

Mothers Day 2012

The Grandmother Hypothesis and Pass the Baby

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One of the pleasures of traveling to Utah to visit my son, daughter-in-law and my granddaughter Jane is the opportunity to talk with their housemate Isaac Hart. Isaac is a soft-spoken, muscle bound titan of a young man who rides fixed gear bikes and drives a huge wheeled Jeep. He is also finishing up his masters degree in anthropology, and, if you ask the right questions and stick around for what follows, he opens up a window onto developments in the world of anthropology informed by statistics, forensics, archaeology, evolutionary biology and the material culture. For years now, Isaac and his teachers and colleagues have been closely studying the remains of ancient Anasazi and Fremont Indian settlements and peoples in the mesas and box canyons of central and Southern Utah. And one of the studies from his field that he clearly enjoyed sharing is something called “the grandmother hypothesis.”

This is an ingenious theory backed up by a growing body of evidence that answers some important questions: compared to other primates, why do humans live well past menopause? What accounts for our high birth and survival rates, for the early weaning of our young, for the much shorter intervals between giving birth, and for our longevity? The answer?—grandmothers and other nonmaternal, adult helpers.

In a groundbreaking paper written in 2003 for the *American Journal of Human Biology*, Kristen Hawks, one of Isaac’s teachers at the University of Utah, compared the mortality rates of humans and other primates; she analyzed studies of hunter gatherers in northern Tanzania, the Amazon, and Papua New Guinea, and examined the environmental records of the Pliocene Epoch when our genus branched off from those of our primate relatives. From these studies a

compelling picture emerged. A crucial factor that favoured the survival, growth and flourishing of our ancestors was the key contribution of maternal grandmothers. They possessed keen interest in their daughters' reproductive success and their own personal survival after child bearing years. Skilled in foraging and processing highly nutritious tubers and seeds, these vigorous adult women fed and cared for their just-weaned grandchildren. This enabled their daughters to shorten the intervals between births and freed them up to better care for their infants. Birth rates and infant survival subsequently increased. As well, younger children could learn crucial life lessons in foraging and child care from grandmothers and, thus occupied, younger girls could postpone their own entry into child bearing. Finally, the contribution of nutritious food by grandmothers into the collective menu added to individual and group longevity. See Kristen Hawks, "Grandmothers and Evolution of Human Longevity," *American Journal of Human Biology*, 15:380-400 (2003)

This was the story Isaac Hart, that quiet mountain of a young man, told me during our last visit to Utah. And it was moving to see him warm up during the telling of it. Rather than the just-so story of ferocious, big game hunting early humans, where individual feral males brought home the bacon and saved the day, Isaac unpacked an alternative narrative that focused on the contribution of long-neglected grandmas—the ones who, from time immemorial, got up earlier than everyone else to forage for food, came in last to camp bearing their bounty, and shared their group survival skills. Cooperative sharing and interdependence helped our primate line to survive; and skilled cooperators were likely to do better than less skilled ones.

Provisioning others—their own offspring and the group—created, in Kristen Hawks' words, "a novel fitness opportunity for older females whose own fertility is declining." Grandmothers conferred a survival advantage to their offspring that enabled our genus to survive and flourish. Instead of being non-players in the evolutionary game, it turns out that

grandmothers have been pivotal and valuable. So in case you didn't get the message: to all you grandmothers out there: We owe you a big thanks! Eons ago you figured out a key ingredient and fitness opportunity that favoured the rise and survival of the human family. But you probably knew this already!

There's one more feature of Hawks' grandmother hypothesis that I want to mention—and that is the contribution of nonmaternal helpers—what the literature calls allmothers—in rearing human children. As things turn out, it takes a village is not just a platitude—it's an evolutionary imperative; not only grandmothers, but biologically unrelated adults have played (and continue to play) a crucial role in the survival, care and well-being of human infants and children. Humans are what the primatologist Sarah Hrdy calls cooperative breeders. They give care to each others' children, pool resources and share food.

And apparently, though there are the quirky, occasional exceptions, this just doesn't happen in any other species of great apes: “chimpanzees, baboons, bonobos, orangutans and gorillas all rely exclusively on maternal care.” For example, “chimp babies cling to their mothers round the clock because they have to. Those who don't are quickly culled by other adults. If a baby becomes separated from its mother, then death is almost certain. Only clingers make it to the next generation. By contrast, humans typically play “pass the baby”—a behavior that displays an amazing amount of trust—not to mention community feeling—when compared to other large apes.” (see Michele Pridmore-Brown, “Pass the baby,” *Times Literary Supplement*, May 22, 2009, pp3-5)

The phenomenon of passing the baby around, of shared child care, may help to answer another puzzling human anomaly: how can *homo sapiens*—our species—rear what are the largest, latest maturing, nutritionally costliest, most vulnerable and demanding of infants among all species of large primates, and yet breed the fastest? *Homo sapiens* averaged two-three year

birth intervals compared to an average of six years for the other great apes. This is an enormous difference. It makes no sense unless we invoke the reality, the contribution of shared care among nonmaternal helpers for our young. Again, it turns out, according to Sarah Hrdy in her book *Mothers and Others: The Evolutionary Origins of Mutual Understanding* “it takes a village”—the lining up of a lot of helping hands to share the burden of child care and rearing to confer a real survival advantage on our progeny.

Hrdy speculates that the intricate “see-saw of enlisting care and giving care—the cooperative dance—created an impetus” for the development and complexity of human language and ever bigger brains. Think about, picture in your minds, a room full of adults—younger, older—and what happens when a baby or child is introduced into the mix. Some of us want to flee, true enough; but more often than not we resist the urge to run away. The baby starts to coo, the child to babble, and adults start cooing and babbling back. They smile; we smile. They reach out; and so do we. If the child begins to act up or cry, we commiserate with the beleaguered parent with a half-smile, and reach out a helping hand and a welcoming lap.

This is everyday stuff, not headline news; but look closer at what’s going on, because it’s the kind of every day miracle that has everything to do with our flourishing as a species. Those babies or children who get more adults invested in their care, whether by babbling, being coy, or better at reading the expressions and reactions of others possessed a survival advantage over their peers—something crucial especially in “hunter-gatherer contexts where often only half of all infants survived to reproductive age.”

This picture also tells us that we grow up “in a soup of other people’s emotions and desires.” And it is precisely this soup, Hrdy and others argue, “that accounts for what we call our humanity: including our ability to empathize with others, to anticipate needs, to respond

emotionally, physiologically and linguistically” to babies and children that aren’t related to us and to bond over them. (Pridmore-Brown) This everyday scenario with its exquisitely choreographed cooperativeness is far more important in explaining our uniqueness than is our competitiveness, our breakdowns in civility. The latter may make all the headlines and predominate the airwaves; but it’s the former—our cooperative interdependence, that human soup of emotion and empathy, which truly makes us who we are and has enabled us to survive as long as we have. It may also be what saves us in the end.

And in the end, I return to the beginning, to the *Mother’s Day Proclamation of 1870* we read together at the beginning of this service. The American Unitarian Julia Ward Howe never succeeded in having a Mother’s Peace Day officially recognized; it, like May Day, was co-opted, its message obscured by politicians before women had the right to vote; handed over to market interests, and transformed into a obligatory greeting card and commercial holiday. Which is not to say (Iris, are you listening?) we don’t appreciate the vision, work, worry and contribution of our moms. We wouldn’t be here without them and *you*. And we thank you.

But...as well...today—here’s a shout out to our foraging, care giving grandmas, and to other nonmaternal adults whose cooperation and resource pooling, whose cooing and babbling, whose mentoring and cradling arms and calls for peace have helped contribute to the survival and flourishing of the human family.

In recognition of our interdependence, and of our utter dependence and our delight in the beauty of nature and the cycling of the seasons—we bring this service to a close with the celebration of our *Flower Communion*.