

The Role of Empathy and Mother-Child Attachment in Human History and in the Development of Consciousness: The Neanderthal's Gestation¹

Abstract: To understand human evolution it is necessary to understand the nature of attachment formation between mother and child. Our evolution can not be understood solely in terms of improvements in cognitive capacities. The roles of empathy and cooperation, not only of dominance, are essential for understanding the attainment of human capabilities. The development of obedience as a social feature of human evolution must be of relatively recent origin and related to a shift in the organization of consciousness from the right to the left cerebral hemisphere. This shift itself has relevance for the development of language as a determinant of what experience should be. This in turn must affect human evolutionary development. The possible role of a longer gestation period in the Neanderthal is examined in relation to this shift. The interaction between child and mother in human and animal behavior suggests a necessary change in our perception of human evolution.

Introduction

An astonishing proliferation of fossil discoveries over recent years has tremendously expanded our knowledge of our ancestors.² But even though paleoanthropologists think that their "first priority must be how ancient people looked and behaved"³, Derek Bickerton has called attention to their emphasis "on skulls rather than what these skulls contained".⁴

His objection might be questioned by some, but he points to an actual difficulty, namely, that what these skulls have been filled with by archeologists and paleoanthropologists are assumptions about behavior that do not necessarily reflect what these ancient peoples were really like. One such assumption is that intelligence, genetically determined and shaped by survival struggles, is the key to understanding the behavior of our ancestors. The evolution of human behavior is thus seen in terms of improvement in information processing and the capacity for novel reactions, which in turn are seen as mediated by competition and leading to the selection of the fittest. Gibbons⁵, quoting O. Bar-Yosef⁶, thus sees human evolution

¹ Parts of this article will appear in Gruen (2006).

² Goren-Inbar et al. (2000), Pennisi (2001), Gibbons (2002a), Balter (2002).

³ Klein & Blake (2002).

⁴ Bickerton (2002).

⁵ Gibbons (2001).

⁶ Bar-Yosef (2001).

in terms of one line of humans wiping out another. Competition for resources is then seen as the primary behavioral means by which evolution occurs.⁷ What is to be noted is the implicit assumption that rivalry and competition are the causes of evolutionary changes. Yet the long period of our evolutionary development itself suggests gradual development rather than struggle or rivalry as the climacteric feature of evolutionary change. Diamond⁸ pointed out that primitive societies tend to be in a state of equilibrium not characterized by change. Therefore, not struggle but a state of equilibrium may have been characteristic of human behavior for millions of years. Struggle and rivalry or competition among humans as a general characteristic of social interaction may be a relatively recent development, beginning perhaps ten thousand years ago and culminating with the inception of archaic forms of state organization and civilization.⁹ The notions that change and progress are factors in behavioral evolution and that evolutionary history is a function of different lines of hominoids usurping others may well be a reflection of values and interests of observers that are based on the nature of comparatively recent developments in the social order of our own lives.¹⁰

Generalizations about our human past are interpretative and must be, as in any historical discipline, concerned with the problem of meaning and not merely with the surfaces of social interactions. Isabel Azevedo's letter to *Science*¹¹, suggesting that being human involves much more than speaking languages, argues for a paradigmatic change¹² in our perceptions and therefore suggests a necessary reorientation for the scientific study of humankind. This reorientation is not only based on recent findings cited by Azevedo, coming mainly out of the newer neuro-psychological domain, but is also supported by earlier anthropological studies. Irvn Devore and Melvin J. Konner¹³ remind us that all of humankind lived a hunter-gatherer existence for more than 99 percent of the some three million years humans have occupied this planet. *Homo sapiens* assumed a modern form at least 50 thousand years before the species began to domesticate plants and animals or modify the environment in any significant way. Human patterns of aggression, of affection, and of reaction to stress as well as the structure of family and group life were all fashioned in this context. The seeming difficulties of survival in habitats of differing severity have led observers to assume that the lives of hunter-gatherers were a constant struggle for survival. Devor and Konner show us that such conclusions reveal the observers' biases and not actuality. Human evolution can therefore not be understood simply in terms of archeological findings. The living interaction between child and mother not only molds the present but must be recognized as part of the evolutionary process, both shaping it and modulating the development of human consciousness.

⁷ Kun and Arizona, cited by Gibbons (2001).

⁸ Diamond (1974).

⁹ Diamond (1974), p.126.

¹⁰ Sampson (1981).

¹¹ Azevedo (2002).

¹² Kuhn (1962).

¹³ Devore & Konner (1974).

The Role of Possession

We do not seem to take into account that the idea of possession as an indicator of the abundance or poverty of a habitat reflects our own social order and not how people actually experience themselves.¹⁴ In the eighteenth century Samuel Johnson realized that such misconceptions reveal the observer's own background, since—to paraphrase him—humans who thought of themselves as rich because their natural needs were satisfied began to see themselves as poor when they became aware that their neighbors possessed more than they did. He recognized that the very concept of possession changes consciousness. Joseph Wood Krutch¹⁵ stated something similar when he wrote that we have to learn to live with less. A change in consciousness as a factor in our perceptions of ourselves does not seem to be generally acknowledged, which may explain why so many observers have taken for granted that the lives of our ancestors were determined by a constant struggle for survival.

In their study of infancy among the !Kung of the western Kalahari desert, Devore and Konner found that far from living at a substandard nutritional level, the !Kung were able to maintain themselves well above minimum standard nutritional levels, even in drought years, with a modest work week of only two or three days per adult; older persons, children, and adolescents rarely participated significantly in the food quest.

"One problem when using contemporary hunter-gatherers for pre-historic reconstruction cannot be easily overcome: contemporary hunter-gatherers live in refuge habitats... The more favorable habitats have long since been appropriated by populations with larger, more cohesive, more aggressive social systems. Jungles, deserts, and tundras often pose difficult problems of survival, leading observers to assume that the lives of contemporary hunter-gatherers [and therefore the lives of our own ancestors] were a constant struggle for survival... These conclusions and their implications are very much mistaken... It is traditional in anthropology to view hunter-gatherers as living in tightly knit male-oriented bands... The band was thought to be highly territorial, and very protective of hunting areas, water sources, and so on... As the primary food providers, the men would have to dominate hunter-gatherer life [and] drive other hunters away... Further, it seemed apparent to even trained observers that hunter-gatherer life must be harsh, their nomadic travels and lack of material goods seemed evidence enough that the hunters [and by implication our own ancestors] lived in grinding poverty. Such conceptualizations could scarcely be further from the conditions we found among the !Kung groups. There are no organized "bands" but rather clusters of families at campsites whose composition changes almost daily; nuclear and extended families move freely over an area of a hundred square miles

¹⁴ Radin (1953).

¹⁵ Krutch (1953).

or more, camping with relatives and kinsmen throughout the region.¹⁶ Kinship is traced equally through the husband's and wife's families, and residence, like all aspects of group structure, is fluid and subject to frequent changes. Far from defending territories, in this free-flowing population the very concept is meaningless. While there are allegedly "owners" of certain waterholes, their claim to ownership is often recent, disputed, and, in any case, not enforced... It is important to remember that most hunter-gatherers throughout pre-history lived in regions far more favored than the Kalahari fringe—abundant in water, food plants, and game."¹⁷

As indicated earlier, these are people who live at above minimum standard nutritional levels.

Devore and Konner point out that, contrary to current views, "students of hunter-gatherer life were not prepared to gather quantitative data on work levels and caloric intake. They significantly underestimated the role of women in the food quest... We have found that women contribute from 50 to 80 per cent of foodstuffs by weight... More important, while vegetable foods can be gathered regularly and infallibly, hunting success is far from predictable... We find no reason to suppose that the relative contribution to the economy by women was ever less in the past... Ironically, however, the only tools a woman needs to collect vegetable staples are a skin bag and a digging stick—neither of which are likely to be preserved in archaeological sites. The elaborate hunting equipment of the men, however, will always be well represented in the form of arrow heads, spear points, knives, etc. The result is an almost inescapable tendency to underestimate both vegetable foods and the economic importance of women in the interpretation of prehistoric living sites..."¹⁸

Another important key to understanding the !Kung economy is that food and material goods are shared, not stored, which contradicts another aspect of current thinking that identifies competition as basic to behavioral evolution and almost completely denies cooperation as a primary factor in evolution. This brings us back to Azevedo's letter, which was written in reaction to the surprise with which the findings of Karl Zilles and colleagues were greeted¹⁹, namely, that humans seemed more "right-minded." Yet, as she succinctly points out, it is the right hemisphere that is involved in the infant's tie to its mother and in the later attachment patterns of one adult to another.²⁰ Socially transmitted behavior has its origins in the attachment formation between mother and child. Van Schaik et al. suggested recently that the cultures of the great apes, which have existed for the past 14 million years, have done so without habitat playing a crucial role.²¹ The same can be said about the

¹⁶ [e.g., Lee (1972).]

¹⁷ Devore & Konner (1974), p. 123.

¹⁸ Devore & Konner (1974), p. 122.

¹⁹ Gibbons (2002b).

²⁰ Joseph (1992), van Lancker (1991).

²¹ van Schaik et al. (2003).

social transmission of behavior patterns in humans.²² Yet the role of attachment behavior as a key to human history during the past three to four million years has not been considered to be important in shaping it.

Most studies concentrate on fossils and the archaeological record, deducing from them behavior that fits the writer's notion of "survival of the fittest." In other words, "competition" is seen as the driving force in human evolution and not what can be legitimately deduced about human behavior from other sources, such as comparative primate studies and observations of the earliest of mother-child interactions.

Attachment and Cooperation

John Bowlby was one of the first to point to the importance of attachment behavior between an infant and its nurturing caretaker for the formation of later social behavior.²³ Despite the difficulty of obtaining direct evidence of the behavior of ancestral humans, we may infer from the attachment behavior that we have in common with apes that it gives us a basis for making valid assumptions about the behaviors of ancient human lines. In addition, in regard to mothering and the caring of offspring we can make direct observations of present-day humans as well as species related to us, such as chimpanzees.²⁴

Human newborns are particularly immature at birth from the point of view of their development.²⁵ Were the human neonate to have the time necessary to attain the state of development of the newborn ape, the total gestation period of the human would be some 21 months.²⁶ This makes the caring behavior and responsiveness to the needs of the newborn during this precarious period of development most crucial. Their needs revolve around satiation of food, intake of liquids, restoration of muscular and nervous organization, sleep and awakening from it with restored energy, removal of tension, relaxation, and a generalized state of equilibrium. "If," writes Ashley Montagu, "we define love, from a purely biological standpoint, as the caring behavior that confers survival benefits, then these may be regarded as neoteneous traits... We may therefore infer that no early population of human beings could have survived had it not been for the dominant role that love and cooperation played in holding them together."²⁷ Cooperation is a function of this early attachment behavior if—as Harlow and Harlow have shown—mothering has not been interfered with. On the other hand, inadequate mothering produces individuals who become abusive mothers. It is therefore the infant's tie to its mother that determines its later attachment as adult to other adults.²⁸

²² Harlow (1962), Harlow & Harlow (1969).

²³ Bowlby (1969).

²⁴ Crawford (1937), Nissen & Crawford (1936).

²⁵ Portmann (1944), Bostock (1958), Kovacs (1960), Montagu (1981).

²⁶ Portmann (1944).

²⁷ Montagu (1981).

²⁸ Van Lancker (1991), Rafael (1971).

J. Z. Young has also emphasized that the behavioral equipment humans have received from their past history has been designed to ensure communication and cooperation.²⁹ Galt observes, "As an analytical statement and not simply a value judgment, it may be said that from the standpoint of breadth of social organization and multiplicity of interindividual relationships a cooperative pattern (rather than a 'dominance-hierarchy' pattern) represents the fuller attainment of human psychological resources. Dominance factors which emphasize individualistic motivation represent only a partial realization of group resources, on a lower psychological level, on which the clash of different subgroup motivations increases intragroup conflict and promotes tensions which make for social disorganization."³⁰ And Schneirla points out, "In criticizing 'dominance' theory as applied to vertebrates, we called attention to its reductionistic emphasis upon just those special characteristics which are not essential to group unity but in fact tend to operate against and reduce the psychological level of group integrity. For this reason in particular, 'dominance' theory cannot be regarded as adequate for a comparative psychology of social organization."³¹

Studies with chimpanzees³² show that infrahuman primates plastically acquire cooperative relationships under appropriate conditions, working purposely together toward common goals.³³ The much emphasized dominance behavior, which is seen as a primary explanatory factor in primate behavior, and therefore also in the behavior of the ancestors of humans, is dependent upon aggressive behavior³⁴ and appears only under conditions in which positive factors unifying group activity are weak.³⁵ It appears that when weaning of the young occurs abruptly in mammals, it enforces separation from family conditions. This in turn determines the subsequent group behavior and the development of individual aggressiveness. Thus, dominance relations are indicative of weak social responsiveness. Psychological cooperation as found on the primate level, on the other hand, involves the ability to anticipate the social consequences of one's own actions and to modify them in relation to the group's goal. Dominance promotes isolation and psychological distance, which are counteractive to those factors that hold a group together. This is to say that a child, as Charlotte Bühler put it³⁶, is part of its mother before it becomes an individual for itself and is part of a definite group for a long time before it can actively enter and join any other group.

²⁹ Young (1971).

³⁰ Galt (1940).

³¹ Schneirla (1946).

³² Crawford (1937), Nissen & Crawford (1936).

³³ Schneirla (1946).

³⁴ Collias (1944), Maslow (1940).

³⁵ Schneirla (1946).

³⁶ Bühler (1931).

Empathy

The ability to anticipate the social consequences of one's own actions is not primarily a capacity based on abstract functions of thought. It is a feature of an organism's capacity for empathic perception. "Empathy is the capacity for participating in or a vicarious experiencing of another's feelings, volitions, or ideas and sometimes another's movements to the point of executing bodily movements resembling his".³⁷ This capacity develops with the beginnings of the autonomic nervous system and is part and parcel of the mutual interaction between mother and the developing fetus. The integration of these interactions in human beings seems to be localized in the right hemisphere.³⁸

In attempting to understand what our ancestors may have been like, it is important to take into consideration that the primary and oldest medium for recognizing and dealing with oneself and the surrounding world is an empathic one. When regarding human evolution from the vantage point of empathy, human development will take on a different character because the emphasis of observation will shift from a struggle for domination to one focusing on cooperation. This shift will be possible when we consider that our notions about survival of the fittest may be reflections of a set of social values and interests that tend to reproduce the existing nature of our social order.³⁹

The capacity to care for others is not a function of the degree of "civilization" attained. It has little to do with learning as an intellectual process but rather with what Paul D. MacLean⁴⁰ has called a "visceral" aspect of learning (the fronto-temporal portion of the limbic system), which is mediated by empathy—that is, the capacity to identify one's own feelings and needs with those of another person. As already noted, Isabel Azevedo wrote that being human is much more than speaking languages. Babies, for example, imitate the head movements of adults in order to willfully reach goals, not simply to copy⁴¹, and thus they learn quickly to enrich and control their environment. However, this ability is not only a human attribute; animals in general perceive the nature of another's emotional state by empathic means. Rhesus monkeys have been shown to respond to facial gestures of other rhesus monkeys on the basis of such perception.⁴²

Interestingly, human evolution reveals that in hominid skull casts, ranging from 2.5-million-year-old australopithecines to more recent archaic *Homo sapiens* and Neanderthals, frontal lobes began to expand above the nose. Areas at the bottom of the lobes, behind the temples, expanded even more in archaic *Homo sapiens* and Neanderthals.⁴³ This was considered surprising because of the idea that speech is

³⁷ Clark (1980).

³⁸ Holowka & Petitto (2002), Bekkering (2002), van Lancker (1991), Shapiro et al. (1997), Wittling (1997), Joseph (1992), Henry (1997).

³⁹ Sampson (1981).

⁴⁰ MacLean (1967).

⁴¹ Bekkering (2002).

⁴² Ghazanfar & Logothetis (2003).

⁴³ Gibbons (2002b).

dominant on the left side and therefore human evolution would show an increase in the left brain hemisphere. This points to the importance of empathic processes in the evolution of humans and the nature of their development as revolving around "feeling into" or "Einfühlung".⁴⁴

Caring for others as an aspect of interpersonal relations must therefore be intimately tied up with the nature of what human evolution is about. If this aspect of human nature has changed, then perhaps only within the past more or less 50,000 years of our history, and especially with the advent around 9,000 years ago of the so called higher civilizations, based on possession, domination, and power.⁴⁵ As David E. Stuart shows, it was the advent of surplus food that changed Anasazi culture in the Americas from a peaceful sharing society to one of elitisms and ultimately war and destruction.⁴⁶

Left and Right Cerebral Hemispheres

It is at this juncture of change from cooperation and empathic perception to possession and power that a break in the state of human consciousness must have occurred. In order to understand the evolution of human behavior we need to consider that a shift occurred in the organization of consciousness from a dominance of the right hemisphere to that of the left.

The left cerebral hemisphere controls the right side of the body; in right-handed people it contains the speech areas and is commonly called the dominant hemisphere. The right hemisphere, which controls the left side of the body, is commonly called the non-dominant one. Because speech has been seen as the dominant factor in human evolution, it was of course expected that humans would be "left minded." The contrary has evolved.⁴⁷ While the right looks at the whole configuration, seeing parts as having meaning within a context, the left isolates and looks at parts of perceptions. Since it is the early developmental history of the individual (the attachment phase) that determines how the brain is organized, this determines in particular the nature of the interorganization between the hemispheres.⁴⁸ That the suggested shift in the reorganization of the hemispheres is a function of shifts in cultural changes is supported by the finding that women tend to be somewhat less lateralized in brain function than men.⁴⁹ The results of a stroke study by Gruen⁵⁰ are in agreement with findings that women are less affected than men by notions of honor, strength, and heroism; this is also shown in Gruen (1988) and in Carol Gilligan's essay⁵¹ on gender differences. Such notions are essentially

⁴⁴ Lipps (1914).

⁴⁵ Morgan (1974), Margalit (2003).

⁴⁶ Stuart (2000).

⁴⁷ Gibbons (2002b).

⁴⁸ Reeves & Carville (1938); Jaynes (1976), p. 125; Saul & Sperry (1968).

⁴⁹ Wittelson (1976), Harshman & Remington (1975).

⁵⁰ Gruen (1962).

⁵¹ Gilligan (1982).

ideologies and are found as hallmarks in all the epics that describe the feats and grandiose ideas about the conquerors and founders of the so-called great civilizations. (A good example is *The Lamentations Over Sumer and Ur* of the third millennium B.C.⁵²).

The shift from social patterns supporting cooperation and empathy to patterns furthering the development of power, subjugation, coercion, and control⁵³ must have occurred in a context favoring the accumulation of private ownership and the development of authoritarian behavior and obedience to it. The early Sumerians, for example, were active colonizers and empire builders in the centuries before 3000 B.C.⁵⁴ The changeover to domination of the left hemisphere with its focus on the particular and not the whole must have been both an accompanying phenomenon and one furthering this process of a change in human consciousness. Here strength became equated with power and possession, a phenomenon that is self-evident if we read the tablets of the kings and rulers of the "great" civilizations from China, India, Persia, and Egypt to the Incas, Aztecs, etc. These tablets always glorify their great deeds and deny pain and suffering. The development of ideologies to support patterns of obedience rationalizing subjugation was a parallel development of these civilizations.⁵⁵

If cooperation and behavior patterns based on empathy characterized our earliest history, then we may have to rethink our past and our recent history. It may be that the change in behavior from cooperation to competition contradicts the common assumption that our ancestors were primitive and that socialization is a product of the rise of the great civilizations. Rather than a gradual development in human consciousness from primitive aggression to civilized conflict resolution⁵⁶, it may have been the other way around, with the introduction of "property" leading to the dissolution of social relations based on sharing and cooperation. That humans, just like other animals, can be aggressive is not the same as being purposively destructive. Yet we are the only species that purposefully murders and tortures its own kind.

But such destructiveness may not always have characterized human beings. Jonathan Haas of the Field Museum in Chicago was until recently a proponent of the view that war and culture were intimately related.⁵⁷ The lack of fortifications and the evidence for a loving concern in the burial of children at Caral in Peru led him to acknowledge that warfare may not be natural to human beings. Of course, it is not an easy undertaking to try to fathom what the original nature of humankind may have been like. But it is nevertheless necessary to formulate ideas about our origins in order to understand our present state. The origins and development of human consciousness are crucial factors for our understanding of human history and our present age. The abstractions that so determine our present mentality—our notions

⁵² Metropolitan Museum of Art (2003).

⁵³ Baines & Lamberg-Karlovsky (2003).

⁵⁴ Potts (2003).

⁵⁵ see also Gruen (2002, 2003); de la Boétie (1992).

⁵⁶ de Wall (2000).

⁵⁷ Solis et al. (2001), BBC (2002).

about honor, courage, and heroism as well as vulnerability and pain as weakness—are hallmarks of a consciousness that was not always characteristic of humans. Julian Jaynes has made clear how abstractions dominating human consciousness, like national honor and ideological purity, reduce our perception of reality and our learning abilities.⁵⁸ What is generally not recognized is that this comes to pass because abstract ideas about manly honor, purity and strength depend on a socialization process that needs obedience as the means of inculcating them. The ideologies of manly honor and manly strength are not genetic givens, nor are they "natural" outcomes of development. Gene Weltfish has shown this for the American Pawnees⁵⁹ as have Peter Brückner in his analysis of the pathological effects of obedience in the socialization of Western society⁶⁰ and Arno Gruen in an analysis of the political and psychological consequences of obedience in reducing our perception of reality.⁶¹ This kind of consciousness, Jaynes suggests, developed before Homeric times. It is associated with an obedience that detaches humans from a sense of responsibility for their own actions. It is therefore useful at this point to look at how we have dealt with the issue of the Neanderthal.

Neanderthals

Neanderthals had emerged in full-blown forms 130,000 years ago⁶² and persisted in Europe and western Asia until perhaps 30,000 years ago. They have been regarded until recently as inhuman, without culture, but Brian Hayden, Richard Klein and Erik Trinkhaus have shown them, to the contrary, to have a human face.⁶³ Trinkhaus in particular suggests on the basis of the archaeological evidence that they cared for their sick, their children, and their dead. Yet as recently as September 5, 2003⁶⁴, some anthropologists challenged the notion of the existence of compassion in Neanderthals because it was claimed that chimps and gorillas can survive in the wild without teeth. They denied that a toothless, diseased 179,000-year-old jawbone found in southern France could signify that Neanderthals cared for their old and frail. If on the other hand, one's understanding of development takes into account that we all have experienced a mothering person, such denials of essential interpersonal life-processes become impossible.

It is interesting that Christoph P. E. Zollikofer, Marcia S. Ponce de Leon, Bernard Vandermeersch, and François Léveque, working with the skull of a Neanderthal, provide evidence indicating that he sustained an intentional injury to his skull.⁶⁵ Utilizing brilliantly conceptualized computer-tomographic imaging and

⁵⁸ Jaynes (1976).

⁵⁹ Weltfish (1965).

⁶⁰ Brückner (1976).

⁶¹ Gruen (2002).

⁶² Ponce de Leon & Zollikofer (2002).

⁶³ Hayden (1993), Klein (2003), Trinkhaus (1990).

⁶⁴ Holden (2003).

⁶⁵ Zollikofer et al. (2002).

computer assisted reconstruction of the skull, they were able to reveal a healed fracture in the cranial vault. Combining paleopathological and forensic diagnostic standards, they showed that the bony scar bore direct evidence of the impact of a sharp implement. What is important to note here is that this individual was able to survive because of what must have been supportive nursing from fellow Neanderthals. The authors therefore conclude that Neanderthals were capable of sustaining severely impaired individuals over extended periods of time.

That Neanderthals were capable of aggression, as were other modern humans during the early Upper Paleolithic period in Europe, should not be surprising. Evidence of aggression is not, however, the same as evidence of intentional destructiveness. Aggression and fighting are not the same thing. In failing to differentiate between aggression and fighting we join—perhaps unwittingly—Konrad Lorenz, who saw aggression as a fighting instinct and therefore believed that humans must find methods of ritualizing and channeling instinctive aggression.⁶⁶ Instinctual aggression was already regarded by Herbert Spencer as a dominant factor in natural selection. Yet as Schneirla points out, "In man, adrenalin—a neurosecretory, excitatory substance —arouses fighting, loving, poetizing, singing, or fleeing according to the individual's background and current situation. The assumptions underlying the theory in [Lorenz's] books are open to question for lower animals; their extrapolation to man is doubtful."⁶⁷ It is likely (and Zollikofer et al. acknowledge this for the Neanderthal) that outbursts of temper are an explanation for the kind of reactive aggression occurring within a group. In terms of our own experience, the tendency is of course to attribute intra- and inter-group aggression to rivalry and competition and the holding of grudges. Yet an explanation just as valid is that the aggression involved denoted an immediate reaction to a provocation and not one expressing vengeance, punishment, or the holding of a grudge. Eleanor Burke Leacock describes such direct but nonpunitive aggression among the Montagnais-Naskapi of Canada.⁶⁸ This kind of behavior also characterizes the aggressive behavior of most animals.

Aggressiveness

One animal experiences another animal as restricting its action and lashes out. The response may be as immediate as biting, but once the aggression is acted out, there is not any continuing grudge. With humans it is another matter if aggression occurs in a different historical context, where it develops a meaning associated with self-worth. For example, within our particular kind of socialization, parents respond to the aggression of their child in terms of what that aggression means for them personally. If, as is often the case, a child's aggressive behavior is seen by the parents as reflecting the inadequacy of their parenting, then a child's aggression will develop meaning in the context that this aggression signifies badness. In our culture

⁶⁶ Lorenz (1966).

⁶⁷ Schneirla (1966).

⁶⁸ Leacock (1981).

aggression thus becomes associated with lack of self-worth. Of course, this does not mean that aggressive behavior cannot inflict injury, as in the case of the Neanderthal. But it is of a different order from that assumed by de Wall⁶⁹ to characterize aggression in primates and to carry implications for human aggression. De Wall sees it as a tool of competition and negotiation, thereby confusing its differential origins in a socialization process determined by the consequences of the need for possession and domination.

Aggressive behavior does not have to be negative; in the development of humans and many animals it does not have to be indicative of willful destructiveness or involve feelings of continuing revenge. It may be first of all a reaction to perceived pain or to the violation of one's boundaries and therefore an expression of self-assertion, an immediate and natural reaction to disturbing stimuli.⁷⁰ This is different from the perception of aggression as a need to be destructive, to avenge "honor," or carry out grudges. Fifty years ago Greenacre came to the conclusion that aggression could also express constructive behavior.⁷¹ Parens similarly concluded that aggression is not instinctual but a reaction to aversive stimuli and that aggressive impulses harbor both destructive and nondestructive elements.⁷²

Thus, the aggressive behavior de Wall writes about may not describe destructiveness but simply express direct aggression in response to a provocation. As soon as it is expressed, its energy is dissipated. There is no subsequent grudge or continuing resentment. We can observe such behavior in dogs or human infants. Aggression is expressed and then it is gone. Conflict may be much more a function of the kind of development that characterizes the consequences of our socialization processes. When parents respond to the aggression of their child as if it injures their sense of self-worth⁷³, then processes are set in motion by which natural reactive aggression becomes a sign of a hostile emotion directed against the parent. What in the first instance was the expression of an infant's autonomously formed reaction thus becomes a reaction endangering the child since the parental reaction threatens it with the withdrawal of "love". Under these circumstances the child's autonomous feeling reaction becomes a threat to its own interpersonal existence and has to be repressed. As a result, the energy of the child's own aggressive reaction remains alive and becomes a reservoir of accumulations of these aggressions. This then becomes the source of undifferentiated resentments and grudges. Instead of aggression being simply an emotional reaction, which another can perceive as just that, it becomes the source of continued aggression and counteraggression. The !Kung, for example, respond to 15-month-old infants hitting people by laughing at this behavior and not discouraging it.⁷⁴ That we on the contrary respond to aggression in a threatened fashion is indicative of a paranoid stance that our culture forces on us. That may explain why de Wall can speak of power politics among

⁶⁹ de Wall (2000).

⁷⁰ Gruen (1987, 1999).

⁷¹ Greenacre (1971).

⁷² Parens (1979, 1989).

⁷³ Gruen (1980).

⁷⁴ Devore & Konner (1974).

chimpanzees.⁷⁵ We keep seeing other cultures and beings in terms of our own cultural deformations.

Neanderthals and modern humans are relatively indistinguishable in their post-partum development. It is therefore plausible that the differences in their developmental processes are to be found in their pre-birth or fetal phases.⁷⁶ Both human lines have taken over their postnatal developmental patterns from common ancestral lines. "It is on the time-axis of ontogeny, in other words their childhood, that we will find the 'key' to understanding human evolution".⁷⁷

Gestation and Security

What has been overlooked is that the childhood of the Neanderthals had a different beginning from that of modern humans: their gestation period was longer. Tompkins and Trinkhaus have pointed out that their pubic bones contrast morphologically with those of early and recent modern humans.⁷⁸ This morphology is seen as a function of a relatively large pelvic aperture. In particular Trinkhaus and Tompkins suggest that the length of gestation was between 11 and 12 months.⁷⁹ Jared Diamond also speaks of a gestation period of 12 months, permitting a longer period of growth within the mothers body.⁸⁰

That a longer gestation period may have consequences for the kind of personality organization an individual develops has not been taken into account in the archeological literature. Yet Portmann suggested that "were the human neonate to take the time necessary to attain the state of development of the new born ape, the total gestation period of the human would be some 21 months".⁸¹ Kovács set the time at 18-20 months.⁸²

Bostock wrote, "Babies must live in an atmosphere very different from that of ordinary everyday living, and its main principles of isolation and security closely resemble gestation itself."⁸³ It has not been adequately understood how very immature the human newborn actually is and how long this immaturity lasts. The anthropologist Ashley Montagu writes that "civilized" peoples have not recognized the needs of the human infant during this precarious period of development.⁸⁴ If the human infant (but also others like chimpanzees) receives inadequate bodily stimulation and body contact during the first months of life, this will lead to a reduction

⁷⁵ de Wall (1998).

⁷⁶ Ponce de Leon & Zollikofer (2002).

⁷⁷ Ponce de Leon & Zollikofer (2002), p. 73.

⁷⁸ Tompkins & Trinkhaus (1987).

⁷⁹ Trinkhaus (1984, 1990), Trinkhaus & Tompkins (1990).

⁸⁰ Diamond (1992).

⁸¹ Portmann (1944), translation from Montagu (1981).

⁸² Kovács (1960).

⁸³ Bostock (1958).

⁸⁴ Montagu (1961).

and limitation of social development.⁸⁵ If an infant is deprived of stimuli necessary for emotional growth and development, it will fail to undergo the transformations leading to a sense of security.

This leads us to a key point in considering the extended gestation in the Neanderthal. In line with Portmann, Kovacs, Bostok, and Montagu it would be valid to consider that an extended gestation period leads to offspring with a stronger base for the development of a sense of security precisely because this prolongation of intra-uterine life covers the very three months of an infant's life that are the most precarious. During this period, as Montagu points out, the infant is most dependent on parental love. It is the empathic response to its needs that confers survival benefits, seen by Montagu as equivalent to a neotenuous trait. It follows from this that Neanderthal offspring, in being basically more secure, responded differently under stress. It may be that lack of security in relation to a mother (for example, diminished need fulfillment) is a factor in the development of innovative behavior compensating for such a lack. Our own constant restlessness and uneasiness⁸⁶ may be rooted in social developments that reinforce non-empathic reactions of mothers to their offspring.

Modern humans invaded the west Asian part of the Neanderthal range about 45,000 years ago.⁸⁷ "Consistent with an African origin for the Cro-Magnons, radio-carbon dating suggests that they displaced the Neanderthals about 45,000 years ago in Western Asia and only 5,000 to 15,000 years later in Europe." Klein thinks it was the Neanderthals' failure to adopt Upper Paleolithic/Cro-Magnon technology more effectively that explains their disappearance. At the same time he notes that the fossil record shows that from 130,000 to 50,000 years ago, although the African contemporaries of the Neanderthals were more modern in their anatomy, they closely resembled the Neanderthals in their behavior. Klein therefore suggests that a change in brain function about 50,000 years ago could explain why modern Africans subsequently spread to Eurasia. He proposes that the Neanderthals succumbed because they wielded culture less effectively and that behind this failure to compete may reside culturally genetic features.

It seems to me that to think in terms of genetic factors simplifies and obscures our view of the issues in human behavioral evolution. As pointed out, the issues residing in the earliest of mother-child interactions have been completely overlooked. It is as if human development is simply a question of developments in cognitive behavior. The possibilities residing in a shift of human consciousness from a domination of the right hemisphere to the left have not been considered. Klein himself thinks that a change in brain function occurred about 50,000 years ago but attributes it to a genetic cause. That a change took place seems probable, but it would have been based on a functional not an organically rooted process.

There is relatively little evidence for dramatic changes in behavior until long after the appearance of modern humans.⁸⁸ There is much agreement that the first signs of modern behavior began to appear about 50,000 years ago. When human

⁸⁵ see Nissen et al. (1951), Gruen & Prekop (1986).

⁸⁶ see Jung, p. 327 this paper.

⁸⁷ Klein (2003).

⁸⁸ Balter (2002).

culture finally did explode around 40,000 years ago, this was preceded not by an increase but a small decrease in average brain size.⁸⁹ Yet recent work by Christopher Henschilwood et al. reported 77,000-year-old geometrical designs, suggesting that the sudden explosion may not have been that sudden, which in turn suggests that cultural rather than genetic factors were the causes of such changes.⁹⁰ This is not to deny that genes play no role in evolution. On the contrary, genes are always there, but the causes of development lie in the relationship between the two components gene and experience, not in the components themselves.⁹¹

If the demise of the Neanderthal is insufficiently explained by genetic factors and by supposedly competitive disadvantages arising from them, then what other explanatory causes are there? It is my proposition that the nature of the Neanderthals' consciousness, being based on a personality organization with a stronger foundation in a sense of security, was responsible for their ensuing demise.

Consciousness

Consciousness⁹² is the state of being characterized by sensation, emotion, thought, etc.; it is mind in the broadest sense. Consciousness, Hebb writes, is to be identified with the complexity of the merging of central and sensory sequences of stimulation.⁹³ In abstract behavior, Scheerer observes, we transcend the immediate reality of a given stimulus situation and apprehend objects not as uniquely individual things but as representative of a category. "We are able to detach ourselves from the directly given outer or inner experience and reflect upon it, shifting from one aspect of the stimulus situation to another."⁹⁴ Scheerer here points to an essential feature of awareness/consciousness dominated by left-hemisphere activity. When such detachment cannot occur because the individual is more rooted in the empathic mode of the right hemisphere, then the evolving consciousness will be different. This difference affects one's perception of meaning and thus one's very relationship to one's world.

This is true not only when cortical functions are interfered with, as in strokes⁹⁵, but also when development is dominated by a process of socialization that instead of focusing on individual differences merges them by emphasizing thinking about people in abstract modes. Such a development shifts perception to categories rather than to individual beings. Work with African-American students in the United States is illuminating in this regard. These students, in holding on to their awareness of the empathically experienced differences between people, do not see others as abstract

⁸⁹ Bickerton (2002).

⁹⁰ Henschilwood et al. (2002).

⁹¹ Gottlieb (1992).

⁹² Webster's Collegiate Dictionary (1942).

⁹³ Hebb (1949).

⁹⁴ Scheerer (1940).

⁹⁵ Ullman et al. (1960).

objects and therefore as representatives of categories. Thus, they tend to fail on college entrance tests that are based on such abstractions.⁹⁶

In view of the possibility of a longer gestation in the Neanderthal and therefore a development with a more secure emotional base, it seems valid to postulate that the consciousness of the Neanderthals was rooted more in their empathic capabilities, thereby ensuring right hemisphere dominance. This in turn would mean that they reacted differently to the stresses of a changing environment than did the Cro Magnons. It is of interest that Bruce Bower, in an article about the Neanderthal mind⁹⁷, based on Steven Mithen's "The Prehistory of the Mind", suggests that Neanderthals thought separately about objects to be manipulated and about people. By merging these categories *Homo sapiens*, on the other hand, could think about people as objects to be manipulated. This would lead to our prevalent habit of thinking about people in abstract forms, which in Mithen's view can lead to the formation of racist attitudes. That would underline our thesis that because of their longer gestation and therefore greater sense of security, Neanderthals were more right dominant and therefore more empathic than abstract in their life organization.

Evidence does not seem to exist for a struggle between Cro-Magnon and Neanderthal; nevertheless, the archeological record suggests that Neanderthals retreated into less hospitable areas. The common implication is that this denotes retreat or flight rather than defense of one's position. Such an interpretation reflects our thinking mode and not necessarily what actually happened. An alternative interpretation is given by Devore and Konner, who point out in their study of the !Kung that defending territories in a free-flowing population with a different relationship to possession (i.e., non-existent) is meaningless.⁹⁸ Similarly, many animal species exhibit no territorial behavior⁹⁹, contrary to Ardrey's assumption of a territorial imperative.¹⁰⁰ Individuals and groups among the !Kung change residence easily so that when arguments break out, it is a simple matter to part company in order to avoid serious conflict. Therefore, "the resolution of conflict by fission... may help explain how order can be maintained in a society without superordinate means of social control".¹⁰¹

Interbreeding

At this point it is also necessary to consider the difficulty of finding evidence for Neanderthal/Cro-Magnon interbreeding. Perhaps an answer resides in the possible difference in their gestation periods. How would a Neanderthal baby, offspring of a Neanderthal man and a Cro-Magnon woman, pass through the birth canal? If its bio-

⁹⁶ Gruen (2003), Hacker (1989), New York State Department of Education (1987).

⁹⁷ Bower (2004) and Mithen (1996). Mithen, however, sees consciousness exclusively in terms of human cognitive development.

⁹⁸ Devore & Konner (1974).

⁹⁹ Tobach & Schneirla (1968).

¹⁰⁰ Ardrey (1966).

¹⁰¹ Devore & Konner (1974), p. 124.

logical program tended toward a longer gestation period¹⁰², would not the smaller pelvic structure of Cro-Magnon woman lead to the death of both mother and child? The Neanderthal baby was simply too large. Perhaps the reverse situation, a Neanderthal woman mating with a Cro-Magnon man, would lead to a successful birth. This may explain the dearth of evidence of interbreeding.¹⁰³

To weigh further the possibility that a longer gestation period had an influence on the consciousness of Neanderthals, one needs to consider that a secure foundation and therefore the predominance of empathic processes would make for dominance of the right hemisphere. T. C. Schneirla points out that development under secure conditions favors approach toward and not withdrawal from stimulus sources.¹⁰⁴ Approach allows empathic processes to organize perception whereas withdrawal leads to a narrowing of social interactions and thus shifts consciousness to the left hemisphere. In the case of modern humans, with a shorter gestation period, the possibility of a disturbance in security becomes apparent, depending on how the attachment process can compensate for the precariousness of the infant's first three months. The !Kung, among other peoples, present us with a picture of parents who have a responsiveness to children that meets the latter's needs to a far greater degree than is common in our cultures. The !Kung show us how it is possible to compensate for the shortened gestation period through responsive mothering. What seems a distinct possibility here is that the change in consciousness was a function of an incisive cultural shift in the direction of domination of others.

Empathy, Security, and Obedience

With the advent of the so-called great civilizations a pattern of conquest and subjugation evolved that in turn created the conditions distancing humans from their empathic capacities. Gould, the Egyptologist Hayes, and the archeologist Wolley all emphasize that in prehistoric cultures of the Near East no indications of wars or violence could be found.¹⁰⁵ Similar findings have been reported for Caral in Peru.¹⁰⁶

The advent of power and conquest as a cultural pattern must have found its most negative expression in a change in attachment formation as a result of diminished responsiveness on the part of mothers and fathers to their offspring.

The work of Stanley Milgram on obedience to authority shows that such obedience, the hallmark of the great civilizations, diminishes empathic responses.¹⁰⁷ Lloyd deMause, the historian of childhood, provides us with a picture of the devastating nature of child-parent relationships during the past 7,000 years or so of our history.¹⁰⁸ We need to be reminded that William James pointed out long ago that the

¹⁰² Ponce de Leon & Zollikofer (2002).

¹⁰³ Duarte et al. (1999).

¹⁰⁴ Schneirla (1965).

¹⁰⁵ Gould (1987), Hayes (1990), Wolley (1961).

¹⁰⁶ see p. 311 this paper.

¹⁰⁷ Milgram (1963, 1974).

¹⁰⁸ deMause (1974).

nonrecognition of an individual's being can be so painful as to result in rage, impotent despair, and even death.¹⁰⁹ Furthermore, the shift to the left hemisphere makes possible, through abstraction, the distancing from pain. It is through the abstract capacities modulated by the left hemisphere that pain and insecurity can be both denied and bridged. In other words, the development of ideational concepts such as manliness, heroism, conquest, and power allows the experiences of helplessness, insecurity, and pain to be both denied and compensated for.

It may well be that the explosion in culture 50,000 to 40,000 years ago¹¹⁰ had its origins in such a shift in dominance. With this development, obedience and abstract thought were mandated to usher in our present cultural development with its negative attachment developments—negative because the mothering process was interfered with by the deleterious effects abstraction and obedience have on empathic capacities. Recent work by Martha Welch and co-workers shows that release of anti-stress peptides is furthered by intensive maternal nurturing, which in turn makes for attachment formation leading to reciprocal interaction between mother and child.¹¹¹ And when the needs of a child are met in this way, empathy is furthered. If, on the other hand, the child's needs are not responded to, anger, helplessness, and lack of empathic development ensue.

It is significant in this respect that Harald Strohm, a researcher in the field of antique religions, finds that the early religions were formed around positive and benign gods and not punishing ones.¹¹² Gods of fear, damnation, and revenge seem to have evolved with the beginnings of the "great" civilizations that required obedience in order to make domination of peoples possible. It is fear and punishment that enforce obedience. Jaynes writes that the Greek gods of the *Iliad* take the place of man being the cause of his own behavior; in that work, man is action only in obedience to authoritarian gods.¹¹³ Helen Lynd points out that the development of language reinforces these processes.¹¹⁴ If language is formed by the social pressures of a culture subjected to obedience, then language itself has a special importance for the realization of the kind of identity being formed. In learning to speak, she writes, a child learns to acquire a delineation of itself in terms of the given permissible social conventions. In turn this becomes a means of entering into relations with other persons. Obedience thus becomes a key factor in the formation of social identity.

Leacock describes how the conversion of the Montagnais-Naskapi of Canada by Jesuit missionaries in the seventeenth century led to behavior utterly at variance with the free and accepting style the Indians had lived by.¹¹⁵ As soon as obedience to religious teachings became what converts lived by, they began to look for other Indians to punish, thus initiating a previously unknown need to punish others who deviated. Obedience seems to lead to what Lynd characterizes as a need for un-

¹⁰⁹ James (1905).

¹¹⁰ Bickerton (2002), Gibbons (2001).

¹¹¹ Welch et al. (2004).

¹¹² Strohm (2003).

¹¹³ Jaynes (1976).

¹¹⁴ Lynd (1958).

¹¹⁵ Leacock (1981).

ambiguity and precision as criteria of responsibility. But this is a "responsibility" about the form of behavior in which conformity to social norms of appearance becomes the mark of personal cohesiveness. It is not a sense of responsibility for one's own actions because it does not take into consideration how these actions affect one's fellow beings. This kind of false responsibility, Lynd indicates, precludes the development of language through which more multifarious and complex experiences can be expressed. Obedience thus becomes a factor in shifting domination to the left hemisphere with its isolating and empathy-limiting organization of consciousness. We say with Lynd that in this way language itself can bring about a development which precludes the evolvement of a language through which emotional experiences could be expressed.

Language and Identity

This limited development will successively replicate itself into a process in which words of domination and control become the deciding features. (The tablets of the old civilizations use language of domination and control.) We as the participants in this process will have difficulty becoming aware of it. Language therefore does not simply reflect an evolution leading to ever more "development"; rather, as Edward Sapir formulated it¹¹⁶, the function of language becomes not to report and communicate experiences but a way of defining what experience should be. Therefore, language dominated by the left hemisphere can both help and hinder the exploration of emotional experience. A recent report in *Science*¹¹⁷ reminds us that the linguist Benjamin Lee Whorf similarly believed that language is more "mold" into which thought is cast than it is a reflection of thought.

The Hopi language is a good example. Hopis think in terms of context and not of the abstract narrowing of the elements that make up a total configuration, this being somewhat analogous to what I have said about the problems presented by African-American children in their college entrance testing. The Hopi language does not contain words referring to time or to the past, present, or future in our sense of those words¹¹⁸; nevertheless, it is capable of accounting, in a pragmatic or operational sense, for all observable phenomena of the universe. What their language does is to constantly turn propositions about things into propositions about events. This is process-oriented thinking. For the Hopis, the element of time is not separated from whatever element of space enters into the operation. Their thinking, as Sapir points out, is in terms of context and not the abstract narrowing into elements. We are clearly dealing here with a phenomenon associated with the right hemisphere. The appearance in human development of emotional expression as an expression of right-hemisphere dominance is shown in the babbling of five-month-old babies.¹¹⁹ Babbling is a total configurational response within the infant's emotional behavior.

¹¹⁶ Hoijer (1954).

¹¹⁷ Holden (2004).

¹¹⁸ Carroll (1956).

¹¹⁹ Holowka & Petito (2002).

The dominance of the left hemisphere is associated with early infantile emotional deprivation, an experience that brings with it feelings of having one's sense of adequacy weakened. In our cultures, people generally try to compensate for the resulting feelings of personal weakness by dominating others, by gaining special positions and power, and by humiliating others. In this way emotional deprivation becomes ingrained in the very organic substructures of life. Mark Lewis et al. report long-term alterations in the behavior and neuro-biology of non-human primates socially deprived during their first year of life.¹²⁰ The study shows that deprivation resulted in a significantly decreased survival rate, males being particularly vulnerable to early death. Deprivation was also associated with a decrease in the ratio of helper cells to suppressor T cells and a significant increase in the number and activity of natural killer cells. Thus, early social deprivation resulted in life-long effects on cell-mediated immune status. Social deprivation is also a significant factor in the survival rate of infants.¹²¹ The results of deprivation appear to shift the prevailing consciousness into a cognitive mode that emphasizes control over others as well as the denigration of pain and emotional suffering. If pain and suffering are seen as signs of weakness, their denigration is validated. This behavioral mode increases stress. High stress disregulates the infant's basal and reactive levels of stress hormone, especially epinephrine.¹²² With effective maternal nurturing, however, this does not occur.

Consciousness Is More than Cognition

When Juan Luis Arsuaga writes about the consciousness of early humans, he means exclusively cognitive thinking as reflected in symbolic activities.¹²³ He does not seem to conceive of consciousness apart from cognition. But as Sapir's observations about the Hopi language imply, we need to look in a totally different way at a consciousness that is not dominated by the left hemisphere. If human attachment formation was a function of greater security before the advent of the "great" civilizations with their core themes of power, submission, and conquest, then we may assume that earliest consciousness was dominated by the right hemisphere. We need to consider that the kind of consciousness that develops in humans is greatly affected by the kind of mothering experienced. And in humans with a nine-month gestation period, with the first three months after birth so precarious, we cannot but suppose that under conditions devoid of adequate maternal care the resulting attachment will determine the kind of consciousness formed. It will be a consciousness reflecting the domination of the left hemisphere. That means a consciousness directed toward dealing with experience in an outward, logical, and emotionally fractionating way, one with diminished capacity for inner direction.

¹²⁰ Lewis et al. (2000).

¹²¹ Silk et al. (2003).

¹²² Welch (2001, 2002, 2004).

¹²³ Arsuaga (2003).

Aesthetic behavior and abstract thinking will be of a different order if consciousness is rooted in the emotional ways associated with the right hemispheres, a consideration that scientific thinking is not sufficiently aware of. After all, it was Descartes who formulated the idea that people have to learn to cut off and forget their relation to their childhood.¹²⁴ For Descartes the ideal human being was an empty subject, to be slowly filled with objectivity. When we consider that the American Pawnee Indians¹²⁵ "think" in ways different from our own, that their ways of perceiving the world are more based on right-hemisphere functioning with its integrative rather than isolating ways, then a different manner of looking at the evolution of consciousness is called for. Harlow and Harlow have shown that if mothering is interfered with, as in experiments with rhesus monkeys, individuals are produced who become abusive mothers and who not only perpetuate what their own experience has been but also create a world full of danger for their offspring.¹²⁶ Such offspring, whether non-human or human, develop relationships to their surroundings based on avoidance and defensiveness. Their perceptions narrow, and defensive behavior becomes the core of their survival behavior.¹²⁷

Stress, Fear, Nurturance, and Consciousness

In this kind of development, distrust dominates. Instead of curiosity awakening, strangeness stirs feelings of fear and self-depreciation.¹²⁸ Continuing stress then becomes a factor leading to physiological deregulation, for the stress interferes with hormonal regulation. As already noted, Welch points out that "virtually all stresses faced by the perinate activate the epinephrine neurotransmitter network. High stress disregulates the infant's basal and reactive levels of stress hormone, especially epinephrine."¹²⁹ The reverse holds true, however, if maternal nurturing is such that it leads the visceral thalamus by way of conditioning to well modulated coping responses. This suggests that when nurturance is lacking in empathy, the resulting difficulties in dealing with stress will lead the developing infant in the direction of dominance by the left hemisphere with its narrowing and splitting of the experience of stress. (The aforementioned irrational racism by Mithen is a case in point.) This situation occurs in order to overcome traumatizing and paralyzing effects. It may well be that the kind of cognitive development Arsuaga envisions as basic to human consciousness represents a later stage of consciousness when its organization has already shifted from the right to the left hemisphere. The development of a need for possession and control—to compensate for helplessness and suffering—is what led in turn to the rise of the great civilizations.

¹²⁴ Siirala (1964).

¹²⁵ Weltfish (1965).

¹²⁶ Harlow & Harlow (1969).

¹²⁷ Gruen (1974/75).

¹²⁸ Berlyne (1966).

¹²⁹ Welch (2001).

My proposition is that the consciousness of the Neanderthal was rooted in the right hemisphere, that a longer gestation provided a maternal environment that made for a more secure beginning. That is to say, the additional three months of a protected intrauterine environment meant that for these crucial months the infant was not exposed to the negative effects of a possibly deficient maternal nurturing. Its consciousness therefore was more rooted in empathic processes. A development more like that of the !Kung would ensue in response to stresses and changes. Since the !Kungs' consciousness is not dominated by the need to compensate for defective nurturing, pain and suffering in the context of maternal acceptance do not lead to their denial because they are not experienced as weakness. In such a social context acceptance of another person's love becomes possible since it is not experienced as a threat. On the other hand, the kind of consciousness characteristic of our cultures makes relationships a question of either submission or conquest.

Among the American Yahi Indians, for example, children were desired and welcomed.¹³⁰ As described by Kroeber, the kind of self-consciousness characterizing them was not based on the need to prove strength and fearlessness. On the contrary, they were characterized by a dignity that did not depend on identification with an authority. Therefore, they never submitted to the white conqueror. Submission would have denoted a loss of their own identity. When confronted with the overwhelming power of the white invaders, they chose to withdraw, not to fight. A consciousness based on the ideal of manly strength would not permit such withdrawal. With us, one fights or identifies with the stronger; any other response is seen as submission.

If the development of consciousness is not regarded as having any importance for understanding human history, we fail to consider its role in our evolution. Yet it may explain why the Neanderthal disappeared. We take survival of the fittest to mean that evolutionary development always means the best survives. But Darwin spoke of survival only in the sense of "fittest" under the given conditions. That is not the same as equating survival with the "best." Schneirla pointed to this erroneous assumption in 1959. That the Yahi disappeared does not therefore mean that they were, from an evolutionary viewpoint, inferior human beings. On the contrary, as Kroeber indicates, they were more humane than the people and the social forces threatening their existence. "The surviving Yahi seem never to have lost their morale in their long and hopeless struggle to survive." Their withdrawal did not save their lives as individuals or as a nation, but their life was "brilliantly successful in its psychology and technique of living... the group was master of the difficult art of communal and peaceful coexistence... in a tragic and deteriorating prospect".¹³¹ They stopped procreating.

Different kinds of consciousness exist aside from the one we take as universal. This emerges from Gene Weltfish's 30-year study of the Pawnee Indians of Oklahoma.¹³² Weltfish, an anthropologist who has studied many western Indian tribes during her professional life, gives us a picture of Pawnee consciousness very

¹³⁰ Kroeber (1962).

¹³¹ Kroeber (1962), pp. 31-97.

¹³² Weltfish (1965).

different from ours. In doing so, she comments on our own history, for without this comparison, she writes, we cannot comprehend the nature of the difference. "For millennia, people have been grouped into ruling classes and ruled masses. Setting aside the practice of applauding this approach to human affairs as an advance in history and therefore a human benefit... we cannot readily free ourselves of this habitual approach to the human being. It is therefore important for us to find a model of a human being who has never been pressed into a mass mold, no matter how different his physical setting may have been from ours. The Pawnee Indian is such a person".¹³³ Her conclusions are: "The Old World civilization for several millennia has been based on masses of people. Not so the Pawnee. His aspirations are his own, he sets his own goal, which is his personal secret. His aspiration is not to surpass someone else, but to go beyond his own past achievement... They were a well disciplined people, maintaining public order under many trying circumstances. And yet they had none of the power mechanisms that we consider essential to a well ordered life. No orders were ever issued... There was no code of rules or conduct nor punishment for infractions. There were no commandments nor moralizing proverbs". Democracy was a very personal thing for them. Basically it meant not being coerced and having no need to coerce anyone else. "The Pawnee learned this way of living in the earliest beginnings of his life. In the detailed events of everyday living as a child, he began his development as a disciplined and free man or as a woman who felt her dignity and her independence to be inviolate".¹³⁴

For us obedience is the feature in our lives that makes this kind of development almost impossible. It results in an awareness of ourselves that reflects the dominance of the left hemisphere with its organization of experience based on isolation instead of integration. Elenore Burke Leacock also describes this as the key element that changed the consciousness of many Montagnais-Naskapi Indians of Canada in the seventeenth century when subjected to religious coercion by Jesuit missionaries.¹³⁵ We, on the other hand, see ourselves as free, but are caught in a process of "imprinting"¹³⁶ that makes it nearly impossible for individuals to surmount what obedience in their earliest life experiences brought about: that as children they had to accept the pose of the parents as their reality. In this way the tendency evolves to accept appearance and not the truths of our world as the only reality. To do otherwise is to bring about the original fears, if not terrors, for not being obedient to the dictates of our authorities.

Gestation, Security, and Human Evolution

If longer gestation means a greater foundation of inner security at birth, then we may have to consider that Neanderthals were more rooted in their empathic perceptiveness; they were more akin to the Indians whose childhood experiences provided

¹³³ *ibid.*, p. 59.

¹³⁴ *ibid.*, pp. 5-6.

¹³⁵ Leacock (1981).

¹³⁶ Gruen (2000, 2003).

them with the kind of security that led them to be rooted in empathic, and therefore cooperative, ways. If this was so, then we may consider that the Neanderthal disappeared not simply because of climatic changes but because of changes in the social life of modern humans. These changes related to the development of power and possession as reactions to the insufficiencies in maternal nurturing. The social world began to change, and in reaction to these consequences the Neanderthals withdrew in the manner of the Yahis.

Thus, we can surmise that the shift from right- to left-hemisphere domination led to a consciousness that changed the relationship of humans to the surrounding world. Jaynes shows that a consciousness dominated by the left hemisphere brought with it a shift in the way human beings thought about responsibility.¹³⁷ Instead of feeling responsible for their own actions, the gods were now responsible for human deeds.¹³⁸ "Iliadic man did not have subjectivity as we do; he had no awareness of his awareness of the world, no internal mind-space to introspect upon... Volition, planning, initiative is organized with no consciousness whatever".¹³⁹ Jaynes sees the beginnings of humans' actions as not rooted in themselves but always in obedience to the gods. There is no sense of personal responsibility, only obedience. The world of *The Iliad* reflects a social organization in which hierarchies of officials, soldiers, and workers as well as inventories of goods and statements of goods owed to the ruler and especially the gods were the focus of ongoing consciousness.¹⁴⁰ Obedience to the gods and to authority was its organizing focus.

We believe that the history of human behavioral evolution has been the struggle to reconstitute the integration of a sense of personal responsibility and empathy into our consciousness. It is the struggle for the reassertion of right hemispheric consciousness that can be seen as the key to the ever-recurring social upheavals during the past 7,000 years or so of our history. It is in the light of these developments that the disappearance of the Neanderthal needs to be considered.

The question of what obedience does to human consciousness must be considered in relation to the psychic pain we are capable of enduring. Civilizations based on obedience to authority and the heroization of human behavior bring about the denial of pain and suffering. In the context of obedience and heroism, pain and suffering become signs of weakness. The pain of subjugation and humiliation is itself seen as disobedience to the authority causing it in the first place, which in turn leads to violence and aggression. This behavioral sequence has structural and organic corollaries. Recent studies on the pain of rejection by Naomi Eisenberger, Mathew Lieberman, and Kipling Williams indicate that right ventral prefrontal cortex activity is active during distress.¹⁴¹ At the same time Jack Panksepp shows how social support of suffering and the accompaniment of loving feelings reduce the sting of pain.¹⁴² What happens, however, when pain and compassion are denied?

¹³⁷ Jaynes (1976).

¹³⁸ *ibid.*, p. 72.

¹³⁹ *ibid.*, p. 75.

¹⁴⁰ *ibid.*, p. 80.

¹⁴¹ Eisenberger et al. (2003).

¹⁴² Panksepp (2003).

Panksepp suggests that the denial of pain prevents the release of opioids, especially endorphins, and thus, if pain is not alleviated, creates the conditions leading to violent aggression. We can gather from the neurochemistry of social attachment that the distress of separation accompanying a disturbance in mother-child attachment brings about the pain of sudden loss of social support, and it is this factor that separates peaceful cultures from warlike and conquering ones.

Jaynes clearly shows in his study of consciousness that in *The Iliad* the relationship of human beings to their gods was one of obedience and not responsibility to themselves. This makes aggressive violence permissible, for the gods ordered it. With peoples whose religious life is not determined by obedience to the gods but by feelings of an integrative relationship with surrounding nature, the interdependence of human being and nature furthers a sense of responsibility for one's own actions. The religious ceremonies of the Pawnees, for example, were considered the means by which the cosmic order was maintained on its course. In the continuance of the earth and its life processes the people played an integral part, with every individual participating.¹⁴³ Jung recounts that the Hopi Chief of the Taos Pueblo in New Mexico, Ochwia Bianco, told him of his relationship to God: "...we are the sons of father Sun, and with our religion we daily help our father to go across the sky [i.e., by prayer]. We do this not only for ourselves, but for the whole world. If we were to cease practicing our religion, in ten years the sun would no longer rise. Then it would be night forever."¹⁴⁴ Jung comments, "...that man can give God something in exchange, induces pride, for it raises the human individual to the dignity of a meta-physical factor... Such a man is in the fullest sense of the word in his proper place." In other words, a sense of self is based on equality and not obedience.

This is a kind of consciousness we have difficulty in acknowledging, as the following vignette makes clear. This same chieftain declared on another occasion: "The Whites... are always seeking something; they are always uneasy and restless. We do not know what they want. We do not understand them. We think they are mad." Jung asked him why he thought this. "They say they think with their heads", he replied. "Why of course. What do you think with?" Jung asked. "We think here," he said, indicating his heart.¹⁴⁵

That is precisely what differentiates these Indians and very likely our ancestors from us. Unless we can take into account that consciousness plays a role in the evolution of human behavior, we will not be able to understand it. When we begin to see that empathy is a significant factor in our evolution, then we will be in a position to gain a clearer insight into our past.

Concluding Statement

One significant aspect of our own consciousness which helps distort our views is that with our logic and our scientific achievements we have succeeded in reaching the point of believing ourselves secure. We have lost what Ortega y Gasset calls,

¹⁴³ Weltfish (1965), p. 8.

¹⁴⁴ Jung (1963).

¹⁴⁵ *ibid.*, p. 247.

"that basic feeling of risk which is the substance of man."¹⁴⁶ Our civilization consists of a repertoire of systems based on the belief that power and possession in themselves bring security and have thus become synonymous with security. But because success in these domains is always a function of someone else's failure, we are marked by an internalized nightmare: "In order to live successfully in our culture you must learn to dream of failing".¹⁴⁷ The end result is an inner dread of possible failure, inadequacy, and vulnerability. However, this feeling must be denied, for in order to gain approval we must appear secure and strong. And thus we metamorphose, to paraphrase Kierkegaard¹⁴⁸, into beings who are wholly under the spell of a need for approval.

Human evolution cannot be understood simply in terms of archeological findings. We must incorporate what we know about the living interactions between child and mother as a factor in that evolution. Here the processes of attachment formation play a crucial role in the development of human consciousness. To understand our past will necessitate an evolving understanding of all that contributed and continues to contribute to our becoming human.

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¹⁴⁶ Ortega y Gasset (1969).

¹⁴⁷ Henry (1963).

¹⁴⁸ Kierkegaard (1941).

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