

## *In Memoriam*

B. F. SKINNER: 20 March 1904–18 August 1990

B. F. Skinner was one of the century's leading psychologists and the patriarch of the school of thought known as behaviorism.

"Fred" Skinner had an impact on *Zygon* in three ways. His primary impact came through its founder, Ralph Burhoe, and his associates. Skinner was a member of the Committee on Science and Values of the American Academy of Arts and Sciences, which in 1952 accepted, from the Coming Great Church group, an invitation for scientists to address the issue of what a scientific understanding of religion might contribute to religion. Skinner was one of ten scientists to speak at the conference entitled "Religion in an Age of Science," which the committee prepared for the Coming Great Church group's week-long meeting in the summer of 1954. The group was having its fifth summer conference on Star Island, ten miles out from Portsmouth, N.H.

According to the report of that conference in *Science* (1 October 1954: 522–24), "Skinner said that experimental psychology was making clear the superiority of a system of rewards over a system of punishments in creating desired new patterns of behavior, and that psychology therefore offered powerful tools for ethical training. Some, in his audience of more than 200, felt that this implied psychological substantiation for the religious insistence on tolerance and love in dealing with other persons rather than the aversive methods of punishment and war. Skinner [agreed but] warned that these more powerful and pleasant methods of control by positive reinforcement could be dangerous when used by clever but unscrupulous people, and he recommended the establishment of suitable social safeguards."

So favorably impressed was the Coming Great Church group with the Academy committee's performance and its promise for religion, that its subsequent meeting in Boston (9 November 1954), it voted to ask the Academy group to become its successor in the future. Thus was born the Institute on Religion in an Age of Science (IRAS).

Since then, IRAS has provided a week-long conference each year

on Star Island. IRAS also produced other conferences, as well as programs and publications. By 1964 its activities had stimulated a related society, the Center for Advanced Study of Religion in an Age of Science (CASIRAS)—on the invitation of the Meadville/Lombard Theological School in Chicago—to begin using scientific ideas of religion and human values in the school's curriculum and seminars. In 1966 it began the publication of *Zygon: Journal of Religion and Science*, and in 1969 it helped to introduce a similar program at the Lutheran School of Theology at Chicago.

The second impact of Skinner on *Zygon* came through his character and social awareness. He was a person with great concern for all members of society, not merely for the "intellectual elite." He had a big heart and went much further than most people to help the handicapped and disadvantaged, which he could do by giving them the benefits and applications of his behaviorist philosophy and techniques (for instance, enabling handicapped readers to learn to read in a very short time). This facet of Skinner may not be widely appreciated, since he was a matter-of-fact person rather than a boaster. For all who knew him, he was a model for effective "do-good" behavior. This affected *Zygon* through Burhoe, who knew and admired him.

The most far-reaching way in which Skinner had an impact on *Zygon* was through wide use in the scientific world of his findings and theories in experimental psychology.

Ralph Burhoe, the founder of *Zygon*, had been prepared, by majoring in physics and psychology at Harvard from 1928 to 1932, to appreciate behaviorist and other psychological views as good science, to be applied to the understanding and improvement of human behavior in ethics, morals, and religion. Skinner's conceptual and operant schemes of how behavioral patterns are changed or improved and how the natural selection of cultural, as well as genetic, patterns constitutes the ultimate system of control of behavior had a tremendous influence on Burhoe.

Skinner's ideas had a significant and positive influence upon the scientific and general culture of the world, even though they usually aroused an adverse reception among religious and humanistic scholars. An important review of Skinner's *Beyond Freedom and Dignity*, showing how his theory applied to his central understanding of human values, was published in the *Center Magazine* of the Center for the Study of Democratic Institutions (Santa Barbara) in its March/April issue of 1972. John Platt, a physicist and neuroscientist, presented an excellent analysis of Skinner's theory and its applications to problems of human values, titled "Revolutionary

Manifesto” (pages 34–52). In the same issue were two shorter articles that showed characteristic misunderstandings of Skinner’s theory and disapproval of its implications by philosopher Max Black (“A Disservice to All,” pages 53–58) and historian Arnold Toynbee (“An Uneasy Feeling of Unreality,” pages 58–62). These latter two views are typical illustrations of why, as Platt noted, “Skinner may have had the worst press of any great scientist since Darwin.”

But to most scientists, behaviorism was an empirical finding that “worked” and whose applications improved the power to change behavior patterns. Skinner’s views were gladly used by Burhoe, as he tried to develop and present his own concepts of a scientifically informed theology.

Critical for a credible and effective theology in the context of the scientific view of the world, said Burhoe, is that the real or scientific world be seen as the determiner of human destiny—as all-powerful and at the same time favoring the advancing evolution of human individual and social patterns. Burhoe found that Skinner’s views were similar to those of many scientific contributors to the theory of evolution—the natural history of humanity. This view of the inexorable power of the environment and its requirements, and of the fact that viable behavior necessarily must be adapted to and fit those requirements, closely matched with Burhoe’s *theistic* picture of God as the “single supreme being which is the source of everything else and which is complete and perfect and worthy to be worshipped.”

In general, however, the scientific community has not accepted theistic conceptions or the terms *God* and *theology* as representing the inexorable power of the environment over human evolution. To scientists, *God* and *theology* are only prescientific terms, not very credible in scientific thought. However, beginning with the Academy Committee on Science and Values, Ralph Burhoe led a group of scientists and other scholars, published in *Zygon*, to give a fuller exposition of the values and needs of religion and the term *God*. They have developed a new *natural history* of the role of religion in human evolution that helps clarify the great necessity (and possibility) for religion and morals in today’s age of science.

In this group of scientists was a psychologist, Donald T. Campbell (younger than Skinner), who in his presidential address to the American Psychological Association in 1975 described the “sources of validity in the recipes for living that have been evolved, tested, and winnowed through hundreds of generations of human social history. On purely scientific grounds, these recipes for living might be regarded as better tested than the best of psychology’s and psychiatry’s speculations on how lives should be lived. This argument

comes from a natural-selectionist theory of social evolution.” Thus Campbell, a scientist, was very positive about religion on the basis of biosociological views of human evolution.

Another scientist in this group, the Nobel Prize physicist and leading philosopher of science at Harvard University, P. W. Bridgman, also aided Burhoe’s development of a scientific approach to religion. This concerned the paradox of Skinner’s denial of the possibility of subjective or conscious experience in the context of his behavioral language. In several committee meetings in the late 1940s and early 1950s, Burhoe enjoyed debates between Pete Bridgman and Fred Skinner on subjective *experience* versus objective *things*. Skinner’s position was that the subjective mind does not exist. There is only objectively observable behavior.

Bridgman argued that the paradox between objective things, behaviors, and observables can be thought of as a problem of trying to be coherent in a particular language, either in the objective language that begins sentences with *It* or the subjective language that begins sentences with *I*. Bridgman later wrote about this in *The Way Things Are: An Individual Assessment of the Nature of Experience and the World as Man Knows It* (1959). Bridgman refers to conversations with Skinner and acknowledges the key role of those conversations in generating his book. For Burhoe, Bridgman’s book became the bridge over the subjective-objective or mind-matter dichotomy and paradox that has baffled our culture. In brief, Bridgman holds that the subjective or *I* language is unavoidably used in speaking of what we know and is only gradually fashioned into the objective or *It* language, after consensus has been achieved by a community of speakers.

Skinner, Campbell, and Bridgman are listed below to show how a diverse trio of scientists came to reinforce the complex synthesis in Burhoe’s “God talk.” Actually, more than a hundred scientists, stemming from the movement initiated by the Academy Committee on Science and Values, gave reinforcement to Burhoe’s own work in writing more than a hundred papers and two books to generate a scientific theology. Indeed, many papers by Burhoe and the others have been published in *Zygon*. Burhoe and this group have provided a base for religion that can praise both traditional religion and the scientific grounds for appreciating it.

In recording this appreciation of the tremendous role of Fred Skinner’s personal, moral, and intellectual influence upon Burhoe and *Zygon*, together with that of others also stemming from the Committee on Science and Values of the American Academy of Arts and Sciences, gratitude is expressed to all who have advanced the

possibility of understanding the evolution of human culture and a new hope for humanity in the light of the sciences. Appended is a list of other scientists, who together with B.F. Skinner, led Burhoe to provide scientific grounds for understanding and revitalizing religion and morals. They are indeed diverse in their areas of scientific expertise. Most of them have not been pietistic followers of any traditional religion.

Richard D. Alexander  
Hannes Alfvén  
Gordon W. Allport  
W. Ross Ashby  
Francisco J. Ayala  
Daniel Bell  
Ludwig von Bertalanffy  
Charles A. Birch  
Anton T. Boisen  
Kenneth E. Boulding  
P. W. Bridgman  
J. Bronowski  
Sanborn C. Brown  
Donald T. Campbell  
Eric J. Chaisson  
Mihaly Csikszentmihalyi  
Eugene d'Aquili  
Bernard D. Davis  
Richard Dawkins  
José M. A. Delgado  
Karl Wolfgang Deutsch  
Theodosius Dobzhansky  
Lindon G. Eaves  
John C. Eccles  
Charles F. Ehret  
Manfred Eigen  
Loren Eiseley  
Erik H. Erikson  
Alfred E. Emerson  
Bernard T. Feld  
Victor Ferkiss  
Jay W. Forrester  
Lawrence K. Frank  
Philipp Frank  
Daniel G. Freedman

Clifford Geertz  
Ralph Waldo Gerard  
Thomas L. Gilbert  
Robert B. Glassman  
Charles Y. Glock  
Ward Goodenough  
H. J. Hamilton  
Garrett Hardin  
Robert Heilbroner  
Hudson Hoagland  
H. Rodney Holmes  
Gerald Holton.  
Roy G. Hoskins  
A. G. Huntsman  
Julian Huxley  
Dwight J. Ingle  
Clyde C. K. M. Kluckhohn  
Solomon H. Katz  
Aharon Katchalsky-Katzir  
Heinrich Klüver  
Lawrence Kohlberg  
Edwin H. Land  
Chauncey D. Leake  
I. Michael Lerner  
Jerre Levy  
Richard Lewontin  
R. Bruce Lindsay  
Paul D. MacLean  
Henry Margenau  
Abraham H. Maslow  
Kirtley F. Mather  
Margaret Mead  
O. Hobart Mowrer  
Ashley M. F. Montagu  
Robert S. Morison

Hermann J. Muller  
Henry Alexander Murray  
Filmer S. C. Northrop  
Howard T. Odum  
Talcott Parsons  
Arthur R. Peacocke  
H. Bayard Phillips  
John R. Platt  
Michael Polanyi  
Van Rensselaer Potter  
Ilya Prigogine  
C. Ladd Prosser  
George Edgin Pugh  
Peter J. Richerson  
David Riesman  
Harold K. Schilling  
Richard Schlegel  
Francis O. Schmitt

J. Paul Scott  
Harlow Shapley  
Herbert Simon  
George Gaylord Simpson  
B. F. Skinner  
Pitirim A. Sorokin  
Melford Spiro  
Roger W. Sperry  
Gunther S. Stent  
Charles H. Townes  
Victor Turner  
C. H. Waddington  
George Wald  
Anthony F. C. Wallace  
Jeffrey S. Wicken  
George C. Williams  
E. O. Wilson  
Donald G. York