

Ancient minds

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Books¹

Review Essay: Ancient Minds

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*The Prehistory of the Mind: A Search for the
Origins of Art, Religion, and Science.* By Steven
Mithen. London: Thames and Hudson, 1996.
288 pp.

*Human Evolution, Language, and Mind:
A Psychological and Archaeological Inquiry.* By
William Noble and Iain Davidson. Cambridge:
Cambridge University Press, 1996. 272 pp.

Interaction between the fields of palaeoanthropology and psychology is not a recent development, and many of the themes on the agenda of this joint venture about a century ago are still at stake in the two books reviewed here. Max Verworn, for instance, in his "Zur Psychologie der primitiven Kunst" (1907) mentions his experiments with peasant children in remote mountain villages of Germany, where he hoped to uncover ways of perceiving (and drawing) the natural world that were close to those of Palaeolithic hunter-gatherers. Much to his disappointment, he soon found out that even there, in the midst of "nature," education filled even very young children with huge amounts of *Vorstellungsmaterial*, to such a degree that at the time they were capable of making their first drawings a pure and uncontaminated perception of nature no longer existed. Young children and developmental psychology are central in British archaeologist Steven Mithen's *The Prehistory of the Mind*, which appeared virtually simultaneously with *Human Evolution, Language, and Mind*, by the psychologist of perception William Noble and the archaeologist Iain Davidson, both from Australia. But apart from their timing and general theme, these books have surprisingly little in common; they aim at different audiences, start from opposing philosophical standpoints, and thus have highly conflicting views of what "the mind" is and how, consequently, its prehistory can best be studied.

Early language and cognition are within the range of a number of disciplines. Current theorizing on the subject, which has been drawing increasing attention over the past 15 years or so, is fragmented across disci-

plines—linguistics, cognitive science, archaeology, palaeoanthropology, primatology, anthropology, philosophy, semiotics—as well as within disciplines. Some, for instance, study language primarily as a cognitive activity of mental mapping or representation, while others see it as basically a social, communicative activity. In each of these approaches, some assume a sharp break with functional capacities already present in nonhuman primates while others attempt to explain the features of language as quantitative elaborations of earlier ways of gathering, using, and transferring information. In all cases this makes for worlds of difference in conceptualization, methods, and research topics.

A pioneer on ancient minds is the archaeologist T. Wynn, who since the seventies has been trying to trace changes in the spatial and technical competences of early hominids, extrapolating Piagetian insights to the ontogeny of cognition (Wynn 1989). The linguist D. Bickerton (1990) has developed the notion of a syntactically poor but semantically rich protolanguage. The idea of a prelinguistic, flexible "mimetic skill," using the body as a representational device, has been proposed by the cognitive psychologist M. Donald (1993). These and several other contributions have provoked much discussion, thus enhancing an emergent field of study (Gibson and Ingold 1993, Mellars and Gibson 1996). Chomskyan linguistics is now incorporating an evolutionary perspective, and psychologists are explicitly attempting an evolutionary psychology. R. Dunbar (1993) is studying language as an activity of social grooming that enhances group cohesion, while other primatologists as well as psychologists are looking at symbolic capacities in apes and early hominids.

The fragmented and multiparadigmatic character of this field of study and the relative invisibility, especially archaeologically, of cognitive processes regularly provoke skeptical comments about quite speculative scenarios like those proposed in the two monographs under consideration here.

THE ARCHITECTURE OF MIND

While Noble and Davidson aim at a more scholarly readership, Mithen has tried to write a book "that makes the evidence from prehistory accessible to readers who may never previously have heard of an australopithecine or a handaxe" (p. 7), and his *Prehistory of the Mind* can certainly be called a success on this front; specialists are addressed in many pages of useful more technical endnotes, a solution that makes for a highly readable book.

Mithen analyzes the Palaeolithic archaeological record in terms of a research agenda which has broad sup-

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port in contemporary psychology and cognitive science: the modularity of mind. Jerry Fodor, an influential "modularist" featuring prominently in Mithen's first chapters, postulates a two-tier cognitive architecture, with specialized and independent modules that function as input systems (sight, hearing, touch, language) for a nonmodular central processing system. Fodor argues that each input system is based on independent brain processes, modular and mandatory, and that the nature of perception of these modules is already hard-wired into the mind at birth. The "central system" is where it really happens, the black box where "cognition" resides and where the information from all input systems is mysteriously channelled and integrated.

From the plethora of psychological research Mithen somewhat opportunistically selects and critically uses some other work to develop further this basic idea of the mind as, put simply, a Swiss army knife with different blades for different purposes: H. Gardner's theory of multiple but interactive intelligences, the evolutionary psychology of L. Cosmides and J. Tooby, and the developmental psychology of A. Karmiloff-Smith.

The evolutionary psychologists see the mind as a constellation of many separate adaptive or survival devices, all developed in the course of human evolution. Each of these modules has a specific kind of memory and reasoning process, is hard-wired into the mind at birth, and is rich in survival information about real-world structure. But, says Mithen, the human passion for analogy and metaphor poses a challenge to claims that the mind is like a Swiss army knife, and he then turns to developmental psychology. Indeed, we learn, there is overwhelming evidence that children are born with content-rich mental modules that reflect the structure of the real (Pleistocene) world in which our ancestors lived: judging from the rapid rate at which children learn, they must have an innate intuitive knowledge of language, psychology, biology, and physics.

Developmental psychology furthermore tells Mithen that ontogenetically things change considerably: with very young children, up to about two years of age, general-purpose learning processes and a general intelligence seem to dominate, while later on content-rich modules with knowledge about language, psychology, physics, and biology overwhelm these general processes. Then, according to Karmiloff-Smith, soon after this modularization has occurred the modules begin to work together, connections between domains are built, and knowledge becomes applicable beyond its normal special-purpose goals. Thus the child develops through three stages: first general intelligence, then modularity, and finally a cognitively fluid mentality in which the modules are interrelated.

Mithen, fascinated by the behaviour of his children (who figure prominently in the book), then turns to the old "ontogeny recapitulates phylogeny," and from this point on the book is quite predictable for those who are acquainted with the archaeological record: Neandertals (and earlier hominids), as far as their minds are concerned, were forever (very) young: capable hunters, good

flintknappers, and socially adroit, all this taken care of by modules for natural-history, technical, and social intelligence. The archaeological record of the Upper Palaeolithic shows that these modern humans possessed the cognitive fluidity so characteristic of "us"; apparently by then the modules had become intertwined, allowing individuals to express group membership by their style of tool manufacture (social and technical intelligence modules combined), to see plants as persons (social and natural-history intelligence modules combined), or to design complicated multicomponent tools for specialized hunting (natural-history and technical intelligence modules combined).

The notion of recapitulation is crucial in Mithen's book, and though he adopts it "hesitantly" (p. 63) to propose a series of architectural phases for the evolution of the mind which is essentially based on Karmiloff-Smith's ontogenetic periodization, this hesitancy is strikingly invisible in the rest of the book. The story of how mind as a Gothic cathedral with interconnected chapels came about is well told. In fact, it is so well told that the innocent reader may forget about Mithen's initial and crucial hesitancy as to that basic assumption, along with other assumptions which are not necessarily less controversial: that "mind" has a modular structure and that it changes ontogenetically from general through modularized to cognitively fluid.

BEHAVIOUR IN ITS CONTEXT

The quite different approach to ancient minds that Noble and Davidson take will not be unfamiliar to readers of this journal or, indeed, to those interested in the evolution of language and cognition in general. They criticize the stress on internal computational processes or other forms of representation found in the work of Fodor, Mithen, and indeed, mainstream contemporary cognitive science and interpret mind as mindedness of behaviour in its context, especially its social setting. As Mithen does for his purposes, they too make a pragmatic selection from an abundance of available scholarship, ending up with the symbolic interactionism of G. H. Mead, the philosophical behaviourism of G. Ryle and the late Wittgenstein, and, above all, J. J. Gibson's "ecological" theory of perception. Gibsonians, wary of too emphatic appeals to various forms of internal processing, take perception to be an adaptive, direct, unmediated relation between an organism and its environment and look upon mind as observable minded behaviour.

Crucial to their argument, developed in a number of papers and elaborated in admirable detail in this book, is how communication came to be unquestionably intentional. Following the aforementioned authors, they see language as social interaction, whereas many other workers study vocal skills and symbolic communication in terms of the underlying configuration of brain functions. Their argument is that practices which happen to be unique to humans "recruit the structures of the brain, rather than being determined by them. . . .

Practices interact with structures" (p. 18)—a position which gives little attention to evolutionary changes in hominid skeletons during the past million-odd years. Their continual concern is to explain how human speaking (or its equivalent in gestured signs) is distinct from all other forms of communication. How did unintentional communication change into intentional communication? A typical answer to this question is alterations in central nervous system circuitry allowing connections previously unmade—that is, changes in the architecture of the mind. Noble and Davidson are not interested in such explanations. In fact, they dispense with the term "mind" as referring to any sort of natural entity altogether. For them "mind" is simply a term used to account for the ways in which humans go about their business. Minded behaviour is linguistic and essentially interactive, and thus human minds are socially constructed.

In their view, throwing and pointing led to iconic gestures, which in their turn made possible the transformation of communication into language: a persistent trace of such a gesture was a meaningful object for perception and facilitated the discovery that one thing can stand for another. That discovery, for Noble and Davidson, was an all-or-none event, a binary condition which is not explainable in gradualist terms.

The first unambiguous evidence of intentional, plan-based behaviour in the archaeological record, in their view, is the colonization of Australia. Boats and a certain knowledge of seafaring were necessary for this enterprise. Both demanded execution of well-thought-through plans in a complex series of actions the end result of which was not simply determined by continuous reduction as in the case of stone tools. It is inevitable that plan-based intentional behaviour existed before it was expressed in that colonization event, but Australia and New Guinea fit in in the earliest worldwide radiation of modern humans at about the same time that the first more complex (multicomponent) tools appear in the archaeological record: some of these are made not by simple flaking but by grinding, which means that the end product was envisaged beforehand.

Such behaviours must have been language-based, they claim. The discovery of language was more a matter of behaviour than of evolutionary changes in biology, themselves heavily influenced by selection on behaviour in its context. Language as a symbolic communication system created mindedness—being aware of experience and knowledge, being able to judge and plan and thus better to control the future. This released hominids partially from the immediate contingencies of a specific natural environment, enabling them to plan logistically in all kinds of environmental settings, to abstract, to differentiate between "us" and "them," to invent the supernatural, and to reflect on past, present, and future.

Noble and Davidson's well-known, controversial finished-artifact-fallacy hypothesis supports their identification of the earliest "modern" minds. Attacking a credo of most typo- and technological studies of stone

artifacts, they claim that the final forms of artifacts were not necessarily intended as such by Pleistocene hominids but just more or less contingent results of continuous flaking, of simple reduction. These tools, though made with better motor capacities and a few other extra gadgets, are basically no more sophisticated than the termite probes chimpanzees wield and therefore correspond to still ancient minds.

Noble and Davidson have woven a very intricate story to explain how we got to a situation in which you, the reader of this review, can read and (we hope) follow our thoughts about two different sets of thoughts about things that happened in various places way back in time—thoughts written down in England and Australia, sent to printers in, respectively, Slovenia and Hong Kong, and from there redistributed all over the world. To do this, they have combined elements from many corners of palaeoanthropology, psychology, and philosophy. It is impossible here to give a fuller summary of their basic scenario, which is considerably more complex than Mithen's architectural approach.

SOME ARCHAEOLOGY

Noble and Davidson's scenario is more susceptible to falsification than Mithen's, and indeed there are some points to be brought against it from an archaeologist's perspective. The debate on the Pleistocene colonization of the northern regions of Europe, for instance, has at the very least shown that premodern groups were capable of living in a wide range of environments, although the degree to which they exploited interglacial forested environments is still a matter of contention. Making a living in northern Europe in both cold and interglacial phases was possible only with a considerable degree of "planning" (cf. Gamble 1986 vs. Roebroeks, Conard, and Van Kolfschoten 1992). Noble and Davidson also have a quite outdated view of the hunting capacities of premoderns that leads them to underestimate their potential in this respect (see Gaudzinski 1996).

Furthermore, there are other possible indications of premodern intentional behaviour that they neglect or ignore. Whereas they state that the regular production of fire did not occur earlier than the emergence of modern human behaviour (pp. 206–7), at least for Europe it now seems well established that fire was a rather common feature from the later part of the Middle Pleistocene (oxygen isotope stage 7) onward. At sites 250,000 years old or younger burnt flints are often present, coming in handy for thermoluminescence dating purposes. Their presence at sites such as Maastricht-Belvédère, Biache Saint Vaast, La Cotte de St. Brelade, and Ehringsdorf, to mention just a few, is in striking contrast to their virtual absence in earlier very rich sites in the Somme Valley, at Boxgrove, and in all but the uppermost layers of the Caune de l'Aragó at Tautavel. From 250,000 years ago onward, fire was used on a regular basis but only very rarely within structured hearths somewhat comparable to Upper Palaeolithic ones (see Rigaud, Simek, and Ge 1995). There are also, of course,

the recently published Middle Pleistocene wooden spears from Schöningen (Thieme 1997). These are not just pointed sticks, and their manufacture represents considerable investment of time and skill—selecting the appropriate wood with a dense concentration of growth rings, constructing the tip from the base of the wood, and placing the centre of gravity a third of the way from the sharp end, just as in a modern javelin.

The strong points of Mithen's architectural scenario are its robust straightforwardness and the elegant and archaeologically well-founded way in which it furnishes the cathedral of mind with archaeological data. What to Noble and Davidson may be disturbing surprises from the archaeological record, such as the spears from Schöningen, fall nicely into one of the modules of premodern humans in Mithen's scenario. Its integrative power is enormous, and even the hypothetical find of, say, a nest of anthropomorphic figurines in a Middle Pleistocene deposit could be incorporated as a temporary short circuit between two modules. But then, of course, one might hold against his scenario, as elegant as it is, that it is less vulnerable to empirical falsification than that of Noble and Davidson, who really stick their necks out.

We have more problems with Mithen's basic explanatory scenario, which is three levels deep in basic assumptions—to such a degree that it is not even convincing to one of the founding fathers of the idea of modularity, Fodor himself (1996). There are also serious problems in terms of the internal consistency of the story: if a transition from a generalized to a specialized type of mentality—at the transition from the common ancestor/*Homo habilis* group to the early humans (*H. erectus*)—had evolutionary advantages, what were the advantages of the transition the other way back, in the Late Pleistocene? As Fodor (1996) has commented, this cannot be right: "the same cause can't explain opposite effects." We do not get any clear answer to this question, and instead the final chapter gives an extension of the story far back in time, in which 65 million years of the mind are simply presented in a few pages as an oscillation between specialized and generalized ways of thinking.

SOME PHILOSOPHY

The two monographs exemplify two styles of the contemporary philosophy of mind. Mithen is closer to a predominantly American approach, oriented towards computationalist cognitive science, favouring causal-nomological explanation, and studying internal cognitive processes that somehow pertain to a physical environment outside. Noble and Davidson are close to British analytical philosophies of mind which start from ordinary language and everyday behaviour. This and their Gibsonian stress on the environment as subjectively perceived lifeworld, we feel, make their approach the more interesting one for Palaeolithic archaeologists studying Pleistocene hominid behaviour. The philosophical behaviourism of Ryle and Wittgenstein on which they base their argument has provoked criti-

cism for its reduction of subjective consciousness to observable behaviour, but perhaps this drawback is balanced by what, by this very move, it can offer to archaeologists looking for such imponderabilia as intentions and words.

The discrepancy between Mithen's mentalist stress on internal processing and Noble and Davidson's "relationalist" focus on how the surroundings are dealt with practically highlights some striking parallels with controversies and developments in 20th-century continental philosophy which have only recently begun to spill over into Anglophone arenas (e.g., Dreyfuss 1993). Edmund Husserl's mentalistic and "egological" account of mind and intentionality, in the Cartesian tradition, was attacked by Martin Heidegger with his "ecological" analysis of *Dasein* (being-in-the-world) and by Maurice Merleau-Ponty's theory—which critically elaborates upon Heidegger—of the unreflexive, embodied intentionality of the *corps-sujet*, which again inspired Pierre Bourdieu's sociology of habitus and *sens pratique*.

More specifically, a basic problem in German philosophy has been how, why, and when the spontaneous, practical interactions of certain living beings with their *Umwelt* or milieu (*sensu* J. von Uexküll) were transcended towards fully reflexive *Weltoffenheit* or being-open-to-the-world (*sensu* Max Scheler and others). Scheler, for one, felt that Heidegger underestimated this transcendence to "world-openness" and, with it, full humanness. He and others have analyzed this process extensively as a move towards intermodularity (cf. Mithen) and symbolic language (cf. Noble and Davidson), thus prefiguring more recent Anglophone scholarship, which is mostly unaware of this. Such parallels—which we can only touch upon here—may have a heuristic value which is not exploited fully because of linguistic and disciplinary boundaries. Another germane philosophical point that many philosophers with a background in continental philosophy (e.g., Habermas 1988) would try to drive home in the present context is the ultimately reductionistic treatment of human mind and language in such approaches as the two under discussion here, which characteristically look at mind(edness) too exclusively in terms of its utility for a range of purposes.

IN CONCLUSION

However speculative Noble and Davidson's explanation for the emergence of language, one has to agree with them that alternative or better accounts will not be free to overlook the conceptual issues they have identified and discussed, "even if every link in our chain is found to be mistaken in one way or another" (p. 220). In the end one may not learn a lot from them about the past, but one may learn a lot about how to undertake its study. Although we are not sure that this last assessment applies to Mithen's book, we do recommend it as well—to general readers because it is well written and presents a well-knit story with few loose ends or open questions, which probably means success in the present era with its need for new grand narratives, and to spe-

cialists because it is, like the other monograph, a much-needed, pioneering interdisciplinary piece of work on ancient minds, however elusive one may think those minds to be.

References Cited

- BICKERTON, D. 1990. *Language and species*. Chicago and London: University of Chicago Press.
- DONALD, M. 1993. *Origins of the modern mind: Three stages in the evolution of culture and cognition*. Cambridge: Harvard University Press.
- DREYFUSS, H. L. 1993. Heidegger's critique of the Husserl/Searle account of intentionality. *Social Research* 60:17-38.
- DUNBAR, R. 1993. Coevolution of neocortical size, group size, and language in humans. *Behavioral and Brain Sciences* 16: 681-735.
- FODOR, J. 1996. It's the thought that counts. *London Review of Books*, November 28, pp. 22-23.
- GAMBLE, C. S. 1986. *The Palaeolithic settlement of Europe*. Cambridge: Cambridge University Press.
- GAUDZINSKI, S. 1996. On bovid assemblages and their consequences for the knowledge of subsistence patterns in the Middle Palaeolithic. *Proceedings of the Prehistoric Society* 62:19-39.
- GIBSON, K., AND T. INGOLD. Editors. 1993. *Tools, language, and cognition in human evolution*. Cambridge: Cambridge University Press.
- HABERMAS, J. 1988. *The theory of communicative action*. Vol. 2. *A critique of functionalist reason*. Boston: Beacon Press.
- MELLARS, P., AND K. GIBSON. Editors. 1996. *Modelling the early human mind*. Cambridge: McDonald Institute for Archaeological Research.
- RIGAUD, J. PH., J. F. SIMEK, AND T. GE. 1995. Mousterian fires from Grotte XVI (Dordogne, France). *Antiquity* 69: 902-12.
- ROEBROEKS, W., N. J. CONARD, AND T. VAN KOLFSCHOTEN. 1992. Dense forests, cold steppes, and the Palaeolithic settlement of Europe. *CURRENT ANTHROPOLOGY* 33:551-86.
- THIEME, H. 1997. Lower Palaeolithic hunting spears from Germany. *Nature* 385:808-10.
- VERWORN, M. 1907. "Zur Psychologie der primitiven Kunst." *Bericht über die Prähistoriker-Versammlung am 23. bis 31. Juli 1907 zur Eröffnung des Anthropologischen Museums in Köln*. Cologne.
- WYNN, T. 1989. *The evolution of spatial competence*. Urbana: University of Illinois Press.