

while he prayed: “Mercea, I don’t know whether you were called, taken, or thrown out of this world. But look down at us from your heavenly home with tenderness, with pity, and with mercy.” So be it.

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## *The Cultural Nexus of Aka Father–Infant Bonding*

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Despite a steady increase in the quantity and quality of studies of infants, young children and motherhood in various parts of the world (e.g., LeVine et al. 1994), we know relatively little about the nature of father–child relations outside of the U.S. and Western Europe (see Hewlett 1992 for some exceptions). In general, mother-oriented theories of infant and child development have guided cross-cultural research. The majority of these theories view the mother-infant relationship as the prototype for subsequent attachments and relationships (Ainsworth 1967, Bowlby 1969, Freud 1938, and Harlow 1961). According to Freud and Bowlby, for instance, one had to have a trusting, unconditional relationship with his or her mother in order to become a socially and emotionally adjusted adult. These influential theorists generally believed that the father’s role was not a factor in the child’s development until the Oedipal stage (3–5 years old). The field methods to study infancy reflected this theoretical emphasis on mother. Observations were either infant or mother-focused and conducted only during daylight hours; father-focused and evening observations were not considered. Also, standardized questionnaires and psychological tests were generally administered only to the mother. One consistent result from the cross-cultural studies

was that fathers provided substantially less direct care to infants than mothers. In fact, all cross-cultural studies to date indicate that a number of other female caretakers (older female siblings, aunts, grandmothers) provide more direct care to infants than do fathers. Since fathers are not as conspicuous as mothers and other females during daylight hours researchers tend to emphasize a "deficit" model of fathers (Cole and Bruner 1974); that is, fathers are not around much and therefore do not contribute much to the child's development.

Given the paucity of systematic research outside of the U.S. on father's interactions with children, it is ironic that this variable (i.e., the degree of father vs. mother involvement with children) should be so consistently invoked as an explanatory factor in the literature. It is hypothesized to be related, for example, to gender inequality (Chodorow 1974), universal sexual asymmetry (Rosaldo and Lamphere 1974), and the origin of the human family (Lancaster 1987).

## FATHER-INFANT BONDING

Bowlby's (1969) theory, mentioned above, suggested that an early secure attachment (or "bonding") between infant and caregiver (usually mother) was crucial for normal development. Lack of bonding between mother and infant led to the infant's protest, despair, detachment, and eventual difficulty in emotional and social development. Most studies of attachment have focused on mother-infant bonding, but an increasing number of studies in the U.S. and Europe have tried to understand if and when infants become attached to fathers. Numerous psychological studies now indicate that infants are attached to their fathers and that the infants become attached to fathers at about the same age as they do to mothers (8-10 months of age) (Lamb 1981). But how does this bonding take place if infant bonding to mother is known to develop through regular, sensitive, and responsive care? American fathers are seldom around to provide this type of care. The criti-

cal factor that has emerged in over 50 studies of primarily middle-class American fathers is vigorous play. The physical style of American fathers is distinct from that of American mothers, is evident three days after birth, and continues throughout infancy. The American data have been so consistent that some researchers have indicated a biological basis (Clarke-Stewart 1980). The idea is that mother–infant bonding develops as a consequence of the frequency and intensity of the relationship, while father–infant bonding takes place because of this highly stimulating interaction. British, German, and Israeli studies generally support this hypothesis. This chapter examines the process of father–infant bonding among the Aka, a hunter–gatherer group living in the tropical forest of central Africa.

## THE AKA

There are about 30,000 Aka hunter–gatherers in the tropical rain forests of southern Central African Republic and northern Congo–Brazzaville. They live in camps of 25–35 people and move camp every two weeks to two months. Each nuclear family has a hut, and each camp generally has 5–8 huts arranged in a circle. The circle of huts is about 12 meters in diameter and each hut is about 1.5 meters in diameter. Each hut has one bed of leaves or logs on which everyone in the family sleeps. The Aka have patrilineal clans and many members of a camp belong to the same patrilineal clan (generally a camp consists of brothers, their wives and children, and unrelated men who are doing bride service for the sisters of the men in camp). The Aka have high fertility and mortality rates: A woman generally has five to six children during her lifetime, and one-fifth of the infants die before reaching 12 months and 43 percent of children die before reaching 15 years.

Life in the camp is rather intimate. While the overall population density is quite low (less than one person per square kilometer), living space is quite dense. Three or four people sleep to-

gether on the same 4-foot-long by 2-foot-wide bed, and neighbors are just a few feet away. The 25–35 camp members live in an area about the size of a large American living room. The Aka home represents the “public” part of life, while time outside of camp tends to be relatively “private.” This is the reverse of the American pattern (i.e., home is usually considered private). The camp is relatively young as half of the members of the camp are under 15 and most women have a nursing child throughout their childbearing years.

The Aka use a variety of hunting techniques, but net hunting, which involves men, women, and children, is the most important and regular hunting technique. Women generally have the role of tackling the game in the net and killing the animal. Game captured is eventually shared with everyone in camp. Some parts of the game animal are smoked and eventually traded to Bantu and Sudanic farmers for manioc or other domesticated foods. The Aka have strong economic and religious ties to the tropical forest. The forest is perceived as provider and called friend, lover, mother, or father.

Sharing and cooperation are pervasive and general tenets of Aka camp life. Food items, infant care, ideas for song and dance, and material items such as pots and pans are just some of the items that are shared daily in the camp. An Ngandu farmer describes Aka sharing:

Pygmies [the Ngandu use the derogatory term Babinga to refer to the Aka] are people who stick together. Twenty of them are able to share one single cigarette. When a pygmy comes back with only five roots she shares them all. It is the same with forest nuts; they will give them out to everybody even if there are none left for them. They are very generous.

The Aka are also fiercely egalitarian. They have a number of mechanisms to maintain indi-

vidual, intergenerational, and gender equality. The Ngandu villager mentioned above describes his concerns about Aka intergenerational egalitarianism:

Young pygmies have no respect for their parents; they regard their fathers as their friends.... There is no way to tell whether they are talking to their parents because they always use their first names. Once I was in a pygmy camp and several people were sitting around and a son said to his father "Eto be your balls are hanging out of your loincloth" and everyone started laughing. No respect, none, none, none.... It's real chaos because there is no respect between father and son, mother and son or daughter. That's why pygmies have such a bad reputation, a reputation of being backward.

Three mechanisms that promote sharing and egalitarianism are prestige avoidance, rough joking and demand sharing. The Aka try to avoid drawing attention to themselves, even if they have killed an elephant or cured someone's life-threatening illness. Individuals who boast about their abilities are likely to share less or request more from others in the belief that they are better than others. If individuals start to draw attention to themselves, others in the camp will use rough and crude jokes, often about the boastful person's genitals, in order to get the individuals to be more modest about their abilities. Demand sharing also helps to maintain egalitarianism: if individuals like or want something (cigarettes, necklace, shirt) they simply ask for it, and the person generally gives it to them. Demand sharing promotes the circulation of scarce material goods (e.g., shoes, shirt, necklaces, spear points) in the camp.

Gender egalitarianism is also important. For instance, there are male and female roles on the net hunt, but role reversals take place daily and individuals are not stigmatized for taking the

roles of the opposite sex. If one does the task poorly, regardless of whether it is a masculine or feminine task, then one is open to joking and teasing by others (e.g., when the anthropologist chases the game in the wrong direction).

The rough joking mentioned above is also linked to another feature of Aka culture—playfulness. There is no clear separation between “work” and “play” time. Dances, singing, net hunting, male circumcision, sorcery accusations all include humorous mimicking, practical jokes, and exaggerated storytelling. Aka life is informal because of egalitarianism and the playful activity that occurs throughout the day by both adults and children. Play is an integral part of both adult and child life and contributes to enhanced parent–child and adult–child communication. Parents and adults have an extensive repertoire of play, and can and do communicate cultural knowledge to children through their playful repertoire.

Greater ethnographic detail on the Aka can be found in Hewlett (1991) or Bahuchet (1985).

## AKA INFANCY

The infant lives with a relatively small group of individuals related through his or her father (unless the infant is the first born in which case the family is likely to be in the camp of the wife for the purposes of bride service) and sleeps in the same bed as mother, father, and other brothers and sisters.

Cultural practices during infancy are quite distinct from those found in European and American cultures. Aka parents are indulgent as infants are held almost constantly, nursed on demand (breast-fed several times per hour), attended to immediately if they fuss, and are seldom, if ever, told “no! no!” if they misbehave (e.g., get into food pots, hit others, or take things from other children). An Aka father describes Aka parenting and contrasts it with parenting among his

Ngandu farming neighbors:

We, Aka look after our children with love, from the minute they are born to when they are much older. The villagers love their children only when they are babies.

When they become children they get beaten up badly. With us, even if the child is older, if he is unhappy, I'll look after him, I will cuddle him.

Older infants are allowed to use and play with knives, machetes, and other "adult" items. They are allowed to crawl into a parent's lap while the parent is engaged in economic (e.g., butchering animal, repairing net) or leisure (e.g., playing a harp or drum) activity. While older infants are given considerable freedom to explore the house and camp, parents do watch infants to make sure they do not crawl into the fire.

Extensive multiple caregiving of 1 to 4-month-old infants (Hewlett 1989) exists, especially while the Aka are in the camp. Individuals other than mother (infant's father, brothers, sisters, aunts, uncles, grandmothers) hold the infant the majority of the time (60 percent) in this context, and the infant is moved to different people about seven times per hour. Mothers' holding increases to 85 percent and the transfer rate drops to two transfers per hour outside of the camp (i.e., on net hunt or in fields).

Infancy is very active and stimulating. Infants are taken on the hunt and are seldom laid down. They are held on the side of the caregiver rather than on the caregiver's back as in many farming communities so there are opportunities for caregiver–infant face-to-face interaction and communication. The infant can also breast feed by simply reaching for the mother's breast and can nurse while mother walks. While out on the net hunt the infant sleeps in the sling as the caregiver walks, runs, or sits.

## THE STUDY

I started working with the Aka in 1973 so by the time I started the father–infant study in 1984 I was familiar with specific Aka families and Aka culture in general. Since I wanted to test some of the psychological hypotheses regarding father–infant relations, I incorporated psychological methods into my research. The quantitative psychological methods consisted of systematically observing 15 Aka families with infants from 6 A.M. to 9 P.M. (the observations focused either on the father or the infant). This enabled me to say precisely how much time Aka versus American fathers held or were near their infants and precisely describe how American versus Aka styles of interaction were similar or different. Informal discussions while on the net hunt and in camp were also utilized to develop structured interviews. Men and women, young and old, were asked about their feelings regarding relations with their mothers, fathers, and other caregivers.

The study focused on two domains important for trying to understand father–infant bonding: the degree of father involvement and mother’s versus father’s parenting style. For degree of father involvement I wanted to know: How often do fathers actually interact with their infants, how often are fathers available to their infants, if fathers are not involved with infants what other activities are they involved in, how do children characterize the nature of their involvement with their father? Questions regarding paternal versus maternal parenting style included: Are there distinctions between the mother’s and the father’s play behavior with their infants, do mothers and fathers hold their infants for different purposes, what do mothers and fathers do while they hold the infant, do infants show different types of attachment behavior to mothers and fathers, how do children view their mother’s and father’s parenting styles?

### WHY ARE AKA FATHERS SO INVOLVED WITH THEIR INFANTS?

## THE CULTURAL NEXUS OF FATHER–INFANT BONDING

Although few cross-cultural studies of father-child relations have been conducted, Aka father involvement in infancy is exceptional, if not unique. Aka fathers are within an arm's reach (i.e., holding or within one meter) of their infant more than 50 percent of 24-hour periods. Table 1.1 demonstrates that Aka fathers hold their very young infants during the day at least five times more than fathers in other cultures, while Table 1.2 indicates Aka fathers are available to their infants at least three times more frequently than fathers in other cultures. American and European fathers hold their infants, on average, between 10 and 20 minutes per day (Lamb et al. 1987) while Aka fathers, on average, hold their infants about one hour during daylight hours and about 25 percent of the time after the sun goes down. At night fathers sleep with mother and infant, whereas American fathers seldom sleep with their infants. While Aka father care is extensive, it is also highly context dependent—fathers provide at least four times as much care while they are in the camp setting than they do while out of camp (e.g., out on the net hunt or in the villagers' fields). What factors influence this high level of paternal emotional and physical involvement among the Aka?

Aka father–infant bonding is embedded within a cultural nexus—it influences and is influenced by a complex cultural system. This brief overview describes some of the cultural facets linked to Aka father–infant bonding.

Like many other foragers, the Aka have few accumulable resources that are essential for survival. “Kinship resources,” the number of brothers and sisters in particular, are probably the most essential “resource” for survival, but are generally established at an early age. Food resources are not stored or accumulated, and Aka males and females contribute similar percentages of calories

to the diet. Cross-cultural studies have demonstrated that in societies where resources essential to survival can be accumulated or where males are the primary contributors to subsistence, fathers invest more time competing for these resources and, consequently, spend less time with their children. In contrast, where resources are not accumulable or men are not the primary contributors to subsistence, men generally spend more time in the direct care of their children. Katz and Konner (1981: 174) found that father–infant proximity (degree of emotional warmth and physical proximity) is closest in gathering-hunting populations (gathered foods by females are principal resources, meat is secondary) and most distant in cultures where herding or advanced agriculture is practiced. In the latter cultures, cattle, camels, and land are considered the essential accumulable resources necessary for survival. These findings are consistent with Whiting and Whiting’s (1975) cross-cultural study of husband–wife intimacy. They found husband–wife intimacy to be greatest in cultures without accumulated resources or capital investments. While there are other factors to consider (the protection of resources and the polygyny rate), there is a strong tendency for fathers/husbands to devote more time to their children/wives if there are no accumulable resources.

**TABLE 1.1 Comparison of Father Holding in Selected Foraging Populations**

<i>POPULATION</i>	<i>AGE OF INFANTS (MOS.)</i>	<i>FATHER HOLDING</i>		<i>SOURCE</i>
		<i>(PERCENT OF TIME)</i>		
Gidgingali	0–6	3.4		Hamilton (1981)
	6–18	3.1		
!Kung	0–6	1.9		West and Konner (1976)

	6-24	4.0	
Efe Pygmies	1-4	2.6	Winn et al. (1990)
Aka Pygmies	1-4	22.0	Hewlett (1991)
	8-18	14.0	

NOTE: All observations were made in a camp setting (Table from Hewlett 1991).

**TABLE 1.2 Comparison of Father Presence with Infants or Children Among Selected Foraging and Farming Populations**

<i>POPULATION</i>	<i>LOCATION</i>	<i>SUBSISTENCE</i>	<i>PERCENT TIME</i>		<i>SOURCE</i>
			<i>FATHER PRE-SENT/IN VIEW</i>	<i>PRIMARY SETTING OF OBSERVATIONS</i>	
Gusii	Kenya	farming	10	house/yard & garden	1
Mixteca	Mexico	farming	9	house/yard	1
Ilocano	Philippines	farming	14	house/yard	1
Okinawan	Japan	farming	3	public places & house/yard	1
Rajput	India	farming	3	house/yard	1
!Kung	Botswana	foraging	30	camp	2
Aka Pygmies	Central African Re-	foraging	88	forest camp	3

	public				
Logoli	Kenya	farming	5	house/yard	4
Newars	Nepal	farming	7	house/yard	4
Samoans	Samoa	farming	8	house/yard	4
Carib	Belize	farming	3	house/yard	4
Ifaluk	Micronesia	farm-fish	13	house/yard	5

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Sources (Table from Hewlett 1991):

1. Whiting and Whiting 1975
2. West and Konner 1976
3. Hewlett 1991
4. Munroe and Munroe 1992
5. Betzig, Harrigan, and Turke 1990

Three additional factors seem to be especially influential in understanding the extraordinarily high level of Aka paternal care. First, the nature of Aka subsistence activity is rather unique cross-culturally. Usually mens' and womens' subsistence activities take place at very different locations. The net hunt and other subsistence activities, such as caterpillar collecting, involve men, women, and children. If men are going to help with infant care on a regular basis they have to be near the infant a good part of the day. The net hunt makes this possible. The net hunt also requires that men and women walk equal distances during the day. In most foraging societies, females do not travel as far from camp as males. Older siblings are not useful for helping their

mothers because of the extensive labor involved in walking long distances with an infant. If a mother is to receive help on the net hunt, it needs to come from an adult. Most of the other adult females carry baskets full of food and have their own infants or young children to carry since fertility is high. Fathers are among the few alternative caregivers regularly available on the net hunt to help mothers. While fathers do carry infants on the net hunt, especially on the return from the hunt when the mothers' baskets are full of meat, collected nuts, and fruit, father–infant caregiving is much more likely to occur in the camp.

Another influential factor is the nature of husband–wife relations. The net hunt contributes substantially to the time husband and wife spend together and patterns the nature of that time spent together. Observations in the forest and village indicate husbands and wives are within sight of each other 46.5 percent of daylight hours. This is more time together than in any other known society, and it is primarily a result of the net hunt. This percentage of course increases in the evening hours. But, husbands and wives are not only together most of the day, they are actively cooperating on the net hunt. They have to know each other well to communicate and cooperate throughout the day. They work together to set up the family net, chase game into the net, butcher and divide the game and take care of the children. Husbands and wives help each other out in a number of domains, in part because they spend so much time together. Husband–wife relations are many-stranded; that is, social, economic, ritual, parenting, and leisure activities are shared and experienced in close proximity. When they return to camp the mother has a number of tasks—she collects firewood and water, and prepares the biggest meal of the day. The father has relatively few tasks to do after returning from the hunt. He may make string or repair the net, but he is available to help with infant care. He is willing to do infant care, in part, because of the many-stranded reciprocity between husband and wife. In many societies men have fewer tasks to

do at the end of the day, while women have domestic tasks and prepare a meal. Men are available to help out with childcare, but seldom provide much assistance, in part, due to the more distant husband–wife relationship.

The third important factor in understanding Aka fathers' involvement with infants is father–infant bonding. Father and infant are clearly attached to each other. Fathers seek out their infants and infants seek out their fathers. Fathers end up holding their infants frequently because the infants crawl to, reach for, or fuss for their fathers. Fathers pick up their infants because they intrinsically enjoy being close to their infants. They enjoy being with them and carry them in several different contexts (e.g., out in the fields drinking palm wine with other men).

While the factors described above are especially influential, other cultural factors also play a part. Gender egalitarianism pervades cultural beliefs and practices: Men do not have physical or institutional control over women, violence against women is rare or nonexistent, both women and men are valued for their different but complementary roles, there is flexibility in these gender roles, and holding infants is not perceived as being feminine or “women’s work.” Sharing, helping out, and generosity are central concepts in Aka life; this applies to subsistence and parenting spheres. Aka ideology of good and bad fathers reiterates the importance of father’s proximity—a good father shows love for his children, stays near them, and assists mother with caregiving when her workload is heavy. A bad father abandons his children and does not share food with them. There is no organized warfare and male feuding is infrequent, so men are around camp and help with subsistence rather than being away at battle. Fertility is high, so most adult women have nursing infants and there are few other adult women around to help out. Finally, the Aka move their camps several times a year and consequently do not accumulate material goods that

need to be defended.

The point here is that Aka father-infant relations have to be viewed in a complex cultural nexus. Some cultural factors are somewhat more influential than others—net hunting, husband–wife relations, for instance—but even these cultural features take place in a web of other cultural beliefs and practices that contribute to the intimate nature of Aka father–infant relations.

### **FATHER–INFANT BONDING IN THE AKA AND UNITED STATES**

Over 50 studies of European and American fathers indicate that father’s interactions with infants and young children are clearly distinguished from mother’s interactions in that fathers are the vigorous rough and tumble playmates of infants and young children, while mothers are sensitive caregivers. The American literature suggests that this rough and tumble play is how infants become attached to fathers (“bond”) and develop social competence (Lamb et al. 1987). The Aka father–infant study is not consistent with the American studies that emphasize the importance of father’s vigorous play. Aka fathers rarely, if ever, engage in vigorous play with their infants; only one episode of vigorous play by a father was recorded during all 264 hours of systematic observation. Informal observations during more than 10 field visits over the last 20 years are also consistent with this finding. The quantitative data indicate that by comparison to mothers, Aka fathers are significantly more likely to hug, kiss, or soothe a fussy baby while they are holding the infant.

While Aka fathers do not engage in vigorous play with their infants, they are slightly more playful than mothers; fathers are somewhat more likely to engage in minor physical play (e.g., tickling) with their one- to four-month-old infants than are mothers. But characterizing the Aka father as the infant’s playmate would be misleading. Other caretakers, brothers and sisters in par-

ticular, engage in play with the infant while holding much more frequently than fathers or mothers. Mothers have more episodes of play over the course of a day than fathers or other caretakers because they hold the infant most of the time. The Aka father–infant relationship might be better characterized by its intimate and affective nature. Aka fathers hold their infants more than fathers in any other human society known to anthropologists, and Aka fathers also show affection more frequently while holding than do Aka mothers.

So how can vigorous play be a significant feature in American studies of father–infant bonding, but not among the Aka? Four factors appear to be important for understanding the process of Aka father–infant bonding: familiarity with the infant; knowledge of caregiving practices (how to hold an infant, how to soothe an infant); the degree of relatedness to the infant; and cultural values and parental goals.

First, due to frequent father-holding and availability, Aka fathers know how to communicate with their infants. Fathers know the early signs of infant hunger, fatigue, and illness as well as the limits in their ability to soothe the infant. They also know how to stimulate responses from the infant without being vigorous. Unlike American fathers, Aka wait for infants to initiate interaction. Aka caregivers other than mothers and fathers are less familiar with the infants and the most physical in their play, suggesting a relationship between intimate knowledge of the infant's cues and the frequency of vigorous play while holding. Consistent with this is the finding that working mothers in the U.S. are more likely to engage in vigorous play than are stay-at-home mothers.

Second, knowledge of infant caregiving practices seems to play a role in determining how much play is exhibited in caretaker–infant interactions. Child caretakers were the most physical and the loudest (singing) in their handling of infants. Children were not restricted from holding

infants, but they were closely watched by parents. While “other” caretakers were more playful than mothers or fathers, younger fathers and “other” caretakers were more physical than older ones, probably because they did not know how to handle and care for infants as well as adult caretakers.

A third factor to consider is the degree of relatedness of the caretaker to the infant. If vigorous play can assist in developing attachment, more closely related individuals may have a greater vested interest in establishing this bond than distantly related individuals. Attachment not only enhances the survival of the infant, but it can potentially increase the related caretaker’s survival and fitness. Aka mothers and fathers establish attachment by their frequent caregiving; vigorous play is not necessary to establish affective saliency. Brothers and sisters, on the other hand, might establish this bond through physical play. Aka brothers and sisters, in fact, provided essentially all of the physical play the focal infants received; cousins and unrelated children were more likely to engage in face-to-face play with the infant instead of physical play.

Finally, cultural values and parental goals of infant development should be considered. American culture encourages individualistic aggressive competition; Aka culture values cooperation, nonaggression, and prestige avoidance (one does not draw attention to oneself even, for instance, if one kills an elephant). Apparently, Americans tolerate—if not actually encourage—aggressive rough-and-tumble types of play with infants. Also, due to the high infant mortality rate, the primary parental goal for Aka is the survival of their infants. The constant holding and immediate attention to fussing reflect this goal. In the United States, infant mortality rates are markedly lower and, as a result, parental concern for survival may not be as great. The Aka infant is taken away from a caretaker who plays roughly with the infant, in part because it could be seen

as aggressive behavior, but also because the pervasive aim of infant care practices is survival of the infant, and rough-and-tumble play could risk the infant's safety.

These factors tentatively clarify why Aka fathers do not engage in vigorous play like American fathers, but do participate in slightly more physical play than Aka mothers (but not more than other caretakers). American fathers infrequently participate directly in infant care and consequently are not as familiar with infant cues. To stimulate interaction and (possibly) bonding, they engage in physical play. Aka brothers and sisters are also much less physical in their play with infants than American fathers (Aka never tossed infants in the air or swung them by their arms), again suggesting that Aka children know their infant brother or sister and the necessary infant caregiving skills better than American fathers. These observations are obviously speculative and need further empirical study.

Sociologists LaRossa and LaRossa (1981) also describe stylistic differences between American mothers' and fathers' interactions with their infants. They list a number of male-female role dichotomies that reflect different parenting styles. One distinction they make is role distance versus role embracement. Fathers are more likely to distance themselves from the parenting role while mothers are more likely to embrace the parenting role. American women generally want to remain in primary control of the children, and while fathers may show interest in caregiving, they are more likely to distance themselves from caregiving while embracing their roles as the breadwinners. LaRossa and LaRossa also suggest that fathers generally have low intrinsic value and relatively high extrinsic value, while mothers have the reverse.

The intrinsic value of something or someone is the amount of sheer pleasure or enjoyment that one gets from experiencing an object or person. The extrinsic

value of something or someone is the amount of social rewards (e.g., money, power, prestige) associated with having or being with the object or person. (64)

They use this dichotomy to explain why fathers are more likely to carry or hold an infant in public than in private. Fathers receive extrinsic rewards from those in public settings, while this does not happen in the home. According to LaRossa and LaRossa,

Fathers will roughhouse with their toddlers on the living-room floor, and will blush when hugged or kissed by the one-year-olds, but when you really get down to it, they just do not have that much fun when they are with their children. If they had their druthers, they would be working at the office or drinking at the local pub. (65)

These role dichotomies may be useful for understanding American mother–father parenting styles, but they have limited value in characterizing Aka mother–father distinctions. Aka mothers and fathers embrace the parenting role. Generally, mothers and fathers want to hold their infants, and certainly they derive pleasure from infant interactions. As indicated earlier, fathers were in fact more likely to show affection while holding than mothers. Fathers also offered their nipples to infants who wanted to nurse, cleaned mucus from their infants' noses, picked lice from their infants' hair, and cleaned their infants after they urinated or defecated (often on the father). Fathers' caregiving did not appear any more or less perfunctory than mothers'. Aka fathers are not burdened with infant care; if a father does not want to hold or care for the infant he gives the infant to another person. Overall, Aka fathers embrace their parenting role as much as they embrace their hunting role.

The intrinsic–extrinsic role dichotomy does not fit well with Aka mother–father parenting

styles either. Again, both Aka mothers and fathers place great intrinsic value and little extrinsic value on parenting. The fathers' intrinsic value is demonstrated above, but the lack of extrinsic value among the Aka can best be seen by comparing Aka and Ngandu fathers (the Ngandu are the horticulturalist trading partners of the Aka). When a Ngandu father holds his infant in public he is "on stage." He goes out of his way to show his infant to those who pass by, and frequently tries to stimulate the infant while holding it. He is much more vigorous in his interactions with the infant than are Aka men. The following experience exemplifies Ngandu fathers' extrinsic value towards their infants. An Ngandu friend showed me a 25-pound fish he had just caught, and I asked to take a photograph of him with his fish. He said fine, promptly picked up his nearby infant, and proudly displayed his fish and infant for the photograph. His wife was also nearby but was not invited into the photograph. Aka fathers, on the other hand, are matter-of-fact about their holding or transporting of infants in public places. They do not draw attention to their infants. Aka fathers also hold their infants in all kinds of social and economic contexts.

## CONCLUSION

This paper has examined the cultural nexus of Aka father–infant bonding and has made some comparisons to middle-class American father–infant relations. American fathers are characterized by their vigorous play with infants, while Aka fathers are characterized by their affectionate and intimate relations with their infants. Aka infants bond with their fathers because they provide sensitive and regular care, whereas American infants bond to their fathers, in part, due to their vigorous play. The purpose of this paper is not to criticize American fathers for their style of interaction with their infants; physical play is important in middle-class American context because it is a means for fathers who are seldom around their infants to demonstrate their love and inter-

est in the infant. Vigorous play may also be important to American mothers who work outside the home; studies indicate they are also more likely than stay-at-home mothers to engage in vigorous play with their infants. The Aka study does imply that father–infant bonding does not always take place through physical play, and it is necessary to explore a complex cultural nexus in order to understand the nature of father-infant relations.

Aka fathers are very close and affectionate with their infants, and their attachment processes, as defined in Western bonding theory, appear to be similar to that of mothers. While Aka mother– and father–infant relations are similar they are not the same. Fathers do spend substantially less time with infants than do mothers, and the nature of their interactions is different. Aka and American fathers bring something qualitatively different to their children; father’s caregiving pattern is not simply a variation of mother’s pattern. More research is needed on the unique features of father involvement so we can move away from a “deficit” model of fathering.

Finally, this paper identifies cultural factors that influence father–infant bonding; biological forces are not considered. This is unusual in that mother–infant bonding generally mentions or discusses the biological basis of mother’s attachment to the infant. The release of prolactin and oxytocin with birth and lactation is said to increase affectionate feelings and actions toward the infant. These same hormones exist in men but endocrinologists generally believe they have no function in men. Is there a biology of fatherhood, or is motherhood more biological and fatherhood more cultural? This is a complex question as both men and women probably have evolved (“biological”) psychological mechanisms that influence their parenting, but if one just focuses on endocrinology, few data exist on the endocrinology of fatherhood. For instance, Gubernick et al. (unpublished paper) found that men’s testosterone levels decreased significantly two weeks after

the birth of their children; the decrease was not linked to decline in sexual behavior, increased stress, or sleep deprivation. Another small study of American fathers indicated significant increases in plasma prolactin levels after fathers held their 3-month-old infants on their chest for 15 minutes (Hewlett and Alster, unpublished data). The few biological studies that do exist suggest that biology can and does influence fatherhood. More studies of the biocultural nexus of fatherhood are needed.

While biology probably influences both mothers' and fathers' parenting to some degree, this chapter has demonstrated that the cultural nexus is a powerful force that profoundly shapes the nature and context of father–infant bonding. Aka father–infant bonding takes place through regular and intimate (i.e., hugging, kissing, soothing) care while American father–infant bonding takes place through vigorous play. American fathers often do not know their infants very well and try to demonstrate their love and concern through vigorous play. American mothers that work outside the home also tend to be more vigorous with their infants. American fathers are not necessarily “bad” fathers because they do not do as much direct caregiving as the Aka fathers. Fathers around the world “provide” and enrich the lives of their children in diverse ways (e.g., physical and emotional security, economic well-being). The Aka data do suggest that there are alternative processes by which father–infant bonding can and does take place and that Americans and others might learn from this comparative approach as policy decisions about parental leave and other topics are considered.

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