

Editorial

Out of the dreaming past, with its legends of steaming seas and gleaming glaciers, mountains that moved and suns that glared, emerges this creature, man—the latest phase in a continuing process that stretches back to the beginning of life. He is the heritage of all that has lived; he still carries the vestiges of snout and fangs and claws of species long since vanished; he is the ancestor of all that is to come.

Do not regard him lightly—he is you.¹

Who and what exactly are we—we human beings, the products of over ten billion years of evolutionary history? What has created us and brought us to this moment of reflection? And where do we go from here? What guiding values can we find to illuminate our way into the darkness of a largely unknown future that we ourselves are helping to create?

Under its founding editor, Ralph Wendell Burhoe, *Zygon* has attempted continuously to respond to such questions of ultimate concern by using the knowledge of the contemporary sciences. In its pages scientists and religious thinkers have attempted to draw out the implications of recent, well-tested scientific research to further refine and reshape the long-evolved cultural wisdom embodied in the world's religious and philosophical traditions. They have done this not simply to build bridges between the traditions of humanity and the discoveries of modern science but to provide better answers to fundamental questions of human existence.

This issue, the first to appear under the journal's second editor, Karl E. Peters, continues the *Zygon* tradition by publishing essays that employ some of the scientific findings and theories from brain research, quantum physics, developmental psychology, and sociobiology to further the discussion begun in the March 1979 issue about the nature of the human mind, human values, and God in the evolving universe.

Although the reader will find a wide variety of sciences represented and a multifaceted discussion of the nature of the human self, its relation to society, and its relation to that which is the primary shaper of nature and history, there is a general thread through all four essays which might be used to organize schematically the diversity of material. The thread is that each essay, in its own way, helps unify our split or dualistic thinking.

At least since René Descartes, people who have thought about the human self have wrestled with the seeming duality of mind and brain—where mind connotes the introspectively known awareness or experience of things or events and where brain connotes the objectively known set of neurological networks and physical processes that increasingly have been found to be essential for subjective mental experience. Related to these two ways of understanding the human self are two basic ways of conceiving the universe—the materialistic view that everything can be reduced conceptually to physical processes and the idealistic view that the most fundamental reality is mental.

In "Transcending the Mind/Brain Problem" Karl H. Pribram argues that thinking in terms of naturalistic-mentalistic dichotomies is oversimplistic because the universe, which includes energy, forces, information, and drives, can

be characterized neither as material nor mental. He then suggests that ordinary dualistic thinking is really the result of two modes of analysis of everyday experience. Both begin with the domain of appearances, but one set of conceptual procedures, which may be called naturalistic, analyzes experience "downward" in a hierarchy of systems until quantum and nuclear levels are reached, while the other set of procedures, which are called mental, move "upward" to a consensual validation of experience. In an extended critical dialogue with John C. Eccles's and Karl Popper's *The Self and Its Brain*, Pribram argues for a pluralistic-monistic view of reality in which what is usually called the material and the mental (the brain and the mind) are two realizations of underlying informational structures. This leads him to suggest a more basic dualism—one between the explicate order or world of appearances (including both material and mental) and the implicate order of the "wave-form domain," with the brain as a "wave-form analyzer" having the capability of encoding, storing, and reproducing information in a manner similar to a hologram. Pribram concludes with the suggestion that the conceptualization of the implicate order by some modern physicists is similar to the descriptions of some mystical experiences.

While Pribram, a physicalistically oriented brain scientist, relates the human self to nature conceptualized in a manner that is not physical in the ordinary sense, Walter E. Conn, a religion scholar, draws upon the more introspective, psychoanalytic tradition to show that the individual human self cannot be severed neatly from society. In an analysis of Erik H. Erikson's concept of human psychosocial identity Conn suggests that Erikson's thought about the self is best understood when the term "ego" is taken to specify an unconscious activity that organizes the complex array of human experience, especially the experience of the other selves, and that screens out potentially disruptive aspects of experience so as to maintain a sense of well-being that helps constitute individual identity. Conn also argues that in Erikson's thought the concept "I" refers to the consciousness of the self as a center of awareness in the universe that includes the organization established by the ego. Because the "ego" and "I" are respectively centers of unconscious and conscious organization of external realities, the individual cannot be divorced from human society and the rest of nature. Because society and nature help to shape an individual's identity, a person is related intimately to other human beings and the nonhuman world. This individual self-transcendence thus provides, according to Conn, a basis for a religious ethics of mutual love.

Ralph Wendell Burhoe focuses on the question of individual self-transcendence in another way as he seeks to achieve a conceptual harmony that helps us understand better the relation between human egoistic and altruistic behavior in the light of the interrelationship between biological and cultural evolution. Burhoe agrees with such sociobiologists as Donald T. Campbell, Richard Dawkins, George C. Williams and E. O. Wilson that acts of altruism are supported genetically only when the individual's own genetic line is thereby advanced. Hence only when the altruistic act ultimately benefits close kin will genes for altruism be selected. He then suggests an explanation of human altruism even to nonkin. Pointing to the well-known relationships where individuals from two or more species cooperate as an interdependent living unit, where reciprocal altruism by members of one species to members of the other enhances the genetic survival of each, he offers the scientific hypothesis that human beings are actually two coadapted "species" or symbiotic

information systems—one system being genetic and the other cultural. Although individuals in a human society may not be related as genetic kin to all the others, they may be related as kin by virtue of inheriting the same culture and of being in fact elements of the same sociocultural organism. Since the success of each individual's genetic line is interdependent with the success of the sociocultural organism of which it is a part, there is a symbiotic relationship between two separate systems within each individual. This relationship can engender reciprocal altruism between individual and society. Burhoe suggests much scientific data show that religions evolved to transmit the basic cultural beliefs and personal values to link individuals and the transkin, sociocultural organisms. Hence he suggests religion is the "missing link" of earlier scientific theory seeking to explain what unites an egoistic ape-man nature with the altruistic nature of a civilized human being.

The physicist Richard Schlegel concludes this issue by focusing on the correlation between science's understanding of humanity's relation to nature and religion's understanding of humanity's relation to God. According to Schlegel's "divine postulate" one should expect to find a correlation because both scientist and theologian are concerned with what exists and are seeking to answer basic questions about nature and humanity. Classical physics, Schlegel argues, conceived of nature as independent of humans in the sense that it was not affected by the operations and thought of the observing scientist. Correlative with this, traditional theology viewed the relation between humans and God in much the same way: God's being was not in any way determined by man; instead God was regarded as totally independent of human influence. With the rise of quantum physics, however, the relation between humans and nature must be viewed as interdependent. Electrons, for example, exist in a "superposition of states." Prior to an observation they must be regarded as being in probable velocities and locations simultaneously; only when they are observed by the scientist do they resolve into a definite position or velocity. The act of observing is an element in the creation of the particular location or velocity of an electron. Hence nature is not independent of but is rather dependent on human activity. Likewise in theology Schlegel suggests that the definition of God should not be completely objective—holding God apart from human influence. Instead the definition of God should have a subjective component; God should be viewed as in part dependent on the experience of each person who wrestles with fundamental life questions as that person is informed by his or her culture and by the biological and physical aspects of his or her existence. In a survey of theological alternatives on the relation between humanity and God, Schlegel finds that Henry Nelson Wieman's concept of God as the creative process embodies a partly subjective understanding.

Thus Schlegel also supports the general thread running through this issue of *Zygon*—that simplistic and often confusing dualistic thinking is overcome as we discover human nature and values to be more solidly related to the general scheme of things. Christian thinkers in the middle ages, building on the heritage of Hebrew and Greek thought, located humans in the scheme of things in terms of a "great chain of being," extending from the lowest material levels to the highest reality, God. Humans, located in the middle of the hierarchical chain, shared a material and a spiritual nature. The ideas from various scientific viewpoints presented in this and the previous issue of *Zygon* also help to place humans in the scheme of things and thus provide at least a partial answer to the quest for meaning. However, instead of locating us as a link in a

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hierarchical cosmic chain, the contemporary scientific picture suggests that we are complex, uniquely developing nodes of extensive, interacting strands of nature and history. The picture also suggests that we are cocreators, with the ultimate determiner of nature and history, in an ongoing evolutionary process of the universe's self-expression. In this way we are "the heritage of all that has lived" and "the ancestor(s) of all that is to come."

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NOTE

1. Don Fabun, as quoted by James L. Christian, *Philosophy: An Introduction to the Art of Wondering*, 2d ed. (New York: Holt, Rinehart & Winston, 1977), p. 458.