

THE CENTER FOR ADVANCED STUDY IN
RELIGION AND SCIENCE, AND *ZYGON: JOURNAL OF
RELIGION AND SCIENCE*—A TWENTY-YEAR VIEW

by *Ralph Wendell Burhoe*

Abstract. This essay gives a brief history and presents an analysis of the aims and accomplishments of the two institutions as seen by the author. The analysis seeks to describe and justify some of their basic presuppositions. Primary has been their belief that scientifically informed understandings of religion do enrich our appreciation of and faith in it. For instance, religion's recently discovered roles in the evolution and development of sociocultural systems and personalities provide new credibility and importance for religious heritage. Recent translations between contemporary scientific and ancient religious concepts give new hope for religious reform, revitalization, and effectiveness for human salvation in an age of science.

In this essay, in response to the request of Philip Hefner, the arranger of this celebration, I will first present a historical sketch of the two institutions whose twentieth anniversaries are being celebrated: the Center for Advanced Study in Religion and Science and *Zygon: Journal of Religion and Science*. Then, in the second part, I will respond further to Hefner and to other CASIRAS and *Zygon* leaders, George Riggan and Malcolm R. Sutherland, Jr., who insisted that, since I had been a central agent in generating the goals and the efforts culminating in the present state of these two institutions, my "original dream should be rehearsed as a measure for our accomplishments to date and as a chart for upcoming efforts."

A BRIEF HISTORY

The governing board of the Institute on Religion in an Age of Science (IRAS), on 22 February 1965, met at the Lexington, Massachusetts

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home of its president, Sanborn C. Brown, professor of physics and associate dean of the graduate school at the Massachusetts Institute of Technology. The minutes of the meeting record that it was “unanimously voted that the Institute join with Meadville Theological School of Lombard College to establish a journal . . . in the general context of the evolving aims and interests of IRAS and the Meadville Committee on Theology and the Sciences.”

A year earlier, Sutherland, the president of Meadville, with encouragement from leaders of the Unitarian Universalist Association and a number of scientists associated with IRAS, had worked out and published a twenty-five-page catalogue announcing *The New Design of Theological Education at Meadville*, “making radical innovations in its curriculum.” The first element in this design was the establishment of “an interdisciplinary Department of Theology and the Frontiers of Learning for the purpose of relating theology or religious theory to the insights, conceptions and models of reality of contemporary knowledge. . . .” Among other things “the theological engagement at Meadville is to be undertaken in the context of disciplined familiarity with specific aspects of contemporary knowledge about humans and their total environment as discovered through and interpreted by the various sciences and other disciplines.” This was indeed a radical innovation even for a liberal theological school. At the same time the school announced what was to become its Center for Advanced Studies in Theology and the Sciences (CASTS), which was recognized as necessary for the development of the substantial concepts in the new curriculum.

Another essential agency for Meadville’s New Design was the journal to be published jointly with IRAS: *Zygon: Journal of Religion and Science*, “established as a workshop for those seeking ways to unite, in full integrity, the sciences with what humans hold to be their sacred values, their religion.” Under Ralph Wendell Burhoe, as director of the new Center and the appointed editor, the first issue of the quarterly *Zygon* appeared at the University of Chicago Press as of March 1966. This issue contained papers from the first CASTS conference on *Theological Resources from the Sciences*. The papers were by scientists and scholars of many disciplines, including Sanborn C. Brown, F. S. C. Northrop, Ian G. Barbour, John F. Hayward, John R. Platt, George Wald, Hermann J. Muller, Robert B. Tapp, Alfred E. Emerson, Bernard M. Loomer, A. F. C. Wallace, Henry Nelson Wieman, Melford E. Spiro, Lawrence K. Frank, and others. I speak not of other parts of the New Design here.

So far as we know, by the above programs authorized and funded in 1964, Meadville became the first theological school seriously to in-

stitutionalize advanced-level study of the implications of the full range of the modern scientific world view for the interpretation of religion and for the education of candidates for the religious ministry. What became of these parts of the New Design?

In 1985 *Zygon* is flourishing, close to its early aims. Since 1979 it has a younger editor, Karl E. Peters, professor of philosophy and religion at Rollins College, which has been providing an office as well as some staff and funds for the publication. Testimony to *Zygon's* international and theological impact is coming from such books as Gerd Theissen's *Biblical Faith: An Evolutionary Approach* (1985). In it, the Heidelberg professor of New Testament closely follows findings published in *Zygon*, several of which he quotes, in showing how contemporary theories of human evolution provide new appreciation rather than depreciation of biblical faith.

CASTS also has continued. With the utmost possible support Meadville's Board provided for resident Fellows with stipends and for visiting Fellows, as well as meeting and office space on the first floor of its former presidential house. Here weekly interdisciplinary seminars had impact on many local and visiting scholars. In the early 1970s funds came to an end. The reconstitution rather than death of the Center was called for by the vision and enthusiasm of George A. Riggan, professor of systematic theology at Hartford Theological Foundation, who had been a CASTS full-time Fellow in 1967-68. He, Sutherland, and others, with strong faith in CASTS' value, established a new and independent Center for Advanced Study in Religion and the Sciences (CASIRAS). On 15 February 1973 under the presidency of Donald Harrington, minister of New York City's Community Church and one of the first to use *Zygon* themes in sermons and services, CASIRAS was incorporated in New York. CASIRAS legally inherited the functions of CASTS, including joint publisher of *Zygon*.

Then the Lutheran School of Theology at Chicago (LSTC) welcomed an affiliation with CASIRAS and for some five years, beginning in 1974, housed CASIRAS and the editorial office of *Zygon*. From 1965 to 1985 CASTS-CASIRAS has operated conferences at various times and places; and each year, at the Meadville or Lutheran school has held classes and advanced seminars on various aspects of the problem of interpreting religion in the context of the sciences. Sometimes, through *Zygon*, it has published elements of the output of its conferences and seminars. Over the years the Center's advanced seminars usually have enjoyed the participation of some five to fifteen scientists, theologians, and other scholars of different types, as well as some five to ten graduate students. Some of the papers have been highly critical of what we have been trying to do, which has helped to shape our

responses. Philip Hefner, professor of systematic theology and director of graduate studies at LSTC, and Burhoe still cochair an advanced seminar for graduate students and faculty during one or more of the academic quarters each year. LSTC also maintains degree programs close to areas with which CASIRAS and *Zygon* are concerned, including a doctorate of theology in the context of science. Further, LSTC has taken first steps to implement a plan to bring together and to extend its activities in this field in a Center for Faith and Science Studies.

While CASIRAS vigorously sought funds to finance a sizeable and nationally or internationally active center, it seems that most foundations and other institutions that might support CASIRAS have remained up to the present largely incredulous that the sciences could enhance the interpretation and effectiveness of religion or morality. A notable exception was the unsolicited 1980 award of the more than \$200,000 Templeton Foundation prize for progress in religion to Burhoe, essentially for the work he had accomplished through *Zygon*, IRAS, and CASIRAS. But most secular foundations and academic institutions seem to feel that religion is only an archaic vestige that must be ignored and will be replaced by a secular ideology, while the religious funds and institutions largely have felt that the sciences are either irrelevant or a dangerous threat to religion, but seldom a resource.

Increasingly during the past twenty years, institutions have been founded whose purposes overlap with ours and whose establishment in the United States and abroad seems to have been in some degree influenced by the pioneering example set by IRAS and Meadville in CASIRAS and *Zygon*. The enterprises whose anniversaries we celebrate still set a high standard for illuminating the harmony between the full range of the modern scientific world view and the full range of the salvatory functions and wisdom of ancient religious traditions. The range of religious functions includes the generation of faith and hope in our relation to the scheme of things and the securing of altruism along with individual freedom, dignity, and justice in a viable social order within the tribe, nation, and world. It is still a very great challenge for most persons to recognize the wisdom, power, and glory revealed in these ancient traditions or their existential relevance as being enhanced for today's credibility by new scientific understandings. Few have seen how well the scientific views of "reality," of the well-known but largely invisible system of forces that shape world and local events (including human minds and cultures), match the general dynamics and implications for human life of the creating, judging, and transforming God of religion. Few have seen how well religion itself, from its most primitive stages, has been selected and has evolved by this system of power that gives us life. What now is our duty as agents for the future?

A PERSONAL ANALYSIS

In meeting the request of CASIRAS and *Zygon* leaders Hefner, Riggan, and Sutherland to rehearse my original dream "as a measure for our accomplishments to date and as a chart for upcoming efforts," I propose to respond, not so much in terms of ordinary autobiography and history, but in a way that I hope illuminates some of the basic, scientifically informed understandings of religion that have distinguished the central core of CASIRAS and *Zygon* and that I believe provide sound grounds for religious and moral revitalization in an age of science. Predominant in these concepts is the evolution or development of individuals and sociocultural entities (including religion) under the aegis of, and "judgment" by, a system of forces transcendent to humans. The sciences show a system of forces that seems clearly to be operative in shaping not only the cosmos but also events down to the microscopic and mental details of human nature and experience. That is, I propose to account for CASIRAS and *Zygon*, and my role in them, in the light of an interpretation of human nature, including its ultimate concerns or religious values, which fits with and may be illuminated further by the contemporary scientific world view.

As my studies and analyses of the human situation and of religion have advanced, I find more and more confidence in the new *paradigm* that has developed from my dreams or hypotheses. This paradigm also has been tested against the scientific world view with the personal cooperation of hundreds of leaders of the scientific community in various pertinent fields. The paradigm has been tested against the religious world view with the personal cooperation of some dozens of leading scholars. The resulting conceptual system has all the characteristics of a new paradigm (in the sense set forth by Thomas Kuhn for the revolutions of conceptual systems) for understanding religion and its fundamental role in human nature.

A new paradigm presents a radically different model or way of describing the reality being considered, such as the difference between the new Copernican and the older Ptolemaic conceptual paradigm for planetary motions. It sometimes takes a few, or even a dozen or more, decades for a new paradigm to become acceptable, since the reigning authorities, in the realm of the knowledge concerned, necessarily have matured under the previously reigning paradigm and since the radically new model does not make sense in the context of the previous paradigm. The same sort of thing happens in religion, as, for instance, in the many evidences of the reigning religious establishment's spurning new concepts by prophets and reformers. Although central for later paradigms of religion, the new views of prophets may not become a widely held view sometimes for centuries.

While there has been some increasing recognition in recent years of the new paradigm which I have sought to make central in the work of CASIRAS and *Zygon*, more of my increasing confidence in the paradigm has come from its having made so many things become more readily and beautifully explained, sensible, or predictable to me—as had been the case of the Newtonian, Darwinian, and other paradigms. Hence the new scheme seems better validated.

What were the sources of my dream, which gave rise to the new paradigm? The central themes of this dream began and became fixed in their present general pattern in Massachusetts in my Reading High School, Harvard College, and Andover Newton Theological School years, from 1924 to 1936. At college I was much influenced by courses in mathematics and various sciences from anthropology to zoology and physics to psychology, as well as some courses in history and philosophy. They had made clear the bankruptcy of traditional interpretations of religion with respect to most modern minds. Also important were my association with a Boston-area Baptist student, religious-mission group, and what I learned from a moderately liberal theological faculty. I became acutely aware of the gulf between the two cultures, religion and science, as understood in the then-reigning paradigms. “Paradigms” and “two cultures” would not be terms that I would use for another quarter century when I came to know Kuhn and C. P. Snow. But the same phenomena were discernible in the 1930s, and my efforts then as now were to generate a monist world view encompassing religion and science to resolve the split mind or schizophrenia of our civilization. In the early 1930s I became well aware of the great difficulty of communicating the budding paradigm in which I thought they could be integrated: the application of the most objective views of modern science directly to interpreting the beliefs, values, and functions to be found in the scholarly and experiential knowledge of religion.

I recognized that traditional Judeo-Christian religion and its God had been killed for many thinkers by the newer ways of thinking, as Friedrich Nietzsche had earlier noted. Nevertheless, this religious tradition had for centuries provided the population of Western civilization with considerable degrees of personal grace and hope and with considerable social order through sufficient altruism and wise goals. I felt that this base of Western civilization could be revitalized if we looked at religion carefully from more advanced stages of twentieth-century knowledge.

In the 1930s I began to understand why, during the rapid innovations in the systems of scientific concepts during recent centuries, theologians were largely unable to adapt and synthesize their culturally

inherited religious ideologies with the newer views of the world. The religious ideologies and the Hellenistic philosophies in which they were deeply entwined were prescientific. The new scientific stage of cognitive culture described nature and human nature in an integrated system of conceptual models (a paradigm) that increasingly differed from those of Plato and Aristotle, as well as from earlier conceptual or mythical systems. Science tended to leave the outmoded conceptual systems behind and people began to discount any assertions made on the outmoded grounds, in spite of the possibility that the assertions were important for personal meaning and hope and for public morals. Hence religion had reason to avoid science.

Disastrous for religion were the philosophical efforts during the past two or three centuries to protect from the new sciences the admittedly important or necessary religious functions and ethical values. Because in the 1700s many philosophers could not see how the scientific ways of looking at things could handle religious and moral values, to say nothing of how they could be compatible with the then-existing styles of religious or theological ideologies, they and their colleagues in theology (and, by the absence of protest at least, in the sciences) concluded that religion and values must operate in a different, "subjective or spiritual world" that was assumed to exist independently of the objective, material world view of the scientific ideologies. Unfortunately, this alleged discontinuity of the world of facts from the world of values increasingly deprived an advancing technological civilization of the awareness of the legitimacy, relevance, and necessity of religious and moral power. Increasingly, religious claims tended to be regarded as nonfactual and hence irrelevant.

The dream I had, envisioned that, if one looked at religion in the full light of today's much more advanced sciences, rather than as merely a phenomenon not examinable by the sciences and not connectible with the reality being explored by them, one would find that religions basically could be fruitfully explored by the sciences. I felt one would find that the basics of traditional values not only were *scientifically* valid but, exactly because of this, were more than ever *religiously* true and compelling. I now have considerable evidence for this.

KEYS FOR JOINING RELIGION AND SCIENCE

I should briefly mention three critical keys for understanding and uniting the two separated cultures of religion and science under a single paradigm: the new theories of the interrelation of the evolutions of cultures, brains, and the cosmos.

These keys were not significantly available for me (or for anyone else) until more recently, with radically new scientific models emerging

in the past thirty years. These allowed me to say with considerable scientific assurance that, in the context of the cultures in which they arose and were effective, religious assertions or implications about the significant nature of the relation of humans to the system within which they live or have their being—and hence about the consequent proper attitudes and duties of one human to another—were in general valid because their evolutionary course had been selected by processes that were regarded as natural or credible by the sciences. Cultures and values as well as genes arose by selection.

These keys also allowed me to say that religions were basically as valid as, and more essential than, other contemporary cultural heritages—such as language, agriculture, medicine, and other technologies or secular philosophies—none of which gave, like religion, the cultural heritage for altruism, an altruism which is necessary for a basic human society that is significantly larger than kinfolk society.

These new insights into religion's functions seemed to demonstrate its critical role in the evolution of humans up from the apes. By well-winnowed and effective cultural inputs or reinforcements to the brain, religions functioned to transform many of the earlier behavioral patterns, which had been driven primarily by animal-level instinctual responses largely shaped by genetic information alone. If left unmodified by culture, those earlier response patterns would tend to wipe out behavior necessary for the goals and values required for human life. This provides a powerful view of how the selection of the value core of cultures could raise us out of the animal kingdom to humanity. Such a religious function will forever be necessary, since evolution through genetic selection alone simply cannot produce the human values, states of consciousness, and altruism adequate for human societies. Of course, we have no life at all apart from the wonderful wisdom of the body produced by our genes. Hence genes and culture had to be selected as coadapted symbionts for humanity to come into being.

As central for this new scientific theory about, and appreciation of, religion, I call your attention to recent formulations of evolutionary theory. These include not only the history of biological systems but also the history of the cosmos, of the earth, and more recently of human sociocultural systems, including the life histories and roles of individuals and the place of their conscious scope and intent in this larger context.

In this theory all stages and systems of evolution are seen to operate under a universal system of dynamics that selects for viable or quasi-stable systems. Cosmic, physical, chemical, biological, and sociocultural systems are all selected because they are the products of largely random changes that inevitably and progressively find certain very rare but

inherently quasi-stable or viable states in what may be an infinite progression of a dynamic universe. To me the most masterful expression of this cosmology and evolutionary theory was Jacob Bronowski's paper, first published in *Zygon* (1970). Although Bronowski was not prone to theological language, one can see how this universal system of nature and natural laws, which transcends but shapes all events of whatever nature, logically corresponds with ancient and still relevant religious notions of human dependence upon a transcendent, monistic source of destiny. We have much evidence that shows how this applies in detail and in general, even though we can account for many kinds of events only statistically.

I should note the rise in recent decades of the fantastic knowledge and application of physical science—as in atomic energy, space travel, computers, cosmic and biological evolution, brain processes, and other areas—as relevant for solutions to the present human predicament. The physical sciences have played illuminating roles in our understandings of human nature, its evolution, and its destiny in the scheme of things: spiritual, moral, and mental, as well as bodily. One example is the usefulness of physics in exploring and accounting for brain functioning in behavioral and conscious patternings. Another is the interpretation of the second law of thermodynamics that gives life new meaning in the scheme of things, as presented in the views of Bronowski, Ilya Prigogine, and others.

But physicists played a further role for us. Their early perception of the threat to humanity posed by the immoral use of scientific technologies has been a prime motivator of our work, ever since the early roots of CASIRAS and *Zygon* in the 1940s among physicists in the Science and Values committee of the American Academy of Arts and Sciences, which was a prime source of the Institute on Religion in an Age of Science. Commonsense as well as scientific analysis of harmful human behavior shows that technology's powers are not the problem. The problem is what humans are motivated to do with such powers, whether sticks and stones or atoms and lasers. We now can see that responsibility for delivering us from such evils as nuclear war is not in the power of the combatant agencies that use technology for coercing. That responsibility requires the power of the agencies that can motivate noncoercively our attitudes and behaviors of mutual concern and peaceful cooperation in a community.

Religion, however, because it has not yet learned to communicate in the new idiom of the scientific world view, has lost much of its power to elicit, from persons imbued in that view, a behavior that is good for the more important or ultimate human values. In our theory, within any sizeable community the top value of peaceful cooperation depends

primarily upon a certain minimal level of religious-moral enculturation that leads its individuals to feel personally that it is directly to their own long-term advantage to do what the reality system requires for the life of their community as well as for their own bodies or families. In general it is found that the religious god (reality-system symbol) requires and gives people concern for and readiness to help other members of the community, because they believe any near-term costs will ultimately be more than repaid in this life or beyond. In my theory of human evolution as a symbiosis of genes and cultures, it turns out that in the dynamics of human evolution such beliefs are true and essential for human life even when their details are not adequately conceptualized for nonbelievers.

My scientific inquiry into religion has made it clear to me that the prime function and power of religion arose from its long-evolved capacity to humanize the ape-man in us, not by coercion but by generating inner beliefs and wants that motivate us to higher life patterns. This new level of motivation has been accomplished by culturally transmitted components of our information input. Our cultural evolution and development have been selected, by the same nature of the reality within and around us that selects our genes, to give us higher levels of concerns and viability. This cultural modification of genetic motivations provides for new and more viable expression of many of our instinctive, genetically programmed urges into the broader patterns of goals selected and transmitted in a cultural evolution, an evolution that is only indirectly coupled with the heritage transmissions of our gene pool.

Values, goals, or motivations in cultural evolution have been selected indeed because they are coadapted and symbiotic with our genetically programmed goals. Hence they give pleasure and joy when individuals act to serve their coadapted religious community. Further, because certain cultural goals or concerns have been selected independently of the gene pool and have provided better adaptation and viability of our symbiotic nature in its evolving ecological niche than genes alone can provide, those goals have become an essential or sacred part of our heritage. Because of the inherited dynamics of our nervous systems and our sociocultural systems, the higher level of adaptation in our ecosystem through better cultural information patterns naturally yields greater pleasure and joy in the long run exactly because our unenculturated, selfish-gene goals at the instinctive level, while postponed a bit, are enhanced.

To give credibility that many kinds of cultural goals or values would be rewarded in the long run, even if denied by many social and natural events, religious belief systems had to give assurance that their prom-

ised hopes and rewards certainly would be provided ultimately. Hence the rise of beliefs about the future, even after the death of the body, under divine control. In scientific language these concepts readily translate into the longevity (viability) of the information pools of genes and cultures. Before as well as after science, these concepts are ever being tested in each brain where, by selection, they become adaptations to ever higher ecological niches. The reality of immortal values in human evolution properly may be said to be the "soul" for which phenotypes and their heritage patterns are selected.

Because of the inherent weaknesses of humans and their societies in rewarding justice for self-sacrificial service on the part of some, religions properly have ascribed the assurance and payoff of its system of promised rewards and punishments to super-human powers, that is, to the gods or God that far transcend the power and the justice of human individuals or societies. In scientific language these ancient systems of transcendent powers may properly be translated as the universal and interconnected reality system that ultimately creates, governs, and selects our destiny.

In sum, according to my analyses and translations between prescientific religious beliefs and scientific beliefs, the import of the ancient beliefs in general seems to convey something that is essentially real and necessary in the genetic and cultural evolution of humans. Various scientific information suggests that these religious promises of greater reward by following the faith in viable religions have indeed corresponded with what has transpired in the evolutionary history from ape-men into advancing human civilization. This may seem incredible to many scientists and religionists who have not mastered the writings, by me and by a number of colleagues, which have appeared in *Zygon* and which provide widespread support for my general position. However incredible, I have to state it for the logic of my position, even though I know my paradigm is likely to seem paradoxical.

My theory suggests that for humans these religious beliefs and associated ritual and other behaviors have motivated the social altruism necessary for human, nonkin societies to exist. The basic religious orientation to the system of supreme powers, which is of ultimate concern for us, is the primary source and sustenance of our humanity. Without some such beliefs, humans tend to retreat toward short-term, hedonistic, individual, animal-level selfishness and the small kin-group societies of all mammals, while the maintenance of the necessary social order tends to go to the unpleasant extremes of totalitarian coercion.

As evidence, I suggest you will find that, with the lessening of an adequate and largely shared system of values that are shaped by beliefs, the viabilities of societies decline and fall. In more advanced societies

the fall is from a democratic form of government. In both the tribal and the more advanced societies, the fall is toward increasingly totalitarian, policed, or coercive controls to get individuals to do what has to be done for the social order to exist. But of course a police state rapidly becomes unmanageable, uneconomic, and unviable as the degree and intensity of dissension increases. The decline, fall, and breakup into smaller units that are more homogeneous in ideology or genes may be countered if a more valid and widespread religious conviction arises and revitalizes the population's individuals to a new level of altruism that can maintain the viability of larger and more peaceful societies and civilizations.

The rescue from serious decline and fall cannot be done adequately by ethical preachments devoid of the religious or inner motivation necessary for the feelings and behavior to carry them out. Philosophies do not replace religions, unless they succeed in also becoming religious enough to generate motivation as well as ideas. The rescue cannot be done by political agreements devoid of the truly sacred motivation that is necessary for the several factions to keep the agreements. The rescue cannot be done by international or national laws, since the enforcement of laws that suppress or coerce behavior becomes impossible when, for a sizeable fraction of the people involved, people inwardly feel that obeying the laws is not what will profit them most. Religion is the name of the sociocultural agency that has in the past and could in the future convince human minds inwardly to believe in a system of promised rewards and punishments. This leads people to want to do what is good and right and raises them to the necessary altruism that vitalizes a cooperating society of nonkin.

TOWARD A WORLDWIDE RELIGIOUS REFORMATION IN LIGHT OF THE SCIENCES

It should be noted that the picture I have been portraying is not merely one that reflects my subjective experiences but links them with and is dependent upon sociocultural events and scientifically validated theories of the twentieth century. Thousands of colleagues have helped shape and correct my thinking and feeling. Also I have learned from those who doubt my views.

My publications have dealt with many of the complex facets of this new paradigm and its theoretical components, including the places of religion and science within it. Since much of that needs to be understood for my general picture of religion today to become adequately clear and since I cannot review much of it in a few minutes, I shall presume that any who are interested will ask questions and read further in *Zygon* and elsewhere (see, e.g., Burhoe 1975; 1977; 1981;

1982). What remains to be done is that such work should be greatly expanded and should spread around the world.

I should note that thus far the basic source of the developments of the Institute on Religion in an Age of Science and the Meadville/Lombard Theological School and their offshoots, the Center for Advanced Study in Religion and Science and *Zygon: Journal of Religion and Science*, is the *voluntary* association of groups of cooperators outside their regular professional duties. They possess shared concerns about distress signals from the present state of world culture and civilization. These cooperators' views have overlapped enough so that some of them have worked together in spare time for nearly four decades. Each year some have died or moved out but others have joined in the project to produce the results that we can see in the Center and *Zygon*. No one of us alone shapes or energizes the institutions. They are a sociocultural phenomenon, emerging in response to a widely shared network of overlapping concerns and opportunities.

For there to be more rapid progress toward the revitalization of religion that can be credible and operate effectively in the context of minds imbued with the modern sciences, the future will have to provide rapidly expanding funds to enable full-time professional and institutional efforts for the greater acceleration of our understanding and convictions, in order to serve humanity's urgent religious and moral needs.

I am pleased that I can bring you evidence that such insights on the role of religion in the context of the sciences are not confined to the institutions we celebrate here. One might say that the spirit of God is at work, creating a religious and moral reformation in the world. Here I shall limit myself to citing evidence from only two recent books.

First, a couple of years ago I saw a book on table at the Seminary Cooperative Bookstore called *The Origins of Life: Evolution as Creation*, by a German professor of psychiatry and neurology, Hoimar von Ditfurth (1982). In looking through it I was amazed at how close he was to many of our understandings of the place of humanity in nature, the notion of cultural evolution, and the role of religion. I had never heard of him. Second, Phil Hefner recently presented me with Gerd Theissen's *Biblical Faith: An Evolutionary Approach* (1985). To my delight, this book by the professor of New Testament at the University of Heidelberg goes beyond Ditfurth and not only shows indebtedness to Ditfurth, among others, but also to some authors in *Zygon*. Moreover, Theissen presents a view of religion's truth as valid and vital in an age of science, not despite the sciences but exactly because of reinforcement by this new scientific theory of human evolution. His book incorporates much of the theoretical structure which we have published in *Zygon*.

But, on the basis of his very good and extended version of new evolutionary theory, he goes beyond most of us in applying it to the interpretation of biblical faith. His enthusiasm for the fruitfulness of this new paradigm for theology, his own remarkable developments of it, and his revolutionary efforts to formulate a biblical theology that can have a new strength and impact on today's world seem to me to be one of the clearest signs yet of the possibility of a dynamic revitalization of religion, perhaps in time to save us from our present follies.

You would expect, of course, that I would find various problems in theory. For instance, it is not clear to me how Theissen would relate to my view that through the sciences Christianity can not only find a fitting and dynamic role in the context of the scientific world view but also can and must find such a role in relation to the other religions of the world. Of course, this and other problems sooner or later can be ironed out.

But what is most important to me is the fact that this book signals the real possibility of what I have called the greatest of all religious reformations and renewals, starting in the twentieth century. I view Theissen's evolutionary approach to biblical faith as a remarkable effort. Along with many others, it is evidence that at last the expected reformation is surely on the way. Becoming available is a sufficient body of scientific and religious scholars working together around the world by means of correspondence, visits, and publications to bring about a breakthrough. The breakthrough is toward a new paradigm for understanding a harmonious relation of religious concepts to the scientific world view and to the views of other religions.

This I believe could unstop our ears and open our minds to the wisdom and power of the creator of the world and of its life and to our duties and opportunities therein. It could show us broader and more effective ways for communicating the requirements and rewards of the creator than ever before in human history. I believe that, with the help of modern communication technologies, in relatively few decades a religious reformation could sweep the world and bring to new heights the faith, hope, and altruism stemming from a closer union of human minds and hearts with the grace and requirements of their creator.

I believe there are many of us in this community and around the world who will be impressed with the potentiality of such a movement toward the revitalization of religious institutions as our duty and privilege in our service for human salvation under the call and promise of the Lord of History.

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