

## REALITIES AND IDEALS IN THE WORLD SYSTEM

by *Karl E. Peters*

Much of modern thought presupposes a fundamental distinction between the kind of thinking that attempts to describe, explain, and understand the way things are and the kind of thinking that tries to formulate in terms of right and wrong, good and bad, the way things ought to be. While this division between “facts” and “values” has been useful in helping to delineate different types of reasoning, it has also been a symptom of one of the basic problems of modern civilization—the separation of the sciences from philosophy and religion to the point that the insights from one realm of inquiry are often regarded as irrelevant for the other. Furthermore, in spite of its usefulness in a schema of types of thinking, the distinction between facts and values is sometimes, though not necessarily, grounded in the erroneous idea that reality or nature is limited only to physical, chemical, and biological processes and hence does not include man and his aspirations, dreams, goals, and values—that is, does not include “human nature.”

A general systems framework does not share this erroneous notion about reality; systems thinking includes within its view of the universe not only facts but also values. Further, it seeks to discover the interrelationship between the way things are and the way things ought to be, to see how the realities of the world help to determine what man's goals are and in turn to explore not only how the goals and hopes of man condition the way he sees the world but also how they lead to alterations in the way things are. In seeking to explore the interrelationships between “realities” and “ideals” the general systems approach not only is an expansion of the scientific enterprise, what Solomon H. Katz has called “a new science of man” that melds “our scientific and humanistic traditions together in a highly effective manner in order to adapt to the world we have evolved,” but also is a possible type of religious inquiry.<sup>1</sup> If one follows John Dewey's suggestion that “God” or “the divine” can be defined as the “active relation between ideal

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and actual," then the exploration of how such ideals or possible goals emerge out of present realities and how such ideals in turn feed back to recondition the way things are is theological inquiry about the nature of God.<sup>2</sup>

### INTERDEPENDENCE OF SYSTEMS

The interrelationship between reality and ideals in the world system was the underlying philosophical problem of the conference on "The Ecosystem, Energy, and Human Values." It is not surprising then that the conference exploration of the interdependence of physical, biological, and social-cultural systems in a world of finite resources led to the set of ideas that follow. These ideas are my own formulation of some of the highlights of the papers and the discussion that followed their presentation, and they present one side of the relationship I have been outlining: The ideals man projects and strives to attain can be formulated effectively only in relation to realities that are understood to be the "givens" of our present natural and social world.

The first idea emerging from the conference concerns the basic goals of living systems. All systems, whether they be simply cybernetic arrangements such as thermostats or humans being in cars or more complex systems such as a species in interaction with other species, seem to have built-in goals. Whenever the goals of the ecosystem or of species within the ecosystem are discussed, the most fundamental goal usually mentioned is survival. However, often it is pointed out that members of the human species desire much more than simply to survive. They desire not just life but also a high quality of life, that is, they desire to move beyond the maintenance activities that provide physical and mental health and hence allow for human reproduction and child rearing to a continual increase in the breadth and depth of human experience and achievement.<sup>3</sup> Perhaps one way of resolving this problem of whether the basic goal of man is survival or survival plus something else is to replace the idea of a survival in evolutionary thinking with the maximum power principle, first suggested by A. J. Lotka in 1922 as a criterion for natural selection and used extensively by Howard T. Odum. The maximum power principle states that systems tend to maximize flows of useful energy by increasing order, developing better cycles, improving control mechanisms, and forming patterns that increase production and consumption of energy flows.<sup>4</sup> If this principle is correct, then the basic goal of any living system is not just survival but the trying to make the most of the energy available to it. When large amounts of energy are available and do not cost too much in energy to obtain, then one can expect the production of increasingly complex biological and cultural

systems, an example of the latter being our present Western civilization. As J. Alan Wagar has stated in more general terms, "growth will continue as long as there is something capable of growing and the conditions are suitable for its growth."<sup>5</sup> However, what happens when the energy that supports growth is not as available as it once was, so that the energy expended to obtain more energy yields a very low net energy return?

This brings us to a second point, the possible correlation between given realities and the values or ideals human beings hold. At the individual level, when a person is young, with an abundance of physical energy, there is a tendency to attach importance to those activities for which much energy is required, such as active outdoor play and athletic competition. However, as one grows older and physical capacity levels off and then begins to decline, one's values also begin to change. Mental activity expressed in a variety of forms ranging from the playing of bridge to the writing of poetry, essays, and letters becomes increasingly important. So does the skilled but not too strenuous activity associated with the making of things, such as sewing, woodworking, cooking, and home maintenance. Also rising in importance are more passive modes of behavior ranging from spectator sports (instead of playing baseball, one watches the children in "Little League") to simply sitting and watching the traffic go by. The values a person holds for himself seem to correlate at least partially with the reality of his physical capabilities.

An analogous correlation may hold at the societal level. When a society has an abundant supply of easily accessible energy, such as that contained in fossil fuels, it may evolve, in following the maximum power principle, values associated with growth, achievement, and material progress. However, when such energy is not available, the society's values may change toward those of a steady state, such as conservation, the maintenance of traditions, and stability. If there is an emphasis on change, it may be on the cyclical change associated with the seasons of nature or the rhythms of the body, the type of change affirmed by earlier primitive and non-Western societies. If growth is stressed, instead of the materialistic growth associated with hard technologies the mental and spiritual growth achieved through soft technology may be emphasized.<sup>6</sup> In fact, it is a mistake to assume that a limited supply of energy means no growth; while it does mean a limit to growth in many of the ways to which modern Western man has become accustomed, there is still much room for growth and perhaps for greater satisfaction than material goods can provide in such things as the development of interpersonal relationships and in the exploration of inner states of consciousness by means of tech-

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nologies developed long ago by monks in various religious traditions when there was a limited supply of energy available. This, however, does not negate my basic point here; rather, it supports it. In both the individual and society what is thought to be desirable or valuable can be expected to fit with what is possible in terms of present realities. What ought to be done tends to be formulated in the light of what can be accomplished.

### PRINCIPLES AND VALUES

What ought to be done can be expressed in two ways, as a set of principles to be followed or as a set of values to be sought.<sup>7</sup> Thomas Devaney Harblin's presentation at the conference portrayed an extensive table of established principles and values and also of emerging principles and values that are more environmentally responsive. The suggested reason for the shift from established to emerging values was that the established values are leading mankind in undesirable directions. For example, the principle of using the environment as a commodity for expanding production is leading to a contamination of the environment, and men's efforts to compensate technologically for pollution may not prove effective; therefore, the principle may be replaced with another principle of environmental control through harmony with nature's laws. This would not do away with hard technology but would reorient, one hopes, the use of hard technology to establish a better relationship between man and nature. Again, the value of growth, especially of the growth of the human population, is leading to problems of accommodating the increased population and the increased pressure it puts on limited resources; hence this value may be replaced by that of a stable population which is maintained by intentional planning.<sup>8</sup>

At first glance, it looks as if principles and values such as environmental use, harmony with nature, growth, or stability are basic, perhaps even intrinsic, goals that guide human behavior. Yet this is not quite the case because in Harblin's presentation each of the existing principles or values is judged by its undesirable consequences, and the consequences are judged undesirable because—and this is assumed rather than made explicit—they no longer promote the survival of the human species or, perhaps more accurately stated, they are no longer in accord with the maximum power principle. The values or ideals men project as basic human goals in a particular place and time in human history are thus judged by the given realities of the universe; the maximum power principle as a criterion for survival expresses a very important given reality.

The correlation between given realities and human ideals is ex-

pressed in another way by Don E. Marietta, Jr., in his criteria for assessing various religious models. After he indicates the extent to which religious beliefs have an impact on human behavior and hence on the environment and after assuming that survival is the basic goal of human as well as of other species, Marietta suggests a number of criteria for evaluating religious models. The second of these criteria is that a religious paradigm "must have an adequate 'picture' of reality so as to elicit the desired perceptions of the world."<sup>9</sup> If the religious model and the values that express the hopes of human beings in the model are not compatible with the conditions given by nature or provided by man's prior interaction with nature, then the religious model is likely to be selected out in a process of cultural selection as being inappropriate at a particular time and place in the history of the human species, and it will be replaced by a more adequate model with a more realistic set of values. Of course, the cultural selection to which I have just referred is actually a part of the interaction between human ideas and the physical world that the paradigmatic concept of systems allows us to see.

So far when we have spoken of reality we have been concerned mostly with the limits of the physical world. However, a systems view of man as a part of nature also must include in its conceptual scheme the realities of established social and political institutions and the existing values of groups of people even when those values are unfulfilled. Specifically, as Harblin points out, we must be concerned with the reality of those people whose basic physical and mental needs are not currently being met. In our own society and in the developing nations around the world there are many who protest against the environmental movement and against talk about moving toward a steady state because those who are doing the talking are those whose needs have been met and who are already living a life of high material comfort.<sup>10</sup> We then are faced with a conflict between some who, if they are right about the limits of human growth, already have achieved the maximum state of material development and others who are going to be excluded eternally from this state. Yet there may be a way out of a possible destructive conflict between haves and have-nots. It is to recognize with Mihaljo Mesarovic and Eduard Pestel in a second Club of Rome study that the earth and its peoples need not be and should not be treated as a single entity.<sup>11</sup> Indeed, a systems approach that allows for nonhuman and human subsystems within the world system makes it possible to suggest that, if the physical realities are different in different regions of the world, the religious models and value system may differ accordingly. For example, while some portions of the globe may have reached or nearly reached the

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maximum state of material development and are moving toward a steady state and the values associated with it, other regions that are only poorly developed but that still have access to "cheap" energy resources may be in a position realistically to employ a religious model that emphasizes the values of human material growth and the exploitation of nature. There may be some wisdom in a plurality of religious and value viewpoints, for such a pluralism may be required if mankind is to maximize most effectively the power available throughout the world.

### CONTROL OF THE FORCES OF NATURE

A final point emerging out of the conference is that one of the things man has considered desirable is to be able to control the forces of nature for the benefit of man. This value of control usually is grounded in an understanding of man as distinct from all other living creatures. The evolution of the human brain has given man the capacity for language, for abstract thought, and for foreseeing the future; and these mental abilities when coupled with other evolved body characteristics, such as the ability to stand erect on two feet and to use the thumb and fingers in various tasks, have given man the capability of developing a science and a material technology so that the rest of nature can be used to create a better life for man. Yet the value of control if not properly understood, if not placed in its proper context, can lead to—in fact has led to—some of the current problems in the relationship between man and nature. As Robert L. Heilbroner has pointed out, the creativity of science and technology used by man to control nature and create a better life has led to the major problems of excessive population growth, the threat of nuclear conflict either in the form of outright war or nuclear blackmail, and the risk of thermal pollution.<sup>12</sup> Is it possible to understand the value of control in such a way that these and other dangers can be alleviated without deemphasizing human control to the point where man becomes regarded as just another animal?

A systems approach and in particular an understanding of cybernetics may help formulate the value of control in such a way as to hold to the truth of those who stress man's uniqueness and dominance over the rest of creation and at the same time avoid the dangers mentioned. In line with the realities, both physical and social as already discussed, control cannot mean the changing of the physical conditions of existence. Neither can it mean the direct, facile changing of well-established cultural institutions and human values; even in those places where major political revolutions have occurred, such as the revolution in the American colonies or the communist revolution

in Russia, many of the prerevolutionary values and practices continue. Yet, while control may not mean the radical altering of given conditions, it can mean control in a cybernetic sense of steering a course for humanity and the rest of creation on planet Earth. To use the common image of the earth as a spaceship, man has the capacity to be at the helm of that spaceship as a governor. This recognizes that man did not create the earth, the solar system, and the rest of the universe with all its laws. Also, insofar as the ecosystem itself, including man, contains countless governing mechanisms including biological mechanisms that control man, it is in final control and man's control is derivative. In religious terms, God, as the System of Systems, is the Lord, and man, who is the image of God and not actually God, is a servant of the entire system. However, a cybernetic approach also allows us to recognize, as Odum and others suggest, that man is the ecosystem become conscious of itself, and hence man can do something that the ecosystem as a whole cannot do. While the ecosystem may have a certain wisdom, expressed through the many homeostatic mechanisms that have evolved to regulate it, this wisdom, as far as we can discern scientifically, is not intentional. Man, on the other hand, because of his self-reflective capabilities, may plan the future intentionally in the sense that he consciously can govern the ecosystem in the light of physical and cultural realities and at the same time in the light of his own rationally projected principles and values that allow him to maximize the power available to him. It is by recognizing the interplay between realities and ideals in the world system and by governing in the cybernetic sense in terms of values and beliefs that are in accord with present realities that man will fulfill his unique human capabilities in a manner that will give him the greatest hope for the next hundred years.

#### NOTES

1. Solomon H. Katz, "The Dehumanization and Rehumanization of Science and Society," *Zygon* 9 (1974): 135.

2. John Dewey, *A Common Faith* (New Haven, Conn.: Yale University Press, 1964), p. 51. See also Dewey's discussion of "the reality of ideal ends as . . . vouched for by their undeniable power in action" (p. 43).

3. This distinction I have elaborated in a paper, "The Development of the Earth and the Quality of Life," *Religious Humanism* 10 (1976): 134-38. It is similar to Abraham H. Maslow's differentiation between meeting basic needs or deficiencies and self-actualization in *Toward a Psychology of Being* (New York: Van Nostrand Reinhold Co., 1968), pp. 21-27.

4. Howard T. Odum, "The Ecosystem, Energy, and Human Values," in this issue. See also A. J. Lotka, "Contribution to the Energetics of Evolution," *Proceedings of the National Academy of Science* 8 (1922): 147-55, and Howard T. Odum, *Environment, Power, and Society* (New York: John Wiley & Sons, 1971), pp. 31-32.

5. J. Alan Wagar, "Growth versus the Quality of Life," *Science* 168 (1970): 1179-84;

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reprinted in John G. Burke, ed., *The New Technology and Human Values* (Belmont, Calif.: Wadsworth Publishing Co., 1972), p. 79.

6. Cf. my "The Need for a Systems Approach," in this issue.

7. In current philosophical ethics these are formulated as the rule deontological approach or reasoning from principles and the teleological approach or reasoning to consequences that are judged to be valuable. See William K. Frankena, *Ethics* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1973), pp. 14–17.

8. Thomas Devaney Harblin, "Mine or Garden?: Values and the Environment—Probable Sources of Change in the Next Hundred Years," in this issue.

9. Don E. Marietta, Jr., "Religious Models and Ecological Decision Making," in this issue.

10. David L. Sills, "The Environmental Movement and Its Critics," *Human Ecology* 3 (1975): 31–32.

11. Mihaljo Mesarovic and Eduard Pestel, *Mankind at the Turning Point* (New York: E. P. Dutton Co, 1974), pp. 1–9.

12. Robert L. Heilbroner, *An Inquiry into the Human Prospect* (New York: W. W. Norton & Co., 1974), pp. 31–38.