The Emergence of Culture. The Evolution of a Uniquely Human Way of Life

Philip G. Chase
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Just a quarter of a century ago primatologists and other students of animal behavior had to prove that culture is not unique to humans (among others, Bonner 1980; McGrew and Tutin 1978). Nowadays anthropologists have to prove that there is something unique in human culture that cannot be found among non-human animals. The book by Philip Chase is a very original, thought-stimulating, and—in my view—generally successful attempt to reveal and discuss those aspects of human culture that predetermine its specific character and allow it to be considered a distinct phenomenon. This attempt is based on a wide coverage of archaeological (the author's primary field of expertise), paleoanthropological, and primatological data, and thanks to the author's ability to explain complex subjects in simple words, his work may be interesting and useful reading not only for specialists in these fields, but also for everybody interested in general problems of human cultural and biological prehistory.

The book consists of an introduction, four chapters, and conclusion. In addition, it includes a glossary intended mainly for non-professional readers, as well as an appendix with brief overviews of Pleistocene chronology, primate taxonomy, and stone tool typology.

The author starts with the statement that "there is a difference—one that seems to have escaped the notice of most investigators—between human culture and anything we may call culture in other species" (p.1). The essence of the difference is that the human culture "is an *emergent phenomenon*" (p.2), in the sense that at least part of it is not only learned socially as is the case among many other species, but also created socially, through the interactions of multiple individuals. Motivations, concepts, beliefs, rules, values, etc., that emerge as a result of such interactions, constitute what the author calls "socially created coding." The existence of socially created coding is a necessary condition for the appearance of two more phenomena that are unique for human culture. First, culture in the form of socially created codes appears to not only govern and inform our behavior, but also to motivate it, which means "that individuals may be led to behave in ways detrimental to their own individual evolutionary success" (p. 49). For instance, the motivating property of human culture helps one understand (at least partly) the tendency toward altruistic behavior, without referring to strictly biological explanations. Second, culture is an all-encompassing phenomenon which provides a ubiquitous intellectual framework for almost everything humans perceive, believe, think, or do.

These three most important (according to Chase) aspects of human culture (socially constructed codes, culture as a motivating force, and culture as an all-encompassing system) are discussed in detail in Chapter 1 ("How is Human Culture Different?"). The purpose of Chapter 2 ("Why Does Culture Exist?") is to propose hypotheses to account for each of them. The main problem with Chapter 2, as I see it, is that the central question, so clearly formulated in its title, receives in fact very little attention. I think this is so because of the author's belief that "the first component of the human culture, the social creation of coding is ... the easiest to explain" (p. 51), because the advantages associated with it are self-evident. Maybe they are. Much less evident, however, is "what forced our ancestors to use their cultural potentialities more actively than the progenitors of chimpanzees and other, now extinct, hominoids did, who probably possessed the same or nearly the same capabilities" (Vishnyatsky 1999: 122). Put in other words, the problem is to understand why there were selection pressures that caused the appearance and development of socially created coding among our ancestors, and why these did not act in the same way in other hominoids, including probably some hominids. It is only after solving this problem that we may hope to answer the questions of why culture exists and how it came into being.

In Chapter 3 ("The Origins of Socially Constructed Coding") the author pursues two tasks. First, he reviews the primate evidence to see if there are any species other than humans who use socially created coding in the wild. While Chase admits that we are not the only species whose representatives possess the cognitive ability to learn codes from conspecifics, and even mentions a few observations indicative of the possible ability of some apes to create codes through social interaction with humans, his final answer to the question is negative. "I am unaware"—he writes—"of any example of an ape teaching a new symbol he or she has created to another ape, or of two apes agreeing on the meaning of a new symbol" (p. 79). Still, in the conclusion to the book he notes that, "like all empirical judgements, this one may be nullified by new research or by more thorough analysis by primatologists" (p. 166). In connection with this it would perhaps be not unsuitable to cite here a primatologist who points to a behavior which may (or may not) be based on socially created codes:

> "Take the example of "leaf clip," a behavior whereby chimpanzees bite a leaf into pieces to produce a ripping sound without eating any of the leaf. <...> All males in the Taï forest regularly leaf-clip before drumming. Among Bossou chimpanzees, leaf-clip is performed in the context of playing, as a means to enlist a playmate, while Mahale chimpanzees leaf-clip as a way to court estrous

> females. Taï chimpanzees have never been observed to leaf-clip in the context of playing nor in courtship. Similarly, Mahale chimpanzees have never been seen to leaf clip in the context of playing nor when drumming <...>. <...> Nothing in the form of the behavior or in the noise produced by the leaf-clipping indicates that it could mean play rather than courtship. The meaning is adopted collectively and rests on an arbitrary convention shared by group members. Thus, shared meaning and symbolism go together at this level of cultural complexity observed in chimpanzees" (Boesch 2003: 87).

The rest of the chapter is devoted to the search for paleoanthropological and archaeological correlates of language (the most important and ubiquitous form of socially created coding) in order to determine at least the minimal date (*terminus ante quem*) of its appearance. The author first gives a very useful summary of the skeletal evidence pertinent to the problem. In his view, while the available data on the changes in vocal tract anatomy and brain size and structure in hominids are suggestive they are not yet conclusive, and for the time being "no definitive demonstration of a link between endocast anatomy and language" is possible (p.101). The same applies to most kinds of archaeological data (stone tool technology, home bases, etc.) reviewed in the concluding section of the chapter. However, there is one important exception. According to Chase, the archaeological evidence for cooperative hunting, namely for driving herds, "constitutes fairly strong evidence for socially created coding" (p. 115), since "it seems unlikely that such drives could have been organized and carried out without some form of socially created coding to coordinate the actions of those involved" (p.117). As it appears that hunting large game by drives was an established behavior by at least the late Middle Pleistocene, this date can safely be taken as a *terminus ante quem* for socially created coding, which is in rather good agreement with the other lines of evidence.

While I agree with almost everything written in Chapter 3, I think the author's argument could have been made still stronger had he not omitted some very interesting attempts to find anatomical and behavioral (archaeological) correlates of language. For example, in his review of paleoneurological data he does not discuss (just mentions in passing) the well known work by R. Dunbar (e.g., 1993), whose conclusions seem to be quite compatible with those of Chase. Further, when considering the archaeological evidence for socially created coding, it perhaps would be rewarding to pay some attention to the traces of such activities as the use of domestic fire (Ronen 1988) or long distance transportation of raw materials (Marwick 2003).

Chapter 4 ("The Elaboration of Culture") tries to answer why socially created coding became an all-encompassing system of symbolic culture. The author formulates three hypotheses, the choice between which in his view depends on the timing of the elaboration of culture. If the latter phenomenon coincides in time with the emergence of socially created coding, it can be considered either a by-product of the evolution of socially constructed coding (the "by-product" hypothesis) or a mechanism for allaying individual emotional anxieties (the "anxiety" hypothesis). If, however, it turns out that the elaboration of culture occurred much later, the "by-product" and "anxiety" hypotheses should be rejected, and preference should be given to the "group benefit" hypothesis, asserting "that the elaboration of culture is a means of motivating altruistic behavior that benefits the group, even at the expense of the individual" (p. 119). By reviewing the available archaeological evidence for the earliest traces of symbolism Chase shows (very convincingly) that there appears to be a significant time gap between the origins of socially created coding, on one hand, and its elaboration into an all-encompassing system, on the other hand, which is consistent with the "group benefit" hypothesis and inconsistent with the other two. Though I am not sure that the three hypotheses considered by Chase exhaust the number of possible explanations for what he calls the elaboration of culture (in my view, the latter was an inevitable consequence of the ever-increasing complications of natural and social environment, which led to an increase in the amount of information that people had to store and transfer in order to act successfully), the logic of the argument seems irreproachable, and I also concur with nearly all of the author's assessments of different archaeological objects he considers in this chapter.

In general, I think Chase succeeded in demonstrating that human culture is different and exactly how it is different. At the same time, I still think that the concept of culture should not be reduced to socially created coding, and its broader definition (through socially learned and transmitted information) remains valid and useful. As Laland and Janik (2006: 542) have recently noted, an anthropocentric perspective often acts "as a barrier to understanding the evolutionary roots of culture" and in this sense "a broad definition is likely to be more stimulating." Thus, in my view, the second part of the title of the reviewed volume gives a much better idea of its content than the first part. This book is to a much greater extent a study—and a highly successful one—of "the evolution of a uniquely human way of life," than a study of "the emergence of culture." In any case, however, this is a very important contribution to the study of human culture, that deserves to be read by everybody who considers her(him)self an anthropologist.

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