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How Elders Guided the Evolution of the Modern Human Brain, Social Behavior, and Culture

KATHRYN COE AND CRAIG T. PALMER

INTRODUCTION

To prepare for writing this article, we reviewed many academic tomes, from anthropology to zoology, and perused many decades' worth of ethnographic studies of American Indian elders and elders from other groups around the world. We wanted not only to describe elderly American Indians but also to build the argument that elders are of critical importance for American Indian families and communities and have been of critical importance for tens of thousands of years. We wanted to construct the fundamental argument that in virtually all species with large brains and long childhoods, elders are of critical importance. This is as true in caribou as it is in humans; it is as true in American Indians as it is in whites, African Americans, and Asians. It is true because elders are the holders of ancient wisdom about the conduct and management of social behavior and about strategies for protecting the vulnerable from the problems that consistently arise in anyone's life.

In reviewing the literature, it was a bit startling to move from the period that encompassed the late 1800s to the 1940s. This literature includes strong and clear descriptions of the important role of American Indian elders, the wisdom of their words, and the respect that their position held; hundreds of detailed descriptions of the importance of the elders and their

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knowledge—how their wisdom saved their people—and stories of great personal self-sacrifice made by the elders in order to protect their people; and many discussions about the vast amount of time that elders put into nurturing and educating the young.

Beginning in the 1950s, however, new approaches began to appear and slowly—with a decade of studies building upon new decades of studies—another picture of American Indian elders began to appear. Milton Altschuler, as just one example, wrote about the many ways that elders, in teaching children, stifled and repressed them.¹ He felt it was important never to restrain the behavior of the young or for that matter anyone else. He did not see that even in a changing world, some things—such as thoughtfulness and respect for knowledge—are constants.

A recent literature review on Google Scholar, using the term *American Indian elders*, showed that the direction of current studies, and the picture painted in them, is a dismal one. Paper after paper regarding American Indian elder dementia, diabetes, cognitive impairment, elder abuse, depression, and coping strategies for careworn caregivers exists. One has to ask what happened to all the studies of noble and important elders. These elders still exist; where are the studies of their resilience, nobility, compassion, honesty, justice, and service?²

In this article we revisit these earlier studies of the role and importance of elders and pursue various lines of evidence—biological, archaeological, and cross-cultural/ethnographic—to build the fundamental argument that elders and the knowledge they have acquired from their ancestors, through social learning, have played a key role in the evolution of social species. We will argue that among humans, who are among the most social of all species, elders have played a crucial role. This was certainly true in American Indian societies, where elders were held to be of particular importance.

As definitions are the heart of all scientific endeavors, we begin this article by providing definitions for crucial terms—*culture* and *tradition*, *hierarchy* and *influence*. Then we review the cross-species, biological, archaeological, and cross-cultural/ethnographic records to support our claim that elders did play an important role and outline the ways that elders were important. This article ends with a discussion of elders, traditions, and the issues that underlie a diminishing of elder importance and influence.

DEFINITIONS

Culture and Tradition

Culture, for those scholars interested in the topic, is generally defined as that which makes humans unique. If we were to press them for more detail, these scholars would likely provide a list of things that humans do and other animals do not, a list that is consistent with the laundry-list definition coined by Edward Tylor at the dawn of the field of anthropology: “That complex whole which includes knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by man as a member of a society.”² If

we want to move beyond a laundry list to a theoretical and scientific definition, then we can begin by looking at the elements of culture consistent with common definitions. These elements include the facts that culture is learned—it is not innate—and is shared or copied by individuals living in a society. Lyle Steadman and C. T. Palmer phrase it this way:

Culture has been the focus of anthropology since its beginnings. An explicit definition of culture, however has never been widely accepted. Clearly, while the term refers to something learned, it does not refer to just anything learned, for many organisms exhibit some learning and are not said to exhibit culture. The essence of culture is not that it is learned, but that it is something learned and copied from one individual by another, occurring in the first individual and then *replicated* by the second. Therefore, what distinguishes culture, identifiably, is copied behavior. Only to the extent that it is copied do we speak of culture; it is only the repeated, learned part of behavior that is *identified* as culture. Cultural behavior, then, exhibited by one individual implies another individual from which it was copied. Culture, *identifiably*, is behavior that is experienced, remembered, and then copied, as Darwin implied by his use of the word “imitation.”³

Culture, as learned and shared/copied behavior, can be transmitted vertically—that is, past to present—from ancestors to descendants, or it can be transmitted horizontally, among peers.⁴ In sum, although there may be many ancient, ornate, and nontestable definitions, a current definition of culture, explicitly and identifiably, refers to learned behaviors, copied from another, and potentially transmittable to a third person.⁵

Tradition, following from this definition, is culture coming from the past, transmitted from ancestors to descendants.⁶ Until quite recently, human culture was overwhelmingly traditional; the word *tradition* implied not only persistence from one generation to the next but also the method of transmission—culture was passed from one generation of kin to the next, generally parent or grandparent to child/grandchild, and its transmission required intergenerational kinship cooperation.⁷

Culture, at least at its origin, was a form of kinship behavior. For much of evolutionary history, humans lived in small groups of kin; kin were those with whom we lived our lives, with whom we shared our possessions, from whom we could learn, and who we could teach. Cultural transmission, however, is not just information that simply diffuses among groups—it involves parents approving or disapproving of their children’s behavior and influencing what their children will learn or not learn. Further, culture was ancestral; individuals sharing a common culture, or common traditions, will have inherited those traditions from their parents and their other close kin with a common ancestor.

Hierarchy and Influence

Elders, across traditional societies, are regularly said to have differential influence or higher rank even in what are fundamentally acephalous societies.⁸ When we talk about elders having differential respect and influence, we are talking about rank, or relative standing or position. Our conception of a hierarchy, as Robert Wright recognizes, is often built on the assumption that a hierarchy necessarily involves rank and a “power struggle in which the powerful prevail and the weak are exploited.”⁹ There are, however, reasons to question this statement. First, as Jane Lancaster points out, there are advantages to a hierarchy. “Dominance,” she continues, “is one effective way to organize social interactions . . . unorganized social interactions can be chaotic.”¹⁰ Further, all mammals are distinguished by a ranked relationship; offspring are subordinate to, or dependent upon, a mother who guides, while offspring follow.¹¹ Following from this, the first human hierarchy, or ranked relationship, was that between a mother and her child. The prolonged immaturity of human and primate offspring reflects not only their dependency but also the mother’s responsibility. The offspring’s survival depends fundamentally on this long-term ranked relationship. The mother-child relationship is ranked but rarely described as exploitative.

Although Lancaster used the word *dominance*, a more appropriate term to use when speaking of the relationship between elders and their kin, as between a mother and a child, and father and a child, may be *hierarchy*.¹² *Hiero*, the root of the word, is a Greek word meaning sacred or keeper of sacred things; *archos* means to rule or lead. Hierarchs, as leaders of religious societies, were obligated not only to supernatural beings (often ancestors) but also to the people whose servant they were said to be.¹³ Hierarchy, rather than implying exploitation, implies generosity, obligation, and even subordination.¹⁴ A hierarchy is defined by duties or service, not merely by rights, and differential influence is exhibited through acceptance of responsibility.¹⁵

The association of high rank and duty or obligation is not confined to hierarchs living in the classical world. According to Alfredo Barrera-Vásquez: “Maya hieroglyphic script talks about ‘lineage authority’ using the Yucatec Mayan term *kuch*, which refers to burden, such as a burden that is carried on a tumpline against one’s back, a burden of conscience, a responsibility, an obligation, or the authority of an office.”¹⁶ The higher ranked individual, in a hierarchy, is a servant to the lower ranked individuals. To paraphrase Jan van Baal, the higher a person’s position in the hierarchy of power, the more is expected, the greater are the obligations.¹⁷

The exploitation of subordinates, often assumed to be a privilege of rank, is true of a pecking order, which is distinguished from a hierarchy in that the individual at the top has dominance or rank but no obligations to the one(s) at the bottom, just as the one(s) at the bottom has no influence over the one at the top.¹⁸ Pecking orders, often seen in domesticated animals such as chickens, are impersonal and competitive: hierarchies are personal and involve a vertical form of cooperation. The important point here is that when elders—across species—are seen as holding a differential rank, their role is often that of a servant leader.¹⁹ They lead through service.

IMPORTANCE OF ELDERS AND TRADITIONS IN OTHER SPECIES

As humans we have a great deal in common with other animals, mammals and primates in particular. Like many of these animals, we nurse our young and have enduring and complex maternal-child and, among humans, father-child interactions. We are highly social; identify kin and preferentially cooperate with them; and often treat the elders preferentially, recognizing them as role models, as hierarchs.

Scholars who define culture cognitively—as ideas and beliefs—tend to be highly skeptical of the claim that other species have culture. However, if we accept the definition of culture provided above, “culture can be exhibited by any animal with a mind that allows social learning.”²⁰ Following from this, across species, culture was created by elders, and honed by them across generations, to make it possible for their descendants to avoid problems that the elders learned to avoid in the past through costly trial-and-error learning. Culture makes it possible for descendants to avoid having to pay the high costs inherent in such learning. Richard Byrne et al., in their study of animal traditions, describe the benefits of traditions:

With useful, socially learnt traditions, a local population can “punch above its weight,” and thus gain a critical survival advantage. Elephants can learn of the location of water sources merely by following their elders. Without this social guidance they could not survive in the Namib; with it, individuals gain valuable knowledge for nothing. If each generation adds something to what they learnt, then “ratcheting” of cultural knowledge can occur—a sort of cultural common interest.²¹

BIOLOGICAL ADAPTATIONS SUPPORTING THE IMPORTANCE OF ELDERS

Biologically, modern humans are unique in a number of ways. First of all, compared with other species, we live a very long time. Second, we are unique in the size of our brain; its cortex comprises thirty billion neurons of two hundred different types, each of which are interlinked by about a thousand synapses, resulting in a million billion connections working at rates of up to ten billion interactions per second. Although the benefits of a large brain are obvious, it is a costly organ. The metabolic expense of building and running the large human brain is high: more than 50 percent of an infant’s and 20 percent of an adult’s energetic resources are used to support the brain. Perhaps even more costly, in evolutionary terms, is the association of a large brain with an extension of mental and physical immaturity—the long juvenile period seen in humans. The apparent reason is that human minds need a long time to master the information that is the key to success as an adult—for example, foraging skills, mating strategies, and social competencies. This information, which is possessed by the elders, is of critical importance to human survival.

Humans also are unique biologically, not only in being bipedal but also because females delay initiating reproduction, hide their ovulation, experience increased risk in childbirth, invest huge amounts in their offspring, and terminate reproduction early, long before their death. Menopause involves the cessation of ovulation and the termination of reproduction. In other mammalian species, all of the physiological systems, including that of reproduction, decay at the same rate and even old females retain some fertility.²² In humans, however, reproductive function decays decades earlier than do the other systems; females at age thirty begin to lose fertility dramatically, and it declines thereafter to reach zero between ages forty-five and fifty.²³ Human females live perhaps a third of their lives after menopause, while other mammalian females might live 10 percent of their lives after their last birth.²⁴

Although menopause may be a by-product of senescence, it is widely accepted that it seems too complex and comes too early in a female's life to be regarded as other than an adaptation.²⁵ It has been hypothesized that menopause became adaptive as the necessary investment in hominid offspring went up due to the offsprings' increased dependency.²⁶ In species in which offspring are dependent for some time on their mother, it may pay older females to shift from producing more offspring to continued high-level care of existing offspring.²⁷ According to Richard Alexander's grandchild altruism gene hypothesis, it may have been adaptive for an older human female, rather than producing additional offspring, to turn her effort to tending the offspring she had already produced (in order to raise them to maturity before her death) and to aiding daughters in their reproductive efforts.²⁸ What we are describing here is not only a hierarchy but also a dynastic strategy. Mothers, who have differential influence, now assist their daughters in childbirth and guide them in rearing the daughters' infants and children and then encourage/influence their daughters to do the same for their own daughters, and so on through the generations. One can assume something similar occurred between fathers and their sons, with fathers influencing their sons to influence their own sons and even their more distant descendants. In summary, menopause may be an adaptation designed to help ensure that females live long enough to become elders and that males, influenced by females, began to adopt pair bonding and demonstrate paternal care.

Humans are also unique in that our infants are highly altricial. They are born physically immature, with bones that are not completely ossified and with immature systems—the nervous, immune, and digestive systems among them. Human offspring are highly dependent, and they remain dependent upon their parents for many years, much longer than offspring in any other species. In many ways, human offspring are extremely costly to their parents. It is during infancy, childhood, and adolescence that the developing brain, which was designed for a highly social species, rapidly absorbs information, a function it was designed to perform. The extreme and extended altriciality of human offspring points to the importance of culture. This necessarily intense and prolonged care of the young led to the development of many cultural strategies, one of which was marriage. Human males and females, unlike

males and females in many, perhaps most other, mammalian species, form enduring bonds that involve a sexual relationship; provide the protection, provisioning, and education of costly and vulnerable children; and nurture enduring bilateral kinship ties.

Many other examples of human cultural strategies coevolving exist, along with biological traits. These include:

- Midwifery skills evolving culturally along with or in response to the higher-risk childbirth that was a consequence of bipedal posture.
- Complex kinship systems, headed by elders as living representatives of the ancestors, evolving culturally along with or in response to the rapid accumulation and importance of traditional knowledge.
- Complex parental, grandparental, and kinship strategies evolving culturally along with or in response to the altriciality and long-term vulnerability of human offspring.
- Male hierarchies becoming more like the maternal hierarchy, in its obligations to those served, along with or in response to cultural strategies promoting enduring mating relationships/pair bonding, paternal obligations to offspring, and male responsibilities to kin (see discussion of hierarchies below).
- Cultural strategies to protect female choice evolving culturally in response to concealed ovulation and male hypersexuality.²⁹

For many social scientists, *Homo sapiens* is the big-brained animal that has most magnificently elaborated cultural behavior; in our lives we invest many resources in such cultural practices. Although the “seeds of cultural capacity,” Edward Hoebel writes, “are in the great apes . . . only humans have so greatly elaborated culture and done so over a relatively short, some 100,000 years, period of time.”³⁰ This capacity for the elaboration of culture was linked inextricably to biological evolution including the evolution of the large brain.

ARCHAEOLOGICAL EVIDENCE SUPPORTING THE IMPORTANCE OF ELDERS

It is not always clear how the importance of elders might or should be measured in the archaeological record. It is possible, as some hypothesize, that humans grieve more and are more likely to build large memorials for individuals of high reproductive value and genetic relatedness.³¹ However, the predictions that might be generated from this approach are unclear. If reproductive value refers to the potential number of offspring an individual could potentially produce, the reproductive value of elders is near or at zero. However, if the evolutionary value of an individual is thought of in the sense of promoting successful reproduction in descendants, then elders—specifically grandmothers—may have the highest reproductive value. This view might lead to the expectation of elaborate burials for elders; however, if a hierarchy is distinguished by service and not self-interest, one should probably not expect the elders to have the most elaborate burials. Thus, it is not clear that elaborate burials are necessarily the way the importance of elders is identified or measured.

That said, there is some evidence suggesting that the elders had an important role. Although the precise details of most of the earliest burials will be debated, perhaps forever, there is some agreement that the burial of an elderly Neanderthal male in Shanidar Cave, which is located in Iraq, involved respect for the elderly.³² This man's skeleton was seriously deformed, with lesions on its vertebrae and evidence of multiple traumatic and degenerative joint disease lesions due to injuries suffered prior to death.³³ These abnormalities would have been debilitating, making day-to-day life painful. A violent blow to his face, perhaps from a rock fall, crushed his left orbit leaving him partially or totally blind in one eye. He had a withered right arm that had been fractured in several places causing him to lose his lower arm and hand, and perhaps leading to deformities in his lower legs and foot. He would have walked with a painful limp. What this suggests is not only that the Neanderthal looked after their sick and aged, but that this elderly man was considered to be important enough to be given a burial after his death, at a time when burials were apparently rare.

Although many examples of burials of the elderly can be found in modern humans, one intriguing example was found in a twelve-thousand-year-old Natufian cave site in Israel. The burial was constructed for a small, elderly, disabled woman. This woman was buried with an exceptional amount of grave offerings, including fifty complete tortoise shells and body parts of many animals—a wild boar, an eagle, a cow, a leopard, and two martens. The archaeologists who excavated the site wrote that both the interment rituals and the method used to construct and seal the grave suggest that this was one of the earliest known burials of a female shaman.³⁴

ETHNOGRAPHIC EVIDENCE SUPPORTING THE IMPORTANCE OF ELDERS

As we have implied, in order to understand the importance of elders, it is important to understand culture and hierarchies because such hierarchies are ubiquitous, generally involve the elders, and can be based on something as simple as birth order.³⁵ In birth-order hierarchies, which are found around the world, the one at the top of the hierarchy, the older one, is obligated to those beneath her, the younger members of the hierarchy. In humans, as among chimpanzees, this can be interpreted to mean, as one example, that older siblings are obligated to—or in a sense servants of—their younger siblings.³⁶ Isabella Bird wrote that when traditional Japanese children play a game and there is some doubt about a rule, “instead of a quarrelsome suspension of the game, the fiat of a senior child decides the matter.”³⁷ The importance of age in hierarchy is also seen in kinship terminology. Among the Chachi tribe of Ecuador, the kinship term used to address someone, and the behavior of deference to the elder of the two involved in a social interaction, depends upon relative age; Chapalaachi kinship terms refer to relative birth position, older to younger.³⁸ This ranking by birth order, with the elder individual being given more authority, is a common practice around the world.³⁹

As humans tend to form hierarchies built on age, it is not surprising that in many societies “advanced age brings increased prestige and authority.” In traditional societies, “senior members of the family and community are elevated to positions of leadership.”⁴⁰ In the Hopi community, older mothers (now grandmothers) often have significant influence.⁴¹ The Irish called old age “the most honored state.”⁴² Among the Australian Aborigines, a woman, at age forty-five, became a *kapula*, an old one who was respected.⁴³ The !Kung revered the elderly as living ancestors (the givers of life); the traditional knowledge they held was seen as crucial for survival.⁴⁴

According to the Ainu, the “aged are the most revered members of society and are political leaders as well as guardians of religion, oral literature, and other important traditions.”⁴⁵ An Aymaran child’s taskmistress is an older woman, mother, sister, or mother-in-law, who has unquestioned authority.⁴⁶ In the Bemba communities of Africa, young boys and girls were taught to pay “extreme deference” to age, and during their rites of passage girls were told that they were expected “to accept the domination of older women.”⁴⁷ Bemba ceremonies opened with a representation of the hierarchy of the women who were present, with the oldest honored first, then the next oldest, and then on down to the women below them in rank by exact order of age.⁴⁸

Not only were the elders often revered, but new roles also opened for grandmothers. Older women among the Netsilik Eskimos are the storytellers. Among the Navajo, “if a woman is committed to becoming a chanter she is more likely to do so after menopause” because, at this point in life, she has “more free time to devote to learning all aspects of the ceremonial.”⁴⁹ The Navajo claim that an older female can take on new, more public roles as she no longer has to worry about infecting her children (if she acquires an illness during a healing), nor does she have scheduling difficulties related to taboos against menstruating women attending ceremonies.

One new role that older women can and do take on is that of social critic. “Most [Inuit] men defer to the opinion and wishes of a ‘grandmother’ as they will to no one else” even though those women could be outspoken critics of males.⁵⁰ The position of these older women in the age hierarchy protected them “from recrimination and retaliation,” by which Lee Guemple means that they could speak openly and even insultingly and could “insinuate the ‘women’s vote’ into what would otherwise be an all male ‘caucus.’”⁵¹ Cherokee women were, and continue to be, influential members of the council as they were felt to give balance to debate and decisions.⁵²

Older women also often perform what was probably another important social role, one that we now often pejoratively refer to as busybody. These individuals teach manners and use gossip and ostracism to encourage individuals to exhibit appropriate social behavior and follow traditional law in line with traditional expectations.

The importance of elders and the importance of preserving traditions also can be seen in certain subcultures within modern societies that have made a conscious effort to retain their traditions. For example, the Amish regularly say that they “are uncomfortable with the idea of change . . . [and] young people do what the old people did when they were young.”⁵³ Essentially

all Amish social behavior is based on a “charter” known as the *Ordnung*, and this “charter encompasses basic beliefs and a body of tradition and wisdom that guide the members in their daily lives.”⁵⁴

The value given to elders among the Amish, and to the traditions Amish elders strive to encourage in the young, is also shown in the fact that tradition “tends to become sacred.”⁵⁵ As traditions are seen as sacred, they are seen as inviolable and “continuity of conformity and custom is assured . . . religion and custom are inseparable.”⁵⁶

Like in other tradition-directed societies, “persons who make up the society are associated with genealogical position. Most people in this society have orderly kinship and coherent social connections with one another so that virtually the whole society forms a body of relatives.”⁵⁷ Within the Amish kinship structure, the respect given to elders is paramount: “Wisdom accumulates with age, and with age comes respect. Old people retain the respect of children and grandchildren. Obedience to parents is one of the most common themes in Amish preaching. . . . Since the wisdom of the aged carries more weight than the advice of younger men, the conservation of the entire community is assured and the religious ideals are protected from too much change.”⁵⁸ The Amish summarize their view of traditions and the elders that transmit them in the simple, but powerful, statement: “The old is the best, and the new is of the devil.”⁵⁹ Thousands of such examples are available in ethnographies.

Traditions, and the rules they included, were made more attractive and memorable by linking them with other traditions, especially the arts. Ernst Gombrich writes that the “great teachers of China thought of art as a means of reminding people of the great examples of virtue in the golden ages of the past.”⁶⁰ Visual art in traditional societies is often an important part of religious ceremonies and is used in the teaching of moral behavior. Art, in this association, is used to promote cooperation. One of the earliest Chinese book scrolls (fourth century AD) depicts the lives of virtuous ladies. Lega art consists primarily of human and animal figurines that are associated with proverbs about appropriate social behaviors.⁶¹ Among the Australian Aborigines, Howard Morphy explains, the “teaching of paintings is seen as part of the on-going process of initiations, and takes place in conjunction with the learning [from older male relatives] of songs and of some of the meaning of paintings.”⁶² Songs and stories describe how the ancestors in the paintings behaved and expect their descendants to behave. Ancestral heroes who lived in the Dreamtime, Adolphus Elkin writes, are models for correct social behavior. The actors in rituals, he writes,

“dress up”, adorning themselves with the paint and design peculiar to the rite, and wearing or carrying symbols which express some fact about, or incident in the life of the hero. . . . At the conclusion of each act which usually lasts only five or ten minutes or so, the old men explain it and the decoration and symbols to any newly initiated men present or to any whose memories need refreshing. In this way, tribal history is handed down, and the patterns of life which the myths

enshrine are instilled into the minds of the younger men present, for most do today what the great heroes did in the dream time.⁶³

Although the close linkage between kinship and art style helped promote persistence of visual art style, in ancient oriental urban societies, leaders and elders encouraged the replication of art traditions by arguing that “the traditional rules of art [were] as sacred and inviolable as the traditional religious creeds and forms of worship.”⁶⁴ When changes in style occurred, those changes often were adopted, as in the case of Christian art in the Middle Ages in Europe, or the art of the Plains Indians, from metaphorical (or fictive) kin.⁶⁵ Metaphorical kin are individuals who are not biological kin, but rather are those who use kinship terms to refer to one another and share kinship obligations. Further, the new elements of art complemented the ancestral style; they were not idiosyncratic and were justified by reference to ancestors.⁶⁶ As Robert Tonkinson describes, the Mardujara Aborigines claim that all new knowledge, including, presumably, knowledge of a new art style, comes to humans in dreams through spirit-beings who mediate between the living and their deceased ancestors.⁶⁷

In sum, traditions were complex strategies that limited one’s ability to behave in ways that would promote one’s own self-interest, but could have quite high costs, including the time required to make an object and the many years that must be spent to learn to make it properly. There are also energy costs and risks. The Maori sailed to remote areas of Otago and the West Coast of South Island, either of which was quite a journey by sea, to obtain jade or nephrite in varying shades of green to make the *hei-tiki*, a small breast pendant or neck ornament of an ancestral female figure.⁶⁸ During the years spent learning a tradition, the young were provided with a great many opportunities to build strong and enduring social relationships with their elder kin—upon whom they depended if they were to acquire the knowledge—and, as the examples above show, they received a blueprint for how life was to be best lived.

LOSS OF RESPECT FOR THE ELDERS

In this article we have provided several lines of evidence supporting the importance of elders. The elders were important as social guides, guardians of important knowledge, social critics, and experienced teachers. However, although the elders are respected in many societies, this is not always true, and it is important not only to understand why but also to understand some possible consequences of the loss of traditional knowledge, much of which was about how to maintain cooperative social ties.

Elders in Westernized societies are not always respected, unless, some argue, they control vast amounts of funding.⁶⁹ The environment that facilitates the loss of elders may be one of rapid change, when the elder’s knowledge of technology, as one example, is seen as obsolete. We would still expect, however, that elders would continue to be respected universally in traditional societies.

Most scholars propose that treatment of the elderly is related to their control of some sort of resource; elderly females are treated poorly when they no longer are sexually attractive, and elderly males and females are mistreated when they do not control vast amounts of land or money, or when the knowledge they have is seen as obsolete. The elderly are valued in societies that have no writing system because they serve as the repositories of cultural knowledge.⁷⁰

We predict, however, that poor treatment of the elderly is independent of all of these. Rich or poor, attractive or unattractive, respect for the elders will be correlated with traditions that encourage restraint, especially around the vulnerable, and that promote respect for traditions and the elderly, who are described as the holders of traditions—the accumulated and honed social knowledge of a people. This proposition is testable and hopefully will be put to a critical test.

CONCLUSION

Kinship relationships are a key to the remarkable evolutionary success of modern humans; elders, along with the traditions they teach and guard and the mothers and children whose interests they protect, are the keys to understanding kinship. Although it is not clear how other species may identify their kin, humans learn from their elders how to identify their kin. Further, humans have developed strategies—shared language, tribal outfits, hair arrangements, dental decoration, cranial deformation, scarification, and tattooing—for identifying large categories of individuals (for example, clans, tribes) who refer to one another as kin because they share a common ancestry. Humans also have developed complex strategies for encouraging social relationships and for creating and maintaining the cooperation among those kin. These strategies, which are cultural, include not only tribal law, moral systems, and methods to resolve and prevent conflict, but also they include the rules of kinship behavior, starting with those encouraging women to be “good mothers” and good wives, men to be good husbands and fathers, and kin to protect, provision, and assist one another.⁷¹ These rules were taught, protected, and encouraged by the elders. As long as the young are taught to listen to and respect the elders, the position of the elders and the traditions they protect will persist. These cultural strategies evolved, in a system of coevolution, along with the evolving complex brain and nervous system.

The persistence of traditions, and their tie to the elders, is not under debate; it is a point accepted almost universally in anthropology. Traditions have persisted for hundreds, thousands, and tens of thousands of years.⁷² Baldwin Spencer and James Gillen explain that “amongst all savage tribes, the Australian Native is bound hand and foot by custom. . . . What his fathers did before him that he must do.”⁷³ Not only has innovation and rapid change been rare in human prehistory and history, but also, as Alfred Kroeber explains, *Homo sapiens* “is generally hidebound and unimaginative, and . . . its cultures are therefore inclined to be persistent . . . on the whole the passive or receptive faculties of culture tend to be considerably stronger than its active or innovating

faculties.”⁷⁴ Kroeber continues, “Even in times of the most radical change and innovation there are probably several times as many items of culture being transmitted from the past as there are being newly devised.”⁷⁵

We agree with Kroeber and others in accepting that traditions put a cap on *unrestrained* creativity, while we do not agree that humans are unimaginative or lacking in creativity. When an individual accepts a tradition, and we use the term *accept* intentionally as individuals have choices, that particular individual sacrifices some degree of creativity—or the ability to make unrestrained changes in a tradition, at the ancestors’ request. There is, as Franz Boas points out, a “restriction of inventiveness.”⁷⁶ When one accepts a tradition, one inherits the obligation to cooperate with one’s elders in order to learn a design and the techniques necessary to produce it. One also inherits the obligation to teach these to the next generation. Further, one has to earn the right to use the art style one has inherited by showing appropriate social behavior. Morphy explains that a man must ask “his father’s permission to do paintings that he has been taught.”⁷⁷ If a male’s behavior is seen as inappropriate, the ability to learn and to use a design is withheld: “Wamatun refused to teach his two eldest sons the clan’s paintings unless they stopped drinking.”⁷⁸

As humans are clearly a species capable of tremendous creativity, one has to ask why, in a traditional society, unrestrained creativity was discouraged. We argue that creativity, if promoted to the detriment of tested cultural knowledge, can result in the breakdown of social relationships essential for human survival and reproduction. Although modern humans may be “built for speed,” the ancestral encouragement, and even demand, that traditional behaviors be replicated has served for much of human evolution as a governor of cultural creativity in domains such as subsistence technology, religious beliefs and rituals, social manners, language, and even art. Among humans, cultural behaviors transmitted from one generation of kin to the next can and do persist for hundreds and even thousands of years. It was this transmission that makes the role of the elders so important across culture and provides the strong underpinnings of American Indian cultures. The loss of these traditions, and the role of the elder, is associated not only with unrestrained creativity but also with the loss of traditions encouraging cooperation; a breakdown of close kinship ties; the disappearance of tribal, clan, and family identification; and cooperation.

NOTES

1. Milton Altschuler, “The Cayapa: A Study in Legal Behavior” (PhD diss., University of Minnesota, 1964).

2. Sir Edward Burnett Tylor, *Anthropology* (1881; repr., Ann Arbor: University of Michigan Press, 1960), 1.

3. Lyle B. Steadman and C. T. Palmer, *The Supernatural and Natural Selection: The Evolution of Religion* (Boulder, CO: Paradigm Publishers, 2008), 47.

4. Luigi Luca Cavalli-Sforza, Marcus W. Feldman, K. H. Chen, and Sanford M. Dornbusch, “Theory and Observation in Cultural Transmission,” *Science* 218 (1982): 19–27.

5. Kathryn Coe, *The Ancestress Hypothesis* (New Haven, CT: Rutgers University Press, 2003). Also see Richard W. Byrne, Phillip J. Barnard, Iain Davison, Vincent M. Janik, William C. McGrew, Adam Miklosi, and Polly Wiessner, "Understanding Culture across Species," *Trends in Cognitive Science* 8, no. 8 (2004): 341–46, http://www.sciencedirect.com/science?_ob=PublicationURL&_tockey=%23TOC%236061%232004%23999919991%23513287%23FLA%23&_cdi=6061&_pubType=J&_auth=y&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=880aa0b321725f8efa2c12e7ea8fdd20 (accessed 1 July 2009).
6. Coe, *The Ancestress Hypothesis*.
7. Alfred Lewis Kroeber, *Anthropology* (New York: Harcourt and Brace, 1948).
8. Coe, *The Ancestress Hypothesis*.
9. Robert Wright, *The Moral Animal* (New York: Pantheon, 1994), 239.
10. Jane Lancaster, *Primate Behavior and the Emergence of Human Culture* (New York: Holt, Rinehart, and Winston, 1975), 14.
11. Coe, *The Ancestress Hypothesis*.
12. Lyle B. Steadman, *Kinship Hierarchy: The Basis of Cooperation?* Paper presented at the Annual Meetings of the Human Behavior and Evolution Society, Tucson, 6 June 1997.
13. Coe, *The Ancestress Hypothesis*.
14. Fernando Santos-Granero, *The Power of Love: The Moral Use of Knowledge Amongst the Amuesha of Central Peru*, London School of Economics Monographs on Social Anthropology, 62 (London: The Athlone Press, 1991), 229. Also see Jan van Baal, *Man's Quest for Partnership* (the Netherlands: Van Gorcum, 1981).
15. Coe, *The Ancestress Hypothesis*.
16. Alfredo Barrera-Vásquez, Ramón Juan Manzano Bastarrachea, and William Brito Sansores, *Diccionario Maya Cordemex* (Mérida, Yucatán, Mexico: Ediciones Cordemex, 1980), 343–44.
17. Van Baal, *Man's Quest for Partnership*, 114.
18. Steadman, *Kinship Hierarchy*.
19. Coe, *The Ancestress Hypothesis*.
20. Byrne et al., "Understanding Culture across Species."
21. Byrne et al., "Understanding Culture across Species," 3. Also see Eytan Avital and Eva Jablonka, *Animal Traditions: Behavioural Inheritance and Evolution* (Cambridge: Cambridge University Press, 2000).
22. Robin Dunbar, "Demography and Reproduction," in *Primate Societies*, ed. Barbara Smuts, Dorothy R. Cheney, Robert M. Sefarth, Richard W. Wrangham, and Thomas Struhsaker (Chicago: University of Chicago Press, 1987), 240–49. Also see Tim D. Smith and Tom Polacheck, "Reexamination of the Life Table for Northern Fur Seals with Implications about Population Regulatory Mechanisms," in *Dynamics of Large Mammalian Populations*, ed. Charles W. Fowler and Tim D. Smith (New York: Wiley, 1981), 99–120.
23. Albert S. Mildvan and Bernard Strehler, "A Critique of Theories of Mortality," in *The Biology of Aging*, ed. B. Strehler (New York: American Institute of Biological Sciences, 1960), 45–78. Also see Reimert Thorolf Ravenholt and John Chao, *World Fertility Trends: Population Reports, Series 2* (Washington, DC: George Washington University Department of Medical and Public Affairs, 1974).

24. Bobbi S. Low, "The Evolution of Human Life Histories," in *Handbook of Psychology*, ed. C. Crawford and D. L. Krebs (London: Erlbaum, 1998), 131–61.
25. Alan R. Rogers and John Berntsen, *Evolution of Menopause*. Paper presented at the Conference on Human Behavior and Evolution, University of New Mexico, Albuquerque, 22–25 July 1992. Also see Richard Alexander, *How Did Humans Evolve? Reflections on the Uniquely Unique Species*, Museum of Zoology, Special Publication No. 1 (Ann Arbor: University of Michigan, 1990).
26. Alexander, *How Did Humans Evolve?* Also see Richard Dawkins, *The Selfish Gene* (Oxford: Oxford University Press, 1976) and George Williams, *Adaptation and Natural Selection* (Princeton, NJ: Princeton University Press, 1966).
27. Dorothy L. Cheney and Robert M. Seyfarth, *How Monkeys See the World* (Chicago: University of Chicago Press, 1990).
28. Alexander, *How Did Humans Evolve?*
29. Coe, *The Ancestress Hypothesis*.
30. Edward Adamson Hoebel, *Man in the Primitive World: An Introduction to Anthropology* (New York: McGraw-Hill, 1949), 43.
31. Douglas H. MacDonald, "Grief and Burial in the American Southwest: The Role of Evolutionary Theory in the Interpretation of Mortuary Remains," *American Antiquity* 66, no. 4 (2001): 704–14.
32. Robert H. Gargett, "Middle Paleolithic Burial Is Not a Dead Issue: The View from Qafzeh, Saint-Césaire, Kebara, Amud, and Dederiyeh," *Journal of Human Evolution* 37 (1999): 27–90.
33. Eric Crubézy and E. Erik Trinkaus, "Shanidar 1: A Case of Hyperostotic Disease (DISH) in the Middle Paleolithic," *American Journal of Physical Anthropology* 89, no. 4 (1992): 411–20; 2005 reprint available at <http://www3.interscience.wiley.com/journal/110483467/abstract?CRETRY=1&SRETRY=0> (accessed 7 July 2009).
34. Leore Grossman, Natalie D. Munro, and Anna Belfer-Cohen, "A 12,000-year-old Shaman Burial from the Southern Levant (Israel)" (26 March 2003). PNAS Early Edition, <http://www.pnas.org/content/early/2008/10/31/0806030105.full.pdf+html> (accessed 19 February 2009).
35. Coe, *The Ancestress Hypothesis*.
36. Jane Goodall, *Reason for Hope: A Spiritual Journey* (New York: Time Warner, 1999).
37. Isabella L. Bird, *Unbeaten Tracks in Japan: An Account of Travels in the Interior Including Visits to the Aborigines of Yezo and the Shrine of Nikko* (1878; repr., Tokyo, Japan: Charles E. Tuttle, 1984), 194.
38. Samuel Barrett, *Indian Notes and Monographs: Cayapa Indians of Ecuador, Part I & II* (New York: The Heye Foundation, 1925).
39. Keith T. Kernan and Allan D. Coult, "The Cross-Generation Relative Age Criterion of Kinship Terminology," *Southwestern Journal of Anthropology* 21, no. 2 (1965): 148–54.
40. Garrick Alan Bailey and James Peoples, *Introduction to Cultural Anthropology* (Belmont, CA: West/Wadsworth, 1999), 230.
41. Isobel M. White, "Aboriginal Women's Status: A Paradox Resolved," in *Women's Role in Aboriginal Society*, ed. F. Gale (Canberra: Australian Institute of Aboriginal Studies, 1970), 21.

42. Conrad M. Arensberg and Solon T. Kimball, *Family and Community in Ireland* (Cambridge, MA: Harvard University Press, 1948), 109.

43. Annette Hamilton, "The Role of Women in Aboriginal Marriage Arrangements," in *Women's Role in Aboriginal Society*, ed. F. Gale (Canberra: Australian Institute of Aboriginal Studies, 1970), 19.

44. Megan Biesele and Nancy Howell, "The Old People Give You Life: Aging among !Kung Hunter Gathers," in *Other Ways of Growing Old: Anthropological Perspectives*, ed. Pamela T. Amoss and Stevan Harrell (Stanford: Stanford University Press, 1981), 77–79.

45. Emiko Ohnuki-Tierney, *The Ainu of the Northwest Coast of Southern Sakhalin* (New York: Holt, Rinehart, and Winston, 1974), 65.

46. Winifred L. Mitchell, "Women's Hierarchies of Age and Suffering in an Andean Community," in *Women among Women: Anthropological Perspectives on Female Age Hierarchies*, ed. Jeanette Dickerson-Putman and Judith Brown (Urbana: University of Illinois, 1998), 55.

47. Aubrey Richards, *Chisungu: A Girls' Initiation Ceremony among the Bemba of Northern Rhodesia* (London: Faber and Faber, 1956), 48.

48. *Ibid.*, 54.

49. Trudy Griffin-Pierce, *Earth Is My Mother, Sky Is My Father: Space, Time, and Astronomy in Navajo Sandpainting* (Albuquerque: University of New Mexico, 1992), 39.

50. Lee Guemple, "Gender in Inuit Society," in *Women and Power in Native North America*, ed. L. Klein and L. Ackerman (Norman: University of Oklahoma, 1995), 22.

51. *Ibid.*, 25.

52. Marilou Awiakta, *Selu: Seeking the Corn-Mothers Wisdom* (Golden, CO: Fulcrum Publishing, 1993).

53. John A. Hostetler, *Amish Society*, 4th ed. (Baltimore, MD: The John Hopkins University Press, 1993), 9.

54. *Ibid.*, 73.

55. *Ibid.*

56. *Ibid.*, 11.

57. *Ibid.*, 12.

58. *Ibid.*, 14–15.

59. *Ibid.*, 11.

60. Ernst Hans Gombrich, *The Story of Art* (Englewood Cliffs, NJ: Prentice-Hall, 1989), 104.

61. D. Biebuyck, *Lega Culture: Art, Initiation, and Moral Philosophy among a Central African People* (Berkeley: University of California Press, 1973), 45.

62. Howard Morphy, *Ancestral Connections: Art and an Aboriginal System of Knowledge* (Chicago: University of Chicago Press, 1991), 60.

63. Adolphus Peter Elkin, *The Australian Aborigines* (Garden City, NY: Doubleday, 1964), 156.

64. Allen Hauser, *The Social History of Art: Prehistoric, Ancient-Oriental, Greece and Rome, Middle Ages* (New York: Vintage Books, 1959), 31.

65. Pierre Francastel, *Medieval Painting* (New York: Laurel, 1967). Also see W. Raymond Wood, "Plains Trade in Prehistoric and Protohistoric Intertribal Relations," in *Anthropology on the Great Plains*, ed. W. Raymond Wood and M. Liberty (Lincoln: University of Nebraska, 1980), 98–109.

66. Wen C. Fong, *Images of the Mind* (Princeton, NJ: The Art Museum, Princeton University, 1984). Also see Robert Tonkinson, *The Mardujara Aborigines: Living the Dream in Australia's Desert* (New York: Holt, Rinehart, and Winston, 1978) and Reed L. Wadley, "Disrespecting the Dead and the Living: Iban Ancestor Worship and the Violation of Mourning Taboos," *Journal of the Royal Anthropological Institute* 5, no. 4 (1999): 595–610.

67. Tonkinson, *The Mardujara Aborigines*, 16.

68. Albert C. Moore, *Arts in the Religions of the Pacific: Symbols of Life* (London: Pinter Publishers, 1995), 176.

69. Gerard Ciparisse, "An Anthropological Approach to Socioeconomic Factors of Development: The Case of Zaire. Anthropological Contributions to the Food and Agriculture Organization," *Current Anthropology* 19, no. 1 (1978): 37–41. Also see Santos-Granero, *The Power of Love* and Susan J. Rasmussen, "Alms, Elders, and Ancestors: The Spirit of Gift among the Taureg," *Ethnology* 39, no. 1 (2000): 13–38.

70. Bailey and Peoples, *Introduction to Cultural Anthropology*.

71. M. Edel and Abraham Edel, *Anthropology and Ethics* (Springfield, IL: Charles C. Thomas, 1959). Also see Coe, *The Ancestress Hypothesis*.

72. Coe, *The Ancestress Hypothesis*.

73. Baldwin Spencer and James Frances Gillen, *Native Tribes of Central Australia* (London: MacMillan, 1939), 217.

74. Kroeber, *Anthropology*, 257. Also see Coe, *The Ancestress Hypothesis*.

75. Kroeber, *Anthropology*, 256.

76. Franz Boas, *Primitive Art* (1927; repr., New York: W. W. Norton, 1955), 156.

77. Morphy, *Ancestral Connections*, 61.

78. *Ibid.*, 60–63.

