parties may not have time or interest to read entire books on each of these critical issues, but they would find the concise arguments proffered here to be powerful and manageable. The editors introduce the volume by saying that ''readers will decide for themselves whether the effort was worthwhile'' (p. ix). I am convinced that it was.

The Emergence and Evolution of Religion: By Means of Natural Selection, by **Jonathan H. Turner, Alexandra Maryanski, Anders Klostergaard Petersen,** and **Armin W. Geertz.** New York: Routledge, 2018. 285 pp. $36.95 paper. ISBN: 9781138080928.

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In academic discourse and common parlance alike, the term ''religion'' can refer to three related yet distinct entities. It can refer to *religious beliefs* or *religiosity* (intra-individual cognitive processes inside the brain, such as a belief in supernatural beings), *religious behavior* or *practices* (individual and interindividual social behavior, such as rituals and prayers), or *religious organizations* (supra-individual collectivities gathered for the purpose of collective religious practices, such as churches, synagogues, and other denominations). In the typical academic division of labor, psychologists mostly study religious beliefs, anthropologists usually focus on religious beliefs and behavior, and sociologists and economists typically concentrate on religious behavior and organizations. Now Jonathan Turner, Alexandra Maryanski, Anders Klostergaard Petersen, and Armin Geertz, a multidisciplinary quartet of scholars, have written *The Emergence and Evolution of Religion: By Means of Natural Selection*, an ambitious book that simultaneously and comprehensively seeks to explain all three aspects of religion and more by effortlessly gliding from the genetic to world-system levels of analysis.

The ''natural selection'' in the book's subtitle is not your father's natural selection. Even though the book is entirely devoted to explaining religion, the authors intend their general theoretical framework to be applicable to the evolution of all institutions. In this endeavor, the authors define, in addition to the familiar *Darwinian* (genetic) *selection*, four other types of natural selection. *Type-1 Spencerian selection* is the teleological and purposeful invention of solutions to new environmental problems confronting societies. (This is the old functionalist sociological explanation translated into the language of modern evolutionary theory.) *Type-2 Spencerian selection* refers to the geopolitical competition between societies where the winners of the competition impose their institutions on the losers and sometimes adopt institutions of the losers. *Durkheimian selection* captures the processes in organizational ecology where different organizations compete for resources and niche markets, often leading to division of labor and specialization among them. (This process might as well be called ''Hannanian selection.'') *Marxian selection* is the failed Marxist logic of class struggle applied to (often violent) conflict between organizations where some organizations seek to overthrow the entire organizational system.

The authors use Darwinian selection to explain religious beliefs (religiosity) and behavior (practices); Type-1 Spencerian selection to explain the institutionalization of religion in order to satisfy basic human needs created by Darwinian selection; Durkheimian selection to explain the competition among religious organizations (or ''cult structures,'' in the authors' language) for members, resources, and ideological niches; Type-2 Spencerian selection to explain how religion, polity, and economy coevolve when certain religions spread throughout the world as their host nations vanquish and conquer others in warfare in modern human history (think the Roman Empire); and, finally, Marxian selection to explain the violent acts undertaken by religious organizations when they act as social movement organizations and the negative emotions experienced by their members that motivate and fuel such violent acts (think ISIS).

The authors use the linguistic method of cladistics very carefully to reconstruct the brain and behavioral tendencies of hominin

ancestors of humans, and then they explain the emergence of religiosity and religious behavior as a consequence of some of these brain structures (or ''pre-adaptations'') and behavioral tendencies, such as the sense of justice, the ability to see self as an object and to make external causal attributions (assigning causes to external entities for events that have consequences for self), and the propensity to engage in rhythmic interactions with others and experience collective emotional arousal. Perhaps reflecting their sociological perspective, the authors conceive of religiosity as an interpersonal, social process rather than an intrapersonal, cognitive process (pp. 130–35). Put differently, for the authors, *religious behavior comes before religious beliefs* (the authors refer to ''the profane origins of the sacred and supernatural''); whereas for psychologists, *religious beliefs come before religious behavior.* Do we pray because we believe, or do we believe because we pray? This question should stimulate further theoretical development and empirical research.

One currently active debate in the evolutionary psychology of religion is whether religiosity is an adaptation or a byproduct. Do we believe in gods because those who did in the past survived longer and achieved greater reproductive success, or do we believe in gods because religiosity emerged as a nonadaptive byproduct of some other adaptations? On this question, the authors squarely fall on the byproduct side; religiosity became possible because of the evolution of the human brain for other reasons (p. 134).

Ultimately, of course, the value of any scientific theory is its empirical validity, and the authors' theory must be empirically tested. In this sense, the Achilles's heel of their theory might be its extreme complexity, which is a necessary and unavoidable consequence of its comprehensive explanatory scope. The authors themselves do not derive any testable hypotheses in their book or provide any hint as to how their theory might be tested empirically. It will therefore be up to future generations of scientists to subject the theory to empirical tests. I would particularly be interested in the empirical validity of the authors' conclusion, derived from their cladistic analysis, that humans, like orangutans, are naturally solitary, not group-oriented (pp. 63–72), as this seems to go against most assumptions of human nature in behavioral sciences, which hold that humans have been evolutionarily designed to be inherently social.

As impressive and ambitious as the book is, it is not impossible to nitpick. For my taste, too many insightful theoretical gems, such as the devastatingly fatal critique of Dunbar's widely accepted theory of the evolution of human language (p. 105, n10), are buried in footnotes. But the most annoying problem with the book, although this is as much the publisher's fault as the authors', is that there appears to have been no careful copyediting of the text before publication. As a result, along with a few occasional typos and a mixture of American and British spelling, there are many references cited in the text, particularly those by the authors themselves, that are missing or are incorrectly identified by publication year in the bibliography at the end of the book, making it impossible for readers to look up key references. I consider serendipitous discovery of new references to be one of the pleasures of reading academic work, but sadly this was often impossible with this book.

The Emergence and Evolution of Religion promises a lot at the outset of the book, and, quite remarkably, by its end, it delivers everything it promised. I highly recommend the book to anyone interested in the evolutionary origins of all three aspects of religion and believe that it will provide the sources and foundations for countless PhD dissertations in the near future.