

the errors and confusions that are still being promulgated by critics of the field.

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PRIMATE AND HUMAN EVOLUTION. *Cambridge Studies in Biological and Evolutionary Anthropology.*

By Susan Cachel. Cambridge and New York: Cambridge University Press. \$120.00. xvii + 469 p; ill.; index. ISBN: 0-521-82942-9. 2006.

Do not be deceived by the title, *Primate and Human Evolution* is a book about human origins. Cachel argues that the morphological evolution of hominids can best be understood by comparisons to closely related catarrhine primates, specifically Old World monkeys. The evolution of traits such as larger body size and bipedal locomotion, as well as the evolutionary factors affecting speciation and extinction, are best understood by comparative analysis. Oddly, however, Cachel breaks with modern evolutionary anthropology with her suggestion that the discontinuity between the behavior, social structure, and intelligence of humans and non-human primates negates the validity of the non-human primate models to human origins; she strongly advocates abandoning nonhuman primate models for human evolution for this reason. Instead, the author hypothesizes that early hominid adaptive change was triggered by a significant decrease in intragroup competition combined with derived division of labor, food sharing, and "natural history intelligence" or specialized knowledge of extracting nutrients from the environment. In this regard, Cachel explicitly and solely relies on her interpretations of the archeological record to reconstruct human social, behavioral, and cognitive evolution.

What detracts most from the author's central thesis is the highly disorganized format of the book, which includes large tracts of historical review and literature surveys on topics that have little relevance to her argument. This, in turn, dilutes the data that are used to develop and support her hypothesis. Although not without interesting observations on the current state of physical anthropology, because *Primate and Human Evolution* is written as both an introductory textbook and as a major exegesis of human adaptive origins, it does not succeed at either objective.

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THE ORIGIN AND EVOLUTION OF CULTURES. *Evolution and Cognition.*

By Robert Boyd and Peter J Richerson. Oxford and New York: Oxford University Press. \$74.00 (hardcover); \$35.00 (paper). viii + 456 p; ill.; author and subject indexes. ISBN: 0-19-516524-1 (hc); 0-19-518145-X (pb). 2005.

Throughout the natural world, the human animal is unique in its ability to transmit and accumulate information across generations. This phenomenon of culture has been studied in depth by anthropologists, cultural historians, and biologists. Culture exists in rudimentary forms in other animals. Yet, no species has accumulated culture across generations as humans have, and this ability to share and build upon past ideas is thought to be key to the spectacular success and global dominance of the human species. This unique status of human culture presents some fascinating and mostly unresolved questions. For example, if culture is critical to human success, why is it not more developed in other species? How did culture originate in humans and does it evolve like other biological traits? How does the large-scale cooperation that complex culture necessitates evolve, and what prevents the spread of cheaters that are known to disrupt such cooperative systems?

In their most recent book, *The Origin and Evolution of Cultures*, Robert Boyd and Peter J Richerson have assembled a series of previously published research papers into a single volume that seeks to tackle these difficult questions. The approach of the book might seem highly technical to some readers. Many pages are given over to equations and models that attempt to characterize the conditions under which cultural traits and human cooperation can spread. Anyone without previous experience or perhaps a strong interest in mathematical modeling may find this approach overwhelming. However, the keen efforts of readers will be paid off with an understanding of some of the key challenges that lie ahead for cultural scientists.

The 20 chapters of the book are separated into five parts, each with a different focus and a divergent set of questions to tackle. In the first part, the authors introduce their Darwinian approach. Their method is to apply the framework of biological evolution to investigate cultural origins and the forces of cultural change. Throughout this section and beyond, Boyd and Richerson show a bias toward beneficial explanations for cultural traits. For example, one main argument is that social learning, a key building block of culture, is an evolved, and often adaptive trait. Yet, evolution often occurs via random processes and, under such conditions, cultural traits might be neutral or even costly. Boyd

and Richerson ascribe little importance to neutrality and nonadaptive explanations; they do present such counterarguments, but not until the latter sections of the book. Part 2 continues in a similar fashion, with one chapter that discusses “ethnic markers” as adaptations that allow group identification. For example, selective imitation is predicted to be a key adaptive feature of human culture, and the authors hypothesize that the markers that identify ethnicities help individuals to focus their imitation on others that share similar selective conditions. The third and longest part of the book focuses on the thorny problem of large-scale human cooperation. Cooperation is a central aspect of culture. Yet, cooperative traits can be difficult to maintain since pure selfishness is often a cheaper strategy, and can supplant cooperation under many conditions. The maintenance of cooperation is often thought to require specific conditions (such as kinship or repeated interactions among individuals), and these conditions are unlikely to occur in large human groups. Boyd and Richerson review models that might solve this difficulty. They primarily focus on punishment systems that work against selfish individuals. Punishment models are attractive, as they work efficiently even in large groups of nonrelatives. However, if punishment is itself costly to impart (as is commonly expected), then some secondary explanation must exist to clarify how individuals can benefit from punishing others. All three of these initial sections could be improved with a greater connection to empirical research. The strength of the evolutionary models that Boyd and Richerson present is that they can predict what might evolve and be stable in the natural world. However, natural or experimentally derived examples are not a main focus of this book.

Part 4 offers a historical perspective on the evolution of culture. The authors describe the potential importance of historical contingency in driving differences among cultures, as opposed to the adaptive evolution of cultural traits. The discussion is evenhanded and very useful, although such counterpoints might be better if spread throughout the volume. The final group of chapters covers the broadest range of topics, and this is where the authors reach out most to other fields, while simultaneously seeking to defend their approach. In particular, Boyd and Richerson argue that the academic fields that study humans are too rigidly divided, and that these fields should forge a synthesis with evolution as the common and overarching process. Their goal of applying a Darwinian method to all investigations of culture is ambitious to say the least. The authors conclude by humbly offering what they call a toolbox of simple models.

Perhaps the sound application of these models to the accumulated datasets of anthropologists, human economists, political scientists, and sociologists is the route by which such a synthesis could occur.

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PEOPLE AND NATURE: AN INTRODUCTION TO HUMAN ECOLOGICAL RELATIONS. *Blackwell Primers in Anthropology, Volume 1.*

By Emilio F Moran. Malden (Massachusetts): Blackwell Publishing. \$67.95 (hardcover); \$27.95 (paper). xiv + 218 p; ill.; index. ISBN: 1-4051-0571-2 (hc); 1-4051-0572-0 (pb). 2006.

Social theorists who write about the current round of globalization fall into two broad camps. Some regard globalization as a largely positive social process characterized by a liberalized exchange of goods and ideas, the mixing and blending of cultures, and new individual freedoms. At least as many view globalization with alarm; considering it to be a homogenizing and hegemonic process that threatens to destroy distinct cultures, impoverish and immiserate much of the world's population, and unleash violent conflicts. With this slim volume, Emilio Moran has produced a biological version of globalization alarm. He observes that changes in human behavior (especially in the most developed countries) over the past half century have resulted in related exponential increases in industrial production, energy consumption, species extinctions, and concentration of atmospheric CO₂. However, unlike the social theorists who understand contemporary globalization to be a result as well as a constituent of capitalism, the author avoids explicitly linking contemporary ecologically destructive human practices to a unifying social theory.

Moran organizes his treatise into eight chapters. The early chapters describe the current global ecological crisis, and present a variety of anthropological studies that might be characterized as cultural ecology. Here, he synthesizes a considerable amount of biological and anthropological research. For example, the chapter entitled *The Great Forgetting* recounts several cases from human prehistory in which individual societies collapsed after failing to recognize and change their ecologically destructive ways. The scale of the current crisis is no longer local, making it even more difficult to recognize and change our perilous ways. The remaining chapters argue for reducing individual consumption and developing social and cultural institutions as the way to avert the impending tragedy of the global com-