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RALPH BURHOE: RECONSIDERING THE MAN AND HIS VISION OF YOKING RELIGION AND SCIENCE

by Philip Hefner

Abstract. Ralph Wendell Burhoe was a leading figure in relating religion and science in the second half of the twentieth century. His autodidactic style and character as a public intellectual resulted in a vision that is comprehensive in its concern for the salvation of society. He does not fit easily into academic frameworks, even though he has been influential upon scholars who work in academia. This article discusses some conundrums posed by his work. There are also brief presentations of the concerns that motivated Burhoe, his style of work, and the content of his vision.

Keywords: altruism; autodidact; Ralph Wendell Burhoe; public intellectual; religion; science; society; yoking; zygon

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Ralph Wendell Burhoe was born on June 21, 1911 in Somerville, Massachusetts; he died on May 8, 1997, in Chicago. My aims in this article are to present a succinct and comprehensive overview of Burhoe's life and thought and some of its implications for the current scene. I write on the basis of my personal 30-year close relationship to the man, my recollection of those years, and my interpretation of his life and work. I have not felt the need for footnoted documentation, since this piece represents my personal involvement with Ralph Burhoe.

Defining Burhoe: Autodidact and Public Intellectual

We focus first of all on the style or the genre of Ralph Burhoe's work. The difficulty involved with determining the genre deserves noting in itself.

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Burhoe was a singular individual in both his life and his career, and in this article I will focus on the latter, his career.

The challenge of understanding Burhoe is underscored by a number of conundrums with which his career presents us:

(1) He was motivated by a deeply religious concern, but he did not follow the career track of a religious professional. He did not serve as a minister in a church, as an institutional chaplain, or as administrator in a religious organization.

(2) He had a brilliant mind, he attended an elite college (Harvard) and a top-ranked seminary (Andover Newton), yet he left both institutions before receiving a degree.

(3) He lived 60 years of his life in elite academic communities, and for over 50 years counted top-ranked academics as friends and collaborators—ranging from religion scholars to scientists, philosophers, and those who were social scientists and humanities scholars. Burhoe himself, however, held a professorial position for only ten of those years, and he left that position when he found himself in uncompromising disagreement with his colleagues.

(4) The theme that drove Burhoe and his work—the challenge for religion in the regeneration of civilization—while it required the kind of sophisticated elaboration that draws upon many of the departments of university and theological school, was not, as such, the object of study in any academic discipline. Indeed, because he frequently stated the theme in religious terms, it was an embarrassment to some in the university, and, because he insisted on there being a scientific dimension to the theme, it did not take hold in most religious studies departments and theological schools. The theme implies a programmatic commitment to the welfare of society involving both science and religion—in an academic context that most often proclaims the ideal of detached and disinterested methodologies.

(5) These conundrums bring into focus an important feature of Burhoe and his work: an ambiguous relationship to the academic world.

When we consider these conundrums, we get a better picture of the nature and the dynamic of Burhoe's work. Those who gathered around the man in his lifetime were attracted to the vision—they did not build careers on Burhoe's work; they sought to incorporate it into the careers they had already chosen: scientist, clergy, teacher, lawyer, or other profession. Students of religious studies and theology were frequently able to work science/religion studies into their programs, even though there were seldom regular programs in that area.

Two terms may capture Burhoe's singular character: autodidact and public intellectual. Autodidact describes the conditions of his education. Public intellectual emphasizes his concern for societal issues that go beyond the components that make up an academic discipline. I define public intellectual as a learned person whose written works and other social and cultural contributions are recognized not only by academic audiences and readers, but also by many members of society in general.

Autodidact

Even though he lived and worked in the academic world—Harvard's Blue Hill Observatory and Meadville/Lombard Theological School, integrated into the University of Chicago—Burhoe possessed none of the formal credentials required by academia. He was a studious person by nature and never stopped reading, but he left both Harvard and Andover Newton Theological Seminary without graduating and without degrees. He was an ardent student, but also self-educated. He said in later years that he received his doctoral education from his associations with the top-flight leaders of the American Academy of Arts and Sciences. These leaders included Nobelist in biology George Wald, astronomer Harlow Shapley, geologist Kirtley Mather, geneticist Theodosius Dobzhansky—surely a stellar group, but his associations with them were hardly those of a graduate student with teachers. Furthermore, his career as academic teacher—at Meadville—lasted only for ten years, from 1964 until 1974. There is no question that Burhoe attained a high level of thinking and academic expression. He did so, however, on the basis of his own self-education. He is a clear example of an autodidact.

There are certain clear consequences that flow from his autodidactic style of learning and researching. Formal undergraduate majors and graduate degree education focus on fields of study, and one of the major tasks of graduate education is mastering and understanding the field, recognizing the outstanding issues in that field, and formulating an approach to those issues that can be affirmed by the principal teachers in the field. Sometimes brilliant pioneers actually establish a field and their works become that field's basic texts. Such a person was Ian Barbour, who brought together his studies and research in physics with his academic study of theology. He was able to link both of these fields in his foundational texts. Most formal study of religion and science then focused on the field that Barbour established.

Forgoing such formal education and instead following the route of the autodidact, even though he lived and worked in the world of academia, Burhoe did not share the academic approach. We might make the distinction between "academic" and "intellectual," in which case Burhoe definitely falls in the latter class, but only ambiguously in the former. His career

reflects his position in the academic world. I mention four major episodes: from 1936 until 1946, he worked as a meteorologist at Harvard's Blue Hill Observatory; from 1946 until 1964, he served as the first full-time executive director of the American Academy of Arts and Sciences; from 1965 until 1974, he was professor at Meadville-Lombard Theological School; from 1974 until his death, he was an independent scholar, continuing until 1970 as editor of *Zygon: Journal of Religion and Science* in Hyde Park, Chicago. We note that he lived the bulk of his life in two elite academic communities: Cambridge, Massachusetts, and Hyde Park, Chicago.

Public Intellectual: Burhoe's Central Concern for Religion and Civilization

His perspective was that of a scientist, but the objects of his concern and the motivation of his career were religion and the wholesomeness of our culture. He was concerned with the regeneration of religion, because he felt that it was essential, not only for morally upright living and happiness, but also for maintaining a viable civilization. Since he was a scientist and working in a scientific occupation (at Harvard's Blue Hill Observatory), he was particularly sensitive to the impact of science on human living—he believed that he was living "in an age of science." He concluded that if religion were to be regenerated, it would have to be credible in terms of this age of science.

These issues and their importance for Burhoe are articulated in two important statements, the first of which is his farewell address to the American Academy of Arts and Sciences in May, 1964:

> At Meadville Theological School I will continue the exploration of the basic postulate of my formative years which is also a postulate which has played a role in this academy's renaissance–an integration of science and human values. . . . I can state the main theme of my future work in the words of the 1946 report of the Commission on the Present State and Future of the Academy: "the spirit, purpose, and essential logical and instrumental methodology of science can be applied more or less readily and successfully to any and every form and aspect of human knowledge." I would emphasize that this includes our knowledge of basic human values, values which traditionally have been called ethical and religious. (Breed 1992, 73)

The second statement is that which Burhoe wrote with Karl Peters to set forth the statement of perspective that appears in the journal founded by Burhoe, *Zygon*. It reads as follows:

> The Journal provides a forum for exploring ways to unite what in modern times has been disconnected –values from knowledge, goodness from truth, religion from science. Traditional religions which have transmitted wisdom about what is of essential value and ultimate meaning as a guide for human

> living, were expressed in terms of the best understandings of their times about human nature, society, and the world. Religious expression in our time, however, has not drawn similarly on modern science, which has superseded the ancient forms of understanding. As a result religions have lost credibility in the modern mind. Nevertheless some recent scientific studies of human evolution and development have indicated how long-standing religions have evolved well-winnowed wisdom still essential for the best life. *Zygon's* hypothesis is that when long-evolved religious wisdom is yoked with significant recent scientific discoveries about the world and human nature, there results credible expression of basic meaning, values, and moral convictions that provides valid and effective guidance for enhancing human life. (See "Statement of Perspective" inside back cover of every issue of *Zygon*.)

Although these views are presented as those of the journal, they articulate the core position of Burhoe and the driving motivation of his career.

We begin to see from these statements how, for Burhoe, the term "religion and science" functions at two levels. At the first level, it refers discretely to the juxtaposition of religious belief and scientific theory. Beyond that, "religion and science" functions as symbol to encompass the polarities that mark a deep rupture that runs through our culture: values from knowledge, goodness from truth, technology from morality. Concern for this rupture consumed Burhoe's attention: it threatens the future of our civilization and the splintering of individual persons.

Burhoe did not seek a synthesis of these polarities, nor a "bridging," nor integration. Rather, he spoke of "yoking," for which he manufactured his hallmark term, "zygon."

Yoking is a kind of partnering, without which civilization would not flourish. This is the large conceptual and historical stage on which Burhoe worked—far transcending the boundaries of what is ordinarily thought of as an academic field.

By yoking, he meant the cooperation of religion and science in the work of reformulating our worldviews and religious practice in ways that are commensurate to an age of science. The concept of yoking is derived from a word that Burhoe himself fashioned: zygon. The word zygote comes to mind—the yoking of egg and sperm to produce an embryo. This union is essential for life in higher species. The union he speaks of is just as essential for the life of our civilization. As I outlined above, he used various terms to describe the partners of this cooperative work: science and religion, science and values, knowledge and wisdom, knowledge and morality. The alienation of these paired elements from one another constitutes the rupture in the body politic that Burhoe so lamented. His concern, in other words, was comprehensive in scope. While it certainly includes the academic fields of the sciences and religious studies, their significance for him lies in the ways they play into the larger civilizational panorama that I have outlined.

Traditional Religion and Mainstream Science

Ralph Burhoe was driven by a fundamentally religious concern: salvation—of individuals and of civilization. This concern contained both a theoretical and a practical dimension. At the level of theory, although questions of religion and science were central for his religious concerns, they were ancillary for his thinking, not the primary issue. He believed that traditional religion was the chief carrier of salvation in human culture; a crisis has been precipitated by the rise of science, in that it has rendered religion unbelievable and inaccessible, particularly to the intellectual leaders of our society. Science has destabilized religion. The theoretical challenge is to translate the knowledge provided by science so as to enable a reform of traditional religion that will embody a linking of the two. At the practical level, the challenge is to formulate maxims of behavior that can carry the moral energy of religion and guide it in ways that are commensurate with the best scientific knowledge.

Salvation, for Burhoe, was comprised of both good theory and good behavior—although he was of the mind that good behavior is preeminent, even if it is motivated by faulty theory. He did not recommend, for example, attempts to reform the thinking of people whose lives expressed the values that he deemed desirable, even while they were committed to obsolete religious ideas.

Recognizing his central concern, we can begin to comprehend the coherence of Burhoe's vision.

Traditional religion is an issue for Burhoe, because it has nurtured Western culture and it is what is in crisis. Although he recognized the plurality of world religions, he focused his efforts on Christianity and, to a lesser extent, Judaism—in part, because he was not as knowledgeable about other world religions, but also because he believed that Christianity and Judaism were the chief players in the historical processes in which science emerged and in which the credibility of religion was challenged. He was concerned with the crisis in Western civilization, and the religion of most interest was, in his opinion, Christianity. He personally welcomed thinkers from all religious traditions, but the circumstances of his life and times did not bring him into significant interaction with religions other than Judaism and Christianity.

Burhoe's awareness of the historical dimension of the problems at the center of his attention moved him to work for reformed and revitalized Christianity, rather than the formulation of a new religion. If the crisis that drew his attention were to be resolved, the major players in Western history had to be the primary objects of examination. This stance may well be challenged today in ways that were not so relevant when Burhoe wrote. Nevertheless, when one focuses on the Western history of the interaction between modern science and religion, his judgment may stand up.

Likewise, mainstream science—or perhaps we should say, the scientific consensus—is the issue, because it is what has challenged traditional religion's credibility. Mainstream science has been the historical player. Burhoe did not devote attention to maverick scientific proposals. Furthermore, although he was in conversation with a wide range of scientists, he zeroed in on the scientific research that he considered most relevant to his concerns, the sciences that deal with understanding the evolution and emergence of humans and their nature today.

Historian James Gilbert (1997) suggests that it is this concentration on the mainstream—both religious and scientific—that makes Burhoe a distinctive religion-and-science figure on the American scene at the midpoint of the twentieth century. When we view him from this perspective, we get a sense of the breadth and the depth of the prodigious intellectual challenge that occupied Burhoe's endeavors. He took on a task no less than understanding and interpreting the historical processes by which belief systems were formed and altered and moral visions were shaped and re-shaped. He gave special attention to what grants credibility to beliefs and morality, as well as the processes by which the credibility is weakened.

Burhoe's central focus is illuminated when we recognize the breadth of his concerns. His own work and that of those who have worked within the framework of his vision have been significantly absorbed into what is now known as the academic field of religion and science. Indeed, at the time of his most vigorous activity, this was the only field in which his work could find a place in academia. To be sure, a great deal of what Burhoe was about is germane to this academic field even though that was not his primary focus. As I have said, however, his passion was for the renewal of society, the restoration of religion to what he considered to be its primary function of yoking with science, so as to function as ground of values for society as a whole.

Sketch of the Content of Burhoe's Vision

Convinced that science does not threaten the wisdom of traditional religion, but rather reinforces it, Burhoe developed an extensive theoretical framework to explain how religion functions within the evolutionary process.

God. His system of thought included the concept of God as demonstrated through the processes of natural selection. Burhoe viewed natural selection in terms of a Calvinist concept of pre-destination (his term was "Lord of History") in which all of evolution and human history possess meaning, purpose, and goal.

Altruism. He saw trans-kin altruism, or love, as the central factor that enabled human culture to survive. The nub of his theories was the recognition that in the brain—the element that has given *Homo sapiens* its distinctiveness—genetic evolution converged with culture and its evolution. Culture carries the information that transforms the "ape-man" into a genuine human being. And it is the religious traditions that have carried core information about how humans can live together and thereby reach their full evolutionary potential. Religion, interpreted as the bearer of this altruism, is essential for the emergence and persistence of the human species. This core information has been transmitted in the religious teachings that insist on altruism beyond the kin group, and it is this information that evolution has selected for, thus establishing the human species and its dominance. In one of his last published articles (1987), "War, Peace, and Religion's Biocultural Evolution," Burhoe argued that religion's success in sublimating the violent behaviors of smaller groups by fostering altruism within the larger religious community must now be extended to include the entire human race as the primary community. In spite of its failures up to now in this effort, he believed that religion was humanity's best hope for achieving peace. His theories of how religion has emerged and functioned within the evolutionary process were intended as intellectual supports that would help people understand how, through religion, they could reach the goal of full trans-kin altruism. This concern for the centrality of altruism led Burhoe to give primary attention to the sciences that focus on human beings, particularly the scientific work that came to be known as sociobiology, evolutionary psychology, and human ecology. He was distinctive in this respect, since, by far, most religion/science attention in the mid-twentieth century was focused on cosmology and physics.

Soul and Immortality. An imaginative evolutionary concept of the soul and its immortality extended the scope of this theoretical framework. The information that comprises the personal center of a human being is released at death into the larger stream of cosmic information and continues its course through the selective processes of evolution.

In their totality, Burhoe's theories presented a comprehensive explanation of how traditional religion could be translated into serious scientific theories. They also provide a scientific theory of religion's role in human evolution and how it enabled the emergence of altruistic cooperation. This theory of religion also accounted for the evolution of civilization and implied that religion, in some form, was essential for the viability of civilization in the future (Breed 1992, 130).

Although this explanation was never recognized as the scientific advance that Burhoe envisioned, it was warmly received by some of the leading scientists who knew Burhoe, and it attracted many of them to his work and to conversation with religious thinkers. Among these scientists were

Harlow Shapley (astronomy), Kirtley Mather (geology), Hudson Hoagland (biology, physiology), George Wald (biology), E. O. Wilson (biology, entomology), Erwin Goodenough (history of religions), Anthony F. C. Wallace (anthropology), Mihaly Csikszentmihalyi (psychology), Solomon Katz (anthropology), Donald T. Campbell (experimental psychology), and others. Writing in 1992, Roger Sperry, a Nobel Prize winner for his brain research, observed that "in the history of efforts to join religion and science, none appears to have achieved more wide and lasting impact than the venture of Ralph Wendell Burhoe" (Breed 1992, ix).

Venues of Work

We get another perspective into the man when we observe how Burhoe went about promoting his program. Except for the 10-year period of his posting at Meadville/Lombard Theological School (1964–74), his efforts were not placed in an institution of higher learning. We can enumerate the ways he worked.

(1) He approached individuals to interest them in his concerns and the project of yoking. These individuals were predominantly scientists, theologians, and religious leaders. He was most successful in his contacts with scientists. Occasionally, he succeeded in recruiting business and professional persons, as, for example, in the cases of Fowler McCormick and John Templeton. Burhoe was extraordinarily gregarious and congenial, especially in service of his program. Many seminars, for example, met in the home that he and his wife Calla assured was both stimulating and friendly. The financier Sir John Marks Templeton noted this aspect when he said, at the 1980 ceremony bestowing on Burhoe the Templeton Prize, "He is not only a scientist and a theologian, he is a missionary for a new reformation."

(2) He worked through the American Academy of Arts and Sciences. The Academy stood at the heart of Burhoe's program. When he assumed the office of Executive Director in 1946, soon after the end of World War II, the Academy's leaders were some of America's leading scientists. As a group, these scientists believed that the scientific community had let American society down, because (1) it had pioneered enormous scientific advances, principally in nuclear physics leading to the making of the atom bombs that were dropped on Japan, but (2) had done very little to inform and educate the American people about science and its potentials—and thus did not carry out its duty to prepare the populace to be responsible citizens in the post-war "Atomic Age." The chief vehicle redressing this failure was the Academy's Committee on Science

and Human Values, whose establishment was one of Burhoe's chief accomplishments, and which he affirmed in his farewell comments in 1964.

(3) Ralph Burhoe joined in founding four enterprises that originally aimed at carrying out his vision: (1) The Institute on Religion in an Age of Science (IRAS), 1965. Burhoe and several of his colleagues from the Academy, including Shapley, joined an ecumenical Christian group, The Coming Great Church, to form an annual conference whose aims are identical to those of the Academy's Committee on Science and Human Values and the *Zygon Journal's* philosophy, as that appears above. Shapley was an early president of the group. IRAS has become a membership society, dedicated to its original aims and to the organizing of an annual conference. (2) *Zygon: Journal of Religion and Science*, in 1965. In its first ten years, the journal was published by the University of Chicago Press. Again, Shapley, Mather, Wald, and other Academy colleagues joined Burhoe (who was editor) on the editorial board. (3) The Center for Advanced Study in Religion and Science (CASIRAS), 1973, was established by the same group, under the auspices of the Meadville/Lombard School of Theology, in Chicago. CASIRAS became co-owner, with IRAS, of the journal. Although it was originally conceived to be a residential center, and did function as such for a few years, this organization has become focused on oversight of the journal and the Burhoe Trust. (4) The Chicago Center for Religion and Science (now named The Zygon Center for Religion and Science) was established in 1988 by Burhoe, in the name of CASIRAS, and William Lesher, President of the Lutheran School of Theology at Chicago. With the establishment of this organization, Burhoe fulfilled his intention of a residential center, integrated within an academic institution that represented traditional religion. This is really the first and most important step in Burhoe's attempt to bring science into relationship with traditional religion.

(4) Burhoe thought of his own personal study and writing as part of a group effort, an "invisible college" which included colleagues from a variety of disciplines and others who were attracted to his vision through personal contact, through his writings or through the journal. Burhoe regularly sent drafts of his writings for critique by selected peers. Since he considered his work to be "scientific," he was eager to get feedback from scientists whom he respected. E. O. Wilson, George C. Williams (genetics), and Donald T. Campbell, for example, were in regular conversation with Burhoe

on the latter's theories of altruism. As he himself wrote about his work:

> If I had not the support for my ideas insofar as they touched the concepts of their own theoretical systems as very credible by some of the greatest intellects of their fields, I never would have had the courage to develop my vision that religious and scientific belief could be unified. My view is a radically new paradigm, but I am still testing and stand ready to test my views against the most recent developments in the various sciences and the studies of human nature, religion, and science. (Breed 1992, 136)

(5) Organizing conferences and discussion groups were key strategies for Burhoe, since they gathered an audience for "yoking." When he joined Meadville's faculty, these discussions became seminars within the established curriculum, where they encountered the challenge of fitting into normal course patterns. The seminars had a number of characteristics that were difficult to fit into the regular curriculum. They included scholars and experts from many fields, who obviously were not enrolled as students in the institution, as well as other interested persons, who frequently had much to contribute, but who had no interest in matriculating at an academic institution.

The Future of Burhoe's Vision

What is the prospect for this man's work and vision? It is clear that those who wish to advance and carry further the work that Burhoe began face two central difficulties, both of which have been discussed above. First, the extraordinary breadth of his concern, particularly in understanding the history of culture and its evolutionary antecedents, is daunting. Add to this the demand to understand traditional religions and think in terms of their worldviews, and the intellectual challenge is nearly overwhelming.

Second, the broad concern for the salvation of society introduces a moral component, a normative approach. Put together, we may say that Burhoe encompassed both descriptive and normative dimensions in his vision. Anything less than this two-dimensional program, carried out with the greatest skill and intellectual depth, will not be able to carry this vision further.

Perhaps still more challenging is the fact that the Burhoe program does not fit into conventional academic frameworks and methods—challenging, because most work in religion-and-science at present is pursued within the ambience of academia. The "public intellectual" character of this vision must be retrieved, if it is to bear fruit in the future.

There is a microcosmic dimension of work to be done—subjecting the details and dynamics of the vision to updating and critique—as well as a

macrocosmic level at which the enlivening of religion and the regeneration of society are at issue. The future offers an invitation for work at both levels. Unless this work is done, the venture which Roger Sperry believed to be the most promising in the religion/science domain will not be brought to fruition.

A Final Word

There is much work to be done at the empirical level of Burhoe's program. The biological sciences that he relied on were cutting-edge in his day, but this science has burgeoned in the last 30 years, and the new methods and insights available today will make a difference. Altruism has become a major area of research and interpretation, and that, too, must be brought into view. Religious studies have also developed in new directions, just as research into moral psychology and philosophy has expanded our views.

Perhaps even more work is required on the religious component of Burhoe's vision. He made a commitment to understanding the split between knowledge (science) and values in his American society at mid-twentieth century, as well as its historical roots. He concluded that traditional Christian religion was the moral partner to science, both historically and in the present situation in which he lived. That judgment can be defended, particularly with respect to the history of Western civilization. The challenges posed by this analysis are still alive and need pursuing. However, we live today with a globalized consciousness; the cultures of the world are being brought together and are living together. Science has become transcultural, in many ways tying together the world's cultures. The various world's religions are also becoming transcultural in this globalized setting, in many ways influencing each other, but unlike science the religions also maintain their specific identities—frequently very tenaciously.

Consequently, Burhoe's vision of yoking religion and science must be transmuted into a globalized vision. This means that the religions interact in their present forms, but at the same time, each religion brings with it its own historical traditions. Furthermore, no religion exists as a monolithic, abstract entity: there is great variety within each religion and a variety of historical traditions. Yoking religion and science participates in this complex, many-splendored situation of religious pluralism. In addition, nonreligious persons—humanists, reductionistic naturalists, and others—present their values-systems, to be yoked with science.

Ralph Burhoe's legacy is huge, and it places extremely challenging demands upon those who hope to extend his vision. One of the most important contributions is its portrayal of the task that faces us—to take the measure of the contemporary sciences, while at the same time plumbing the depth and breadth of the world's religions and finding ways of yoking all of this to work for viable cultures.

Notes

Burhoe's most important writings are in *Zygon: Journal of Religion and Science,* some of which are collected in *Toward a Scientific Theology,* 1981, available from the Zygon Center.

The most useful single work on Burhoe's thinking is Breed 1992.

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