

Zygon, the Greek term for anything which joins two bodies, especially the yoking or harnessing of a team which must effectively pull together, is a symbol for this journal whose aim is to reunite the split team, values and knowledge, where co-ordination is essential for a viable dynamics of human culture.

We respond to the growing fears that the widening chasm in twentieth-century culture between values and knowledge, or good and truth, or religion and science, is disruptive if not lethal for human destiny. In this split, the traditional faiths and philosophies, which once informed men of what is of most sacred concern for them, have lost their credibility and hence their power. Yet human fulfilment or salvation in the age of science requires not less but more insight and conviction concerning life's basic values and moral requirements.

Zygon has rich connotations in the sciences, where it supplies the biological term "zygote," designating the union of the two gametes or complementary halves of the genetic code essential for the continuation and advancement of life. Here we have the image of two sets of different blueprints for life, each from an ancient lineage. And it is only by their effective yoking that a new generation or a more effective pattern of life can emerge. At the same time, *zygon* has symbolized in religion the union between man and the ultimate reality on which his life depends, as in the Christian "for my yoke [*zygos* in the Greek New Testament] is easy [or good]," or as in the Sanskrit and Hindu cognate *yoga*, meaning union of self with the universal reality.

Ordinarily, in the evolution of human cultures, beliefs and practices about man's most sacred concerns necessarily have been integrated with the concurrent general beliefs and practices—the sciences (philosophies,

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world views, myths) and technologies. Disruption by historical changes of this integration between basic values and science, or between sacred and secular knowledge, automatically brings about pressures for new adaptations of one or the other or both to reintegrate the organization of the culture. Failure to reintegrate satisfactorily has spelled the death of cultures or civilizations.

One might say that because of its radical mutations the cultural "gamete" from father science has not yet found any corresponding gamete from mother religion with which it can unite to form a workable new culture for future civilization. A valid union may require mutations or reformations in religious belief systems, or further mutations in scientific belief systems, or both. The journal *Zygon* is established as a workshop for those seeking ways to unite, in full integrity, the sciences with what men hold to be their sacred values, their religion.

A. WHY RELIGION?

In every human culture, some form of religion has been a central element—some program of seeking and transmitting life's prime values or aims (rights and wrongs) and motivations therefor (hopes and fears). Religions, like languages, are the product of millennia of adaptive cultural evolution. They have evolved highly effective and generally valid messages and systems of communication governing morale and morals. The messages of aim (goals, values, meanings, purposes) and the corresponding motivations communicated by religions are the necessary cultural refinements or extensions of the earlier messages of aim transmitted from generation to generation in the biological heritage of the genotype. Religions guide man's over-all response to the problems posed by the world about him, including the world of his fellow men, in order that the values of life should be maximized. The cultural transmission through language and learning of a system to elaborate and expand the genetically established values and motivations is necessary, because in the last million years man's heritage of wisdom has been increasingly formulated and transmitted by culture. The genetic formulations of his wisdom by themselves are therefore decreasingly adequate, and especially so in an environment of scientific technology. This is equally true for the most vital or sacred as for the more routine or secular aspects of human behavior.

Religions evolve or change in the course of time. Also, like any of the other evolved structures of cultural or organic life, any religion

in the time of its origin and flourishing may be said to have been adapted to serve well its function as one of a number of cultural and organic agencies integrated with one another to provide a viable society. Under the forces producing cultural changes, the change of any one element of a society—whether it be its ecology, its technology, its world view, its political structure, or its religion—may require corresponding changes in other elements in order to maintain an effectively integrated system. While the processes of cultural change or evolution are to some extent taking place all the time, there have been several outstanding historical transformations, such as those from hunting-and-gathering to agricultural technologies; and later from agriculture in isolated tribes or villages to aggregations of these into larger societies whose urban centers became the focus of exchange, government, religion, and special arts and sciences. In these epochal transformations of society, religious reformations took place at about the same times as the other changes, regardless of whether it was the religion or some other factor that initiated the change.

The previous major cultural transformation began some twenty-six centuries ago and operated over a thousand years, more or less. It involved the emergence of the Greco-Roman civilization and the great religious reformations represented by Greek philosophy, Judaism, Christianity, and Islam, in the West; and the great Hindu-Buddhist and Confucian-Taoist traditions of the East. Associated with the rise of urban cultures and their interactions, religions tended to change from primitive, local, tribal traditions and customs to more universal and consciously reasoned ones.

B. THE CONTEMPORARY CRISIS OF CULTURE AND RELIGION

Perhaps the most radical transformation in the evolution of human culture began only three or four centuries ago. We call its central thrust by the name "science." Science is radically transforming man's world view, including his concepts of who he is and of the nature of the forces and realities that shape his destiny. Through technological applications of these new images of reality, science is radically transforming man's ways of life and hence his duties and moral requirements.

Some scholars have asserted that the Judeo-Christian religious formulation was one of the essential sources of this scientific revolution of culture. Whether or not that was actually the case, the fact is that religious beliefs governing our morale and morals in the West have not kept pace with the radical transformation of our world view and of our

conditions of living. The beliefs currently propagated by the Judeo-Christian, as well as other religious traditions, remain largely those which fitted the world views and conditions of life of a prescientific culture. This time lag in the reformation of our religion to integrate effectively with the scientific reformation of our world view and of our conditions of life stems from the vastly accelerated and even exponential pace of cultural change produced by the methods of science, while the evolution of religious ideas and practices, for the most part, has been geared in with the much slower processes of cultural change characteristic of the past. The contemporary crisis of culture is this disjunction between those agencies—religion and the related arts—which provide man with morale and morals from those other cultural agencies—science and its technologies—which have brought man into a new world.

History, biological as well as cultural, tells us that, when systems of life are faced with unprecedented threats to tried-and-tested patterns, new and better ways are possible if there is the courage and ingenuity to seek them. One thinks of the apocryphal story of the two fishes of Paleozoic times crawling awkwardly on their pectoral fins out of the vanishing pools of water and choking on gulps of dry air; and one says to the other: "Maybe we ought not try to live on dry land, for perhaps some of our descendants will invent an instrument to annihilate all life." But it would seem that the path for them is the path we must choose. We cannot turn back the direction of time. We must advance into the dangerous future and strive to find higher and more adequate patterns of preserving and advancing life on earth. In the twentieth-century flood of the most radical reformation of culture in human history, immersing all cultures of men simultaneously in new knowledge and new technology, there must be a corresponding reformation of religious ideas and practices, probably far exceeding those of the centuries which gave rise to Buddhism, Christianity, and other great religious traditions of the world. This journal is established to serve it.

C. CHALLENGES TO BE MET

1. Because the scientific world view is fast spreading to the minds of all men—not only in Christendom but in all other religious cultures of the world—and because the sciences present such radically new models or myths of the nature of man and of the forces determining his destiny, people everywhere are losing credence or faith in the models or myths as formulated in their traditional religions. Hence, people are

losing their traditional sense of sacred purpose, meaning, duty, and hope. But, if a culturally transmitted conviction of sacred duty and hope is essential for man, we have to find answers to several questions, including: Where are the prophets and seers who can reformulate our religious images to fit the new conditions? How can religious images be reformed so that they are both credible in terms of the scientific images and, at the same time, adequate for man's basic personal feelings and moral needs? How far can the contemporary, strange, new scientific images of the nature of the human self and of the nature of the forces that determine human destiny become a part of the new religious imagery, replacing the images of the prescientific world views? How far do the scientific images force revisions of our basic hopes and fears or of our basic notions of right and wrong? How far can any religious interpretation be made credible and effective if it ignores or violates the scientific images of man and the world?

2. The new interdependent world community produced by modern technology presents all religions with a problem quite distinct from their conflict with a scientific world view. The various religious systems of the world, which functioned well enough in semi-isolation from one another, are now thrown together as disjointed components into a single world-wide social machine, where the necessary intercommunications tend to smash those discordant religious components that do not suitably mesh. This tends to strip men of effective personal beliefs and create dangerous friction in the social machine. Can a discordant religious pluralism be expected to generate a harmonious world society of Hindus and Muslims or Communists and Catholics? How much do the various religions and moralities basically differ from one another? What can we do about cultural and religious synthesis? To what extent is the emerging universal acceptance of the scientific imagery of man and the world a valid ground for a more common or universal religious imagery and community in the new one-world society? To what extent are differences about fundamental values and morals tolerable, desirable, or even necessary?

3. The technologies growing out of the sciences have placed upon men new problems of morale and morals which did not previously exist during the formative periods of the traditional religions and for which they, in general, have had no occasion to formulate adequate responses. The hazards of nuclear war, for instance, pose a problem for the continuation of those religions which in the past have justified warfare as the ultimate means of settling interreligious or intersocietal disputes. In spite of some Christians' hopes for peace on earth, Chris-

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tianity's history has been one of terrible wars both with other religious groups and within Christendom. Where is the traditional religion that has the capacity to persuade men of all cultures that nuclear war is taboo and which can offer other means and assurances for justice in the world? Besides atomic war, there are many other new problems from technology. Where is the religion that can convincingly tell man what is his primary duty when automation and cybernation make obsolete his duty to earn his bread by the sweat of his brow? What religion offers a clear meaning and purpose for man when his machines may soon do much better than he most of what he has supposed he was born to do? Where is the religion which may have greater wisdom in the face of the population explosion than the once significant command to be fruitful and multiply? Now that men have the capacity consciously to alter not only their sacred cultural inheritance but also their "God-given" genetic inheritance—and, in fact, according to some geneticists, are already unwittingly causing a deterioration of the human gene pool—where is the religion which can guide man's preservation and reformation of the sacred values in his genotype? How radical can and should the evolution of the genotype be to integrate viably into the novel, culturally evolved technologies of the future? Then there is the acceleration of the tempo of cultural change. New crises of morals and morale are thrust upon men so rapidly by new science and technology that the slow pace of cultural evolution, which was characteristic of and generally sufficient for traditional religious evolution in past millennia, cannot possibly be adequate for a religion for tomorrow. How can men's convictions about what is sacred for them be reformed at the faster tempo necessary to keep pace with science and technology?

D. WHY ANOTHER JOURNAL?

This journal is set up as a communications channel for those engaged in exploring reformations of man's religious beliefs to tie in effectively with the new world views and circumstances brought about by the sciences. In spite of the proliferation of journals in our day, there is not yet an academic forum where the mutual implications of contemporary scientific knowledge and the religious values of the world receive serious and sustained discussion. Although we find an increasing number of scientists concerned and writing papers on these questions in a new way, traditional religious and theological journals have not generally been open to them. Their papers often remain unpublished or are scattered and lost in isolated journals seldom seen by the varied groups of scientists, theologians, philosophers, and other scholars who share

similar interests and whose mutual stimulation and critical analysis and commentary would improve the relevance and the rate of progress of the movement. There is no stage on which a full cast of this drama can be seen together.

There are, to be sure, various journals for publishing papers in the scientific study of existing patterns of religions and of the historical interactions of science and religion. But we are committed to the task of reformulating religion for an age of science, not simply analyzing scientifically or historically what has gone on thus far. There are, also, within religious institutions, many scholars and publications devoted to showing why they judge scientific advances to have little relevance or meaning for religion and theology. But it is just the inadequacy of this view which we are established to counter. Even the so-called liberal religious journals, which some decades ago might have welcomed attempts to relate religion and science, we have found, are not today much interested in the problem. That we represent a new field, or a novel approach to a former field, is evidenced by the paucity of university-fostered explorations of the area.

E. CRITERIA OF VALIDITY AND CONTINUITY

Lest there be some who fear that we look forward to revising old religion or fabricating new religion to suit the whims of some particular group of men, let it be noted that neither science nor traditional religion permits man to believe simply what he happens to wish or want. We hold that true statements and valid patterns of life are those which can bear repeated tests for validity by many experiencers in many ways, times, and places. We adopt for problems of religious believing and behavior this criterion for validity which has been formulated by the philosophy of science and which is attested to by the evolution or history of both organic and cultural life forms—including religions.

On the question of whether to reform or to create a wholly new religion, we fancy we are scientifically informed enough to understand that we cannot lightly throw away ancient wisdom in any religious tradition. Man is not clever enough to produce a new language, religion, or any other cultural structure of long evolutionary history without starting from some model provided by prior cultural evolution. Even the especially rapidly evolving languages or concepts of the sciences and mathematics always arise out of the foundations laid by the cumulative experience of prior generations. Continuity of basic functions is as essential in the evolving patterns of cultural as in biological organization. Basic discontinuity is another way of spelling extinction.

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For us, what is true and what is right and what will prevail are not determined by military force or by any other arbitrary human wishes or pressures but essentially by those forces presented in the scientific picture of the historical flow of events in history—forces ultimately outside of man and inherent in the nature of things, forces which brought forth and continue to rule over all life including man. We suggest that the best revelations of these forces today come from the sciences. But these forces, and the values or goals they require, are neither finally nor completely revealed by the sciences, nor are they discontinuous with values in the great religious traditions.

To conserve the subtle values that still remain valid heritages from a long historical experience and yet to meet the conditions of a new age, we suggest that the problem of religious reform is essentially akin to that of the reform of medicine, which is a cultural institution closely tied to religion in human history. In both institutions we see a long history of wisdom from the past fusing with newer wisdom, and one does not see this evolution as being brought about by brash reforms that throw out all that is old because of some corrective new insights.

In both medicine and religion we see fundamental values and wisdom for human salvation formulated long ago, millions of years ago, in the genotype or “wisdom of the body,” still largely valid and essential today—for instance, appetite for health-giving foods and love for fellow creatures are sacred commands first encoded in the genotype long before human culture arose. In both medicine and religion we see sacred values or wisdom implicit in the prescientific accumulations of cultural wisdom as still valid and essential—for instance, various taboos and self-restraints against incest and murder.

And for religion as for medicine, we see the new revelations of the sciences as a boon for better theory and practice to meet the requirements of life in the new age. We view the scientific ways of establishing knowledge as superior to the earlier sources of revelation in human history. While recognizing the finite, tentative, and relatively feeble character of the best human knowledge, we nevertheless feel optimistic that fruitful results can come to a theological as well as to a medical science from this approach. Certainly medicine has been greatly transformed by scientifically based reformations or innovations of belief and practice, and some of these revisions may be said to be beneficial to mankind. The aim of this journal is to present similar, scientifically based revisions or innovations of belief and practice for religion.

We do not envision this journal as being so much concerned with the practical applications or the specific reform of religious institutions

and practice as with a pioneering exploration of the theoretical problems and possibilities. Such exploration in the realm of ideas comes before reform of practice in any applied science, but especially in areas so vital and sacred as medicine and religion. Careful testing of validity should precede reform in practice. The various religious institutions may apply any seemingly useful new insights as they see fit, just as private and institutional medical practitioners may test and adopt or ignore various new suggestions for prophylaxis or therapy that come out of new implications of the sciences for human well-being. We suspect, from our picture of the nature of men, that they will rapidly enough adopt what they see is good for them, as they have in such large measure as a result of the dissemination of new scientifically based medical theories. But the first problem, and the one to which we address ourselves, is imaginatively and informedly to structure theories or beliefs about man, the world, and man's hopes and duties thereunder, which integrate with our new heritage of valid knowledge and, at the same time, effectively operate to supply our religious needs. As in medicine, some ancient traditions may be substantiated and given new significance by the light of science, and some will require reform.

F. SOME FORMAL CHARACTERISTICS

No doubt some of the proposals that will appear in these pages will be as inadequate as those of previous attempts to reform religion, whether in prescientific tradition of religious reform or in the light of the more recent revelations of Galileo, Newton, Darwin, Marx, and Freud. Because we fear the dangers of superficial, unsubstantiated, and uncriticized essays to reformulate religion in the light of the sciences, we propose the journal as a forum, not only for the presentation of new insights from any relevant sources of information and imagination, but also for the publication of critical evaluations of them from competent and well-grounded sources of information. The editors will profit from all comments and criticisms submitted, and intend to publish a well-rounded selection of the most cogent and best substantiated commentaries and criticisms, some of which will be solicited specifically by us.

In addition to general papers and groups of papers seeking to interpret, clarify, or reformulate religion in the light of the sciences, and the critical commentary thereon, we shall undertake to present critical bibliographies and reviews of the now-scattered literature on the subject, and for this we solicit the co-operation of any interested readers.

The articles in the present issue are papers all directed to a common theme and given at a recent conference. It is expected that many future

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issues of this journal will also present such interrelated but varied approaches to a common problem. Other issues will present papers on a variety of significant but not necessarily immediately interrelated topics. Unsolicited manuscripts in the English language will be welcomed from anywhere in the world for examination by the editors, as well as suggestions from readers about where we may find already existing or potential manuscripts relevant to and significant for our expressed purposes. We plan four issues of the journal in each year.

For those interested in the roots out of which this journal has grown, we present in the back pages of this issue the story of the Institute on Religion in an Age of Science (IRAS) and its joining with the Meadville Theological School for the publication of this journal. The papers in this present issue further characterize certain elements of this background, since they were written by persons who have been working with either or both IRAS and Meadville.

We cannot predict with any certainty how much significant new religious truth the efforts of this journal will produce. But under the urgencies of the times and with a hope and faith in the productivity of scientific information and method when applied to any problems including those of religion, we take upon ourselves (and urge others to join us) the labors and the risks of reformation and new birth. We recognize that the ultimate judgment and selection of human beliefs and behaviors are made, not by the wisdom or foolishness of men, but by historical forces that far transcend our puny wisdom fully to comprehend. We conceive it our duty and our hope to stimulate and participate in this search: How can man effectively join his understanding of reality from the sciences with his sense of what for him is sacred?

THE EDITORS