

Review of Sarah Blaffer Hrdy, *Mothers and Others, the Evolutionary Origins of Mutual Understanding*.
Cambridge, Mass: Harvard University Press (422 p.)

[Sarah Blaffer Hrdy](#), a Professor Emerita of Anthropology at the University of California-Davis, has just published a wonderful essay in evolutionary psychology, entitled *Mothers and Others, the Evolutionary Origins of Mutual Understanding*. Her basic question is: what accounts for the unique human capacity to read other minds? Her basic answer is that humans are cooperative breeders, which means both that human infants have evolved a unique ability to engage grown ups into caring for them and also that human adults are wired in for extensive shared care and the provisioning of offspring by so-called “alloparents” (i.e. non-biological parents). The interplay between infants’ commitment to enlist caretakers and adults’ willingness to serve as caretakers is the evolutionary basis of the human ability for mindreading. The book is an impressive and sustained argument for why, unlike other apes, humans are cooperative breeders, based on evidence from genetics, endocrinology, the paleontology of fossil record, primatology, comparative and developmental psychology, anthropological research among extant hunter-gatherer societies, history and even sociology. In the process, she debunks a number of assumptions prevalent in either anthropology (e.g. the prevalence of patrilocal residence patterns and the organizing role of patrilineal inheritance in human gathering-and-hunting societies) or in evolutionary theorizing (e.g. the Hunting pact or Sex contract).

While human infants uniquely compete among one another for being cared for, human adults are uniquely wired for sharing both food and the care of offspring. Not only is food sharing virtually inexistent among Great Apes (chimpanzees, bonobos, orangutans and gorillas), but also the exclusive reliance on maternal care among other apes is non-negotiable: separation from its mother almost inevitably leads to the infant’s death. Trust in others’ benevolence is a unique feature of human cognition: a human mother would never engage in cooperative breeding and shared care of

her offspring unless she trusted members of her group. As Hrdy emphasizes, young mothers' inexperience and incompetence are important causes of infants' deaths among primates. Hence, there is competition among potential young caretakers for holding newborns. Cooperative breeding helps explain the following puzzle: on the one hand, human infants are more helpless, take longer to mature, are larger and more costly to feed, than infants of other apes. On the other hand, human hunter-gatherer mothers reproduce almost twice as fast (every 3 to 4 years on average) as other apes (every 6 to 8 years on average) (p. 102). Shared care and provisioning of offspring critically helps support the high rate of human reproduction compared to that of other apes. In hunter-gatherer societies, shared care enables the mother both to gather food for herself and her progeny and to benefit from food gathered by members of her group.

In chapter 3, Hrdy's shared care hypothesis leads her to a friendly critical assessment of the emphasis by classical attachment theorists on the mother's continuous and exclusive care of, and contact with, her offspring.

Although Great Apes are not cooperative breeders, cooperative breeding has been exploited by a wide variety of other species, including insects, birds and non-human primates, in particular a species of small New World monkeys called marmosets. (Whereas humans and Great Apes shared a last common ancestor some 6-7 million years ago, humans and marmosets shared a common ancestor some 30 million years ago.) Among marmoset males, there is intense competition for carrying infants around, and both male and female marmoset helpers respond eagerly to the noisy competition of begging babies by providing them with food. (As Hrdy puts it, she knows "of no other mammals whose babies are routinely more attached to their fathers than to their mothers [...] Human mothers can only fantasize about such an unlikely state of affairs", p. 88) Prolactin is a hormone known for stimulating lactation in female mammals and also to promote nurturing responses in birds and mammals of both sexes. As in marmoset fathers, the level of prolactin has been found to increase in human fathers after the birth of a newborn (p. 98).

Among infant-sharing primates where allomaternal care of infants is beneficial to mothers and where infants compete with other infants for care, neonatal coats have evolved to be distinctive (e.g. snow white): they attract the attention of potential care-givers at the risk of also attracting the attention of predators. Like infants of many species, human infants are particularly endearing to human adults. In the terminology of chapter 7, human babies are "sensory traps" uniquely adapted for attracting the attention of potential caretakers, whose brains are wired to register signals from infants' needs. In chapter 6, Hrdy reviews the evidence for the so-called "misplaced-parental-care" hypothesis, according to which members of a species "that bears helpless and slow-maturing (altricial) young and a deep history of parental care requiring parents to be sensitive to cues from needy immature creatures" are predisposed to engage in alloparental care, including the offspring of other species who dupe them (e.g. the infamous cuckoo). Hence, Hrdy reviews the evidence showing that misdirected parental care paved the way for cooperative breeding in a variety of species — including fish, eusocial insects and birds. For example, cooperative breeding developed in eusocial insects that have sterile castes of workers dedicated to supporting the offspring of the reproductive queen. Hrdy raises the question: are postmenopausal females equivalent of sterile castes of workers? She also reviews historical evidence in human history showing the extent of coerced

human wet-nursing whereby subordinate women are led by economically advantaged and more powerful women to suckle others' infants and thereby to suppress their own ovulation and reproduction (p. 206).

In chapter 8, Hrdy picks up the question: if allomaternal assistance is so beneficial for maternal fitness, why don't all mother apes solicit help? The reason they don't is that mother apes worry a lot about infanticide because (i) baby chimpanzees are a delectable source of proteins; (ii) elimination of a nursing infant provides a male with the opportunity for inseminating a fertile female; (iii) since female apes typically leave their natal kin to breed in other communities, they also worry about unrelated and potentially infanticide females as well. Among apes, the threat of infanticide looms so large that in subordinate females, it may be adaptive to forgo conceiving. Much of Hrdy's account of cooperative breeding and alloparentality in humans involves the distinctive role of postmenopausal females in general and maternal grandmothers in particular. In many species of apes, postmenopausal females display peculiar altruistic behaviors: for example, Hrdy tells the story of a heroic langur monkey postmenopausal female in Rajasthan who risked her own life to protect an infant from the attack of an intruding male (pp. 251-52). But postmenopausal human females live longer (after they have ceased to menstruate) than postmenopausal females of other apes. (As a rule, the costs imposed by reproduction are such that females who breed tend to die sooner than those who do not. However, among cooperative breeders, the rule is often reversed. For example, the lifespan of a honeybee queen is measured in years, that of a worker in weeks.) As Hrdy argues, in human hunter-gatherer societies, maternal grandmothers work particularly hard at gathering food: ten years of a maternal grandmother's postmenopausal life could help ensure that two grandchildren survived to reproductive age.

The evidence adduced by Hrdy in favor of the crucial role of maternal grandmothers in cooperative breeding, shared care and provisioning of offspring in humans leads her to a critical discussion of traditional assumptions in anthropology about the prevalence of primitive patrilocal residence patterns and the organizing role of patrilineal inheritance in human gathering-and-hunting societies. In fact, Hrdy does not merely argue in favor of the role of matrilineal kin in human cooperative breeding. Instead, what she emphasizes throughout her book is what she calls the "strategic flexibility" of the human family: "flexibility was, and continues to be, the hallmark of the human family" (p. 164). Her argument for strategic flexibility in human cooperative breeding leads Hrdy to a wonderful debunking of the notorious Hunting or Sex contract hypothesis that posited a pact between a male hunter who provided for his mate and a mate who repaid him with sexual fidelity (p. 147). As Hrdy points out, this model vastly overestimates the contribution of hunting over gathering in providing food among contemporary hunter-gatherer societies. What if the male dies, defects or diverts food to additional women? Given the importance of strategic flexibility in human parenting, a variety of alloparental care will be provided by "cads", siblings, grandparents and cousins. Under the heading of strategic flexibility, Hrdy discusses not only the range of alloparentality in humans, but also the selectivity of maternal responses to newborns as a function of both the defects of offspring and the mother's economic resources.

In her wonderful book, Hrdy reviews a wide range of evidence showing that cooperative breeding was discovered by many different species with widely different brain structures. In fact, Hrdy offers some fascinating speculations about the problems whose solution might have facilitated the emergence of cooperative breeding. On the one hand, "it allowed wolves, elephants, and lions (all of which were once much more widely spread around the world than they are today), along with various species like corvids, mice, and humans [...] to move out of Africa, or, as in the case of many cooperatively breeding birds, Australia, migrating to almost every continent of the world" (p. 179). On the other hand, three of the enhancing conditions of cooperative breeding are: slow maturation and long lifespan; year-around occupation of the same geographical area; and unpredictable

environmental changes (pp. 197-98).

In the last chapter, Hrdy considers the pair of related questions: when did human cooperative breeding first begin? When did humans become emotionally modern? By an emotionally modern human, Hrdy means a human being able to board a transatlantic flight full of strangers and to emerge on the other side of the Atlantic unscathed — something, she claims, a chimpanzee would be emotionally incapable of. As she puts it in chapter 1, if a bunch of humans were “traveling with a planeload of chimpanzees, any one of us would be lucky to disembark with all ten fingers and toes still attached [...] Even among famously peaceful bonobos [...] veterinarians sometimes have to be called in following altercations to stitch back on a scrotum or penis.” True, the archeological record of the past 10.000 years of modern human history abounds with evidence of human massacres. However, on Hrdy’s view, unlike members of later hierarchical human societies based on food production and the division of labor, Pleistocene pre-Neolithic ancestors of emotionally modern humans were hunter-gatherers living in egalitarian groups of low population density with little or no pressure towards warfare. She speculates that the evolutionary pressure for cooperative breeding and emotional modernity in apes came mostly from bigger brains and bigger body size (that require more food, particularly proteins), extended lifespan and prolonged childhood. On this basis, she argues that cooperative breeding and emotional modernity emerged early in hominid evolution long before language, and even before the common ancestors of all modern humans migrated out of Africa sometime within the past 200.000 years.