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Unraveling the Significance of Childhood

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THE EVOLUTION OF CHILDHOOD: Relationships, Emotion, Mind. Melvin Konner. xvi + 943 pp. The Belknap Press of Harvard University Press, 2010. $39.95.

Melvin Konner's *The Evolution of Childhood* caps a distinguished career, which began in the 1960s with an important piece of fieldwork among the !Kung San, nomadic hunter-gatherers who live in the Kalahari Desert. That study had a dramatic effect on both anthropology and developmental psychology, in part because its ethological observations, methods and conclusions influenced a generation of scholars, including John Bowlby, the father of attachment theory.

Although the !Kung way of life had been affected by Western practices and material by the time Konner's team (led by the eminent anthropologist Irven DeVore) conducted their seminal fieldwork, the project was of considerable importance to evolution-minded behavioral scientists. The hunting-and-gathering lifestyle of the !Kung was believed to provide insight into how the first humans (also hunters and gatherers) behaved in the environment in which our species evolved and to which *Homo sapiens* is thus adapted.

Konner's observations of !Kung infant life, and especially of infant-mother relationships, feature prominently in this new book, but his goal is much more ambitious: to synthesize all the literature bearing on the evolutionary emergence of our species, and especially on the ways in which humans came to raise their children. The breadth of vision he displays is extraordinary. Konner summarizes a considerable body of research on human evolution, beginning with paleontological and archaeological work on the emergence of life-forms and continuing through evidence regarding the emergence of mammals, primates, hominids and early humans, until finally *Homo sapiens* enters the scene. The volume is a singular achievement, not least because it encompasses, and describes accessibly and eloquently, many fields of endeavor and scholarship, ranging from molecular biology and interpretation of the geological record, to the interpretation of bone fragments found in archaeological sites, to observational research on the behavior of contemporary humans in a wide variety of ecological niches. Furthermore, Konner does not limit himself to secondary sources, as many might do when attempting to place their own research in broader context. Instead, he lucidly discusses a vast range of primary sources. The book's 753 pages of text are accompanied by 159 pages of references.

The goal may be extraordinarily ambitious, but the exercise must be deemed a remarkable success. Konner achieves a readable and persuasive synthesis more inclusive than anything ever before attempted. His account of human evolution, and especially of the evolution of childhood, is coherent and compelling. Of course, given the breadth of materials and disciplines it spans, the portrait painted offers a personal perspective, reflective of some selectivity. When discussing some topics, for example, especially those furthest from his own line of research, Konner does not make reference to all the latest arguments and materials—an inevitable compromise when the canvas is so large. Furthermore, his account perhaps understandably privileges the research conducted by scholars based at or associated with Harvard, the institution where he studied for many years. Studies carried out by Konner's colleagues (including many who were, like him, members of the multidisciplinary teams that studied the !Kung in Botswana) are described more sympathetically and in much greater depth than the work of other researchers. Of course, the studies conducted by DeVore, Robert LeVine, Beatrice Whiting, John Whiting, Marjorie Shostak, Patricia Draper and Sarah Hrdy (to name but a few on the distinguished roster) indeed made profound and lasting contributions, but readers with particular interest in the topics explored by these scholars may be disappointed by the relative inattention to other important research conducted by later generations, especially of anthropologists and

psychologists, who were not part of the Harvard extended family.

Konner's chief focus is, of course, on human childhood, although his analysis is extraordinarily well contextualized by reference to the ancillary fields documenting key transitions in the evolutionary process. He draws attention to the fact that upright bipedal locomotion offered many advantages to our socially living, hunting-and-gathering ancestors, but notes that these advantages came with a price—notably, a narrowed pelvis that made it necessary for parturition to occur when offspring were still extremely immature. In essence, this meant that the "fourth trimester" of fetal development took place outside the womb, and the increased child-care demands increased women's needs for social protection and support, thereby promoting sociality, pair-bonding and the nascent family. These in turn made even longer periods of dependent and protected development possible, perhaps explaining why our species is characterized by an extended period of brain growth and development, which continues over a much greater proportion of the life span in humans than in any other primates. Long, protected childhoods, group living, enduring social bonds, and big brains not only made extensive play possible but also ensured that it paid benefits in terms of intellectual sophistication and cognitive mastery, justifying the "sapiens" label to which our species lays claim.

Humans have, of course, always been distinguished by their behavioral flexibility, a degree of adaptability that has allowed them to occupy an extraordinarily diverse range of ecologies, including icy, windswept terrains that differ in every respect from the warm savannah where the species likely evolved. Despite this flexibility and adaptability, Konner argues, our species is characterized by a large number of behavioral universals, many organized around the fundamental features of child care, and many revealing gender dimorphisms.

His arguments in this regard may be more controversial than his more extended synthetic analysis of evolutionary history. In particular, some readers may be more comfortable with the list of content-free "universal" processes (such as habituation, mimicry, attachment and cultural construction of perception) that are summarized in table 29.3 than with the list of content-laden features (such as coy or flirtatious behavior, personal property, parental devotion, depression and male abuse of power) that are represented as cultural universals elsewhere in chapter 29 and in other parts of the book as well. Furthermore, psychologists in particular will be uncomfortable with the inattention to variability and individual differences—especially because references to their existence are overshadowed by the emphasis on universal regularities.

Also Reviewed in This Issue

Meanwhile, social anthropologists may be unsettled by Konner's understandable depiction of the !Kung experience as the definitive hunter-gatherer lifestyle, the one used to represent ancestral realities—and by his relative inattention to variations among contemporary hunter-gatherers, which at the very least underscore human adaptability in the face of contrasting ecological demands. There is also likely to be controversy surrounding Konner's analysis of the evolution of culture—a concept still less accepted than the broader Darwinian model of evolution. To his credit, he offers a model that draws on many of the competing theories, but this is unlikely to be the last word on the evolution of culture.

Indeed, it would be naive to expect "the last word" on issues as complex and timeless as those with which Konner grapples here. Nevertheless, this magisterial book is assuredly the most important analysis of the evolution of childhood yet attempted. It summarizes 40 years of observation, analysis and synthesis by one of the most profound thinkers of our generation. Whoever follows intellectually will necessarily build on this magnificently eloquent and integrative edifice.

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HISTORY

A Tale of Vectors, Viruses and Victims

David Arnold

MOSQUITO EMPIRES: Ecology and War in the Greater Caribbean, 1620–1914. J. R. McNeill. xviii + 371 pp. Cambridge University Press, 2010. $94.99 cloth, $24.99 paper.

Mosquitoes live brief but busy lives feeding on nectar and plant sugars. The females must also find human or animal blood to feast on in order to produce eggs and continue the life cycle, so they live rather longer than the males—several weeks rather than several days. Frail though individual mosquitoes appear, historically they have shown an impressive propensity to travel. Sometimes they have been stowaways on ships traveling to other continents, carried aboard in water casks and drinking vessels. On arrival in new lands they have exploited the ecological changes—deforestation, canal building, rice cultivation, urban water storage and deficient drainage—brought about by their obliging human hosts. Despite occasional suspicions that mosquitoes were up to no good, most human observers before 1900 were remarkably unaware of the insects' true role. They were inclined to regard mosquitoes as a nuisance—often a prodigious one—rather than the death-dealing menace they actually were. The creatures' frailty belied their fatality.

As accomplished environmental historian J. R. McNeill brilliantly demonstrates in *Mosquito Empires*, for nearly 400 years the human history of the Americas, from the northern shores and interior plains of South America through the islands of the Caribbean to the southeastern corner of the present-day United States, was governed by the activities of "imperial mosquitoes"—both the *Anopheles* species that were the vector for malaria and more especially *Aedes aegypti*, which harbored lethal yellow fever virus. His central argument is that when Europeans first established themselves in the Americas in the 16th century, they had an epidemiological advantage in that the diseases they brought with them (such as smallpox, measles, mumps and whooping cough) caused devastation among indigenous populations. But in the 17th century, migrant mosquitoes such as *Aedes aegypti* were introduced to the Americas, largely through the mechanism of the transatlantic slave and sugar trade, with ships serving as "supervectors, efficiently moving both mosquito and virus from port to port." Once new diseases such as yellow fever made the crossing from West Africa, transported by mosquitoes or traveling in the blood of their victims, then the disease ecology of the Americas was profoundly transformed. Major demographic and environmental changes were also taking place—hundreds of thousands of slaves were imported, and forests were cut down for fuelwood used to boil sugar. The once benign Caribbean became a "giant sinkhole" of suffering humanity.

The broad lines of this epidemiological transformation are already well known, to medical historians at least. Where McNeill excels is in demonstrating, through a close reading of contemporary sources and of modern medical literature, how specific environmental changes in the Americas—especially the "ecological turbulence" caused by land clearance, plantation agriculture and urban expansion—created conditions in which immigrant diseases and their insect vectors flourished, and in which the differential immunity or resistance so central to this story began to operate. McNeill wisely eschews the overemphasis on race that has plagued many previous discussions of these issues, drawing attention instead to the formative role of specific environments (in Africa as well as the Caribbean) and of prior disease exposure. As he notes, by the late 17th century, individuals who had been born or had grown up in those areas of the "Greater Caribbean" (see map on facing page) in which malaria and, above all, yellow fever were rife likely either had an inherited immunity or had acquired protection through exposure to the diseases in childhood, when they were less often fatal. The epidemiological advantage now rested with the locals, whatever their racial composition, as opposed to those arriving unprotected from Europe or from relatively fever-free parts of the Americas. Many Europeans disembarked from ships only to go straight into their graves.

Worse still, McNeill reminds us, medicine was no solace to the sick: The medical treatments employed at the time, including copious bleeding, or venesection, only worsened the patient's condition, just as confinement in a hospital stuffed with fever-sufferers was bound to hasten an already imminent death. McNeill presents compelling evidence for the overwhelming mortality—especially from yellow fever—that