) reports on 11 young chimpanzees who were three years old or older when their mothers died; 7 of them showed both physical and behavioral symptoms of depression, and 3 died. The point is that chimpanzees recognize and react to death. Teleki (1973) reports that the accidental death of an adult male in the presence of 16 other chimpanzees caused an immediate and vigorous emotional reaction that lasted about four hours and included extreme vocalization, frenzied displays, and examination—but never touching—of the corpse. Mother chimpanzees have been observed to carry their dead babies for hours, even when they have begun to smell and discolor. In some cases, the babies are carried like packages, suggesting that the mothers are aware that they are dead (Goodall 1971:215–16). Thus a strong emotional reaction to the death of a loved one appears to be something we share with chimpanzees. It follows that, while archaic *H. sapiens* must also have had such feelings, the mere existence of such feelings does not a priori indicate symbolism. Thus, burial may have been just a way of protecting the bodies of dead relatives from scavengers and the elements, with no *symbolic* meaning attached to it.

We are disturbed by Belfer-Cohen and Hovers's accusing those with whom they disagree of personal (as opposed to philosophical or epistemological) bias. This argument is at best ad hominem and at worst potentially dangerous. In either case, it has no place in scientific debate. Certainly bias can cloud archaeologists' judgments and affect their conclusions. If this is the case, however, the weakness of those conclusions should be demonstrated by exposing either flaws in logic or a failure of the conclusions to fit the data. Disproving conclusions makes accusation of bias unnecessary. If, in contrast, the arguments themselves cannot be criticized, then impugning the motives of the individual is obviously unjustified. In our own case we find such an accusation the more surprising in that we have argued explicitly for the independence of biology and behavior (Dibble and Chase 1990, Chase and Dibble 1990) in the Upper Pleistocene evolution of hominids. It does no one any good to argue about others' motives. If one is unable to accept the significance of negative evidence, the only legitimate recourse is to develop new approaches that will generate new kinds of data.

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- Bar-Yosef et al.'s assertion that the KMH 2 hyoid bone demonstrates that Neanderthal hominids were capable of producing human speech (CA 33:530) is, in fact, not supported by the data of the studies cited (e.g., Arensburg et al. 1989, 1990) or Smith's commentary (CA 33:540–41). Normal adult humans have a larynx positioned very low in the neck, with no epiglottis–soft-palate contact. Independent X-ray studies (e.g., Carmody 1937, Perkell 1969, Nearey 1971) show that approximately half of the tongue is positioned at rest within the oral cavity, half in the pharynx. In the production of English vowels the tongue moves as an almost undeformed body positioned by its extrinsic muscles (Neary 1971). Some additional maneuvers that change the tongue shape occur in the production of certain consonants and the vowels of other languages, but many of the phonetic distinctions of human speech derive from tongue maneuvers that change the cross-sectional area of the supralaryngeal airway, i.e., the supralaryngeal vocal tract. These changing shapes generate formant frequency patterns that specify different speech sounds (Fant 1960, Lieberman et al. n.d.). The larynx itself is irrelevant to this aspect of speech production; its low position in the neck is a key aspect of the morphology of the human supralaryngeal vocal tract.

In contrast, in newborn humans the hyoid and other

On the Kebara KMH 2 Hyoid and Neanderthal Speech

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