

# *Endmatter: Remembering Ralph Wendell Burhoe*

RALPH BURHOE'S EVOLUTIONARY THEORY OF RELIGION

by *Philip Hefner*

*Abstract.* Ralph Wendell Burhoe's legacy rests on a series of interrelated theories that deal with (1) the emergence of life within physical nature; (2) the symbiosis of genes and cultures in human evolution; (3) the central importance of the brain in this symbiosis; and (4) the function of religion within this evolutionary process to carry the traditions of trans-kin altruism that make human civilization possible. These theories give rise to a number of issues that are of current importance. Burhoe's stature is enhanced when one considers that these theories were first articulated by him in the 1970s, in reliance upon the work of J. Bronowski, Alfred E. Emerson, and Donald T. Campbell.

*Keywords:* altruism; J. Bronowski; Ralph Wendell Burhoe; Donald T. Campbell; civilization; Alfred E. Emerson; genes and culture; symbiosis.

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In my own thinking, Ralph Wendell Burhoe's most significant legacy is his set of interlocking theories that deal with the evolution of genes, brain, and culture. Their significance lies in the fact that they deal with issues that are among the most interesting and most important that we face, as we reflect on human life and its meaning. When we consider that he first developed these theories more than thirty years ago, the prescience with which Burhoe searched out and elaborated the fundamental issues on the interface of science and religion is astounding.

Burhoe understood that the interaction between science and religion requires that the emergence and continuation of religion must be

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explained in terms that are credible to science, just as, conversely, science must be credibly explained to religion. He explained to religious thinkers that science is a source for the revelation of God's work and nature. If one is to gain an adequate understanding of the Lord of History (the term for God that Burhoe came to favor), one must give attention to the history of which God is the Lord; the term we use for nature's history is *evolution* (Burhoe 1972).

Burhoe's attempt to explain religion to scientists dealt both with the processes of its emergence and also with its function. With respect to its emergence, he recognized that religion must be understood in continuity with the entire process of evolution, beginning with the descriptions of nature provided by physics. He argued for the emergence of biological reality within the matrix of physical reality, not on the basis of what has become popular as the "anthropic theory," but rather in terms of Jacob Bronowski's concepts of "stratified stability and unbounded plans" (Bronowski 1970). Having established that biological evolution is no alien phenomenon in the physical world, Burhoe focused upon genetic evolution, particularly in the ontogenesis of human individuals.

The key factor to be noted in this ontogenesis is the emergence of the human brain as a fully biological organ. Here in the brain something extraordinary occurs—genetic information gives rise to an organ that also generates cultural information. The interaction between genes and cultures came to be the center of Burhoe's scientific concern, just as it also became the locus for elaborating the significance of his theological theories (Burhoe 1976, 1977). He constructed a theory of *symbiosis* to describe the emergence and interaction of genes and cultures. The human being is thus the creature who could be termed a genes/culture symbiosis.

Symbiosis, by its very nature, decrees that each symbiont is essential to the survival of the supraorganism that is constituted by the coadaptation of the symbionts. Burhoe not only utilized the work of entomologist Alfred Emerson on termites for his theory of symbiosis (Emerson 1943, 1960), but also collaborated with him to extend its meaning (Burhoe and Emerson 1974). Emerson contributed the term *supraorganism* to describe the new form of larger life that is constituted by symbiosis.

Note the progress of thought to this point—all of it developed in its published form by Ralph Burhoe in the decade of the 1970s: A scientific proposal (unusual for its time—Bronowski developed his ideas in the 1960s) concerning physical reality is brought to bear on an argument for the emergence of life; a theory of symbiosis is used to interpret the evolutionary career of life and the emergence of culture within the biosphere and its role in the formation of human beings. Now the conceptual question turns to the evolution of culture and its requirements, and at this point religion emerges. Up to this point, the focus has been

on the processes within which religion has emerged, but now it turns to the concept of religion's function.

It is religion that transforms *Homo*, the "ape-man," into *Homo sapiens*, the human being. Burhoe speaks of this transformation that constitutes human culture as the source of *civilization* in some places and in others as the altruism that enables viable complex social organization through the emergence of *trans-kin altruism* (Burhoe 1979). The work of experimental psychologist Donald T. Campbell enters here as a fundamental conceptual underpinning for Burhoe's thought, just as Bronowski and Emerson did at earlier stages of the argument. Campbell argued that civilization is impossible unless humans as biological sexual competitors are transformed into sociocultural cooperators (Campbell 1975). Campbell hinted, and Burhoe argued vigorously, that religion is critical here as the agent of transformation (Burhoe 1979). Those of us who are familiar with the current discussion of this transformation, fostered in the wake of sociobiology and evolutionary psychology, must remind ourselves that Campbell and Burhoe carried on their discussion, in terms that are more profound than much of the current conversation, more than two decades ago, in the mid-1970s. Furthermore, Burhoe not only recognized the importance of this discussion for religion, but he elaborated concepts for that discussion that far surpass most of the popular and scientific discussion today.

This, then, is the shape of Ralph Burhoe's attempt to explain religion in terms that are credible to the world of scientific thought. Arguing that physical reality is capable of engendering biological reality, he describes biological evolution in terms that emphasize the emergence of the brain and brain-based culture. Religion emerges as an essential feature of human culture. Selection has been at work in the entire scheme of things. The conditions under which religion emerged follow the processes of variation and selection, and religion itself is subject to these same processes. Religion has been selected for, with an evolutionary function, and therefore is as much a phenomenon of nature as any other item that scientists study and about which they theorize.

Burhoe's legacy comes to play directly in the arena of certain issues that flow from his basic set of theories and which, quite apart from his thought, have taken center stage in current thinking about science, culture, and religion. I will sketch just a few of these issues:

1. Since the distinctive element in human evolution is the emergence of culture, and since the conduct of culture is the key to human flourishing or degradation, theoretical discussion of how science and religion interact will move directly to questions of value and morality. This was central for Burhoe: Since religion has a scientifically describable function within the evolutionary process, and since that function has to do with enabling the most authentic human living, both as individuals and as

societies, reflection on values and morality is intrinsic to the relationship between religion and science (Burhoe 1967, 1971).

2. The discussion of values and morality will go hand in hand with the study of cultural evolution. The empirical studies and the theorizing of Donald Campbell, for example, were important for Burhoe, because in setting forth an understanding of how culture evolves, Campbell at the same time described how religion contributes in a central way to culture (Campbell 1975, 1991). The study of cultural evolution, which is burgeoning, promises to have great significance for understanding religion's function in society.

3. Since culture has emerged within biological evolution, Burhoe's legacy will prompt us to carry on *biocultural* research and conceptualizing. Sociobiology, evolutionary psychology, neuroscience, and genetics (including behavioral genetics) will consequently be prominent in our ongoing attempts at understanding.

4. Even though I have devoted more attention to Burhoe's attempt to explain religion to scientists than to the converse effort, to explain science to religious thinkers, the large agenda that awaits this latter effort should not be obscured. Just what significance does Burhoe's description of nature and its evolution hold for how we understand God and theorize about God? If science is a kind of revelation of the God of nature, just what does the revelation amount to? When speaking of religion's evolutionary function, for example, are we engaging in a reductionism of religion to scientific theories, or are we also speaking about the intention of God for religion? Most religion has given most of its attention to preserving and strengthening the particular religious communities. Burhoe's vision, however, emphasizes religion's mission within culture and, indeed, the total evolutionary process. Does this point to the intention of God as dealing with evolution and culture, beyond the religious communities?

Burhoe's defense of religion rested on its important, evolutionarily bestowed function. He employed science to ground and clarify this function. He eschewed the more popular effort to employ science to prove that God is possible, and therefore to ground religion in that possibility. The religion-and-science community would benefit from a thorough discussion between these two alternative strategies. Burhoe's effort is sometimes dismissed for its being functionalist and reductionist. As I hope these comments indicate, there is much more to his strategy than such easy dismissals indicate—namely, a fundamentally different manner of justifying religion.

5. Burhoe's legacy may well stimulate a number of discussions of more discrete issues, such as (a) What are the comparative values of current anthropic theories, which have been called "hidden theologies," and the concept of stratified stability advanced by Bronowski, who was frankly

skeptical of religion? Do these two approaches to the question of the significance of life and human culture prove equally helpful? Or is one of more advantage than the other? Or are they in fact two versions of the same thing? (b) If religion has emerged with an evolutionary function, must not sociobiology and evolutionary psychology begin more directly to include religion in their studies and theories?

This brief summary of Ralph Burhoe's basic legacy describes what I find compelling in his thought. On the one hand, I marvel that he mapped this terrain so provocatively and usefully a generation ago, but on the other hand, I am much more impressed with the agenda he has left us, particularly in the community of thinkers who focus on the interface between science and religion. This agenda is, quite apart from Burhoe, of urgent importance today, and it will challenge the very keenest research and theorizing that we can bring to it. It also will require that we enlist the resources of other thinkers, who may not share our religion-and-science interests, if we are to deal with the agenda as it deserves.

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