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HUMAN SURVIVAL: THE RESPONSIBILITY OF SCIENCE AND RELIGION

by *Ervin Laszlo*

Abstract. Public awareness of threats to human survival has emerged with significant strength since the 1970s. Recognition that growth cannot continue infinitely on a finite planet was affirmed by publication of the Club of Rome report, *The Limits to Growth*. In turn, the responsibility of science for human survival has been widely debated, at least since detonation of the atomic bombs over Hiroshima and Nagasaki in 1945, but the conjunction of threats to human survival and scientific responsibility has remained rather vague. Clarification of this dual issue must take into account the role of religion, since only through a creative alliance of science and religion can a satisfactory resolution of the threats posed by global problems be found.

Keywords: ecumenism; education; evolution; global problems; holistic alliance; responsibility.

Humanity's global problems, which are widely discussed and do not need detailed comment here, include continued militarization in many parts of the world, the growth of human population and its concentration in poor and in urban environments, the financial crisis of developing countries, the twin processes of deforestation and desertification, and related environmental imbalances with serious human

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and social consequences. Even if humanity manages to avoid the ultimate catastrophe of a third world war, it faces the possibility of depleting and overpopulating the global environment.

Scientists, accordingly, need to accept their share of the responsibility for this state of affairs. Greater self-discipline is needed among scientists regarding selection of their fields and the problems of research and communication of the results. Researchers need to join forces through international bodies to assure that a correct or responsible flow of scientific knowledge reaches decision makers—instead of haphazard notions or whatever happens to catch the interest of funding sources and science-related public and private agencies.

The responsibility of science and scientists, moreover, must be coupled with religion. The search for higher meaning and genuine progress cannot be reduced to either natural science or economics. Indeed, the spiritual dimension of life remains essential, both for the inspiration it can give to human initiative and for the integration of society. In the original sense of *religio*, religion is as much a part of human existence as matter and physical survival. Together, science and religion can create a basis for a new civilization, adapted to the global condition of humanity, a condition that cannot be reversed but needs to be evolved and rendered humanly beneficial and meaningful.

THE RESPONSIBILITY OF SCIENCE

Practically all the “high” technologies that impact on the survival and development of humanity derive from research in the natural sciences. This is true in particular of nuclear and high-energy technologies, of information and communication technologies, and of genetic engineering. Research in chemistry is the fountainhead of the estimated 70,000 synthetics that are currently in use.

Classically, scientists engaged in the search for knowledge without concern for the consequences. Basic research was said to be a search for truth, pure and simple. But because basic research produced many (if not most) of the problems that now threaten human survival, the classical view has been increasingly questioned. Since the fateful nuclear explosions that ended World War II, most scientists have become sensitized to their social responsibility. In the 1980s, many physicists, geneticists, and theoretical and experimental scientists posed ethical questions about various aspects of scientific activity, all the way from basic research to publication of the findings. By and large, however, contemporary scientists do not act in accord

with this newfound sense of social responsibility. The main thrust of the contemporary science establishment is toward the armaments industry and the military.

Worldwide, as many as one-fourth of all scientists in the so-called "hard" sciences work on projects that relate (even if indirectly) to weapons technology and national security. Another large proportion of scientists converges on such highly funded fields of social priority as cancer and AIDS research. Even scientists who are not in weapons- and health-related fields tend to distance themselves from the concerns of society. In universities and academies, the teaching and researching of basic science are divided or compartmentalized into specialized disciplines within which scientists and their students concern themselves with abstract and esoteric questions. Most natural scientists, and many social scientists, have become super-specialists, immured in their laboratories and libraries.

If the problems unwittingly created by the shortsighted application of scientific results are to be managed, and if similar problems in the future are to be avoided, a higher level of social-problem consciousness is needed in the mainstream science establishment. Also, further debates on possible applications and side effects are needed before concentrated investigations begin, thus leading to a more farsighted assessment of societal impacts. Impact assessment would consider spatially as well as temporally distant effects: those that concern people in other lands and continents as well as those that affect future generations. Since global problems call for worldwide cooperation, consultation and networking is needed among farsighted practitioners in the research, development, and diffusion of scientific knowledge. International organizations of scientists—in particular, such bodies as UNESCO and the International Council of Scientific Unions—should be entrusted with the relevant consultations and mandated to carry out agreed-upon results.

The responsibility of science does not end, however, with the self-discipline of scientists. Responsibility lies equally with the institutions in charge of diffusing scientific knowledge, not only through direct application in technological innovation but also through higher education. As H. G. Wells said, the future will be a race between education and disaster. Science education would need to evolve as high a level of social consciousness as the scientific community itself. Today, in most countries of the world, standard curricula convey outmoded concepts of the "scientific view" of man and the world. Unfortunately, teaching is fragmented among the natural-scientific-technical, the social-scientific-political, and the artistic-spiritual-religious subcultures. Yet these divisions, like those between the hard

sciences and the humanities, have become obsolete.

Within the truly advanced natural and social sciences, and especially within the transdisciplinary fields known as "systems sciences" or "sciences of complexity," a more integrated concept is emerging. These sciences deal with the evolution of complex systems, regardless of where the systems are found. The systems can be natural or artificial, social or cultural, and even mathematical. Since a human being is one variety of complex system, the natural environment another, and modern artifacts yet a third, a framework is available within which their relations and dynamic interactions can be analyzed and integrated.

Man, in the new transdisciplinary perspective, is an intrinsic part of nature, and both man and nature are intrinsic parts of the system of the biosphere. Rigid separations between natural, human, and social structures and processes do not have legitimacy. If scientists would espouse and deepen the new understanding of man and the world, and if educational systems would disseminate the emerging insights, a knowledge base could be created for tackling global problems and working toward human survival. Scientists and science educators cannot evade these twin responsibilities in today's crucial epoch.

THE RESPONSIBILITY OF RELIGION

Science and science education, of course, can address only human reason and intellect. Humanity, however, is both a rational and a spiritual species; the human person has an intellective as well as an intuitive faculty. If healthy and integrated societies are to be created according to the new concepts of transformation and restructuring, both sides of the mind, both aspects of human existence, must be addressed.

The great religions contribute to the fulfillment of individuals and guide their search for just and harmonious relations. Indeed, the social and humanistic element in the religious tradition is evident in the Judeo-Christian faith no less than in the belief systems of the Orient. Judaism, for example, sees man as God's partner in the ongoing work of creation and calls on the people of Israel to be "a light to the nations." At the heart of the Christian teaching is love for a universal God that must be reflected in love for one's fellows and service to one's neighbor. Islam, too, has a universal and ecumenical aspect; *tawhid*, the affirmation of unity, also means the religious witness, "There is no God but Allah," and Allah is the symbol of the divine presence and revelation for all people. Hinduism, unique

among the great religions in not having an individual founder, perceives the essential oneness of mankind within the oneness of the universe; and Buddhism's central tenet is the interrelatedness of all things in "dependent coorigination," which is interpreted by progressive Buddhists as a mandate for achieving higher forms of unity in today's world of interdependence.

Chinese spiritual traditions revere harmony as a supreme principle of nature and society. In Confucianism, harmony applies to human relationships in ethical terms, while in Taoism harmony is an almost aesthetic concept, defining not only nature but the relationship between humans and nature. And the Baha'i faith, the newest of the world religions, sees the whole of mankind as an organic unit in evolution toward peace and unity—a condition that it deems both desirable and inevitable.

The world religions do include significant elements of ecumenism and humanism, but unfortunately these elements do not come sufficiently to the fore. They are overshadowed and hampered by parochial concerns, and there is competition between particular faiths, each offering a unique path to fulfillment and salvation in its exclusive possession of the truth. A new emphasis and value on the ecumenical, more important side of the coin would not do violence to their doctrines; it would only make them more relevant. Moreover, the leaders and prophets of the great religions have claimed to be humanly and socially relevant to *their* time, so that their followers could not object to their teachings remaining relevant to *our* time.

If contemporary religions were to become truly relevant to our time, they would need not only to recover the humanism of their traditions but also to forge ahead, giving new meaning to life and development in this period of restructuring and transformation. To achieve such a high objective, a return to fundamentals—no matter how enlightened—is not enough. There must be a new elaboration, a creative extension of the ideas that have informed and inspired mankind's religions since the dawn of civilization.

The defining contours of this development can already be discerned, such as relegation to religious history of the concept of God as external to both mankind and cosmos. The concept of the divine that is adequate to our time is that of immanent spirit, inspiring the world from within, not commanding it from above. Then the progressive self-creation of the world must be recognized and celebrated. The biblical tradition of the occidental religions has not come to terms with an evolving reality. The Judeo-Christian religions, although they have a historical perspective on the spiritual development of the individual, do not have a corresponding perspective on

the evolution of the world and of humanity as a whole. Yet such evolution occurred, and it continues before our eyes. We are in a basic and irreversible societal and cultural evolution that affects all life on this planet. To remain relevant, the world's religions would have to convey a view not of an abiding (and perhaps seasonally renewing) world, but of a fundamentally and irreversibly evolving cosmos.

The present period of societal transformation cannot be seen in true perspective unless the world within which it occurs is allowed an evolutionary aspect, which need not be restricted to the physical basis of the cosmos. The universe can be perceived to have a spiritual dimension in addition to a physical one. Historically, it has been the task of the great religions to perceive and proclaim this dimension, and to acquaint the faithful with its meaning.

The new knowledge of the cosmos, coming from the sciences, could be deepened and made more humanly meaningful in the various religions. Cosmic reality could also become the personal reality of each human being. All in all, such a development is not farfetched; each of us, within himself or herself, bears the impress of every transformation through which the universe has passed. The elements from which our bodies are composed were created in the fiery processes of stellar interiors and supernova bursts; then they dispersed in interstellar space and were brought together in the womb of the protostars of a new stellar generation. As elements on the surface of the planets born of these stars, they have participated in the original emergence of life in the rich mixture of molecules and protobionts in primeval seas. They entered and left living bodies for a billion years and more, cycling through the rich web of structured connections that make up the reality of the self-maintaining and self-evolving system of the earth's biosphere. The forces that brought forth the quarks and the photons in the early moments of the radiance-filled cosmos, that condensed galaxies and stars in expanding space-time, and that created the complex molecules and systems on life-bearing planets—these forces inform our brain and infuse our mind, and come to self-recognition in each of us. As human beings evolve consciousness, the biosphere is enriched and lifted to a new plateau. It becomes conscious, turning into a *noosphere* (Teilhard de Chardin's term, derived from the Greek word for mind, *noos*, and used to refer to that segment of the evolutionary process characterized by the interaction of minds and the mind's products, the realm of culture).

Religions could celebrate the world's evolutionary self-creation. They could celebrate the original flaming forth that gave birth to the

known universe—the sudden synthesis of quarks and the wide diversity of microparticles, as well as of atoms and molecules throughout the expanding reaches of cosmic space. They could celebrate the emergence of the macromolecules and protocells, the precursors and harbingers of life, on the surface of this planet and on countless (if as yet unknown) planets in this and in myriad other galaxies. They could celebrate the evolution of the noosphere on Earth as the next, especially significant, phase in the world's self-creation. They could recognize that the self-evolving cosmos is our larger self, that our journey as individuals within the bio-noosphere reflects the evolutionary journey of cosmic reality from Big Bang to black hole. The cosmos could become our primary sacred community.

Recognizing and celebrating the self-creation of the world, religious communities could recognize and celebrate the self-creation of life within the biosphere as the larger framework of the self-creation of humanity in the noosphere. If they did, life, nature, and the human mind and culture would be resanctified: they would be seen as vital elements of the sacred community of the cosmos. And with the recovery of the sanctity of the natural world, humanity would also be impelled to reorient its attitude toward the natural environment. The great religions could become coarchitects of the evolution of contemporary culture and society.

THE HOLISTIC ALLIANCE

Religious renewal always came in the wake of civilizational crises. It was in the disastrous moments of the history of Israel that the prophets of Judea made their appearance; Christianity established itself in the chaos left by the moral weakening of the citizens of a declining Roman Empire; the Buddha appeared in a period of spiritual and social confusion in India; Mohammed proclaimed his mission in an epoch of disorder in Arabia; and Baha'ullah wrote in the confinement imposed by a moribund Ottoman Empire. Today, we are in the throes of the greatest and deepest crisis our species has ever known, in an epoch when the very web of life on Earth is threatened. Will there be another great spiritual and religious renewal in our time? Will renewed and reinvigorated religious communities enter into alliance with contemporary science and become a vital cultural force, illuminating and encouraging the next step in humanity's evolutionary self-creation?

Alliance between science and religion is now a historical imperative. Just as in the early nineteenth century, after the Napoleonic wars, a Holy Alliance was created in Europe, dedicated to creating

a community of the Christian nations of the world, so today we need an alliance that is holistic, rather than holy, between scientists and science educators on the one hand and religious leaders and communities on the other—an alliance to join the artificially segmented rational and spiritual halves of our individual and collective psyches into integral unity.

Creating the holistic alliance between science and religion is the best, and perhaps only, way to gather both the knowledge to tackle global problems and the motivation to act on that knowledge. If the alliance would extend to countries east and west, north and south, cooperation among scientists and religious leaders could be fruitful internationally. Expert and relevant ideas would be brought together, and incentives to act on them would be aroused. The epochal task of guiding the evolution of contemporary societies along physically sustainable as well as humanly meaningful lines could be assumed with vastly improved chances of success.