CHAPTER 2
Evolution: Behavior and Culture

INTRODUCTION

An adult female . . . will unerringly interfere in an infant play group if her friend's child is, in her opinion, being treated roughly . . . An infant that is known to have influential protectors will be treated with great respect, at least if any of its protectors are in sight. An adult male . . . will carefully avoid walking directly up to an infant because if one happens to scream at his approach a pack of females will instantly attack him, assuming him to have harmed it . . . In this way an infant learns its own status including its rank, which is basically that of its mother . . . (Rowell 1976:26).

Could this passage be a description of a group of people at a beach or on a playground in the United States? Or does it refer to some matrilineal group, in some far distant place? Does the phrase "a pack of females" indicate that the author is a male chauvinist?

In fact, this passage is taken from a paper by Thelma E. Rowell, a zoologist, who writes about "Growing Up in a Monkey Group." The observations deal with various species of monkeys studied in captivity. At least part of the human atmosphere of the quotation is due to a use of words that conjure up specific human relationships: "her friend's child," "influential protectors," "status," and "rank." Also, various attitudes and cognitive processes are attributed to individual animals: they are said to hold opinions, to show great respect, and to assume information not directly in evidence.

The fact that this paper appeared in a volume dedicated to Margaret Mead and entitled Socialization as Communication (Schwartz 1976a) indicates that studies of the development of primate infants are nowadays considered relevant to the understanding of human childhood. It is one small bit of evidence showing the importance of the concept of evolution to modern anthropology, cultural as well as physical.

Evolutionary theory has been called "the unifying paradigm of all the biological sciences, from biochemistry to ecology" (Freeman 1970:5). However, among the behavioral sciences, as D. A. Hamburg (1963:300) has pointed out, "anthropology alone . . . has taken evolution seriously and has made it a major focus of research." He goes on to add that "this neglect applies also to the emotional aspects of behavior which is remarkable . . . since Darwin was so strongly interested in emotions and pointed the way to future investigators."

"Evolution" has meant different things in the course of time to investigators in the several fields of anthropology. Anthropologists have used the term in three different contexts. It is important to identify them and to make the distinctions between them explicit.

First, the term refers to the biological evolution of the species Homo sapiens. Here, our basic information comes from physical anthropology, specifically, human paleontology. The data consist of the fossilized remains of early hominids: skulls, teeth, and bones that reveal changes in size and shape of the brain, changes in posture, and so on. Related evidence comes from the archaeological record in the form of tools and from the ecological contexts of the finds. Together with zoologists and psychologists, some physical anthropologists have also turned to the observation of living nonhuman primates. They do so, in part, to shed light on human behavior.

Concerning biological evolution, the psychological anthropologist asks three questions: 1) What is the relationship between skulls, teeth, bones and behavior? 2) What changes in capacity are reflected in the paleontological and archaeological record? 3) What changes were necessary to make culture, as we know it, possible?

To deal with these questions, following A. I. Hallowell, we shall speak of "behavioral evolution."

A second context is the classical concept of unilinear cultural evolution. Most of the major figures of nineteenth century anthropology and sociology, such as Comte, Spencer, Tylor, Morgan, and Frazer, as well as Marx, believed in the idea of progress, propelling cultures from "primitive" to "advanced" stages. Freud incorporated it into his writings on anthropological subjects. This concept of cultural evolution was rejected by most anthropologists of the first half of the twentieth century. As a result, culture-and-personality studies emerged in an intellectual climate that was hostile to evolutionary thought.

A third context is the contemporary theories of cultural evolution, developed principally by two groups of U.S. scholars, centering about Leslie White on the one hand and Julian Steward on the other. These approaches redefine earlier ideas, incorporating such concerns as cultural ecology and adaptation. Such investigations offer a variety of research opportunities for psychological anthropology. To cite only one example, we may investigate the relationship be-
between child training and levels of subsistence economy. Do societies with different economies make different kinds of demands of their children?

Let us now deal one by one with these three divergent and yet overlapping approaches. All of them speak to the issue of "evolution."

BEHAVIORAL EVOLUTION

In his 1949 presidential address to the American Anthropological Association, A. I. Hallowell noted that a central problem of nineteenth century anthropology had been the evolution of man. Darwin's opponents, by contrast, had stressed the discontinuity between humans and other animals. Evolution had gained the day in physical anthropology, where stress was placed on fossil remains of early human forms and on tools showing evidence of the activity of ancient types of man. Yet, as Hallowell points out, anthropologists of the twentieth century (that is, the group he was addressing).

while giving lip service to organic evolution have, by the special emphasis laid upon culture as the prime human differential, once again implied an unbridged gap between ourselves and our animal forebears ... (Hallowell 1974:2).

Because the biological evolution evident in the organic transformations of animal species is only part of a larger process, Hallowell proposes the study of behavioral evolution. He argues that "the achievement of a human status in the evolutionary process ... is ... to be conceived of ... as a total psychobiological adjustment" (Hallowell 1974 [orig. 1950]:6; italics in original). He calls the outcome of this evolutionary process "man's novel personality structure."

What is this structure, and how can we discover it? Hallowell is speaking of a humant nature that underlies "the range and variation of personality structures" that have been reported in the culture-and-personality literature, which describes a great variety of contemporary cultures. In other words, just as we can speak about culture in the generic sense by identifying the universal features that appear in the many specific cultures that have been studied, so also we can speak of a generic human personality structure on the basis of comparative research.

Over a period of almost two decades following his presidential address, Hallowell refined and elaborated these ideas. He stressed the continuity as well as the differences between our species, its precursors (earlier species of the genus Homo), and its relatives among the infrahuman primates. During the same period, research in two directions had filled out our knowledge of these related species. One direction has been the rapid growth of research dealing with primate (and other animal) behavior in the animals' natural habitats. The other is a great increase in the variety and intensity of experimental research with primates. Both of these types of studies by zoologists, psychologists, and anthropologists have greatly enriched our understanding of the behavior and the capacities of primates.

We can now speak with some confidence about the difference between monkeys and apes in the laboratory, in the zoo, and in their native habitats. We have learned about differences between arboreal and ground-dwelling species. We have information about the relationship between ecology and such variables as group size, troop organization, relations between the sexes, and a host of other matters. More than a quarter of a century has passed since Hallowell's initial call to action. A great many questions remain, yet on the whole they are better questions, based on better data. Issues that had virtually disappeared from view have moved back emphatically to the center of attention. In some respects the abundance of information available to us now might make it appear that Hallowell's appeal for research in behavioral evolution has indeed been heeded. Yet a note of caution must be added: knowing about contemporary infrahuman primates is not the same as knowing about the behavior of extinct species of primates or of early humans. We must not be misled into reading too easily and carelessly from one to the other. Also, it is largely students of fossil man and primatologists who have carried on this research, rather than cultural anthropologists, or specialists in culture and personality.

Continuity and Differences: The Concept of Protoculture

Hallowell proposed a new concept for the study of the evolution of the human mode of cultural adaptation. He spoke of protoculture, a preadaptive stage involving six elements: "simple forms of learning, some socialization of the individual, a social structure based on role differentiation in organized social groups, the transmission of some group habits and perhaps tool using and a 'non-syntactic' form of communication" (Hallowell 1960:359-60). The novel psychological factor by means of which these preadaptive conditions were transformed into culture is, in Hallowell's view, a "psychological restructurization." This factor is expressed, among other things, in the capacity for language development and other forms of symbolic communication. This new capacity transformed the previously existing conditions not only of communication but also of social life, of tool using, of learning, and so on. As we shall see, it also made possible the creation of a uniquely human behavioral environment. We shall briefly consider the six features of protoculture in Hallowell's definition.

Learning of some sort exists at all levels of the animal kingdom, and psychologists have long studied learning in a broad variety of animals species. However, since cultural behavior is consistently—and by definition—learned behavior, a capacity for complex learning is a prime prerequisite for the development and acquisition of culture. It is, however, not the only such prerequisite.

Socialization involves an early period in life in which learning takes place that is required for the adaptation of the individual to the group. This learning occurs in particular in relation to mature adults, especially, but not exclusively, in the relationship between mothers and their young. Therefore the duration of a period of socialization and the amount and complexity of what is learned is directly
related to the length of the period of immaturity and dependency characteristic of a particular species. It is also related to the need for learned behavior, in contrast to unlearned responses, for the survival of the individual. In human beings the length of this period is enormously increased beyond that of all other species, as is the amount and complexity of learning.

The existence of socialization is necessarily dependent on the third feature of protoculture, the presence of organized social groups. Again, we find social animals on many levels of the evolutionary scale. However, in contrast to the complex social organizations of insects that are determined by structural differentiations among the members, say, of a termite hill or a beehive, the organization of a primate group and the role differentiation within it are based on learning, socialization, and experience, as well as on differences in sex and age. For instance, dominance gradients in troops of monkeys such as baboons, or apes such as chimpanzees, are established through encounters among individuals, that is, through experience. Moreover, in contrast to the organically based social hierarchies among insects, they are both impermanent and reversible.

Social groups among infrahuman primates are composed of adults of both sexes and young of varying ages, as well as individuals in different positions within the social hierarchy. Socialization therefore takes place within highly differentiated groups and involves the learning of relationships with individuals occupying a variety of social statuses. Because of the similarities of some of these patterns to human social organization, a prefiguring as it were, of some human patterns, writers on primate behavior are sometimes tempted into the use of an anthropomorphic, and thus misleading, terminology. Our introductory quote illustrates this point.

The fourth aspect of protoculture, the transmission of some group habits, is of particular interest, for it is sometimes considered to be virtually synonymous with culture. For example, Jolly says: "A great deal of the behavior of primates can be called cultural, in the sense that it is transmitted by learning from generation to generation" (Jolly 1972:350, italics added). B. Campbell (1974), the British biologist, insists that the transmission of learned behavior defines culture, and chides anthropologists for refusing to recognize the existence of culture, so defined, among primates. However, transmission of learned behavior is not limited to primates either. It has been shown, for example, to occur among birds. To cite only one instance, W. H. Thorpe (1961) reports that birds of the same species share a basic song pattern, but the elaborations of these patterns vary among local groups. Birds such as chaffinches which have been reared in isolation produce only the simplest form of this typical song, whereas those reared in groups produce a unique local variation of the song.

In primates, the socially transmitted behaviors are often innovations initiated by individuals. Among Japanese macaques, animals that have been studied intensively, we know of innovations such as learning to eat, and even to unwrap, sweets offered by tourists, washing and eating sweet potatoes, and even swimming. According to D. Miyadi (1967) the innovations were usually made by infants and transmitted through imitation to their mothers. When these mothers were dominant females, the innovation would be observed by and transmitted to other animals lower in the dominance hierarchy and would spread in this way. Older, dominant males in many cases were the most conservative, the slowest to accept innovations.

As Hallowell (1960:338) points out, in infrahuman primates, social transmission of learned habits does not, however, become cumulative either over time, from generation to generation, or in space, that is, among large numbers of animals. He suggests that the high degree of territoriality among primates causing the virtual isolation of rather small groups from others of the same species, sets up barriers to the formation of larger and more complex social groups, and thus to the transmission and accumulation of learned habits. This observation leads to the further question of how the development of such larger and more complex social groups did in fact become possible. Whatever the ecological reasons might have been, factors of a psychological order must have been involved also: "The social integration of groups larger in size, distributed more widely in space, and characterized by greater diversity in roles required a transformation in psychological structure" (Hallowell 1960:338).

The presence of tools in association with fossil bones long has been used as a criterion for assigning human status to remains. The extended debate over the status of the australopithecines and of the modified bones of other animals found with them is a dramatic case in point (Dart 1959, Le Gros Clark 1967). The use of sticks, leaves, and stones by primates in the wild is well known, as is their extraordinary ability to manipulate human tools in captivity. The extensive observations on wild chimpanzees by Jane van Lawick-Goodall (1968, 1971), moreover, dramatically document the fact that chimpanzees fashion rudimentary tools, for example by modifying grasses or sticks before using them to draw termites out of their hills.

By contrast, human tool-making is not only much more complex; it also involves the existence of traditions, that is, of shared patterns of working materials. Here again we find the accumulation of learned patterns over space and time. Humans also use secondary tools, or tools to make tools; moreover, there is always among humans an extensive and far-reaching dependence on tools.

Among these tools there are generally the means of making fire. The controlled use of fire is universal among human populations and appears to go back at least to Peking Man, half a million years ago. Fire may indeed be said to be the most important human tool, one that radically transformed ecology: it made various otherwise inedible root crops digestible and so extended and survival base; it assisted in the making of other tools; it provided light and warmth; it frightened away predators. The psychological transformation of early human beings from animals fearful of fire to ones able to control and use it is one of the truly remarkable parts of the story, although it has left us no specific clues. The great significance many societies attach to the conquest of fire, however, is recorded amply in the myth of Prometheus and in similar myths throughout the world.
The last feature of protoculture identified by Hallowell is a *form of communication*. Communication of some sort is basic to the existence of social life and is universal among social animals. Most simply, it may be defined as the stimulation by one animal of behavior in another; there is no need to infer *intention* on the part of the organism producing the stimulus, thus sending a message. Such stimulation may consist of evidence of physiological changes, chemical discharges, motion, gestures, touch, sound, and so on. In some animals, such as bees, complex systems of communication have been studied. These systems involve information about the location of nectar and utilize patterns of motion—the “dance of the bee”—as well as chemical exchanges (von Frisch 1950). Indeed, complex social organizations, such as that of bees, could not function without communication to maintain cooperation and interaction among members.

*How Language Differs.* If communication is so widespread among animals, how is human language distinctive? The linguist Charles Hockett (Hockett 1960, Hockett and Ascher 1964, Hockett 1973) has identified a series of “design features” of language, most of which exist in other communication systems as well. For instance, language employs a vocal-auditory channel; the messages are composed of sounds produced by the voice and received by the ear. The same channel is used for the singing of birds or the barking of dogs. In some animals, other channels are utilized: for example, motion serves in the dance of the bee mentioned earlier. In human beings, too, there are many types of nonvocal communication. They may be secondary elaborations of spoken language, such as writing, or even tertiary elaborations based on their turn on writing, such as the Morse code. On the other hand, human beings also use bodily forms of communication that are independent of language, and that are sometimes used to accompany it, such as gestures or various other expressive movements or postures. The latter have occasionally been called “body language.” It is also true that not all elements of human communication that do use the vocal-auditory channel are language; some examples of these nonlanguage sounds are laughing, giggling, yawning, hissing, hemming and hawing, and so on. Language, in other words, is not our only type of communication. It is, however, a separate system and can be analyzed as such. Nor is all communication language. Also, as we shall see, communication is not the only function of language, although it is, of course, a vital one.

Which design features are distinctive of language, according to Hockett’s analysis? There are three: openness or productivity, displacement, and duality of patterning. Let us take a closer look at each.

An *open* or *productive* system is one in which new messages are possible. As Hockett and Ascher put it, “we freely emit utterances that we have never said nor heard before, and are usually understood, neither speaker nor hearer being aware of the novelty” (Hockett and Ascher 1964:139). By contrast, a *closed* system, such as the call system of gibbons, consists of a limited repertory of signals, each of which is associated with a specific set of stimuli, such as food, danger, or sex.

*Displacement* refers to the fact that human beings can and do produce utterances that refer to other times and other places. We may speak of food in its absence; gibbons utter food calls only in its presence. Displacement is crucial for the human capacity to learn from the experience of others, which makes possible the growth of culture over time; to formulate collective memories in myth and history, providing human beings with a past; to develop goals and devise utopias, that is, to think and speak about the future and the potential; to tell lies and to speak nonsense; to develop mathematics and science.

*Duality of patterning* means order or structure at two different levels. On the one hand, there is the patterning of the sound system, which is made up of a small number of elementary signaling units. These units, by themselves, are without meaning. On the other hand, there is the order or structure of larger, meaningful forms. This order is quite independent of the first, A combination of two such systems makes language extremely flexible and economical. By contrast, the units of a call system cannot be broken down into smaller significant elements, nor are they grouped into larger sequences according to a set of rules or a grammar.

*Can Apes Learn Language?* Over the years, a number of experimenters have been intrigued by the possibility that young apes might be taught human language. Several such attempts have been carried out with important results. The first of these attempts was the effort of two psychologists, Keith and Catherine Hayes, who raised a young female chimpanzee, named Viki, in their home from shortly after birth to the age of six and one-half. In spite of being treated like a human infant and child, and in spite of enormous efforts on the part of Catherine Hayes, Viki never learned to utter more than three or four words. Yet she learned to respond to a large vocabulary, acted in many ways like a human child, and even appeared to play with an imaginary pull-toy (Hayes 1951). However much she was able to learn of human ways, it was clear that vocal, articulated language was beyond her capacity.

A more successful experiment was carried out by R. A. and B. T. Gardner, who brought up an infant female chimpanzee whom they called Washoe (Gardner and Gardner 1975). Rather than seek to teach Washo spoken language, they used the American Sign Language for the Deaf (ASL or Ameslan). This language is not a manual version of English. Rather, it consists of conventional representational signs. (Deaf children, having mastered Ameslan, must learn English when they learn to read and write, or lip read and produce vocal speech, or even use the manual alphabet.) The Dutch primatologist, A. Kortlandt, who, himself, has carried on extensive studies of chimpanzees in the wild, has made some interesting comments on Washoe’s accomplishments that are worth quoting. Having observed her when she had already acquired a vocabulary of more than one hundred signs, he writes:
I was very deeply impressed by what I saw. Perhaps the most convincing of all was to watch Washoe “reading” an illustrated magazine. When, for example, a vermouth advertisement appeared, she spontaneously made the gesture for “drink”; when, on the next page, a picture of a tiger appeared, she signed “cat.” It was fascinating to see a chimpanzee “think aloud” in gestural language, but in perfect silence, and without being rewarded for her performance (Kortlandt 1973:14).

He goes on to remark: “In situations when Washoe was not rewarded, she tended much more often to think aloud in silence than to talk to the Gardners and their assistants. This suggests that these apes have a lot more to think than to say,” a remark which, he says, also fits well his observations of chimpanzees in the wild (Kortlandt 1973:14).

Another approach has been that of Premack (1976a, 1976b), who uses plastic chips of different colors and sizes to represent words, while at the same time also speaking to his chimpanzees. The animals in time have acquired large vocabularies and are able to arrange the chips so as to form phrases. In various tests, they have demonstrated their ability to establish relationships among items, to abstract characteristics such as color, and to handle “displacement,” that is, to understand statements about things that are not present.

A fourth study (Rumbaugh 1977, Rumbaugh and Gill 1976) at the Yerkes Primate Center involves a chimpanzee by the name of Lana, who has been taught a specially designed “language” called Yerkish; in this system, Lana constructs sentences by punching buttons on a computer to select among a limited number of signs.

As a result of these experiments we now know that it is possible to teach elements of a human communications code to young apes, and that their learning capacity is greater than inferred from previous observations. However, we need to be cautious in drawing conclusions, as H. J. Jerison has noted:

One often underestimates the capacity of animals to learn and to perform complex tasks. The effect of the study of animal language, in my judgment, is to force linguists to define language more precisely, rather than to demonstrate “language” in chimpanzees. We must, after all, know what it is we are trying to demonstrate (Jerison 1975a:421).

Have we learned anything more specific from these studies, anything that might shed light on the development of language, with its distinctive features, from some other types of communication? Hockett (1973) thinks so. In Washoe’s use of Ameslan, he finds a pattern that is frequent in child language, called “pivot grammar.” In English baby talk, the pivots are words such as allgone, nightnight, more, and various objectives, such as big and little. A pivot is combined with a noun or name to produce new utterances, such as nightnight Jimmy, or candy allgone. Although Hockett notes that there is no evidence of such grammar in the communication of chimpanzees in the wild, he concludes:

In pivot grammar, thus, we seem to have found a limited variety of openness much older than human language, an inherited kernel on which our cousins the chimpanzees may never have built, but on which all human languages have elaborated and with which each human individual begins his linguistic life history (Hockett 1973:117).

Concerning Washoe, we must note that Ameslan lacks two of the distinctive features of language: the vocal-auditory channel and duality of patterning. Neither Washoe nor the other chimps in these various studies have shown evidence of being able to handle these features. We have seen the failure of the Hayes’ attempt to teach Viki spoken language. The signs that Washoe, Premack’s Sarah, and Rumbaugh’s Lana have been taught are complete units and cannot be further broken down into constituent parts, as are human words, or morphemes. Premack, as we saw, says that chimp can handle displacement.

In spite of the claims by Premack, Rumbaugh, and their associates, not all linguists and students of primate behavior agree with their assessments. Harry F. Harlow, a pioneer of experimental work with primates, notes Premack’s description of “serialized complex learning problems” as “language.” In contrast to abstract (human-type) learning, he argues, “Premack’s and Rumbaugh’s chimpanzee performances required only ‘concrete’ (animal-type) learning” (H. F. Harlow, 1977:640). He also stresses that, by contrast, the Gardners came to understand complex, unlearned gestural “language” responses made spontaneously by Washoe. That is, they made a first step toward learning the communication system of chimpanzees. The other types of research involve training in concrete, artificial situations. This fact has led scholars (Mounin 1976) to point to numerous other problems involved in evaluation of these experiments. To mention only one difficulty: what Washoe “says” is translated into English by her trainers, so that her “utterances” are made to appear to conform to English language patterns. They might appear quite different if translated into another human language.

It will take time to sort out the significant contributions of these studies and to consider their full implications. For now, it is important to distinguish between an animal’s potential for behavior, exhibited in these types of learning in a human environment, and the behavior that is learned or released in the animal’s own native ecological and social setting. For example, Washoe was able to learn Ameslan when taught by her human associates. However, in that setting she did not develop her capacity for supplying her own subsistence, as chimpanzees do in the wild.

Language and the Construction of Reality. These experiments with apes focused on the animals’ learning capacities and stressed the use of language to communicate. They also have implications for our understanding of the evolution of language. In view of the importance of gestures in primate communication both in the wild and in the experimental situations of the Hayes and the Gardeners, G. W. Hewes (1973) has suggested a gestural origin of language.
A different approach is taken by Jerison, who considers the development of language from the point of view of the evolution of the vertebrate brain and intelligence. For him, the first and original function of language may have been as a tool for perceiving the world and ordering these perceptions. Language, for Jerison, facilitates "the construction of reality" for our species. The fact that language is also a system of communication means that "reality" can be shared.

"Construction of reality" requires some explanation. Jerison (1973, 1975a, 1975b, 1976) defines intelligence as a species' capacity to process information that comes to it through the sense organs, such as those of smell, touch, sight, hearing, and so on, and to connect this information with its sources. To do so involves basic cognitive capacities that vary from species to species. Consequently the "perceptual world," as Jerison terms it, that is experienced by a given species, including Homo sapiens, depends on how its brain works. For example, color variation is an attribute of the environment only for species with color vision—for humans, but not for dogs. On the other hand, ultra high frequency sounds are part of the perceptual world of dogs, whose sense of hearing can register and process information of that kind, whereas humans are not biologically equipped to do so. As a result, the image of the world constructed by the nervous system of the dog, its "perceptual world," is different from that of the people with whom the dog shares a home.

"From this perspective," Jerison (1975a:403) notes, "language is better understood as having first evolved because it enhances the image- construction capacity of the nervous system, rather than because of its facilitation of communication." Consequently, in order to understand the evolution of language, it becomes more important to understand the evolution of the brain than the evolution of modes and methods of communication in infrahuman primates.

The concept of a species-specific "perceptual world" is of crucial importance in recognizing a uniquely human mode of adaptation. It is similar to the concept of a "behavioral environment" used by the Gestalt psychologist Kurt Koffka. Hallowell adds a further dimension to this concept by noting that in humans the behavioral environment made possible by a common organic equipment is made variable by the fact that it is also culturally constituted. Such within-species variation of the construction of reality and its modification by largely linguistically formulated images is uniquely human. This is an important topic, and we shall return to it a number of times in the course of this book.

Language and Human Evolution. At present 4000 to 5000 languages are spoken throughout the world. For such a diversity to have arisen, linguists such as Hockett believe that it is likely that language in the full sense of the word must have been in existence not much less than 50,000 years. Hockett suggests that it was preceded by a "pre-language," and he speculates (Hockett 1973) on what that might have been like. During that period when language might have been developing to its full characteristic form, say some 100,000 years, the human brain increased greatly; then, 50,000 years ago, it ceased to grow in size. Once the brain had reached its present size and form and once language had developed fully, an enormous increase in cultural development can be observed. The significance of the relationship among the three factors—brain, language, and culture—must not be underestimated.

Among the transformations that are associated with the full development of language and of culture are changes in the organization of local groups and, we may assume, in the rules that are associated with that organization. Let us examine one important example of such change.

Breaking Out of the Local Group: The Incest Taboo. We have already referred to the territoriality and relative isolation of individual primate groups, and we have related it to the lack of any significant accumulation of socially transmitted learned behavior among them. When we look at human groups, even the smallest among the hunting and gathering societies, such as various bands of Australian aborigines, Bushmen, or Pygmies, we never find similarly self-contained units. For example, Lauriston Sharp (1974:417) says of the North Australian Yir Yoront that the stone they used for their axe heads came "from quarries 400 miles to the south, reaching the Yir Yoront through long lines of male trading partners." Lorna Marshall deals with !Kung-speaking Bushmen in a region of southwestern Africa (Namibia), who live in twenty-seven intermarrying autonomous bands. She notes: "The !Kung have intermarried within the Nya Nya region to such an extent that . . . the people of the whole region are what we call name relatives, applying kinship terms to each other" (Marshall 1965:259).

How did human groups (or protohuman groups) cease to be self-contained units? Leslie White (1949) argues that the incest taboo created interdependent groups by requiring members of each individual family and social group to marry out. Although we may agree that the incest taboo—the prohibition on marriage or mating between parents and children and between siblings—does indeed create networks of relationships among families and social groups, this fact does not tell us how such a prohibition came about. The universality of the incest taboo, often noted, suggests its great age. Anthropologists and others have often speculated on its origins; Freud offered his own "myth"—as he called it—of the origin of the incest prohibition in his book Totem and Taboo (1912–1913).

Over the years a number of reports have shown a lack of inbreeding (or "incest avoidance," in anthropomorphic terms) among diverse species of mammals and birds. However, although such a lack is widespread, it is by no means universal. According to Aberle et al. (1963:261) "on a cross-species basis, restriction on inbreeding ... is found among larger, long-lived, slower-maturing and more intelligent animals." They suggest a genetic basis for this behavior, and they go on to note: "in the perspective of population genetics, close inbreeding of an animal like man has definite biological disadvantages, and the disadvantages are far more evident as respects the mating of primary relatives than as respects other matings" (Aberle et al. 1963:257).
When we speak of the incest prohibition in human societies, it is clear that we are dealing with a social rule. There may well be an underlying biological factor at work, but if that is so, this factor has been reworked in cultural terms by means of language, and set up as a rule, the infraction of which is punished by human institutions. To note that such a rule has a biological grounding is not the same as to reduce an analysis of the incest taboo to that starting point. This important consideration must be kept in mind.

Seymour Parker (1976) has sought to formulate a psychobiological theory of incest avoidance. In addition to the materials cited above, he also refers to studies of the deleterious genetic effects of human incestuous unions, which confirm the conclusions arrived at on the basis of population genetics. The implication from both of these approaches is that for human beings and for animals that are like them in the respects noted above, incest avoidance has important survival value. The question that remains, and to which Parker addresses himself, is what psychobiological mechanisms might produce incest avoidance in certain animal species, including humans.

Parker suggests two such mechanisms. First, Parker suggests a psychological and physiological link between sexual and agonistic (aggressive) responses. Prolonged association among individuals during socialization reduces the agonistic responses, and as a result, also reduces the sexual ones. Second, he suggests a link between an exploratory tendency—a search for novelty—and the sexual response. This tendency, too, is reduced during the long association and habituation among individuals during socialization. Parker finds support for both of these propositions in studies of animals and humans. Much of his human evidence for the argument that childhood association leads to a reduction in sexual attraction is drawn from two societies, the Israeli kibbutz and the Chinese.

The Chinese data come from a Taiwanese village where A. Wolf (1966) studied traditional marriage patterns. In one pattern a small girl is adopted into her future husband's family. Among the younger people this form of marriage is strongly disliked, and there is evidence that such marriages in the past have often been unsuccessful, either not resulting in conjugal unions, or, in an earlier generation, involving a higher degree of adultery. Informants talked about marriages with housemates as being "embarrassing" or "uninteresting.

In the Israeli case, a number of researchers have found that in the kibbutz young people consistently "marry out" although there are no rules requiring them to do so. In the collective education pattern of the kibbutz all the children of the community are brought up in the children's house. For example, in his study of the kibbutz Kiryat Yedidim Melford Spiro (1958) found no cases of marriage among peer group members. Joseph Shepher, who analyzed census data on some 3000 kibbutz marriages in three generations, specifically notes that there was not a single case in which the partners had been socialized together between the ages of three and six (Tiger and Shepher 1975). Spiro's informants told him that people did not marry peer group members because they knew each other too well, much as brothers and sisters do.

Parker's paper brings together a rich body of data and theory, and his analysis is quite persuasive. Yet the issue has not been fully resolved. Livingstone (1978) has questioned the animal evidence, which he finds inadequate. He also questions the cultural data. For example, a more recent paper by M. Kaffman (1977) reports changes in the sexual attitudes and behavior of kibbutz adolescents that have resulted from the international "sexual revolution." With a change from the puritanical attitudes typical of the kibbutz in the past, he finds that heterosexual relationships among kibbutz adolescents are not rare. Marriages, however, still are rare. At least one of the reasons for this fact, says this author, is that peer groups are small, usually no more than sixteen individuals of the same age. Together with the fact that girls mature earlier than boys, this size means that finding a partner within the group is difficult. Kaffman, however, like Parker and Wolf, also points to the importance of habituation and familiarity in reducing romantic interest.

In contrast to those who argue that genetic factors are at the basis of incest avoidance, Livingstone (1978) suggests that variations in mating behavior, both animal and human, are due to differences in ecological pressures. Cultural changes, such as those that have led to increasing sexual involvement among kibbutz peers and to the disappearance of adoption marriage in Taiwan, might best be understood in this context.

Parker makes an important distinction between the incest taboo, a cultural phenomenon, and incest avoidance, an earlier biopsychological tendency on which it is built. It is likely that incest avoidance, if not the incest taboo, was part of the protocultural stage of human development. The transformation of biologically based avoidance practice into a culturally formulated prohibition, with its attendant sanctions, is of course dependent, among other things, on language usage to conceptualize it and to communicate the concepts and the rules.

From Proto­culture to Culture: The Missing Elements

Having considered the characteristics of protoculture, the necessary but insufficient conditions for the development of culture, we may now ask what are the missing elements? We have already hinted at the importance of the distinctive characteristics of language. Underlying these characteristics is, in Hallowell's phrase, "the capacity for the symbolic transformation of experience."

In contrast to other animals, human beings are able to share with their fellows private, internal, or "intrinsic" processes, such as subjective versions of experiences, mental imagery, and dreams. We are able to share them because we have "extrinsic" symbolism, means of giving experiences a form that is unrelated to or "outside" those experiences. Language is the primary example of such a symbolic system. The graphic and plastic arts, dance, and ritual are examples of nonlinguistic systems of extrinsic symbols.

As a result of such sharing, the experiences themselves are influenced and modified by group processes. In other animals, such processes—for example,
memory or dreams—undoubtedly exist. However, because the animals lack extrinsic symbolism, those processes remain private and are not subject to the modeling influences of sharing, group pressures, and tradition. By contrast, in many human societies, dreams are given serious attention. Because they are told and discussed and evaluated and interpreted, it appears that they are, to a remarkable degree, culturally patterned. Often enough, dreams and the imagery of altered states of consciousness, such as trance states, are sources of cultural innovation. They may have a significant impact on the construction of a culturally constituted behavioral environment. It is in dreams and trances that much mystical and religious inspiration occurs. We shall examine these matters at some length in Chapter 7.

For Hallowell, the key differences between protoculture and culture, made possible by complex, shared symbolic systems, are the universal existence in humans of self-awareness and of a normative orientation. He notes that, in contrast to the social life of animals, every human social order is also a moral order. Every society has its standards of right and wrong, and each has its system of social control. Social rules of behavior range from those prohibiting in-group murder and incest to those controlling food taboos, property rights, behavior among kin, and even etiquette. Crime and sin are characteristically human phenomena.

This normative system is not merely external to the individual, enforced through law, punishment, and other actions of the group. Rather, the moral order is within the individual, mediated by the development of an individual conscience, the capacity for self-judgment. Therefore, a prerequisite to morality is the capacity for self-awareness and self-objectification, for becoming an object to one's self, to be regarded and evaluated as other objects. Self-awareness implies self-esteem, self-respect, and pride, but also guilt, shame, and anxiety. Self-awareness is always socially patterned and involves the internalization of the society's demands in the process of socialization, during the characteristically long period of dependency of the human young. Language, through the universal use of pronouns and kinship terms, naming systems, and other identifiers, is crucial to the development of this capacity, as we can see in the development of modern children.

Thus, as individuals we learn to appraise ourselves in relation to a socially sanctioned and internalized moral code. The existence of such an appraisal, Hallowell (1966:357) notes, suggests the adaptive value for the society and for the individual of such unconscious psychological processes as the ego defense mechanisms, including rationalization, and repression. These defense mechanisms make it possible to deal with the inadequacies in one's performance and with the conflicts between the demands of one's conscience and those of one's needs.

In summary, the concept of a protocultural stage suggests that culture, human society, the human personality, language, and the underlying capacity for complex symbolic transformations all are products of evolution that developed in interaction. In this light, it would be absurd to expect any abrupt discontinuity in capacity and behavior in the course of hominid evolution, as it would be to expect sudden and startling changes in organic forms. On the other hand, Hallowell (1961:253) rightly stresses, in this connection, the human potential "for transcending what is learned—a capacity for innovation, creativity, reorganization, and change in sociocultural systems themselves."

Hallowell derived this fruitful perspective on human behavioral evolution from the comparative study of personality structure in contemporary societies. Each of these societies shares in a "human perceptual world," in Jerison's terms, for all human groups have the same basic organic equipment. Yet each has evolved its own culturally constituted behavioral environment, peopled its world with beings and forces, provided coherent explanatory systems for its experiences and observations, and structured experiences and observations by means of these explanatory systems. (We return to these matters in Chapter 6.) These activities all required a transformation of experience by manipulating shared and conventionalized symbols, substituted for direct experience. The capacity for symbolization does more than facilitate the development of characteristically human social groups living in characteristically human perceptual worlds. The resulting development of self-awareness and of a normative orientation is evidence of a particular, uniquely human articulation between the individual and the society. In a sense, the society may be said to be built into the individual during the socialization process. In addition, characteristically human unconscious psychological processes as well as conscious processes developed. We begin to see that there is a good deal more involved than merely the transmission of social habits or the existence of an open call system.

Hallowell's contribution to the study of behavioral evolution is important not only for the fact that he was the first to sound a call to action or for the pioneering...
character of his work. Its greatest significance lies perhaps in this fact: he showed us that it is possible for an anthropologist to stress the continuity between human- and its primate kin without losing sight of that radical innovation, the development of culture, and the role of culture in human life and adaptation. He avoided the twofold trap that awaits the unwary who venture into this terrain: either to see human beings as apes with a little more (or a little less)—the naked ape, the talking ape—or else to see apes as incomplete humans, similar to human children or slightly retarded adults.

Biological Bases of Human Behavior

Hallowell’s approach to human evolution was “conjunctive”: he sought to take into account the organic psychological, social, and cultural dimensions of the evolutionary process. His work was notably devoid of speculation; he made no attempt, in any of his writings, to invent a scenario to show how human behavioral and sociocultural characteristics emerged at certain stages of development in the remote past. Such scientific restraint has not been typical of many of the popular writers who have taken up the theme of behavioral evolution since the 1960s. Indeed, a whole literature has grown up in which various of the less pleasant aspects of modern Western society have been blamed either on our primate origins or on our distant ancestors.

Two particular aspects of modern culture have received the greatest attention, either separately or in combination: aggression and male dominance. For example, Robert Ardrey, a dramatist turned popular science writer, has us descend from a “killer ape,” who modified the course of evolution by turning from the peaceful pursuit of gathering to hunting. The resulting bloodlust in time has given rise to such diverse horrors as modern warfare and juvenile delinquency. “Civilization,” says Ardrey (1961:348) “is a compensatory consequence of our killing imperative.”

Konrad Lorenz, in On Aggression (1966), sees warfare and cruelty as part of the human heritage that cannot be changed. He makes these claims in spite of the fact that in his detailed observations of animal behavior he found that aggression occurs in very specific and limited circumstances. His only solution to the problem is to suggest alternative occasions for the expression of the “aggressive instinct,” such as substituting sports for warfare.

R. G. Sipes (1973) has investigated the hypothesis that combative sports represent an alternative to warfare, as well as the contrary view according to which they are more likely to appear in warlike societies. On the basis of both cross-cultural and historical analyses, he finds that societies where war is relatively rare are also those where combative sports are absent. He concludes that “rather than being functional alternatives, war and combative sports activities in a society appear to be components of a broader cultural pattern” (Sipes 1973:80). His study also shows that warfare is not a universal social institution.

In discussions such as those of Ardrey and Lorenz we find a confusion between warfare, an institutionalized pattern of complex social organizations, and aggres-
was launched. Wilson, who is an entomologist, wishes to understand the biological bases of social behavior throughout the animal kingdom, including human-kind. The physical anthropologist Frank Livingstone has made the point, in this connection, that

those who emphasize the biological or genetic determinants of human behavior also emphasize the emotional causes of behavior. . . However, the most striking trend in human evolution has been the elaboration and increasing dominance of the cerebral cortex. This dominance is undoubtedly associated with the evolution of language and symbolic thought (Livingstone 1978:9).

Livingstone goes on to show how the development of symbolic thought has dramatically modified human motivations, so talk of simple genetic programming of behavior appears to be a gross oversimplification.

Such oversimplifications (or overcomplications) are seen in many of the writings of the sociobiologists when they attempt to account for human behavior. The zoologist D. P. Barash uses as one of his examples the Eskimo tradition whereby old people commit suicide by going out on the ice to freeze to death. Barash sets out the following explanation for how such behavior might have become established:

Assume that geriatric self-sacrifice is initially a phenomenon of cultural tradition and nothing else. Selection could then operate upon the susceptibility to such teaching, assuming here that susceptibility genes of this sort exist. Eventually the behavior could be genetically incorporated and thereafter maintained by kin selection (Barash 1977:282, italics in original).

That is to say, individuals who commit suicide favor the successful reproduction of their offspring by not becoming a burden to them when they are unable to contribute to their own support.

Notice the number of assumptions in this statement. Is the susceptibility gene really necessary to account for the maintenance of such a tradition of self-sacrifice? If suicide of the old can develop as a cultural tradition under ecological pressures, and incidentally be rationalized by religious belief and mythological themes, why, as long as the pressures continue, do we need the additional explanatory device of genes? The explanation becomes more cumbersome and complex, rather than simpler and more elegant, by the introduction of this element. Moreover, the fact that such suicides disappeared rapidly under the impact of culture contact and the resulting reduction in the threats of starvation suggests that genes were not involved. If they had been, the cultural pattern would not have disappeared so quickly!

Hallowell's discussion of the important role played in human life by a normative orientation may shed significant light on this situation. Rules of right and wrong are set up by social groups, internalized by individuals, and also, in a variety of ways, enforced by communities. These rules, in many instances, may be related easily to problems of group survival. J. H. Barkow has sought to show the importance of Hallowell's work as a corrective to the reductionism of sociobiology. He sees the ideas of "self and social norms" as a "challenge to sociobiology" that it can ill afford to ignore (Barkow 1978:102).

It is certainly true that the behavior of human beings, like that of other animals, has a biological basis, if by that we mean that we cannot develop or acquire behaviors that are biologically impossible for us. Human beings have never learned to live under water or to fly simply by their own force. Some, however, have invented means of supplementing their bodily capacities with artifacts—from snorkels to airplanes. Moreover, this biological basis involves a considerable flexibility to acquire new behavior, to learn, and to unlearn a broad variety of activities.

How broad the cross-cultural range of variations in behavior and in behavioral dispositions may be will be one of our concerns throughout this book. The question of variability is linked to another, that of a shared human nature. This idea, too, in a number of guises, will be our continuing theme.

**UNILINEAL CULTURAL EVOLUTION**

The paleoanthropologist [the schizophrenic patient] has regressed to the egocentric speech of the child . . . We know that the child's speech has some elements of the speech of primitive people . . . Therefore . . . the specific paleological thought and speech processes of the schizophrenics are in essence those of primitive people . . . The specific laws of language in schizophrenia show that they are the same as those of primitive people or even those of higher animals (Domarus 1944:122, cited in Goldstein 1960:100).

This passage is taken from the writings of a psychiatrist, a well-known expert on schizophrenia. His notions concerning the relationship among mental illness, childhood, and primitives embody some of the essential ideas of an approach to evolution that had wide currency in the nineteenth century, and which lingered on into recent times in areas outside of anthropology.

The psychohistorian Lloyd de Mause (1974:1) illustrates another aspect of this tradition. Writing on "the evolution of childhood," he states: "the further back in history one goes, the lower the level of child care, and the more likely children are to be killed, abandoned, beaten, terrorized, and sexually abused." Of antiquity, he says: "parents routinely resolved their anxieties about taking care of children by killing them."

Anthropology is a child of the second half of the nineteenth century; it came into being as a named, field of study only a little more than one hundred years ago. Those who became the first anthropologists—in England, Germany, France, the United States, and elsewhere—brought to their studies a variety of back-
The basic problem these men confronted was to order vast quantities of new information pouring in from all parts of an increasingly complex world. Part of this information came from the colonial expansion of the European empires, as it is now fashionable to point out. However, it must be remembered that colonial expansion began in the Age of Discovery of the fifteenth century, with Portuguese and Spanish explorations in Africa, in the Far East, and in the Americas. At the end of the nineteenth century, only parts of Africa remained to be divided up. On the other hand, systematic archaeology was just beginning in Europe, with the first discoveries of Paleolithic cave paintings and the first recognition of remains of fossil man. The date of the discovery of Neanderthal man (1856) almost coincides with that of the publication of Darwin's *Origin of Species* (1859).

The intellectual climate of the times was dominated by the concept of evolution and by the idea of progress. It was these concepts and ideas predominantly that served the early anthropologists as ordering principles for their collection of information. These principles had to accommodate not only the diverse cultures of exotic peoples—American Indians, Hawaiians, Australian aborigines, Africans, Siberian tribes, and ancient civilizations such as those of India, China, and Japan—but also what was known of the development and traditions of classical antiquity, of the archaeological discoveries in Egypt and Mesopotamia, of European folklore and peasant traditions (research into which was promoted by Romanticism), of prehistoric archaeology, and a good deal more. The dominant method employed was comparison, the linking of elements, often taken out of context, to establish parallels, and building on these, evolutionary stages. Behavior at an "advanced level" that resembled, on some formal basis, behavior at some "lower" level could be dubbed a "survival." In this manner, it was possible to explain a good many oddities. The maypole of English peasants was clearly a survival of the fertility rites of Neolithic peoples, and carrying a bride over a threshold a survival of marriage by capture. Sir James Frazer, in attempting to explain a ritual of classical Rome, in his twelve-volume work, *The Golden Bough* (3rd ed. 1911), plucked information on divine kingship, magic, and fertility rites from among peoples at the ends of the world, removed in time and space, without regard to possible historic connections.

In spite of these strictures, it must be remembered that the nineteenth century pioneers developed a great many of the basic ideas of twentieth century anthropology. They brought together vast quantities of information, and they formulated most of our basic approaches. Science, as Elizabeth Colson (1976) has pointed out, works not by solving one group of problems and then moving on to the next, but rather in a spiral fashion: preliminary, often largely erroneous answers lead to new questions. We ask many old questions today, distinguished above all by a change in language (or jargon), and we often are unaware that our predecessors already have cleared part of the ground.

The basic approach of the nineteenth century anthropologists was psychological. As we have already seen, Tylor's definition of culture contained important psychological elements: learned behavior and cognitive orientations. Tylor (1958 [orig. 1871] vol. 1: 1) tells us that he is interested in the "laws of human thought and action," and that in his work he gives "special consideration to the civilization of the lower tribes as related to the civilization of the higher nations." He refers to "laws of human nature." Although he makes frequent references not only to "lower tribes" but also to "lower races," he also makes the following statement:

The details of the enquiry will, I think, prove that stages of culture may be compared without taking into account how far tribes who use the same implement, follow the same custom, or believe the same myth, may differ in their bodily configuration and the colour of their skin and hair (Tylor 1958 vol. 1:7).

Thus, human thought and behavior are subject to laws that can be discovered. Human culture has evolved through time. The stages of this evolution can be discerned through the study of living groups. And though groups of humans may differ as to race, race is irrelevant to the study of human thought and behavior.

Tylor's definition of culture is a general one that applies to "man as a member of society." He does not limit or specify kinds of societies. However, Tylor and his contemporaries were concerned with "primitive" culture, for they wished to trace the evolution of culture from its earliest stages. The word "primitive" has two meanings: "simple" and "early." It was used in both these senses. Looking at the "simple" cultures to be found in the second half of the nineteenth century, anthropologists identified them with "early" cultures. "Savage life," says Tylor (1958 vol. 2.444) "carrying on into our own day the life of the Stone Age, may be legitimately claimed as representing remotely ancient conditions of mankind, intellectual and moral as well as material."

The "higher cultures" of the day were thought to have evolved from early beginnings, remnants of which could still be observed. But what were the origins, the earliest stages? How, for example, did religion begin? A belief in spirits—Tylor's minimum definition of religion—arose. Tylor held, from a primitive need for explanations of life and death and of dreams and trances. (Notice the reference here to a very "modern" problem, altered states of consciousness.) Tylor speaks of "ancient savage philosophers," "thinking men, as yet at a low level of culture," who sought answers to what are essentially intellectual questions. Thus, he argues, they developed a doctrine of the soul and of spirits. "Evidence" for these claims is produced in the form of examples from many peoples in all parts of the world, ancient and contemporary, who indeed hold a belief in souls, departed
ancestors, spirits, and so on. But how can we be sure that, even though a belief in spirits may be universal in all contemporary traditional societies, it was indeed the earliest form of religion, or that it arose in response to questions of the sort Tylor suggests? The fact is, we cannot. Others, such as Durkheim and Freud, proposed that totemism was the earliest form of religion, for they considered the Australian aborigines to represent the oldest type of humankind. None of this speculation, of course, can be proven.

From the point of view of psychological anthropology, one important point is at issue here: the classical evolutionists believed in the evolution of the human mind. They sought to show, through the study of contemporary primitives and of the remains of ancient cultures, not only the development and progress through time of technologies and institutions but, first and foremost, of the human mind. They were concerned with the human capacity to perceive, formulate, and resolve problems, both of an intellectual and a practical nature. They believed that there were laws of human thought that would be revealed by their research. Theirs was essentially a psychological enterprise.

The Influence of Evolutionary Theories of Culture

Much of what these early anthropologists wrote was widely read by the educated people of the day. Indeed many popular notions about "primitive" cultures that are still current derive from that period. We need only to look at reports on television or in newsmagazines every time a new "isolated Stone Age" group is discovered, or to read of how rapidly some group in the Philippines or in New Guinea has moved "from the Stone Age to the Space Age," in order to hear echoes of nineteenth century views that somehow equated modern peoples with our prehistoric forebears, making them, by a sleight of hand, our contemporary ancestors. Such reports ignore the fact that all present-day peoples have equally long histories; they have all had time for special elaborations of some aspects of their cultures, even if some have not developed complex technologies.

The early anthropologists stimulated the curiosity of their readers by their reports of exotic materials, and they caused them to think about their own societies as well. There were a great many amateur anthropologists, travelers and observers as well as folklorists, who collected customs, tales, songs, and sayings in their own countries. How widespread this amateurism was is shown by the fact that Charles Dickens satirized it in The Pickwick Papers.

Among the educated readers of anthropological works were a number who have deeply influenced the world of our own day. Karl Marx and Friedrich Engels were evolutionists and believers in progress. Lewis Henry Morgan's Ancient Society (1877) stimulated Engels' work, Origin of the Family, Private Property and the State (1884). Another was Sigmund Freud, the founder of psychoanalysis, whose book Totem and Taboo (1912–1913) reveals a wide reading of anthropological theories and ethnographic descriptions.

Recapitulation Theory and Child Animism

From the beginnings of anthropology, some scholars were interested in primitive cultures because they thought that their study could help to solve some basic intellectual questions. We have already referred to the matter of origins. As we have seen in the earlier portion of this chapter, this subject has returned in a different form. We now do not believe that we can reconstitute the specific origins of behaviors or institutions; instead, we seek to identify the roots of human behavior in our primate nature.

Another, related concern of classical evolutionists, as we have seen, was the evolution of the human mind. Now, if that evolution were reflected, as they thought, in the various stages of the evolution of culture, then it would appear to follow that primitive societies are characterized not only by early stages of culture but also by early stages of mental development. It was, and regrettable still is, popular to say that mentally as well as socially and technologically, primitive societies reveal "the childhood of humanity." This analogy with childhood had important intellectual implications, as well as political ones.

At the time this argument was formulated, the reverse also was asserted: the child in civilized society relives the development of the species, so a parallel may be seen between stages of childhood and stages of cultural evolution. This assertion is a psychological application of the principle known as Haeckel's Law, which states that individual embryonic development recapitulates the development of the species. It is encapsulated in the phrase "ontogeny recapitulates phylogeny."

Recapitulation theory played an important role in the growth of developmental psychology, and it was incorporated into some of the tenets of psychoanalysis. Reviewing its impact, Hallowell notes that at the end of the nineteenth century educators in the United States attempted "to correlate the succession of subjects in the curriculum with the 'cultural epoch' theory of ontogenetic development" (Hallowell 1974 [orig. 1939]:15). This attempt is all the more remarkable in that little, if anything, was known of the thought processes of "primitive peoples" except as they were reflected—or supposed to be reflected—in cultural practices, myths, and rituals of living primitives, and even they were known imperfectly. The presumed similarity between living primitives and their, or our, prehistoric ancestors was not seriously questioned. Much of this kind of theorizing was certainly due to a lack of actual contact with "primitives" or even with good fieldwork reports.

Traces of this approach lingered for a long time. Some are to be found in the earlier writings of the influential Swiss psychologist, Jean Piaget. For example, in Judgement and Reasoning in the Child (1928), Piaget observes a discontinuity between childish and adult thought in European, "civilized" children. He proceeds to identify childish patterns of thinking as "savage," that is, as characteristic of an earlier stage in the development of humankind. His findings, as Margaret Mead has put it:
were strongly suggestive that there were important parallels between the phenomena which anthropologists had described as animism and the observed spontaneous thought of young children. At the same time this parallelism was essentially inconclusive. The investigator merely compares a series of experiments or recorded observations upon civilized children with a type of thought which could be inferred from the myths and institutions of primitive man. Such a comparison was suggestive only (Mead 1967 [orig. 1932]:214; italics added).

Formulating the problem as one of child development, Mead undertook to study it among the Manus of the Admiralty Islands, in Melanesia. She stated the aim of the research in the following terms:

Was the thought of primitive children characterized by the type of animistic premise, anthropomorphic interpretation and faulty logic, which had been recorded for civilized children, or was this type of thought a product of a special social environment? If such thinking were characteristic of the primitive children investigated, what was the result of attaining intellectual maturity in an atmosphere congenial to such thought, rather than under the influence of an education informed by the spirit of western science? (Mead 1967:215).

On the basis of her observations of Manus children under the age of twelve, as well as some ingenious experiments with them, Mead concludes:

Manus children not only show no tendency towards spontaneous animistic thought but . . . also . . . a negativism towards explanations couched in animistic rather than practical cause and effect terms. The Manus child is less spontaneously animistic than the Manus adult (Mead 1967:233).

Furthermore, since the animism of Manus adults is learned as part of adult culture, “animistic thought cannot be explained in terms of intellectual immaturity” (Mead 1967:237).

Commenting on Mead’s study, on his own research among the Saulteaux Indians, and several other related investigations, Hallowell remarks somewhat wryly:

We are thus faced with a paradox. The children of savages are often less childlike in some respects than children in occidental society. Yet when these same children mature, their adult mentality has often been equated with the mentality of occidental children at the earliest levels of development. Perhaps we, too, need to make sure that we are not confusing fantasy with reality! (Hallowell 1974 [orig. 1939]:31).

The story of child animism did not end there. In 1958, Gustav Jahoda, who was at that time working in West Africa, conducted what he called “a critical survey of cross-cultural research” on this subject. He found a body of studies using variable methods and showing some inconsistencies in findings. Yet he was able to conclude that, with the exception of Mead’s work, all the studies sup-

ported the minimum requirements of Piaget’s theory. Piaget had defined animism very broadly as “the tendency to regard objects as living and endowed with will,” whereas Mead’s definition went much beyond that (Jahoda 1958a). Jahoda went on to carry on his own research on animism among school children in Ghana, and his findings also supported Piaget’s expectations. What percentage of his group of children responded “animistically” depended greatly on the specific test materials used (Jahoda 1958b).

Mead’s full discussion of this issue had to wait for another twenty years. Then, however, she vigorously reaffirmed her position by showing substantial patterned evidence of the absence of animistic thought in Manus children (Mead 1978). Her article shows the difference between the work of psychologists and anthropologists. This discrepancy will be discussed fully in Chapter 6.

**Psychoanalysis**

Freud recognized universal stages of child development of a different kind. These *psychosexual stages*, which form a keystone of psychoanalytic theory, were originally constructed on the basis of work with adult patients, and only secondarily based on the observation of children. Freud incorporated into his theory the concept of recapitulation together with the hypothesis of the inheritance of acquired characteristics and the general tenets of cultural evolution. Like his one-time associate, C. G. Jung, he read widely in the contemporary anthropological literature. However, whereas Jung believed that the study of the myths and rituals of primitive peoples could shed light on the problems of his patients, Freud, to the contrary, held that the bizarre thoughts and actions of neurotic patients could help to explain the rituals of “savage” societies.

To the equation of child and primitive, Freud added one more item, the neurotic. He considered neuroses to be failures in maturation, that is, fixations at one of the stages of childhood development. Thus, there was an identity—albeit partial—between child and neurotic. However, since childhood was regarded, in the general pattern of the recapitulation theory, as repeating the stages of the development of the human race, it seemed to follow that neurotics were fixated, or arrested, not only at a given stage of individual, or child, development, but also at a given stage of human development, to be identified with that of “savage” society.

Freud was struck with what appeared to him to be important similarities between certain neurotic symptoms of individuals and ritual behavior, particularly, although not exclusively, the ritual behavior of primitives. In his book, *Totem and Taboo*, he sought to explain certain phenomena described by various anthropologists and missionaries in their studies of primitives. Specifically, he was interested in totemism and the extension of the incest taboo among Australian aborigines. He thought that these beliefs and practices could be understood by treating them as analogous to symptoms observed among his neurotic patients. At the same time, in the characteristic fashion of his day, he attempted
also to reconstruct the origins of these practices and to imagine how totemism and the incest taboo might have come into being.

It should be emphasized that, although Freud, together with most of the anthropologists whom he read, held contemporary primitive societies to represent an earlier stage of humanity than "civilized" Western society, he did not believe it to be the earliest stage, at which the incest taboo was instituted or the practices of totemism and exogamy were begun. In his words: "We shall have to admit that even under the animistic system advances and developments took place which are unjustly despised on account of their superstitious basis" (Freud 1950:97). Even more important is his observation that to call primitive beliefs "superstitions" and to hold, as many of his contemporaries did, that the behavior of primitives is due to these "superstitions" is to explain nothing. Rather, Freud argued, it is important to discover the motivations that underlie these "superstitions." He claimed that the methods of psychoanalysis could be of particular value in unearthing these hidden motivations, of which the people themselves are unaware. However, rather than seeking access to primitives, he asserted that they could be analyzed by applying to them the findings derived from the analysis of the symptoms and complexes of neurotic patients. Nonetheless, Freud himself did not believe that there was an identity between neurotics and primitives, but only an analogy. His cautionary remark on this subject has a curious ring to our ears:

nor must we let ourselves be influenced too far in our judgement of primitive men by the analogy of neurotics. There are distinctions, too, which must be borne in mind. It is no doubt true that the sharp contrast we make between thinking and doing is absent in both of them. But neurotics are above all inhibited: thought passes directly into action. With them it is rather the deed that is a substitute for the thought (Freud 1950:161; italics in original).

Here, in the conclusion to Totem and Taboo, Freud seems to suggest that the apparent similarities between neurotics and primitives actually disguise important differences. What is one to make of this passage? Paul (1976) believes Freud was not referring here to contemporary primitive peoples, but rather to "primordial man." Yet the differences between the reconstructed past and contemporary groups remain uncertain, at best, in Freud's writings.

Anthropological Criticisms of Psychoanalysis

U.S. anthropologists who had fully rejected cultural evolution by the turn of the century and who were strongly steeped in fieldwork and first-hand contact with so-called "primitives"—primarily American Indians—criticized Freud's forays into anthropology severely (for example, Kroeber 1972a, 1972b [orig. 1920, 1939], Du Bois 1937, Hallowell 1974 [orig. 1939]). Among the important strictures they levelled against Freud was the observation that Freud had accepted, perhaps uncritically, a number of indefensible notions of the evolutionists. He had, in other words, read the wrong anthropologists.

First and foremost, there was the idea that contemporary primitives were to be identified with early humans, or that they were in some way childlike. Critics pointed out that Freud did not base his discussion on any first-hand work with "primitives" and that, indeed, remarkably little was known about the psychological life of individual primitives even in the late 1930s. Also, it was argued vigorously that the institutions and customs of human societies, whether primitive or modern, must not be identified with individually developed or "invented" symptoms of neurotic patients. "Primitives" acquire the customs of their society in the process of socialization, whereas neurotics develop their symptoms as part of their own personal psychological distortion. How can we impute unconscious motivations inferred from certain ritual behaviors or social institutions to people who did not invent the particular practices or institutions, but merely accept them as part of a tradition handed down from earlier generations? Although this objection seems well taken, the matter is a bit more complex. As Spiro (1967) has pointed out in his discussion of Burmese supernaturalism, if institutions do not correspond to individual motivations, they soon lose their hold and become obsolete, or are modified in ways that make them personally as well as socially meaningful.

In the 1930s and 1940s psychoanalysis became a major influence on intellectual life in the United States; it affected cultural anthropology deeply, as it affected other fields of intellectual endeavor (for example, Brosin 1952). However, for it to become fully relevant to anthropology, it was necessary for anthropologists to weed out of psychoanalytic theory a series of unacceptable elements, which were not original with Freud, but had been taken over from an earlier and outdated anthropology. Both for the anthropologist and the psychoanalyst it became important to study individual life histories and individual development in diverse societies, and to review, among other things, the idea of an invariant series of developmental psychosexual stages through the direct evidence of primitive peoples. As a result, both anthropology and psychoanalysis have been enriched. Not only did culture and personality emerge as a subdiscipline of cultural anthropology from this interaction, but cross-cultural study has had repercussions on psychoanalysis. This mutual benefit can perhaps be seen most clearly in the work of Erik H. Erikson. Discussing his study of the Yurok and Sioux Indians, he notes:

Even "primitive" societies must avoid doing just what our analogistic thinking would have them do. They cannot afford to create a community of wild eccentrics, of infantile characters, or of neurotics. In order to create people who will function effectively as the bulk of the people, as energetic leaders, or as useful deviants, even the most "savage" culture must strive for what we vaguely call "a strong ego" in the majority or at least in its dominant minority—i.e., an individual core firm and flexible enough to reconcile the necessary contradictions in any human organization, to
integrate individual differences, and above all to emerge from a long and fearful infancy with a sense of identity and an idea of integrity (Erikson 1963:186).

We have come a long way from that set of imaginary triplets, the child, the savage, and the neurotic!

CONTEMPORARY THEORIES OF CULTURAL EVOLUTION

As we noted in the preceding section, by the early years of the twentieth century classical evolutionaryism had been rejected by U.S. anthropologists and many scholars elsewhere. In part, this rejection was due to fieldwork which provided a view of "primitives" that did not correspond to the superstition-ridden savages of the armchair scholars. The American Indians, South Sea Islanders, and Africans whom anthropologists encountered were people who concerned themselves with making a living, rearing their children, managing conflicts within their societies and with their neighbors, coping with illness and misfortune, and solving numerous other practical problems of daily living.

The concept of culture revealed its usefulness in this research. Increasingly, anthropologists came to stress the uniqueness of each culture, and the relativity of the ways in which the many cultures under investigation solved what was, essentially, a constant set of problems. Grant theoretical systems were pushed into the background by this effort to collect data and to see each culture as a unique whole. In the resulting books and monographs the "savages" appeared no more irrational than the anthropologists or their readers.

At the same time, the intellectual climate was changing. The First World War, the worldwide economic depression of the 1930s, the coming of fascism, and the shadow the Second World War cast before it all contributed to the destruction of the comfortable Victorian image of progress and of the glory of Western civilization that had formed the cultural and social background of classical evolutionaryism. Perhaps, some began to wonder, primitive societies, in their simplicity, were at least in some respects superior to modern industrial society with its social and economic ills. The social context of the classical evolutionary world views collapsed, just as much of the comparative anthropological evidence had destroyed some of the simple assumptions and fragmentary evidence on which those theories had been built in great measure.

The Return of Evolutionism

Prehistoric Archaeology. During this period, a number of basic facts about human cultural development were being firmly established. Prehistorians had shown that humankind everywhere had lived for a long time in small groups, subsisting on hunting and gathering.

In some respects, such a mode of life could still be observed in a few relatively isolated societies. These societies were surviving in refuges that were then of little economic interest to others: in semideserts, jungles, and in the Arctic, either where crops could not be grown or where modern technology appeared to be of little use. (By the 1970s, these areas were no longer unusable, and the pressure exerted on the few remaining hunting and gathering societies is now much greater.)

Such foraging had been the only possible pattern of subsistence for human groups until the development of plant and animal domestication in postglacial times. The best known center of this new mode of existence was the Near East. Other centers, particularly in the New World, came to be known later. In the Near East, in time, towns grew up and, eventually, larger political organizations.

This general outline of development began to take shape as prehistoric archaeology of a systematic type enlarged its scope. The Australian-born British archaeologist V. Gordon Childe summarized and popularized it in two widely read and highly influential books: Man Makes Himself (1936) and What Happened in History (1942). Childe, who has been called a "neo-evolutionist," took the developmental stages of classical evolutionaryism, as named and identified by Morgan, and gave them new meanings and new life. He redefined the stages in economic terms: savagery now referred to an economy of food gathering (including also hunting and fishing), barbarism to village life dependent on the domestication of plants and animals, and civilization to urban life. Furthermore, Child spoke of the changes from one stage to another as "revolutions": the Neolithic Revolution brought about the domestication of plants and animals, village life, and the development of a large series of crafts and skills; and the Urban Revolution brought about the establishment of town life.

Writing in the less optimistic period of the 1930s, Childe also redefined the word "progress." He sought to give it an objective meaning, to remove its naive, value-laden, even mystic overtones. To do so he turned to an essentially biological sense of the word. Like the Industrial Revolution, he argued, the Neolithic Revolution and the Urban Revolution could each be thought to have been steps of progress, to have been "successful," because each had resulted in an increase of the human population. That is, in biological terms, it could be claimed that each of the "revolutions" had improved the adaptation of the species.

The position Childe outlined was, essentially, an historical one. He was concerned with a series of unique, specific developments in the growth of civilization in the Near East. Even the title What Happened in History suggests a historical orientation. His evolutionaryism consisted primarily of his concept of "progress" and his delineation of developmental stages, the names of which he had taken over from Morgan; also, there was his emphasis, essentially Marxist, on the material and technological basis of cultural evolution.

In spite of his evolutionaryism, his approach met with little opposition among the generally antievolutionist cultural anthropologists of the period. For example, M.
J. Herskovits, in an influential and widely used textbook, praised Childe's work and his orientation, although he disliked the specific names of the stages, with their pejorative overtones (Herskovits 1948:477). Clearly, variations in cultural complexity were most readily acceptable to the anthropological community when these variations referred to technology. Evolutionism was also more acceptable when stages of development were applied to the archaeological record, where sequences could be observed.

Problems still arose when concepts of complexity and criteria of evolution were introduced into the nontechnological realm, and when attempts were made to apply them to contemporary populations. In this situation, evolutionism ran head-on into the position of cultural relativism, vigorously espoused by Herskovits and others of his contemporaries. To say that certain cultural patterns were more or less complex, or more or less evolved, appeared to be assigning positive or negative values to them, to be saying that they were either superior or inferior. Relativism held that anthropology, like all science, was nonjudgmental, and that each culture provided a meaningful and satisfying life for the people who lived by it.

A second and related difficulty in reintroducing evolutionism was that under the influence of functionalism, cultures were being studied holistically, as total unique entities. Today, we would say that each culture is a system of interrelated parts. However, these very ideas of functional interpretation and of interrelation suggest that at a given level of technological and economic "evolution," we must expect a degree of coherence between the subsistence base and other aspects of the culture. As we shall see, this idea of interrelatedness has had profound consequences for cultural anthropology in general, and specifically for psychological anthropology.

Leslie White's "Culturology": At about the same time, an evolutionist position also was being advocated in the United States by a cultural anthropologist, Leslie A. White. Virtually alone among his colleagues, he had rediscovered L. H. Morgan, and he saw himself as Morgan's heir. He argued that Morgan and Tylor had been on the right track in their studies of culture in an evolutionist framework, and he strongly contrasted an evolutionist approach of the kind he advocated with the historical emphasis on unique cultures that was dominant at the time.

Like Childe, White sought an objective criterion of progress, and he formulated one in his "basic law of cultural evolution": "culture evolves as the amount of energy harnessed per capita per year is increased, or as the efficiency or the instrumental means of putting the energy to work is increased" (White 1949:368-369). Clearly, there is a great advance in energy available when animal energy replaces human energy, and when the power of wind and water or steam and electricity replaces human and animal energy.

White combined his evolutionist views with an energetic antipsychological stance. Writing in the 1940s, in the heyday of the culture-and-personality move-
In reviewing the history of this conflict, Spindler suggests that, particularly in the earlier years of the century, the position of White and other "culturologists" "reflects the struggle of anthropologists to disengage from the bio-racist determinism that ignored the observations about cross-cultural diversity that anthropologists were beginning to assemble" (Spindler 1978:14). Is it possible to recognize the reality of cultural diversity and at the same time recognize the significance of psychological processes for an understanding of human behavior? This is the challenge of psychological anthropology.

M. K. Opler, in an article originally written to honor White, suggested that even in an evolutionary anthropology, psychology could play an important role. Contrary to what he saw as the prevailing mode in anthropology in the United States, he thought psychology should not be used to explain cultural differences, but should be viewed as resulting from them. Thus, Opler argues,

a generalized psychology of people ... depends upon the evolution of the culture and is illumined by the material conditions of existence of the culture. Psychology, then, is a result of the environmental influences in which culture and the conditions of cultural existence always operate. There is no doubt an evolution of behavior ... as an ingredient and as a consequence of those developments (Opler 1967 [orig. 1960]: 222-223; italics in original).

Opler criticizes students of culture and personality, as Aberle (1960) did, for giving primacy to psychology, and specifically to personality, rather than to culture. Both Opler and Aberle advocate, as we have seen, that instead of using an approach in which psychology serves to explain culture, anthropologists should develop a research strategy in which personality and behavior are studied as they are affected by culture. Culture, in this perspective, would be seen as the causative agent, and psychology, in Opler's words, as the "dependent variable."

It is interesting to note that, at about the same time, another anthropologist expressed an almost diametrically opposite view. M. E. Spiro (1961) criticized much of the work of students of culture and personality for doing precisely what Aberle and Opler were urging them to do and what they claimed was lacking in the researches being published. Spiro argued that the initial claim of the culture-and-personality approach had been amply proven: it was by now evident to all, anthropologists and psychologists alike, that culture exerts a significant and powerful influence on personality formation. By persisting in research to demonstrate this connection, anthropology merely becomes a "handmaiden" to psychology, providing it assistance in the solution of one of its central problems. To the contrary, argued Spiro, what was now needed was a reorientation of the culture-and-personality approach: the use of personality concepts to help us to understand the operation of social structures, which, after all, is the central concern of anthropology.

These two positions, summarized here briefly, reflect not only different formulations of the goals of psychological anthropology, but also widely divergent assessments of the work already accomplished in this field. Moreover, they prescribe very different strategies for the achievement of what they perceive to be the goals peculiar to anthropology as a discipline, as opposed to the goals peculiar to psychology. The only point of agreement between these two positions appears to be that cultural anthropology is indeed distinct from psychology, and that it must seek to preserve its own identity and not do the work that properly belongs to psychology.

Julian Steward's Influence. By the 1940s, cultural anthropology saw itself confronted with the need to bring order into an accumulation of vast quantities of information. Hundreds of descriptions of individual societies now existed, and there was an urgent need for ordering principles and methods of analysis that could be applied to these data. One primary approach that had developed was based on historical and geographic distributions of traits and trait complexes. For example, Julian H. Steward, who edited the monumental Handbook of South American Indians (1944-1950), initially proceeded along essentially geographic lines in organizing materials spanning two continents and many centuries.

At least in part as a result of this work, he became dissatisfied with the geographic classification. Instead, he formulated what he termed a "functional developmental" classification, dealing specifically with cultural developments in two regions of the New World, Mesoamerica and Peru (Steward 1948). This limited statement was followed by a more general one, noting regularities and ordering information drawn from six major areas of the world: Mesopotamia, Egypt, India, China, Mesoamerica, and Peru (Steward 1949). Steward later came to speak of "cultural types" and "levels of socio-cultural integration." These levels correspond basically to what others have termed evolutionary "stages." Steward eventually called his theoretical approach "multilinear evolution" (Steward 1955). One might say, Steward had arrived at an evolutionary position inductively, by looking at cultural data, rather than by reconsidering the work of the classical evolutionists. The emphasis on cross-cultural comparisons in Steward's work is of particular importance.

Steward himself did not contribute directly to psychological anthropology. However, his own work and that of his students and others influenced by him, like that of White and his "school," has had profound consequences for all of cultural anthropology, including psychological anthropology. As Robert Carneiro (1973) has pointed out, in the century that elapsed between the 1860s and the 1960s, the position of evolutionary theory in anthropology has come full circle: whereas it was the dominant theoretical position in anthropology in its earliest phase in the nineteenth century, it came under severe attack at the end of the century and then was virtually eclipsed for almost fifty years. At present, in at least some respects, it has regained a dominant position in cultural anthropology in the United States.

Other Factors Favoring Evolutionism. The terms "culture and personality" and "psychological anthropology" will both be used in this book. The first of these
will refer to the somewhat narrower range of concerns that were the principal subject of the original field of study bearing that label. The second will cover a much larger area that includes, among other topics, such current interests of anthropologists as studies in perception and cognition. This is a subject that has been the concern of social psychologists for a long time. We shall see, however, that there are important differences in the ways in which the two disciplines approach topics in which they appear to have common interests.

In this book, we shall attempt to cast a wide net, to provide the reader with a broad view of our field. Our perspective will be cross-temporal as well as cross-cultural. That is, we shall deal with the study of behavioral evolution, of cultural evolution, and of the psychological relevance of culture change as well as with comparative, cross-cultural investigations. We shall be primarily concerned with work that has been carried out by anthropologists, but at times we shall need to make reference to the research and writing of colleagues in neighboring fields. Our emphasis will be on research among peoples of diverse traditions, yet occasionally we shall find examples closer to home. Since the aim of examples is to reveal principles, readers may well find other examples, from their own experiences, to enlarge on the issues raised in these pages.

In addition to the work of White, Steward, and their students, several other factors have contributed significantly to the present importance of evolutionary theory. One such factor was the Darwin Centennial celebration at the University of Chicago in 1959 (Tax 1960). This event brought together anthropologists of various persuasions as well as representatives of other disciplines. One of Hallowell’s important papers on behavioral evolution was presented and discussed on that occasion (Hallowell 1960). A renewed interest in Marxism among social scientists has also contributed to the general revival of evolutionary theory.

The Cross-cultural or Holocultural Method

The introduction of statistical methods for the analysis of large masses of data, made possible by the introduction of computer technology, has had a major effect on anthropological research. They have led to types of studies that previously could hardly have been envisaged. These approaches have been of particular importance for psychological anthropology within an evolutionary framework. We will therefore take a brief look at the development of this area of comparative studies, now generally referred to as “holocultural” research.

The modern cross-cultural statistical (or holocultural) method had its origin in an attempt to bring order into the vast storehouse of cultural data. Beginning in the 1930s G. P. Murdock, at Yale, organized a project that led to the development of the Human Relations Area Files. This project involved bringing together materials on hundreds of cultures and organizing them under topical headings and subheadings. These large quantities of information were coded for analysis by electronic data processing methods. Finally the worldwide distribution of various institutions and cultural practices could be counted, and for the first time a great range of hypotheses could be tested by statistical means. The Files have made it increasingly possible to make meaningful generalizations that are based on more than a handful of societies. Anthropologists, after all, have always engaged in generalizations; yet they have never had ready access to large quantities of comparable materials. In fact, some generalizations in textbooks are rather impressionistic.

A sizable number of the holocultural studies to date have involved ordering data along evolutionary lines. For instance, several scales of subsistence economy and of cultural complexity have been devised. Generally, these scales distinguish hunting and gathering economies from those dependent on animal husbandry and various types of agriculture. Scales of societal complexity have dealt with such variables as class stratification, political organization, urbanization, and so on. Note that, on the whole, such scales do not depend on qualitative judgments, but on quantifiable aspects of culture and social organization. Robert E. Carneiro, who has developed a measure of cultural complexity (The Index of Cultural Accumulation), suggests how to apply it: “In comparative studies of, say, cross-cousins marriage, ancestor worship, or any cultural phenomenon, one might wish to see how the occurrence of the phenomenon correlated with cultural level” (Carneiro 1970:853).

When the term “evolution” is used in the context of cross-cultural studies, we are not dealing with attempted reconstructions of hypothetical past societies that are known to us only fragmentarily, as classical evolutionists often did. Nor are we making any inferences about necessary relationships between societal level and other cultural phenomena, for the statements of association only deal with probabilities. Furthermore, we are making no projections about the future of the societies we deal with, as we might if we were thinking of evolution as an inevitable historical escalator, as it were. Many of the traditional societies we deal with in our studies are at present undergoing drastic transformations induced not through the evolutionary processes endogenous to the society but through contact with other, more complex groups. The findings of the studies we are about to report are to be viewed within this limited framework.

Subsistence Levels and Psychological Variables. In 1959, Barry, Child, and Bacon published a landmark study. They hypothesized that training in later childhood involves, among other things, preparing children to fulfill adult economic roles. In other words, the characteristic child-training practices of a society represent a suitable adaptation to its subsistence economy. Therefore, they expected societies with high accumulation of subsistence goods, such as those practicing pastoralism or agriculture or some combination of the two, to pressure their children toward obedience, responsibility, and nurturance, which together are termed “compliance.” On the other hand, societies with low accumulation economies, such as hunters and gatherers, who live essentially a hand-to-mouth existence, were expected to pressure their children toward achievement, self-reliance, and independence, that is, toward “assertion.” The findings of this study,
based on ratings of child-training procedures in 104 societies throughout the world, support the hypothesis: high accumulation societies pressure children toward compliance, low accumulation societies toward assertion.

In a later study, Barry, Josephson, and Marshall (1976) confirmed these results, while introducing some refinements and new categories into the research procedure. They note: "Increasing importance of animal husbandry is associated with increasing inculcation of Competitiveness and Responsibility, but with decreasing inculcation of Trust and Honesty" (Barry et al. 1976:101). They also found that "increasing levels of political hierarchy are associated with decreasing degrees of inculcation in Self-Reliance, but with increasing inculcation in Obedience and Sexual Restraint" (Barry et al. 1976:101). However, these differences do not apply equally to boys and girls: for self-reliance the difference among groups is greater for boys; for sexual restraint it is greater for girls.

When adults inculcate behavior and attitudes in their children, they do so presumably because they are concerned that their children, as they grow up, show the appropriate ways of responding to the economic needs of the society, and to their own economic needs; in this case, that they become successful hunters or good farmers. However, by the same token, they are encouraging the development of certain personality traits: competitiveness and responsibility, self-reliance and independence, and so on. Some traits may not be intended but appear as by-products of the general system of education and of social life in a given society: trust and distrust, honesty and dishonesty, for example. Some traits may indeed be antithetical. Thus, the pressures toward obedience and responsibility may be at odds with the development of trust and honesty.

The findings of Barry, Child, and Bacon have been subjected to several field tests. In a series of long-term studies called the Culture and Ecology in East Africa Project (Edgerton 1971), comparisons were made among four societies, all of which included both herding groups and agricultural groups. Using direct measures of personality, Edgerton found pastoralists to be higher than farmers on such characteristics as independence, open expression of aggression, cooperation, and quickness of decision making. Farmers, on the other hand, were lower on independent decision making and more likely to resort to indirect means of aggression, such as witchcraft. The result of these studies is a personality picture of herders as "open" and "independent."

Because of the difference between these results and those obtained by Barry, Child, and Bacon (1959), Charlene and Ralph Bolton and their associates (Bolton et al. 1976) attempted to replicate the work of the Culture and Ecology project in their own research in the Peruvian highlands. Choosing two communities, in one of which herding was the dominant subsistence occupation and in the other of which farming was of primary significance, they tested children for a series of characteristics. Here again the herders were found to be self-reliant and nonresponsible, confirming the results obtained by Edgerton and his group in East Africa. The Boltons also interviewed mothers and found that, where some choice existed about which child to assign to herding tasks, the child's personality appeared to play a significant role. Children chosen to be herders are largely those who are less willing or adept in carrying out household chores or the agricultural chores present in the herding community. In other words, there tends to be a reinforcement of preexisting traits, rather than a development of traits in response.
to the tasks assigned. This finding raises a series of issues that require further research.

Because of the divergence of their results from those of the Barry, Child, and Bacon study, the Bolton's reanalyzed the sample used in that investigation. They found that the high accumulation societies were on the whole based on mixed economies, in which herding was rarely of primary significance. These results must be kept in mind when "high accumulation" economies are compared with those of hunter-gatherers.

**Subsistence Economy and Parental Behavior.** In a major cross-cultural study, R. P. Rohner (1975) investigated parental acceptance and rejection of children in a worldwide sample of 101 societies. By "acceptance" Rohner means "parental love, warmth, and affection" and by "rejection" he means the "absence or significant withdrawal of parental love" (Rohner 1975:44). Such rejection may be expressed either through hostility or through neglect and indifference. In this study, Rohner, too, found subsistence economy to be relevant to parental behavior: he reports that hunters are accepting of their children, whereas pastoralists are more likely to reject them. (There is no significant statistical association between parental behavior and various forms of agriculture.)

Rohner adds the following comment about his expectation of a relationship between subsistence economy and parental behavior:

We predict that parents in hunting societies cannot reject their children if that kind of social system is going to persist. ... Certain personality characteristics are more adaptive than others for the successful maintenance of a hunting way of life. Young men who are self-confident, self-reliant, and independent and who can cope with stress without undue emotional upset are, in the face of a sometimes hazardous, demanding or uncertain food quest more likely to be successful hunters than youths who do not have these characteristics. Successful hunters therefore have a selective advantage in the Darwinian sense . . . (Rohner 1975:115–116).

Rohner here is saying that in order to survive, societies develop child-training patterns that are adaptive for their particular conditions, specifically for the kind of subsistence economy they depend on. Rohner is concerned with parental behavior—acceptance or rejection of children—because it leads to certain personality traits, both in childhood and later. Accepted children acquire self-confidence and independence; rejected children are more likely to become dependent and to have a low self-evaluation as adults. It is these resulting traits that are either adaptive or maladaptive in the food quest, as well as in social relations. This argument concerning hunting societies is also supported by the findings of Barry, Child, and Bacon (1959), which we have just cited. However, in contrast to hunting, "economic systems such as pastoralism provide neither a necessary nor a sufficient basis for parents to either accept or reject their children; acceptance or rejection does not form a significant natural selective pressure in these subsistence economies" (Rohner 1975:116).

Rohner also finds a relationship between parental behavior and three indicators of cultural complexity: the number of levels of political integration, degree of social stratification, and settlement pattern. In Rohner's words, "the more complicated the political structure, the more likely the children are to be rejected; the greater the degree of social stratification, the greater the likelihood that the children will be rejected" (Rohner 1975:117). Finally, parents in sedentary neighborhoods and compact towns are more likely to reject their children than parents in migratory bands and nomadic communities. The latter groups are, of course, also more likely to be hunters. Again, it should be noted that hunters are also characterized by simpler political organizations, and there is less likelihood for social stratification to exist among them than among people with high accumulation economies. The various pieces of the puzzle, then, all seem to fall together.

Barry and his associates (1957, 1976) explicitly or implicitly deal with child-training variables that are intended to produce certain results in the behavior and the personality of children. Rohner, on the other hand, speaks of the "Darwinian" aspect of the process whereby child-training variables and personality patterns developed:

Our argument should not be construed to mean that hunters consciously recognize the dangers of rejection or that pastoralists are aware that the effects of rejection are not "lethal" in their type of economy. Rather, our "Darwinian" analysis pertains to the unintended and unrecognized interaction between economy and parental behavior (Rohner 1975:269 n.24).

The implication here is that certain types of parental behavior originally occurred as a result of trial and error, and that the kind of behavior that produced successful hunters became established in time, because it was "adaptive". Presumably, hunters with ill-adapted personalities failed and those with adapted personalities not only had children but tended to treat them as they themselves had been treated, so the adaptive parental behaviors were selected for. Rohner's view, then, must be contrasted with that of Barry, Child, and Bacon (1959), who hold that certain traits are intentionally inculcated in children.

**LeVine's Model.** R. A. LeVine (1973), whom Rohner does not cite, presents an "evolutionary model" of "population psychology" that takes this distinction into account. LeVine differentiates four types of adaptation.

The first involves the "adaptation of early child-care customs to ecological pressures" (LeVine 1973:132). He notes that certain aspects of infant and child care may not be the result of parental intent. For instance, it is known that family size varies with subsistence economy: families in hunting and gathering societies are smaller than those in agricultural societies. Not only is there high infant mortality in hunting and gathering groups, but there is likely to be an effort to space children, because a woman cannot carry more than one child. This child-spacing is aided by prolonged nursing and also by occasional infanticide. At the
same time, hunting and gathering societies tend on the whole to be monogamous. On the other hand, among agriculturalists, where polygyny is frequent, even where techniques exist for spacing the children of an individual woman, the total number of children per family will be greater. Now, LeVine notes evidence, albeit from the United States, that children from smaller families are higher on achievement than those from larger families, and he raises the question whether unintended early experiences in small families might not provide children with basic personality dispositions "making them easier to train in self-reliance and achievement" (LeVine 1973:132). Conversely, he asks whether "the greater potential for obedience and responsibility of children raised in large families contributed to the selective advantage of large domestic groups once the food producing revolution had occurred" (LeVine 1973:133).

Next, LeVine considers a second kind of adaptation: deliberate socialization. He assumes that basic personality dispositions of children vary randomly in a population, with parents' intentional child-training practices constituting the selective pressure. Through reward and punishment children are pressured to conform to various societal norms. The child is shaped to adapt to society, although adult adaptation cannot be anticipated fully.

This adaptation of the adult is the third part of LeVine's model. He refers to it as "the secondary adaptations of individual personality to normative environments through selective social behavior" (LeVine 1973:133). The adult responds to particular life situations, including required social roles, by modifying attitudes and behaviors. Individuals vary, of course, in the degree to which they are successful in modifying the expression of their underlying personality dispositions, their wishes and strivings, in conformity with the demand of their life situations.

The fourth level in LeVine's model is "the adaptation of aggregate personality characteristics of populations to normative environments through the selective pressures of social sanctions." "Aggregate personality characteristics" means the distribution of observable regularities of behavior in a population or society as a whole, not only in specific individuals. The distribution of behavior patterns is modified by social sanctions to conform to ideals of role performance, social competence, and so on. The social sanctions are rewards and punishment, including the according of social prestige and the possibility of social mobility in some societies. In this case, parents discover what personality characteristics are rewarded by social mobility and attempt to inculcate them in their children. In other words, there is a feedback from the "selective pressures" that act on adults to the child-training behavior of parents. On the other hand, in societies that are stable, where mobility is rare, the norms parents internalized during their own childhood are adequate guides for raising competent offspring.

Ever since the beginnings of investigations into the relationship between a group's personality and its culture, the "fit" between the two has been a subject of considerable debate, and when observers have discovered such a "fit," its origin has been a mystery. LeVine's model neatly explains it by bringing together evolutionary concepts of random variation, selective pressures, and adaptation, and by identifying four levels, at which these evolutionary mechanisms operate, rather than the one level, usually child-training, that other observers have suggested.

Subsistence Economy and Expressive Culture. In considering the relationship between culture and personality in an evolutionary framework, a number of investigators have studied the association between subsistence economy and those aspects of culture that are often termed "expressive": aspects that are thought to tell us something about the emotional pressures typical of given societies. Examples are studies of games, of the religious use of dreams, and of altered states of consciousness.

Roberts, Arth, and Bush (1959) distinguished three types of games: games of physical skill, of strategy, and of chance. They and Teetor (1967) have shown that games of strategy are more likely to be present in agricultural societies, while games of skill and of chance predominate in hunting and gathering societies. Using the child-training variables identified by Barry, Bacon, and Child, Roberts and Sutton-Smith (1962) found games of strategy associated with obedience training, whereas games of skill were linked to achievement training. Games of chance were associated with responsibility training.

Roy G. D'Andrade (1961) used the findings of Barry, Bacon, and Child for research into dreams. D'Andrade identified a group of cultural traits that, together, make up a pattern that he terms the "use of dreams to seek and control supernatural powers." He finds strong correlations between this pattern and subsistence economy: the overwhelming majority of the hunting and gathering societies in his sample use dreams in this manner, whereas only one-fifth of the societies that have both animal husbandry and agriculture do so. The societies intermediary in economic form fall between the two extremes in their use of dreams, although a majority employs them in this manner. D'Andrade also finds a relationship between assertiveness training and the use of dreams to seek and control supernatural powers. However, when economy was statistically controlled for, the correlation was drastically reduced. That is, assertiveness training, in the absence of a hunting economy, turned out not to be significantly related to the dream use pattern. On the other hand, societies in which a married son moves some distance away from his parents are also more likely to have this use of dreams. D'Andrade suggests that the pattern should be understood as related to "what happens to adults, rather than to children, and what happens to men rather than to women" (D'Andrade 1961:327).

Not only dreams but also altered states of consciousness (ASC) are culturally patterned. Bourguignon (1973b) distinguished three types of societies by the form that altered states take in their religious practices: 1) societies that use trance (T), a state that includes such experiences as visions and contacts with supernatural beings; 2) societies that use possession trance (PT) linking altered states to a belief in spirit possession; and 3) societies that use both forms of altered states (T/PT).
In a study that carefully controlled for possible diffusion of these patterns among cultures, Bourguignon and Evascu (1977) confirmed the hypothesis that trance (T) was associated with hunting and gathering, with little stratification and low political complexity, whereas possession trance (PT) was associated with agriculture, class stratification, and a higher degree of political complexity. Societies with both types of altered states (T/PT) were intermediate in subsistence base and societal complexity as measured by stratification and political organization.

Both the studies of dreams and of altered states assume that the use to which such states are put by societies reflects their characteristic stresses on individuals as well as the typical personality characteristics of the population.

Culturally Constituted Behavioral Environments

What is the importance of these scattered findings in the context of cultural evolution? It may be helpful here to think back to our earlier review of behavioral evolution, in which we considered the continuities between humankind and our primate relatives. In our discussion of the evolution of language (pp. 35–36), we referred to Jersin’s concept of “perceptual world.” The perceptual world, he tells us, varies from species to species. That is, the “world” that an animal perceives and to which its actions are adapted is constructed by the animal’s sense organs and by its capacity to process the information it takes in from the environment. Humans, as one species, should be living in a single, common “perceptual world.” However, as Hallowell has pointed out, in the case of Homo sapiens the “world” is always culturally constituted. Information processing is complicated among human beings by the fact that culture, as expressed through language, art, and other symbolic systems, including games, dreams, and altered states, interprets experiences and sensations for us. Not only that: because individuals are born into ongoing cultural systems, they are supplied with a ready set of interpretive categories, so they encounter experiences full of expectations. Therefore members of the same species but of different cultures experience the “same” environment quite differently. Although we may be said to live in the same “objective” environment, we actually live in different “culturally constituted behavioral environments.” A vivid comparison of the culturally constituted behavioral environment of two groups with different subsistence economies and at different levels of societal complexity, who are, however, affected by a common physical environment, is provided by Colin M. Turnbull (1965). He contrasts the world of the forest-dwelling Mbuti pygmies of Zaire who live by hunting and gathering with that of the village-dwelling horticulturalists with whom the Mbuti have a special relationship. Turnbull notes that the vast Ituri forest “is considered as generous and friendly from the point of view of the Mbuti hunters and gatherers, and as niggardly and hostile from the point of view of the village cultivators” (Turnbull 1965:17). Whereas the Mbuti live in or by the forest, the villagers live only in spite of it, for they carry on a constant struggle to clear the land for their plantations.

The Mbuti recognize their dependence on the forest and refer to it as “Father” or “Mother” because, as they say, it gives them food, warmth, shelter, and clothing just like their parents . . . Also, like their parents, it gives them affection . . . The forest is more than a mere environment to the Mbuti. It is a living, conscious thing, both natural and supernatural, something that has to be depended on, respected, trusted, obeyed and loved (Turnbull 1965:19).

By contrast, the world the forest constitutes for the villagers is quite a different one:

As for the Mbuti, so for the villagers is the forest an entity to be reckoned with, upon which life and death depends; it is also an entity which is natural and supernatural. But instead of acceding to the natural, the villagers with their superior technology combat it; and instead of respecting the supernatural in the sense that the Mbuti respect it, the villagers oppose it with fear, mistrust and occasional hate. They hate the forest with evil spirits, and they fill their lives with magic, witchcraft and a belief in sorcery (Turnbull 1965:21).

This example shows more clearly than any abstract discussion could how each group constructs its own “reality,” its own culturally constituted behavioral environment. This process involves what is seen, heard, and sensed; in other words, it is perceptual. It is also cognitive, involving practical knowledge by means of which the natural environment can be utilized or modified. Finally, the process of constructing reality is also affective; many types of emotions are to be found in the relationship between a group and its environment, ranging from love and attachment to fear, awe, and even hatred. Some of this feeling is expressed directly, in practical terms, and some of it in the symbolic language of religion and art.

Is it possible to construct a generalized picture from cross-cultural studies? We shall try to construct a model of the world in which hunter-gatherers live. Before we do so, it must be stressed, however, that because these people live at present in marginal environments, any extrapolation of our model to prehistoric hunter-gatherer populations, however tempting, requires considerable caution. Because of their close dependence on their natural habitat, the conditions of life of hunter-gatherers vary considerably among the several ecological settings in which they are found nowadays.

Generally speaking we expect to find in hunter-gatherer societies a simple technology, with only a small total inventory of material culture. The population will be small, local groups numbering 200 or less. There will be no fixed settlements, and the people will move frequently in pursuit of game or opportunities for gathering. We expect to find a sex division of labor, but no occupational specialization. Large animals always will be hunted by men, although women and children may participate in animal drives. However, in many cases more than half of a group’s subsistence will be provided by the women’s gathering activities. The political unit will be the small band or community, or sometimes the individual
family. Under the economic conditions of band life, we do not expect to find class stratification or great differentials in wealth. The only part-time specialist is likely to be a shaman, who enters into direct contact with spirits by means of trance states. Spirits are likely to be concerned in some ways with the animals that are hunted, and hunting will be central to the morality of the group. Spirits also will be concerned with illness, so the shaman may act as diagnostician and healer, and illness is likely to be a punishment for offenses, whether against members of the community or against the rules of hunting. In the socialization of children, overall indulgence of infants is likely to be high, and children are likely to be accepted by their parents; that is, they are treated with warmth and affection. Children, particularly boys, are socialized for assertiveness, self-reliance, and independence. Games of skill and of chance may be expected to exist, but not games of strategy.

As already noted, hunter-gatherer groups are likely to be small. In addition, they are most probably isolated and must therefore be self-sufficient, for the most part. This isolation and self-sufficiency is reflected in their values (such as independence and assertiveness), in their skills, and in their image of the world. They are likely to have detailed and intimate knowledge of their physical environment: the habits of the animals they hunt, the best places to find water, the location of edible plants, the variations in weather conditions, and so on. The spirit world is intimately related to this natural world of work and experience, and good relations, on a one-to-one basis, must be maintained with the spirits. Contacts with spirits occur in dreams, visions, in shamanistic trances, and, as in North America, in the guardian spirit complex.

With the coming of plant and animal domestication much of this behavioral environment must have changed. The relationship between cultivators and the environment is more complex, reflecting both their negative, hostile relations to it and the positive ones. Rather than utilizing to the best of their ability what is available to them for the taking, people now seek to foster and cultivate certain plants and animals and to fight against others. The Bantu cultivators on the margins of the Ituri forest whom we have contrasted with the Mbuti pygmies represent an example of this duality. Consequently, it is not surprising to find that for these people a variety of hostile forces and beings are present in the universe, as well as benevolent ones. The relationship between supernaturals and humans becomes a collective relationship. Religion, in content, organization, and personnel reflects the complexity of the group and the relationship it entertains with the natural and the supernatural. Human groups among cultivators are larger and more complex than those of hunter-gatherers. Their economy can support a larger population and this population is increasingly differentiated, not only on lines of sex and age; there are now craft specialists of various kinds, and we may expect to find social stratification and increasing political complexity as well. The socialization of children now is also likely to be different, as we have seen, as are norms of role performance. Different kinds of personalities are now prized; foresight, management, self-restraint, and obedience are now valued over generosity, self-reliance, and independence.

All of these changes suggest the possibility that we may be able to speak of an evolution of types of culturally constituted behavioral environments of human groups, much as we can speak of the evolution of subsistence type technology, and social organization. Furthermore, we may be able to discern together with it an evolution of adaptive and preferred personality characteristics.

The interrelationship between personality and culture, then, must include a culturally constituted behavioral environment. This culturally variable "reality" is developed and modified in a variety of ways. First, it develops through trial-and-error acquisition of empirical knowledge. This knowledge is accumulated, on the one hand, by individuals in the course of a lifetime, but it is also the property of the group, for it is passed on to its younger members through the teachings of their elders or of more experienced members of the group. Knowledge and skills in humans, in contrast to other animals, is cumulative and grows rapidly when new adaptations are required, slowly when groups have developed a stable adaptation to their ecological niche.

In this regard it is important to remember that a group's "natural resources" are directly related both to need and to the technological capacity to utilize the habitat. The behavioral environment, however, is not limited to this definition and utilization of subsistence resources. As we have noted in the case of the Mbuti and their neighbors, the habitat is conceptualized in both intellectual (cognitive) and affective ways. A variety of elements enter into the construction of a behavioral environment in addition to empirical knowledge. Among these elements are psychological projections. Experiences of dreams and altered states of conscious-
ness may provide guidelines for behavior and a framework of beliefs within which empirical experiences are interpreted. They constitute both a confirmation of beliefs and a source of cultural innovations. Yet, as we have already seen, dreams and altered states of consciousness themselves are culturally structured, and these structures have been shown to be associated statistically with a society's subsistence base, its social and political complexity, its child-rearing patterns, and so forth.

Rather than consider this series of associations as a chain of causal determinants, we are more likely to improve our understanding of the relationship among these various elements if we think of them as constituting a complex network of feedbacks. For example, subsistence patterns favor certain personality characteristics; given, for example, an economy based on hunting and gathering, independence, self-reliance, and so forth, are desirable characteristics. These characteristics result, at least in part, from certain parental attitudes and behaviors. A pattern of using dreams to acquire and control supernatural power also correlates with a hunting and gathering economy. It appears to be related to the stresses experienced by individuals who are, in fact, forced to be self-reliant and independent of human assistance. They express, it would seem, a desire for a magical helper. We shall have occasion to return to these complex interrelationships over and over again in several contexts.

SUMMARY

In this chapter we have seen that an idea of evolution is used in anthropology as a basic concept in three different ways, each of which is relevant to psychological anthropology. One of these ways is the classical theory of cultural evolution that held sway in the nineteenth century. Although it is now outdated in its original form, it contributed importantly to the development of several approaches in modern psychology. In time it also helped in bringing about the rise of present-day evolutionary theories in cultural anthropology. In addition, we discussed two approaches to evolution that are of great contemporary significance: behavioral evolution, and contemporary theories of cultural evolution.

Behavioral evolution deals with the relationship between the behavior of modern humans and their primate cousins. It seeks to identify both continuities and differences between them, and to reconstruct the behavior of earlier forms of the genus Homo. We discussed the theoretical views of Hallowell, who developed the concept of protoculture. This term refers to a developmental stage in which a series of preconditions for the emergence of culture were present, yet were not sufficient to bring it about. For the appearance of a characteristically human mode of existence, the growth of shared extrinsic symbolism was required. This symbolism, expressed in language, art, and ritual, brings about, for each cultural group, the development of its own particular culturally constituted behavioral environ-

ment. Hallowell stressed the development of self-awareness and of a normative orientation, which are characteristics of human beings only. Finally, we examined cultural evolution, modern style. Among the contemporary approaches are statistical, comparative (holocultural) studies, some of which concern how differences in child-rearing patterns and personality types relate to differences in subsistence economy and societal complexity. Based on these studies, and using the concept of a culturally constituted behavioral environment, we attempted to sketch the differences between the world of hunter-gatherers and more complex societies depending for their subsistence on some forms of plant and animal domestication. Differences between child-rearing patterns and personality were among the variables included. In Chapter 4 we shall return in greater detail to studies of child-rearing, and we shall then find it useful to keep these generalized pictures in mind.

The contemporary cross-cultural studies we reviewed contrast present-day societies that have different types of subsistence economies. Although we placed these comparisons within an evolutionary framework, we have actually presented a static picture. That is, we can see what the differences are, but not how societies evolve and are transformed. We have not asked in this chapter how, at some point in the past, hunter-gatherers became agriculturalists and herders, or how modernization occurs today among tribal and peasant peoples. We shall deal with the dynamics of culture change and its psychological aspects in Chapter 9.

What our comparative approach to modern cultures has shown us is that cultural evolution cannot be reduced to an evolution of population size, subsistence economy, technology, and societal complexity. As culture changes and evolves over time, so does the world that is experienced by human groups. Its complexity is related to an increase in empirical knowledge and in practical skills, or a shift in the types of knowledge and skills that are required under new circumstances. At the same time, in ideological or metaphysical terms, it also reflects the image of a more complex social organization. To function effectively personalities must be adapted to this changing behavioral environment, which yet, to some extent, is itself a reflection of the personality type fostered by the group's life style. LeVine's model helps us to understand, in very general terms, the processes whereby personality types evolve. We have attempted to relate this evolution of personality types to an evolution of both culture and of the culturally constituted behavioral environment. In the next chapter we shall turn to the specific evidence of the existence of personality differences among cultural groups.

NOTES

2. Students wishing to pursue this subject further may wish to consult Rowell (1972), Jolly (1972), van Lawick-Goodall (1971). The last presents an interesting first-person account of the author's studies of chimpanzees in the Gombe Stream Reserve.

3. K. R. L. Hall, (1963) makes an extensive review of these materials.

4. There is some indication of displacement in the dance of the bees, but it involves an entirely different evolutionary sequence from that found in the development of communication systems among primates.

5. Oh's Profit, a novel by John Goulet (1975) tells the story of Oh, a gorilla with a complex personality, who has been taught sign language, and of the quarrels this successful experiment produces among linguists and psychologists with competing theories. For a nontechnical review of a large number of studies, see Emily Hahn's book, Look Who's Talking (1978).

6. In a brilliant book, the paleontologist S. J. Gould has reviewed the long history of the idea of a relationship between the development of the individual organism and that of life forms. He demonstrates the significance for modern evolutionary biology of the "changes in developmental timing that produce parallels between the stages of ontogeny and phylogeny" (Gould 1977:2). These changes allow him to reconcile continuity and this continuity in evolution and would account, for example, for both the similarities and the differences between human beings and chimpanzees.

7. Sets of the Files are located at member universities, and microcard versions of the Files are available at subscribing institutions. The topical headings were set out in An Outline of Cultural Materials (Murdock et al. 1965) and cultures are listed in Outline of World Cultures (Murdock 1963). Coding of data on 863 societies is to be found in the Ethnographic Atlas (Murdock 1967), and these data have been analyzed by Bourguignon and Greenbaum (1973). Discussions of the cross-cultural statistical method are to be found in the Handbook of Methods in Cultural Anthropology, edited by R. Naroll and R. Cohen (1970). In 1978, HRAF published a Guide to Social Theory: World-Wide Cross-Cultural Tests. This massive work presents a cross-indexed methodological analysis of some 1375 propositions tested in 300 holocultural studies.

8. G. P. Murdock was greatly influenced by his teacher, the sociologist Albert Keller, and through him, by W. G. Sumner. Tylor, at a time when statistics was in its infancy, had attempted the first correlational study. (See F. W. Moore 1961 for some of the precursors of holocultural research).

CHAPTER 3
Do Group Differences Exist?

I think about my education sometimes. I went to the University of Chicago for a while after the Second World War. I was a student in the Department of Anthropology. At that time, they were teaching that there was absolutely no difference between anybody. They may be teaching that still.

Another thing they taught was that nobody was ridiculous or bad or disgusting. Shortly before my father died, he said to me, "You know—you never wrote a story with a villain in it."

I told him that was one of the things I learned in college after the war (Kurt Vonnegut, Jr., in Slaughterhouse-Five).

INTRODUCTION: WHEN SOUTH MEETS MIDWEST

After spending two years in Georgia, my colleague Professor Donald has recently returned to the Midwest. He was glad to be back, he said, because life in the South had made him uncomfortable. People there deal with business contracts as if they were carrying on personal relationships. Even a trip to the bank involves exchanges of pleasantries and personal inquiries instead of being limited to straightforward business transactions. "They are very insincere," he concluded.

A few days after my conversation with Professor Donald I was listening to Mary Ellen, a student from Alabama, who complained bitterly of her experience in the Midwest. She said she could not get used to living among people who are so cold and unfriendly. Here, she thought, people were not concerned with each other, and personal relationships simply could not be established. At home, she said, everyone was warm and friendly and people really cared about each other.

Next chapter