

THE NEED FOR A SYSTEMS APPROACH: AN INTRODUCTION TO THE CONFERENCE ON "THE ECOSYSTEM, ENERGY, AND HUMAN VALUES"

by Karl E. Peters

For the past decade there has been emerging in the consciousness of many people a set of problems—indeed some would say a “storm of crises”—that involve the relationship between man and nature. This set includes the problems of hunger, pollution, population growth, land and water use, and energy. As the United States moves into its third hundredth year and as humanity approaches the third millennium of the Christian era, these major practical problems, which increasingly are affecting the daily existence of all human beings, are causing many to become concerned about our future as individuals, as a society, and as a species. Also coming to consciousness is the realization that, as down to earth as these problems are, they will not be resolved by straightforward, practical solutions. In fact, many of the solutions to past problems by modern technology, supported by the insights of modern science, have contributed to the nest of problems concerning the relationship between man and nature. It is only by stepping up to a more theoretical and abstract level—which is interdisciplinary in scope—that we can obtain the guiding insights that will initiate an effective resolution of our problems.

Karl E. Peters, associate professor of religion, Rollins College, Winter Park, Florida, was conference chairman.

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Fortunately, at the same time the above set of problems has emerged, there has also arisen a new theoretical framework that may provide a way of dealing with them. The framework is systems thinking. While evolution was the dominant nineteenth-century concept, what Thomas Kuhn has called a paradigm theory in biology that was generalized to other areas of thought, the concept of systems (which emerged with cyberneticists such as Norbert Wiener in the mid-twentieth-century and which in the last few decades has been employed in such widely diverse areas as business data processing, ecological thinking, and even religious thought) promises to be one of the key ideas of the foreseeable future. However, the problem with the concept of systems as it is often used is that its scope is unduly narrowed by the traditional limits of academic disciplines that are centuries old. For example, biologists and, more recently, ecologists have used the idea of systems in their study of the interaction between living organisms, including man, but they do not sufficiently take into account the various dimensions of man that come into play when human beings interact with the environment. They do not consider the human social and political institutions or the values and attitudes that influence human behavior in relation to the rest of the world. What is needed is the expansion of the concept of systems to include not only the subject matter of the natural sciences but also that of the social sciences and humanities.¹ What in German is called *Naturwissenschaft* must be combined with *Geisteswissenschaft*.² Furthermore, these natural and spiritual sciences must be united with not only the "hard technology" of industry but also the "soft technology" of religion, education, mass media, and other institutionalized activities that shape and fulfill human values.³ Both types of technology, supported by the combined insights of the natural sciences, social sciences, and humanities, will be necessary if we are going to resolve current and future crises involving the relationship between man and his environment. The concept of systems provides the guiding, paradigmatic idea that can unite all these disciplinary areas and technologies together.

It was with this expanded idea of systems in mind that the conference on "The Ecosystem, Energy, and Human Values—the Next 100 Years" was held at Rollins College on March 19–20, 1976. Sponsored by the Institute on Religion in an Age of Science and the Department of Philosophy and Religion of Rollins and funded by a grant from the Florida Endowment for the Humanities and the National Endowment for the Humanities, the conference initiated an exploration of the interdependence of physical, biological, and social-cultural value systems in a world of finite resources. The papers by Howard T.

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Odum, Thomas Devaney Harblin, and Don E. Marietta, Jr., present reflections on this theme from the points of view of an environmental scientist, a sociologist, and a philosopher. In this issue of *Zygon* the papers are followed by my interpretative summary of the conference.

The conference stimulated much thought about the nature of the world system and the future of man; many who attended are still involved in group efforts to criticize and elaborate the initial efforts. It is hoped that the presentations in this issue of *Zygon* will evoke the same type of intellectual effort in a far wider audience, so that further insights will emerge that will help all men to deal better with the storm of crises that confronts the human species and the planet Earth.

NOTES

1. In his own way Victor Ferkiss advocates an interdisciplinary systems approach when he argues that the root failure of current political liberalism, conservatism, and socialism is that they restrict political philosophy only to power relationships among people: "To talk about power relationships among people while ignoring the power which nature and technology have over the fate of human beings, and the way in which relationships among human beings influence nature and technology, is to ignore two of the three basic actors in the drama of human history." Ferkiss then goes on to suggest that "any contemporary political philosophy . . . must [as one of its tasks] set forth the premises of the value-system which will enable us to deal effectively with the humanity-technology-nature relationship" (*The Future of Technological Civilization* [New York: George Braziller, Inc., 1974], p. 7).

2. *Naturwissenschaft* means "natural science," while *Geisteswissenschaft* refers to both the "social sciences" and the "humanities."

3. The root of technology is the Greek word *techne*, which means art, skill, or craft and which can be used to refer to both the "hard technologies" that operate on material things and the "soft technologies" that work to promote or alter people's attitudes, perceptions, and values.