Robert Cliquet and Dragana Avramov, *Evolution Science and Ethics in the Third Millennium: Challenges and Choices for Humankind* (Cham, Switzerland: Springer, 2018). 538 pages. ISBN: 9783319730899. $149.00.

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In this lengthy (538 pages) and ambitious book, the authors argue for a "universal morality" based on the "phylogenetic enhancement" of the "hominisation process" and the "furtherance" of the "modernisation process" (their spellings). The foundation of this universal morality is to be in evolution science, which provides the resources to address the mismatch between evolved human tendencies and modern environments. This universal morality, according to the authors, would replace traditional theistic moral systems, which are poorly adapted to modern environments, and secular moral systems, which are too fragmented and short-sighted.

The authors begin with some background on the development of evolution science, identifying four stages. The first stage is the Darwinian Revolution, beginning with the publication of Charles Darwin's *On the Origin of Species* and introducing natural selection as an explanatory resource. The second stage is the Modern Evolutionary Synthesis of genetics and natural selection and the extension of this synthesis to epigenetics, niche construction, multilevel selection, and more. The third stage is the Molecular-Genetic Revolution, which is supposed to provide a "deeper and more profound" understanding of morality. The final stage is the Second-Darwinian Revolution, with the development of biological theories of altruism, sex relations, and sociality in general through the mechanisms of inclusive fitness, kin selection, reciprocity, group selection, and game theory.

If this universal morality is supposed to enhance the "hominisation process" and "further" the "modernisation process," we need to know what these processes are. According to the authors, the "hominisation" process is the six- to seven-million-year development of the hominin lineage, culminating in modern *Homo sapiens sapiens*, which involves an increase in brain size and capacity and changes in nutrition (cooking especially), complex social life, cooperative breeding, language, and biocultural evolution. The "modernisation" process is largely the product of cultural change, which has resulted in novel environments with technological change, non-kin-based social networks, large communities of strangers, the development of science, market economies, industrial modes of economic production, and the introduction of Enlightenment values and normative frameworks.

These two processes, according to the authors, have resulted in an enhanced quality of life with new challenges, even as old challenges remain. First, we now live and interact in environments that are very different from the environments in which we evolved. In effect, our modern environments are mismatched with our genetically based adaptive tendencies. This generates challenges at the individual level: senescence and aging, sexual relations, sexual equality, prevention of maladaptive traits, competitive tendencies versus cooperative, anti-social behavior, psychopathology, and more. There are also social challenges: kinship and family relations, nepotism, social status hierarchies, equity and social inclusion, race and ethnicity, in-group/out-group tendencies, ideological pluralism, and relations between states. And, there are challenges based on intergenerational relations: population growth and birth control, demographic transitions, and the carrying capacity of the Earth.

These are challenges, according to the authors, that traditional religion-based morality is ill suited to address. They show this by sketching out a biological account of religion and religiosity that treats them as genetically based and adaptive to an environment characterized by ignorance and suffering. Traditional religions functioned by offering explanations of things we do not understand and helping us cope with these problems. Traditional religions function in other ways as well. They promote social cohesion, support systems of social dominance, provide health guidance, and regulate sex and reproduction. But these functions are not adaptive in modern environments, where they instead produce in-group/out-group conflict and conflict with the explanatory accounts of modern science.

According to the authors, the modern "secular ideologies" are problematic as well. Each has something to recommend it, but each is also flawed in some way. Capitalism, for instance, produces great wealth, but it is not well adapted to our ecological needs. Socialism and Marxism counter some of the worst side effects of capitalism, but they seem indifferent to merit and confuse equity

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with equality. Feminism is right in fighting gender-based inequities, but it neglects biological and evolutionary factors related to sex. Ecologism is right about placing humans in the biosphere, but it neglects the extent and depth of competition among species. The bottom line, for these authors, is that each of these ideologies has something to recommend, but each is either limited by its domain or presents some socioenvironmental problem. A biological and evolutionary approach to ethics, in contrast, is broad and universal, applying to all people and addressing all of these domains from a scientific stance.

The range and breadth of the discussion, as well as the citation and references, are impressive. The bibliography runs 128 pages. There is much here that simply seems to be biologically informed common sense, although there are many who will likely disagree with some of the substance. Certainly, those who accept a traditionally religious approach or one of the modern ideologies will likely take issue with the thoroughgoing biological framework that offers a ready critique of some of the central commitments of traditional religion and each of the ideologies. But some of us who are more biologically inclined, myself included, might instead see this as a virtue of this book.

There are problems with this book, though. First, many of the views are just mentioned without careful explanation. It may be impossible for a book, even one of this length, to carefully explain everything, but there are key places where a careful reader will likely want more careful exposition. For instance, the philosophical problem known as the "naturalistic fallacy," which raises doubts about inferring what we ought to do from the way things are, is summarily dismissed without an obvious understanding of its challenge to a biologically based ethics. Even those who doubt that there is a real fallacy here will be unsatisfied with the authors' brief treatment.

This failure to understand the naturalistic fallacy is apparent in a second problem, the authors' claim that the main goal of a biological ethics based on "evolution science" is the enhancement of the "hominisation" process and the furtherance of the "modernisation" process. There are trends in each of these processes that we would likely regard as moral progress, but there are also things that are not clearly so. It is just too simple to just say that the overarching goal of a biological ethics is to continue "hominisation" and "modernisation." To do so seems to just repeat the naive view seen in the nineteenth century by those who saw evolution as an overall optimizing process that a moral theory should simply support.

A satisfactory justification of the views here will likely be more piecemeal and complicated, as suggested by a third problem with this book. It does not seem to fully recognize the pervasive conflicts of interest in our relations with other humans, nonhuman life, and the rest of nature. There is no doubt that evolutionists of the past overemphasized competition, but in this book, it seems that there is an overemphasis on cooperation—not in the sense that it is important and a fundamental part of our ethical systems and values, but to the degree that cooperation is always possible in a world permeated with conflicting interests. The authors sometimes recognize conflicts of interest in particular contexts, but they do not seem to acknowledge the full range and depth of these conflicts. In a theoretical discussion of ethics, we can perhaps gloss over these conflicts, but in actual practice, they will undoubtedly arise and must be addressed.

There are some other minor problems with this book, including its inelegant writing and idiosyncratic vocabulary, but it serves well as a resource for those from a variety of disciplines who want a comprehensive introduction to a biologically based ethics. For many of us, this seems to be the right starting point. After all, humans are biological creatures that have evolved psychological and social tendencies and needs. Why should we not start with this fact? The bottom line is that this book is most appropriate as a reference for scholars and graduate students who want a sketch of the full biological picture of human ethics and morality and a comprehensive list of sources to investigate particular issues further and in more depth. Those who are interested in the philosophical issues raised by a biological approach to ethics, including philosophers of biology (such as myself) and ethicists, will likely be less satisfied.



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