

The Emergence of Culture

*The Evolution of a Uniquely
Human Way of Life*



PHILIP G. CHASE

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To Marilyn

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In my struggle to bring some sort of coherence to half-formed ideas, and in an attempt to connect them to work already done by others, I found myself researching fields with which I was either unfamiliar or at best half-familiar. Many of these excursions were directly useful. Others focussed my thinking by proving irrelevant. This rather Darwinian process was fruitful but also slow. I thank Jerry Sabloff for giving me the time to make it work.

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1

INTRODUCTION

The human way of life is shaped by culture. Culture colors almost everything we perceive, almost everything we think, and almost everything we do. We cannot understand humans without understanding culture, and we cannot understand human evolution without understanding the evolution of culture.

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. This is so in spite of many continuities between humans and other primates. The great apes, at least, seem to have most of the cognitive abilities that make human culture possible. Yet there remains a very real and very important difference. Human behavior and ape behavior, like that of all mammals, is guided in part by ideas, concepts, beliefs, etc. that are learned in a social context from other individuals of the same species. Among humans, however, some of these are not just learned socially but are also *created* socially, through the interactions of multiple individuals.

Obviously, I must both explain and defend this statement; I do so briefly in this chapter and in more detail in chapters 2 and 4. The essence of the concept is quite simple. It is, in fact, something that both anthropologists and non-anthropologists probably take more or less for granted in their everyday lives. Yet it has somehow been overlooked by almost all theorists in every discipline dedicated to the evolution of human behavior.

Primatologists often define culture as socially learned behavior or socially transmitted traditions (Alvard 2003; Boesch et al. 1994; Boesch and Tomasello 1998; Laland and Hoppitt 2003; McGrew 1998; Whiten et al. 1999). Archaeological theorists, evolutionary biologists, and sociobiologists have, under rubrics such as memetics and dual inheritance the-

ory, refined this basic concept of culture and applied it to humans (e.g., Boyd and Richerson 1985; Burns and Dietz 1992; Campbell 1965; Cavalli-Sforza and Feldman 1981; Dawkins 1976; 1993; Dennett 1995; Durham 1990; 1991; Giesen 1991; Goodenough 1995; Harms 1996; Rindos 1989; Rose 1998; Wilkins 1998).

Such a model provides a theoretical advantage – or, more accurately, a temptation. If culture consists of particles of behavior or information (often called memes) that are transmitted from one individual to another, then the evolution of culture can be analyzed in terms of natural selection. Cultures evolve when certain memes are more widely adopted than competing memes. Empirically, there is clear evidence that such traditions arise among nonhuman primates (Kawai 1965; McGrew 1998; McGrew et al. 1979; Merti-Millhollen 2000; Myers Thompson 1994; Nishida 1986; Perry et al. 2003; Van Schaik et al. 2003; Van Schaik and Knott 2001; Whiten et al. 1999; Wrangham et al. 1994). Among humans, there is no question that inventions, ideas, and the like pass from one individual to another. Such a concept of culture therefore makes a good deal of sense.

Among humans, however, there is something quite different that merits the name “culture.” This phenomenon is created not by individuals but through interactions among multiple individuals. For example, language (a major part of culture) is the product of many speakers interacting over many generations. Kinship systems are not memes – inventions that each individual is free to accept or reject. As conceptual frameworks, they are created (or maintained or modified) only by multiple individuals through their interactions with one another.

As a result, culture cannot be understood at the level of the individual alone. Knowing the motivations and mental constructs of the individuals involved may be necessary to understand cultural creations or cultural changes, but it is not sufficient. It is also necessary to analyze the interactions of those involved. In this sense, human culture is an *emergent phenomenon* in a way that nonhuman “culture” is not. As Mihata (1997:36) put it,

what we describe most often as culture is an emergent pattern existing on a separate level of organization and abstraction from the individuals, organizations, beliefs, practices, or cultural objects that constitute it. Culture emerges from the simultaneous interaction of subunits creating meaning (individuals, organizations, etc.)

This emergent property of human culture has important implications. It makes the nature of human social life different in fundamental ways from that of other species (in spite of the continuities that also exist). It

makes it possible for groups of humans to coordinate their behavior in ways that are impossible for nonhumans. It changes the relationship of the individual to the social group. Because culture provides motivations for the behavior of the individual, it gives the group a means of controlling the individual that is absent among other primates. Among all living humans, culture provides a (uniquely human) mental or intellectual context for almost everything the individual thinks or does. If culture as an emergent phenomenon is both unique to humans and of major importance to the human way of life, then its origins should be investigated by paleoanthropologists (Paleolithic archaeologists and human paleontologists).

It is my purpose in this book to do four things:

- to analyze and define human culture in a way that will make it possible to investigate its origins
- to propose alternative hypotheses to explain the origins of its various components
- to review the primate evidence to determine to what extent and in what ways culture is unique to humans
- to review the fossil and archaeological data in the hope of identifying the appearance of human culture and in order to test possible alternative hypotheses concerning its origins

I sketch the outline of this process in the remainder of the present chapter. However, the subject is complex, with many ramifications. This chapter offers an idea of where I am going, but it cannot provide a full – or even fully understandable – description of the ideas I am trying to express. This will come only with more detailed discussion in subsequent chapters.

I am under no illusion that I am solving the question of what “culture” is. Some of the best minds in the social sciences and humanities have wrestled with the question and have come to no consensus (Benedict 1934; Boas 1940; Geertz 1973; Kroeber 1952; Kroeber and Kluckhohn 1952; Sapir [in Mandelbaum 1968]; Sahlins 1999; Tylor 1889; White 1949; 1959, to name just a few), and there are even those who argue that the concept should be abandoned altogether (see Borofsky et al. 2001; Fox and King 2002; Trouillot 2002).

What I *am* trying to do is to investigate a particular phenomenon, a particular aspect of the way in which humans govern their behavior, that is different from that of other species. In order to do so, I must have a term by which to refer to the concept I am trying to investigate, and “culture” seems appropriate to me. For other scholars, in other contexts and for other purposes, different concepts will be more meaningful, more

useful, or more valid, and the word “culture” will refer to something very different.

To begin with, what I call culture is something that exists in the mind. Several theorists have conceived of culture in this way (e.g., Geertz 1973; Sapir [in Mandelbaum 1968]; Tylor 1889), but my concept of culture is probably closest to that of Ward Goodenough (1981), although it differs from his in other respects. For him, culture consists of categories (forms), propositions, beliefs, values, rules, recipes, customs, and meanings. In a similar vein, when I use the word “culture,” I mean something in the mind of the culture bearer that informs and guides his or her behavior.

Behavior and culture are related, but they are not the same thing. Baking a cake is behavior; the recipe followed is culture. A game of football – the interactions among 22 people and a ball – is behavior. The rules that structure that behavior and define it as a game of football are culture.

Of course, culture is not all that exists in the mind and that informs and guides behavior. Such mental coding exists in any animal with a brain, even if the coding is very narrowly determined genetically. Thus hunger, thirst, fear, anger, sexual desire, etc. also help to determine human behavior without being culture.

The same is true of things that are learned by the individual outside a social context. For example, a cat may learn that snow is cold and the armchair by the fire is warm and may shape its behavior accordingly, but these bits of knowledge are not culture. Neither, in my definition, are things that are learned socially but not created socially.

The now famous example of sweet-potato washing by Japanese macaques is a case in point. The practice was invented by one monkey and then learned by other monkeys who observed her (Itani and Nishimura 1973; Kawai 1965; Kawamura 1959; Nishida 1986). Thus the notion of washing sweet potatoes is something that existed in the minds of each of these monkeys. It was learned socially. It guided their behavior. However, it was not *created* through interaction among multiple individuals. It was invented by one monkey, and its creation can therefore be understood in terms of the needs, motivations, and thought processes of a single individual. Even for those monkeys who learned it by observing others, it can be understood in terms of their own individual needs, motivations, and thought processes. It therefore lacks the emergent quality that I attribute to culture.

Thus I use the term “coding” to mean motivations, concepts, beliefs, rules, values, etc., that exist in the mind and that govern behavior. “Culture” is then a subset of coding. The first thing that distinguishes culture from other kinds of coding is that cultural codes are emergent. My con-

cept of emergence is essentially that of complexity theory (e.g., Babloyantz 1986; Jantsch 1980; Kauffman 1995; Mainzer 1997; Nicolis and Prigogine 1989). That is, emergent phenomena are those that arise from the interactions of multiple agents and that cannot be understood without reference to those interactions.

For example, a football game cannot be understood simply by observing a single football player. It can be understood only in terms of the interactions of all the football players. In this sense, a football game is an emergent phenomenon. However, the game itself is not culture, but behavior. The social (behavioral) interactions of other species are likewise emergent phenomena. In the case of football, however, the behavior of the players is guided by the rules of the game. These rules are themselves emergent phenomena that can be understood only in terms of the interactions of rules committee members, referees, coaches, and players. The coding that produces sweet-potato washing can be understood at the level of the individual alone. The coding that produces a football game cannot. It is therefore culture.

I see absolutely no a priori reason why other species should not have culture in this sense. Yet as will be seen in chapter 4, I can find no good evidence for it in the primatological literature. This is especially striking because the same literature shows that some species seem to have most, if not all, of the necessary cognitive abilities. My statement that culture, as I define it, is unique to humans does not arise from any Cartesian bias. It is an empirical observation and therefore subject to revision in light of new data.

A second important aspect of human culture as it is found among living humans is that its socially created codes provide motivation for behavior. This is not inherent in the nature of socially created coding. Imagine, for example, a population of early humans with simple language (socially created codes for communication) and simple, agreed-upon procedures for cooperative hunts. In this imaginary group, socially created codes would inform and guide the behaviors of the individuals involved, but it would not motivate them. Individuals would hunt cooperatively for the same reasons that other species cooperate: because each individual decided independently that doing so was in his or her own best interest.

However, among modern humans, it appears that culture, in the form of socially created moral beliefs, religious prescriptions, and so forth, motivates behaviors that would be difficult to understand in the absence of culture – for example, celibacy, martyrdom, and wearing a mortarboard and gown while a band plays “Pomp and Circumstance.”

If it is in fact the case that culture motivates behavior as well as informs and guides it, then the implications are very significant. It means

that the society or social group (however defined) has a way of influencing the behavior of the individual that does not exist in other species. This raises the possibility that an individual might be led to behave in ways that are beneficial to the group yet detrimental to him or her. This in turn raises a theoretical question: how can this happen, given that natural selection should eliminate behavior that decreases the evolutionary fitness of the individual?

This question, usually phrased in terms of the evolution of altruism, is a complex matter that has been the subject of intense investigation. A large body of literature addresses the definition of altruism, the empirical reality of altruism, and theories of group or multilevel selection, as well as a number of related issues (e.g., Aoki 1982; Boorman and Levitt 1980; Brandon and Burian 1984; Chiarelli 1987; Cox et al. 1999; Dugatkin 1999; Field 2001; Frank 1988; Hull 1981; Keller 1998; Maynard Smith 1964; 1976; Pepper and Smuts 2000; Richerson and Boyd 1998; 1999; Smuts 1999; Sober and Wilson 1998; Soltis et al. 1995; D. S. Wilson 1975; Wilson 2002; Wilson and Kniffen 1999; Wynne-Edwards 1962; 1986). How one stands on these issues determines how one is likely to explain the origins of human culture, as I define it. For this reason I discuss the topic in some detail in chapter 3.

The third important characteristic of human culture as we know it today is that it provides a ubiquitous intellectual framework for almost everything we as humans perceive, believe, feel, think, or do. The socially created codes of culture do not replace the older genetically determined or learned codes possessed by other species. We too feel hunger and thirst, we too learn things as individuals outside a social context, and we too learn things by observing the behavior of others, things that we may decide to imitate (or not) depending on our individual motivations.

However, we also live in a world that is full of concepts, definitions, beliefs, values, etc. that are created by culture and that are entirely cultural in their character (Chase 1999; 2001a). We believe in supernatural beings our elders have told us about, we organize ourselves according to social categories that are culturally defined, and we interpret the appearance of a tool, shelter, or item of clothing according to cultural criteria that have nothing to do with its practical effectiveness. We also assign purely cultural meanings to things that exist without culture – to the moon, to sexual desire, and to the bond between mother and child.

Culture replaces nothing, but it incorporates almost everything in a context of culturally defined meanings, values, and beliefs. It becomes a ubiquitous and inescapable framework for everything we perceive, think, or do. Like Geertz (1973:5), I believe “with Max Weber that man is an animal suspended in webs of significance that he himself has spun.” These webs are not, however, an a priori consequence of the existence of

simple socially created coding. Our imaginary group of humans could very well make use of simple language and practical conventions for cooperative activities without this intellectual superstructure. Thus this ubiquity and all-encompassing character of human culture must also be explained, and its origins traced, if possible, in the archaeological record.

I elaborate on my definition of culture in chapter 2. I also touch in that chapter on some related issues that are not central to the purpose of this book. For example, I discuss briefly the implications of the emergent nature of culture for dual inheritance or memetic analysis, as well as the problem of how an emergent phenomenon such as culture can exist in individual human minds and yet at the same time transcend them to exist at another level. In the remainder of the book, I try to trace and to account for the evolution of culture as a phenomenon.

In doing so, I work from the premise that the three aspects of human culture – socially created codes, motivation by socially created codes, and the elaboration of culture into an all-encompassing phenomenon – may have separate origins. If we assume the contrary, then we will never investigate this possibility, and we risk failing to understand the origins of culture. If, on the other hand, careful investigation indicates that all three are a single phenomenon with a single origin, we will have lost nothing by the effort; in fact, we will have learned something of significance. Clearly, the existence of socially created coding (particularly of language) is a prerequisite for the other two aspects of culture, but it does not necessarily follow that the other two appeared simultaneously with it and in response to the same causes.

In chapter 3, I investigate various possible hypotheses to explain the origins of human culture. It is easy to find adaptive explanations for socially created coding per se. This is especially true since human language is a form of socially created coding. Any adaptive behavior that could benefit from either better communication or better coordination among individuals can serve as a potential explanation for the origins of language. This would include teaching one's offspring verbally, rather than having them learn only by observation and imitation. It would include cooperative activities such as hunting. It would also include behaviors not found in other mammals. For example, a group might enhance its chances of finding food by dividing into several small foraging parties, agreeing to meet at a specific location and share either food or information.

I propose a series of alternative hypotheses to explain how culture came to provide motivation *and* how culture came to be an all-encompassing system. These include

1. The hypothesis that culture is a by-product of simple socially created coding