

Book Reviews

The Evolution of Childhood: Relationships, Emotions, Mind. By Melvin Konner. xvi + 943 pp. Cambridge, MA: The Belknap Press of Harvard University Press. 2010. \$39.96 (cloth).

In the decades immediately following the publication of *The Origins of Species*, development had an important role to play in explaining evolution. This was due in part to the general acceptance of Haeckel's recapitulation theory—ontogeny recapitulates phylogeny—which made embryology the window to phylogeny. However, with the discrediting of Haeckel's theory and, more significantly, the rediscovery of Mendel's work, evolution and development parted ways. Weissman's distinction between the somatic and germ lines meant that anything that happened to an organism during its lifetime could have no consequence for its descendants. Development became an epiphenomenon, of great significance for the individual but inconsequential for evolution. Throughout the 20th century, there were always a few hangers-on, but with the advent of the modern synthesis issues of development were essentially seen as irrelevant to questions about evolution. Development did not matter.

This state of affairs has changed in the last several decades, prompted by the discovery of homeobox genes, the advent of evo-devo, and the formulation of epigenetic theories of inheritance. The influence of these new discoveries and ideas extended beyond fruit flies and explaining morphological changes over phylogeny, but to all species, including our own, and to behavior. We are fortunate to now have anthropologist Melvin Konner's ambitious book *The Evolution of Childhood* added to this mix. Konner's early work among the !Kung of the Kalahari Desert taught him that, despite surface differences, many aspects of culture, development, and life are universal, affected by a species-wide inheritance. This was counter to the claims of cultural anthropology's elite at the time, and Konner's book reveals how much views have changed over the last 40 years.

Konner recognizes the role that ontogeny has had on phylogeny and how our unique evolved life history permitted our ancestors to adapt to a wide range of environments and that it continues to influence our actions today. Consistent with contemporary theory [see, for example, many of the papers in Kappeler and Silk (Eds.) (2010), *Mind the Gap: Tracing the Origins of Human Universals*], Konner believes we became the species we are because of our social intelligence—the need to cooperate and compete with one another—and that this was necessitated by important aspects of how we develop, particularly our extended childhoods. To explain human childhood requires a multidisciplinary approach. Konner reviews and integrates both classic and the latest research from a broad range of fields, including genetics (and epigenetics), embryology, neuroscience, evolutionary biology, ecology, life history, comparative animal behavior, psychology (particularly developmental and evolutionary), and anthropology (paleo-, physical, and cultural), among others. Konner's goal is to integrate knowledge from these various areas of scientific inquiry to provide a behavioral biology of psychosocial development or a developmental sociobiology. Being a scien-

tific generalist in these days of specialists is not easily done, but it is exactly what is needed to acquire a proper picture of childhood and the consequences this has for being human.

Konner divides his book into four major sections: Part I. Evolution: The Phylogenetic Origins of Childhood; Part II. Maturation: Anatomical Bases of Psychosocial Growth; Part III. Socialization: The Evolving Social Context of Ontogeny; and Part IV. Enculturation: The Transmission and Evolution of Culture. In between some chapters, he includes Interludes (“Thinking about . . .”), the equivalent of boxes used by textbook authors to present some interesting, perhaps slightly tangential, information related to the main themes. Some of these are very interesting indeed and include “Thinking About”: bird song, bipedal walking, growing up gay, maternal sentiment, “oedipal” conflicts, incest avoidance and taboos, and boys at war. He also includes short transition chapters between the major parts, easing the reader from one major theme to the next.

Part I. Evolution: The Phylogenetic Origins of Childhood provides a little history about evolutionary theory with respect to the concept of development, examines the major paradigms investigating evolution and development, brain evolution and development, and the ape foundations for hominin evolution. He makes the transition to Part II with a chapter titled “Neurological Models of Psychosocial Function.” There are many take-home messages from this first section, the most important one I think being that natural selection has operated on all stages of the lifespan, but especially the early ones. Evolution can be viewed as modifications of developmental systems over the course of phylogeny, or as Konner concludes, “life is development, and modifications of development are of the essence of evolution” (p. 741).

Part II. Maturation: Anatomical Bases of Psychosocial Growth begins with an examination of the basic biology of growth, including genetics, neuroendocrinology, and prenatal and postnatal brain development. The remaining chapters look at important aspects of development that affect human sociality, including attachment, language, sex differences, and reproductive behavior and the onset of parenting. Konner points out how these and other factors resulted in five great changes in human life history: the overall lengthening of ontogeny, a presocial “fourth trimester” early in infancy, the retention of prenatal brain growth rate into the second year of life, the emergence of language and a species-unique cognition permitting the ability to “read other minds” (theory of mind), and the lengthening of middle childhood. The section ends with a transition chapter “Plasticity Evolving,” introducing the important role of plasticity in evolution and development. Of great importance is Konner's emphasis on the role of facultative adaptations, sometimes referred to as conditional adaptations, in which evolved neurological mechanisms detect and respond to features of early environments and entrain patterns of development to produce adult behaviors best suited to anticipated future environments (anticipated based on early environments). These are contingent life strategies that enable organisms to succeed in a variety of contexts. This is an essential concept to evolutionary accounts of development, making it clear that one important thing that evolved in *Homo sapiens* was the ability to vary behavior in response to changing environments, although such plasticity is not

unlimited but constrained by the experiences of our ancestors (i.e., phylogenetic legacies).

Part III: Socialization: The Evolving Social Context of Ontogeny examines what most textbooks in developmental psychology would call “social development” and includes chapters about early social experience, the mother–infant bond, humans as cooperative breeders, paternal care, peer relations, and play, among others. Konner presents extensive coverage of social behavior in hunter–gatherer societies, a topic he knows very well and one that enlivens the book considerably. The final chapter of this part presents hunter–gatherer childhood as the cultural baseline for understanding childhood in modern societies. He quite consciously treads lightly between his emphasis on facultative adaptations (children evolved to deal with a wide range of environments) and his belief that there are important phylogenetic constraints that make the childhood patterns of hunter–gatherers the “natural” one for our species. In general, he succeeds, although walking the line between these two seemingly contradictory positions requires some flexibility (plasticity?) for the careful scientist. Part III ends with a transition chapter titled Enculturation: The Transmission and Evolution of Culture, which deals with the issue of whether nonhuman culture can exist. Konner uses this transition to point to both the similarities and differences between human and nonhuman culture and how humans evolved cognitive abilities, including advanced forms of social learning and teaching that permitted symbolic culture and changed the structure of human social groups.

Part IV. Enculturation: The Transmission and Evolution of Culture deals with various aspects of cultural life including the “Culture of”: infancy and early childhood, subsistence, middle childhood, and gender. The section concludes with a long list of cultural universals and a proposal for a cultural acquisition device (CAD), analogous to Chomsky’s language acquisition device. Konner’s CAD consists of four sets of processes: reactive, including traditional forms of learning, such as classical and operant conditioning; facultative, including all forms of social learning; emotional, including attachment, in-group/out-group distinctions, and other social/emotional processes; and symbolic, including cultural construction of perception and narrative meaning, among other uniquely human cognitive accomplishments. Together, Konner uses these processes to provide “a model of culture in biological context.”

Konner concludes his ambitious and well-written book with brief Part V: Conclusion, in which he presents 40 not-always-so brief take-home messages. Among his many conclusions: life is development; nothing in childhood makes sense except in the light of evolution; and both genetic determinism and environmental determinism are dead. My bias may be showing here, but I see the most important take-home message being “development matters,” a point that this book makes loud and clear.

DAVID F. BJORKLUND
Department of Psychology
Florida Atlantic University
Boca Raton, Florida

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Life Histories of the Dobe !Kung: Food, Fatness, and Well-Being Over the Lifespan. Edited by Nancy Howell. xii + 235 pp. Berkeley, CA: University of California Press. 2010. \$60.00 (cloth), \$24.95 (paper).

The Dobe !Kung are one of Anthropology’s “sacred peoples.” I adopt this phrase from Annette Weiner’s ethnography, *The Trobrianders of Papua New Guinea* (1988), where she calls the Trobriand Islands one of Anthropology’s “sacred places.” The !Kung (also known as the San, “bushmen,” or as they call themselves *Ju/’hoansi*) are a staple of anthropological teaching and research. These foragers of the Kalahari Desert are employed, more than any other group of hunter-gatherers, as models of *humanness* in the sense of biocultural evolution. Nancy Howell’s books, *Demography of the Dobe !Kung* (1979, revised edition 2000) have an almost Biblical status as descriptions of population structure in a traditional society.

This new volume is “Another look at the Dobe !Kung: A Life History Approach”—the title of Chapter 1. Howell writes that, “The task of the present work is to specify the questions that arise from life history theory, consider the ethnographic knowledge that may pertain to the answers to these questions, and then to operationalize the numerical data available to produce the best approximation of an empirical answer to the question posed that I can manage” (p. 7). Based on the 202 pages of text that follow, it seems to this reader that the central question driving the thinking and writing of this book is it “possible to be well nourished and at the same time very thin” (p. 13)? The !Kung are very thin and short statured. “One of the most distinctive features of the !Kung people is their small body size. They are short and slender and fine-boned and many people are so thin that bones and muscles are readily seen through the skin, even though most of them seem to be healthy and vigorous” (p. 49).

How short and thin are the !Kung? On average, !Kung children follow the 3rd centile of stature and weight of the United States National Center for Health Statistics (NCHS, 2000) references. !Kung adult height averages, “. . . a little more than 160 cm. . .” for men and, “. . . somewhat less than 150 cm” for women (p. 57). These adult values fall below the 3rd centile of the NCHS references. !Kung body mass index (BMI) is the lowest of all hunter-gather people and one of the lowest of all human groups, with men averaging a BMI of 19.1 and women averaging, “. . . below 18.5” (p. 59). International references for BMI indicate that a value less than 18.5 is a risk for health. Interested readers may find the original !Kung anthropometric data, 3,081 measurements of height and weight, collected during the Harvard University Kalahari research project of 1967–1969, online at <http://tspace.library.utoronto.ca>. I navigated to this site and it does provide much data, as well as hundreds of photographs taken by Richard Lee. I did not find any of the skinfold thickness measurements at this website, but did find the data at <http://datalib.chass.utoronto.ca/codebooks/utm/howell.htm>.

Howell cites the literature that indicates such low anthropometric values are indications of chronic undernutrition. However, she does not accept the international epidemiological references as applicable for hunter-gatherers such as the !Kung. Howell does not agree with the interpretation of, “Epidemiologists and world health experts. . .” (p. 52) such as the US National Research