

## CONCERNING THE ECOLOGICAL MATRIX OF THEOLOGY

by *Daniel F. Martensen*

*Homo sapiens'* greatest victory is now proving to be his greatest defeat. He has put rivets in his dreams in the perennial war against the mean and destructive forces of nature; that war now has nearly been won. However, with much of nature vanquished, the victory looks a bit anemic; man has destroyed or is destroying what he must have.

Ecology, broadly understood, has now become a grim synonym for survival. As theologians and/or scientists as plumbers or social workers, we have obviously to make some tough decisions. Should we desire not to travel down the quite comfortable and amiable pathway to destruction, we must learn to dream and think in an ecological matrix. Should we desire to go out in style, we must at least be honest. This honesty would demand that each morning after brushing our teeth we would look in our collective mirrors and chant together: "To hell with posterity! What have the unborn ever done for us?"

### THEOLOGY IN AN ECOLOGICAL MATRIX

First, I will sketch some general characteristics of a theology done in an ecological matrix. The word "matrix" is here used to indicate that which gives form or foundation to something enclosed or embedded in it.

Such theological activity would recognize that everything is intricately interlocked with everything else. This is not to speak only of the interrelationships within or among natural ecosystems but also of the ideational, institutional, and cultural ecosystems we have superimposed upon the natural. Furthermore, this mode of theologizing would recognize that the academic world thrives on professional ideological combat rather than on a creative interplay of ideas. We should all hope that our education might prove to be weaker than our desire to survive and guard against creating any more scientific or theological fly bottles into which people might heedlessly go.

Daniel F. Martensen is professor of historical and philosophical theology, Hamma School of Theology, Springfield, Ohio. This paper was presented at the seventeenth summer conference of the Institute on Religion in an Age of Science, Star Island, New Hampshire, July 25–August 1, 1970.

## ZYGON

Like a Mozart sonata, theology done in an ecological matrix would reflect spontaneity but would be highly disciplined, magnificently sensuous, and austere intellectual. It would listen to Aristotle, who, in the beginning of his *Ethics*, says that it is a bad scientific method which seeks a greater degree of precision in any field than the data permit. The *locus classicus* for methodological caution would also halt our common act of raising a circumscribed and contextually rooted idea to the level of unlimited or inappropriate application. It would also put the brakes on the widespread theological practice of baptizing our biases in ontological, dialectic, or process generalizations.

Recognizing that he is working within an ecological matrix, the theologian notices that his eyes are challenged to travel more widely than ever before. Too, he sees that most theologies which he has inherited are too brittle and chiseled, too rigid and conventional, and cannot exhaust the ecological complexities of the times. Ecological thought patterns have previously been poetic, exotic, and illustrative elements in our Western religious thought; they must now become integral. Theologizing in an ecological matrix will prove in the future to be more than a truant absorption or dilettante escape; it will prove to be both a corrective and a creative force.

### SKELETONS AT THE MODERN RELIGIOUS BANQUET

Ecologically embedded theology is a corrective.

There are many skeletons at the banquet of contemporary religious thinkers—skeletons who feast on private ideas topped with magnificent dreams of systematized grandeur. Let us glance at three of the most basic of them: theism, historicism, and naturalism.

In our Western world prevails a common assumption that one must first straighten out his thinking about God before he worries about being religious. There appears to be no necessary connection between the two. As all professors know, it is quite acceptable to be either a theist or an atheist and that neither carries with it any automatic passionate commitment to anything. Taking their signals from the many metaphysical enterprises in past or present philosophy, some theologians are convinced that their task is to construe the common faith in such a way that they can answer the fundamental question of the reality of God. Theism becomes the stage backdrop for the drama of Western religion. The shape of man's questions about God is sharpened up, and the God concept is brought into congruence with it.<sup>1</sup> In this theistic exercise, both God and man are lifted out of the natural-

historical-sociological matrix which is basically ecological. So, too, has been the case with historicism.

Just as the theist is convinced that his knowledge of God is qualitatively different from other kinds, the historicist is certain that one must learn about history in a way quite unique. From at least the time of Hegel and Herder (possibly from the time of Vico), historians have seen their method of study to be quite distinct from that of the natural scientist.<sup>2</sup> One need not point to specific historians like Toynbee, Wells, or Collingwood to observe that the interpretive grid of assumptions which one carries with him to the study of history molds the results of the study.

The most all-pervasive historicism of the Judeo-Christian tradition has been the ideology of two-worldism. We have talked of time and eternity, history and myth. Believing that we must anchor our eternal myths in history, we find that these myths have become half of a bipolar state of tension within which Western religious people have lived. Everything must be both history and eternal myth to many Christians because they live on two ideological planes. As a result of new scientific methods of study and the conclusions reached by modern biology and physics, this old view of history has been shattered. As Lynn White, jr., the historian of technology at the University of California, says in *Machina ex Deo*:

For multitudes reared in the traditional faith, the bipolarity which had been basic in Christianity seemed now lost: the pole of eternity remained, but the pole of time had been destroyed, and with it vanished the magnetic field in which, for nearly two millennia, the Christian life had flourished. . . . The nexus of myth with historical fact was broken.<sup>3</sup>

The ecological crisis and the demands placed upon us to think in an ecological rather than an ideological matrix destroy the long-standing symmetry of Judeo-Christian historicism. We now turn to the problem of naturalism.

There are many kinds of naturalism which have informed religious thought through the centuries. This particular skeleton at the modern religious banquet is active and moving about quite vigorously. Its powerful present form is evolutionism. In Julian Huxley, in C. H. Waddington, as well as in some process theologians, it stands at the base of ethics and/or theology. If man can nudge this evolutionary process in the right direction, what he does and what he is are of value. If he obstructs it, the opposite holds. So it is said.

Nearly all forms of evolutionism which have been bolstering their respective types of religiosity have now been called into question. We

## ZYGON

know that most evolutionary lines end up in extinction. There is no clear-cut theoretical way that we can extrapolate from the data on evolution and esteem what is good or what is not.<sup>4</sup> Evolution gives us no clues for the task of appraising evolutionary directions.

The ecological crisis has now raised the question of the survival of the human species. Is there a resonance or a dissonance between our human categories of thought and patterns of action and the design of the structures of the world in which we live?<sup>5</sup> This kind of question demands a reposturing of others—particularly those related to theism, historicism, and naturalism. Many ideological assumptions presume to be the sole axis around which the theological world has to turn. Some take the shape of psychologism—Freudian, Jungian, Adlerian, Skinnerian, Rogerian, Maslowian, or whatever. Some might be denominational, economic, political, or sociological *isms*. All of these have been the mothers of theologies of many varieties. The question of human survival now forces a shift in the Western theological mind-fix from *mater* to *matrix*. The others of religious thought are no longer keeping theological homes of acid-proof quality. Like Peer Gynt, those who reside in these homes stand at the end of a pilgrimage of devout pretenses. The theologian's task is to gain imaginative leverage on a radically new set of problems. For this reason, we must look at the creative dimension of theology in an ecological matrix.

### TWO FOCI OF THE ECOLOGICAL CRISIS

In relationship to our past, we face the difficult task of creatively posturing ourselves between submissive misery and desperate rebellion. Theology dare not engage in a ventriloquial transaction with familiar religious questions of the past; at the same time, it dare not stage an iconoclastic orgy of proud violence, thereby killing its memory. No, it must recognize that an examination of the origins, conditions, and products of human creativity is the chief theological commitment of our generation. In the process of such examination (and the patterns of action which spin off from it), long-standing pillars of human habit will be modified.

It was said earlier that *matrix* indicated that "which gives form or foundation to something enclosed or embedded in it." The phrase "ecological matrix" refers to ideational, institutional, and cultural ecosystems as well as to the natural. The generic phrase "ecological matrix," then, includes a plurality of matrices. The term "matrix" in our discussion refers to any pattern of human capability or skill, any historical or cultural pattern of activity which is informed by a set of

rules. It was asserted earlier that many of the current matrices of religious thought have been blocked because the rules of their respective games have proven to be inapplicable to the problems at hand.<sup>6</sup>

One cannot limit the examination of creativity to the traditional "religious" matrices. To do so would be to subvert the stated task of looking at theology in an ecological matrix. Hence, the creative acts of the pure scientist, the technological engineer, the inventor, the pianist, the sculptor, the literary critic, the historian, and innumerable others are the focus of our attention. This, one might say, demands a journey of such complexity and duration that it could arrive nowhere. There is, however, no choice but to begin the trip. As we begin, we are not entirely without guidance.

It is apparent that the ecological crisis has two foci: (1) man's creativity and (2) the impact of man's use of his creativity on the world's environment and its future. The crisis is often in a facile way attributed to rapid change, but behind that obviously lies man's creativity harnessed to technology. However, one central ingredient in the crisis is that we no longer have the leisure to wait until the creative visions of the present are belatedly accepted through hindsight. The process of "paving paradise and putting up parking lots"<sup>7</sup> is happening too rapidly.

It is no accident that these two foci (man's creativity and his transformative power) have been nearly neglected in the history of both Protestant and Roman Catholic thought. Even the discussions of "nature and grace" depend too entirely upon limited assumptions about the role of the Bible within a two-world, myth-history cosmology.<sup>8</sup>

In addition to some degree of topical clarity, we have available to us the thought of a very few men who have been able to deal effectively with the contemporary kaleidoscopic cascade of data. With one of them, Michael Polanyi, we might travel quite a distance. He, more than most thinkers, has recognized that the circularity of a conceptual system religious, scientific, or technological tends to reinforce itself by every contact with a fresh topic. He has made a beginning in the difficult task of bringing together the two foci of the ecological crisis.

The best touchstone to be used in getting at the question of man's creative transformative power is that of epistemology. How does what man knows tie up with what he does?

Polanyi regards knowing as an action that requires skill. To quote: Skillful knowing and doing is performed by subordinating a set of particulars, as clues or tools, to the shaping of a skillful achievement, whether practical or theoretical. We may then be said to become "subsidiarily aware" of these par-

particulars within our "focal awareness" of the coherent entity that we achieve. Clues and tools are things used as such and not observed in themselves. They are made to function as extensions of our bodily equipment and this involves a certain change of our own being. Acts of comprehension are to this extent irreversible, and also non-critical. For we cannot possess any fixed framework within which the re-shaping of our hitherto fixed framework could be critically tested.<sup>9</sup>

Hence, for Polanyi, the goal of a skillful human activity is achieved by the observance of a set of rules which are not known by the person following them. This is like the "code" in a matrix, the tacit dimension of man's knowledge. Rules of art, for example, do not determine the practice of art. People learn in part by emulation; an art which is not pursued for a few decades is altogether lost. This is why Polanyi says: "It is pathetic to watch the endless efforts—equipped with microscopy and chemistry, with mathematics and electronics—to reproduce a single violin of the kind the half-literate Stradivarius turned out as a matter of routine more than 200 years ago."<sup>10</sup> In our thinking and knowing, then, we must attend to the pattern rather than to the fragments of the pattern, we must hear the tune, not the individual notes. All particulars lose their meaning if one loses sight of the design which they jointly constitute.<sup>11</sup> This is true for all types and kinds of human knowledge. Like a tool in one's hand, the linguistic or mathematical sign or symbol can be seen as such only in the eyes of the person who relies on them to signify something. This reliance, Polanyi says, "*is a personal commitment which is involved in all acts of intelligence by which we integrate some things subsidiarily to the center of our focal attention.*"<sup>12</sup> This capability of man makes him unique among the animals. He is able with passionate commitment to contrive signs, to determine whether they fit the task at hand, and lastly to interpret their alternative relations. Other animals have these kinds of faculties but they cannot combine them.<sup>13</sup> Polanyi says that to learn a language or to change the meaning of words is a

tacit, irreversible, heuristic feat; it is a transformation of our intellectual life, originating in our own desire for greater clarity and coherence, and yet sustained by the hope of coming by it into closer touch with reality. Indeed any modification of an anticipatory framework, whether conceptual or perceptual is an irreversible heuristic act, which transforms our ways of thinking, seeing, and appreciating in the hope of attuning our understanding, perception or sensuality more closely to what is true and right.<sup>14</sup>

Even though many of us feel that Polanyi's introduction of a classical metaphysics into his discussion represents an intrusion into rather than an organic part of his pattern of thought, we can move with him a bit farther.<sup>15</sup>

Certainly it is impossible for us to arrive at new interpretive frameworks by simply continuing to apply previously used ones. Creativity does not happen when we diligently perform a previously known and specifiable procedure. Originality moves beyond the mere application of existing rules. As Polanyi says, we have to

cross the logical gap between a problem and its solution by relying on the unspecifiable impulse of our heuristic passions, and must undergo as we do so a change of our intellectual personality. Like all ventures in which we comprehensively dispose of ourselves, such an intentional change of our personality requires a passionate motive to accomplish it. Originality must be passionate.<sup>16</sup>

Any statement can be made in good faith or as a lie. The difference is that the truthful statement commits the speaker; he believes in what he says. He takes on the limitless implications of what he has said. He withholds his belief from the untruthful statement and thereby launches "a leaking vessel for others to board and sink in." No intelligence operates outside a fiduciary framework.

A theological enterprise based on creativity rather than ideology has to move organically from the private to the public, from the personal to the institutional. It seems that creativity binds all human decision-making processes together and ties man to his environment. Focusing on the psychological dimension of creativity permits us to shift quickly from the person to the *polis*.

Karl Menninger has defined a neurotic symptom as an "alarm signal that gets stuck." When an older person constantly repeats patterns of behavior which were developed early in life to deal with uncontrollable problems or imaginary dangers, he acts like a rat trapped in a maze. Hence, behavior becomes divorced from the way things really are at the time. The result is rigidity and a paralysis of creative powers. The educational system in the United States from kindergarten through graduate school, with few exceptions, reinforces the repetitive patterns of human behavior. At times, the repetitive drills through which students are put move them gently into the involuntary repetitious behavior patterns of the neurotic. We are gradually coming to see that close to the core of creativity is the cracking apart of rigid, formalized patterns, which permits what is familiar to be seen in new relationships and with new illumination.

As the educational example indicates, the question of creative people is tied to the question of a creative community. Institutions which suffer from neuroses cannot produce free, creative individuals.<sup>17</sup> Why is it that bankers and industrial managers have a difficult time recognizing blatant environmental pollution and hard-core poverty? It may

## ZYGON

have something to do with alarm signals that are stuck. The irony of our ecological crisis is that the very artifices that man has created now control his thought and action. We have, as Polanyi says, tacit powers which give shape to our adherence to a particular kind of culture and hold up our intellectual, artistic, civic, and religious deployment within its framework.<sup>18</sup>

Since the breakdown of the monolithic medieval world in which the touchstone to meaning was the ceiling of the Sistine Chapel, we have tried to avoid the emptiness of sheer self-assertion. We have tried to put the authority of reason and experience in the place of supernatural ecclesiastical laws and sacred texts. It is now evident that science, be it pure science (whose "discoveries" cannot be patented) or applied science (whose "discoveries" can), has fettered human creativity as brutally as ever the church did. It is now evident that scientific ideologies couched in objective phraseology have recruited man's most noble hopes in the service of tyrannies which threaten to destroy life itself. Had it not been for Bohr's principle of complementarity, Einstein's theory of relativity, and Heisenberg's principle of indeterminacy coupled with the disturbing awareness that Gulf Oil and General Motors are not yet toilet-trained, we might still believe that our universe is one immense law-abiding machine. Our universe now looks more like a painting of Jackson Pollack. The old verbal distinctions made between art, science, and religion are now disappearing. Because no formulation can encompass the fluid plurality of the world, we must learn to play with our symbolic constructions in a new way.

The fact that our technology produces millions of tons of plastics, aluminum cans, radioactive material, and fumes which cannot be recycled in natural ecosystems is indicative of a fundamental *human* problem. Man refuses to recycle his symbols and his passions in the ecosystem of natural human history. This being the case, his institutions could not but become frozen embodiments of ideologies with the power to kill both natural and cultural ecosystems. All ideologies rely on a facile optimism, because they deny contradiction, modification, or substitution; creative ideas do not. As Aldous Huxley said in 1963, "Only when we get into our collective head that the basic problem confronting twentieth-century man is an ecological problem will our politics improve and become realistic."<sup>19</sup>

It appears that in the Western world we are not free to play creatively with our symbols, because we have made a Faustian pact with ourselves to sell them. What else would lead people to verbalize with vigor and sincerity that technology will be able to solve the problems caused



by technology? We live by the sale of our wits. Gerald Sykes says it this way:

Our wits must be packaged attractively or they go unnoticed. Our wits express themselves in symbols, but the symbols must seem real if anyone is to pay real dollars for them. . . .

We begin to understand an inherent ethical catch in the new technical order, its obligation to rely on the *misuse of symbols*.<sup>20</sup>

This phenomenon is obvious in the commercial world and in the arena of politics; it is also present in art, science, and theology. Academic people, above all, have remarkably polished ways of hedging and removing themselves from the concerns of other people. Our task in part is to find ways of playing with our symbols in such a way that socialized morality might be tied up with personal morality and that personal commitment might be always linked to democratized ideas. This is why Arthur Koestler writes:

The creative act, in so far as it depends on unconscious resources, presupposes a relaxing of the controls and a regression to modes of ideation which are indifferent to the rules of verbal logic, unperturbed by contradiction, untouched by the dogmas and taboos of so-called common sense. At the decisive stage of discovery the codes of disciplined reasoning are suspended—as they are in the dream, the reverie, the manic flight of thought, when the stream of ideation is free to drift, by its own emotional gravity, as it were, in an apparently “lawless” fashion.<sup>21</sup>

Important steps have been taken by Finley Eversole in his educational experiment known as Creative Society in New York. He has observed a new pattern or code of rules which appear to be part of creative games played with symbols. Some rules by which creative minds operate include “inversion,” that is, inverting the normal order of perception; “juxtaposition,” that is, placing strange worlds together; “identity of opposites,” that is, suspending of the “law” of noncontradiction; “pictorial thinking,” that is, thinking in pictures rather than words; “body thinking,” that is, bodily identifying with an object or a problem. In all of this, there is a kind of deforming of the world as we usually see it. Just a glance at the ghastly faces drawn in Leonardo’s *Sketchbook* hints at the fact that the artist has always deformed the world in order to recreate it.

The scientist, theologian, artist, teacher, and suburban housewife must all recognize the implications for them of living in an ecological matrix. The fact that the English origin of the word “ecology” is only one hundred years old (1873) suggests the massive reorientation which is demanded of the scientist. For centuries now, technology has been

## ZYGON

divorced from science, science from humanistic endeavors. Now we see that none will survive separately; yet with dogged persistence, we stand in our own rivers of habit. White observes that science since antiquity has been aristocratic, speculative, and intellectual in its posture; technology, on the other hand, has always been lower-class, tactile, and action-oriented:

The quite sudden fusion of these two toward the middle of the nineteenth century is surely related to the slightly prior and contemporary democratic revolutions which, by reducing social barriers, tended to assert functional unity of brain and hand. Our ecologic crisis is the product of an emerging, entirely novel, democratic culture. The issue is whether a democratized world can survive its own implications. Presumably we cannot unless we rethink our axioms.<sup>22</sup>

The self-confidence of the scientist is now shaken. The age demands, particularly through the voices of the young, that the scientist integrate his thought and his life. The mathematician cannot separate his work from that of the biologist-geneticist; these plus the ecologist, environmental artist, philosopher, theologian, and psychologist form a linked chain. One of the ironies of specialization has been the birth from it of its opposite.

One of the major foundations of Western science was natural theology. Today we recognize that the theological-motivational power behind science helped form it and then diminished. Even though this force is spent, it does not seem to have been replaced with anything else. White asks:

Are modern scientists quite sure why they are pursuing science? Science is fun, and the exhilaration of the chase may keep it going for a long while. But will scientific advance continue without more serious impulsion?<sup>23</sup>

Nowhere is the challenge to the scientist stated more clearly than when he says:

Those responsible for the statesmanship of science must develop a scientific understanding of science itself. They must become increasingly aware of the ecology of the scientist.<sup>24</sup>

### TOWARD A THEOLOGY OF CREATIVE DESIGN

The corrective and the creative dimensions of theology in an ecological matrix fuse into one, unless they are separated for the sake of discussion. Keeping them separate no longer assists. Therefore, let us collapse them and hope that what has been said so far leaves a somewhat coherent residue, and suggest the following: *Theology in an ecological matrix must have its gestation somewhere deep in the interdisciplinary*

*description of the pluralistic natural historical-sociological contexts of life. It must take shape as a creative vision embodied in action and leaning into the future as an organic, designed dream.*

Now let us briefly unpack that statement.

The impact of the ecological crisis on religious thought and life demands a new description of the religious task and its uniqueness. Religion or theology in an ecological matrix can be characterized neither by *fides quaerens intellectum* nor the reverse but, rather, as a creative trial of spontaneous passions carefully in touch with information, of one's biases in touch with the biases of others, a trial of the past through the disciplined effort of understanding what has happened, a trial of our proleptic visions in relationship to their sources.

Theology of the future will be a theology of creative design. Its method will be precise yet in touch with all other methods used in any human endeavor. In its precision, it will attempt to describe as carefully and as accurately as possible the "codes" or "rules" which govern the various matrices of human life, natural and cultural. More than that, it will create and advocate parabolic designs which accurately reflect the "codes" of human life in its natural-historical settings and, at the same time, point to the distinctively religious patterns, be they Christian or whatever. A theology of design would recognize that all facets of one's life *in* the world and *with* the world inform both the seemingly arbitrary choice of historical (or other) data and the design of relationships in the data examined. Taking such a position would indicate that the theologian would welcome the exposure of the subsidiary awarenesses inherent in his decision to examine one matrix rather than another, or to place matrices side by side to act as a catalyst for imagination. Such a methodological posture turns back upon itself and permits the theologian to join with others in calling into question what he is doing. In order that there be creative interplay between those interested in "religious" matters and those who are not, there must be methodological overlap. A theology of design should offer a good chance for men to communicate about matters of common concern. This is so because a theology of design would involve no hierarchical structuring of the innumerable matrices of human knowledge and the accompanying symbols.

In participating in the creation of parabolic designs, theologians might playfully place the idea of the religious parable beside that of the geometric figure of the parabola. The parabola is the right geometric form to be used in the construction of searchlight reflectors. With this

## ZYGON

mechanism, one can focus all of the light in a straight line perpendicular to the directrix. The religious man or theologian in participating in the interdisciplinary process of creating parabolic designs uses a section of his distinctive memory in such a way that he can project into the future, illuminate it, and make designs upon it.<sup>25</sup> The creative dimension of a theology of design is permitted by collapsing the traditional circumscribed systematic structure-building enterprise into the ecological matrix and seeing its life there as an indispensable motif in the world's symphonic prelude to its future.

To shift back to an earlier metaphor, when a searchlight throws out a beam, the target is as important as the source. Theology of design will be task-oriented. Certainly theology has proposals to make about future patterns of human life; it must also suggest and take responsibility for strategy. Theology will celebrate the wide scope of issues that impinge upon its distinctive passional commitments and will help in both the diagnosis and the cure of contemporary ills. Contemporary theology is comparable to the skyline of Los Angeles on an evening when there are many grand openings. Numerous beams of searchlights poke their way in crazy gyrations to the misty clouds or dissipate into the sky. Periodically, usually by accident, a bird is illumined. There is now the possibility that theological as well as scientific energies might be redirected, hopefully in concert. This cooperative exercise would be characterized not by bare generality but by a vivid specificity of relationships; it would accent not something *about* or abstractions *from* but, rather, what pattern there is and might yet be.

I have referred to distinctive religious patterns of thought and distinctive Christian memories. Most of us stand waist-deep in a river formed by the convergence of a thousand natural-historical-sociological streams. In the midst of this is a current, sometimes felt, sometimes not—a current of memory coupled with hope. It is a current of promises and visions which can give some direction not only in our task of caring for the earth and correcting our ideological modes of life, but also in energizing our creativity.

The old scientific-theological controversies are being swamped by the radioactive, plastic, foil, and sulfur pollution of a new age. In the midst of it, we face an incredible dilemma. We are at a crossroad. What do we do with our loves and our agonies?

White says it this way:

We stand facing a cross. . . . Drawing on its Jewish traditions, the early church flanked the cross with an apple at one end of time and a trumpet at the other.

That symmetry is destroyed, but its crux remains. In every age men have cast a net of symbols to catch truth, and it is the nature of symbols that as their mesh is fine they obscure what they capture. Yet in each generation this man who was crucified reaches through the enveloping web and touches us with bleeding hands; and we may touch his side.<sup>26</sup>

Some of us will continue to commit a good bit of our energy to the further exploration of the possibilities inherent in memories such as this. Some of us, too, will continue to pour time and energy into a corporation (be it ever so sick) which has as its most noble mandate that it kill itself in order that a promise may be realized—a promise that all things can be made new (the promise that man shares the power to heal wounds and mend brokenness), even the fracture of man and nature. Even more than that—that we can be a part of what has never been before.

As we dip our feet in polluted waters and look to the filthy skies, we must commit ourselves to a new exploration of human creativity in individual and communal forms. The promises and the hopes which hold us up as we lean into the future must be affirmed at the same time that they are critically examined. At the heart of the symbol of the cross alluded to earlier is the possibility that when something is made new it is not just replaced. Some of us are convinced that that which breaks in on us from the future is death and resurrection and that this is what human creativity is all about. Christianity construed in symbols like these makes it quite portable. It also implies that one's religious faith need not commit him to an institution which advocates a return to some pristine glory or ideological cocoon as much as it calls for the death and resurrection of all men, their ideas, and their institutions. To look upon our memory as creative memory and as a prelude to the future is not to render it anything less than memory.

One need look no further than Russian Orthodox Christianity to find visions of a religious community inseparable from the natural world in which authority is freedom, organic unity, and reciprocity in love.<sup>27</sup> Particularly in the Kievan period of Russian history and in the modern Russian religious renaissance one can find proclamations of the brotherhood of man based not on an otherworldly Christian abstraction but upon man's common origin and common blood. Nicholas Zernov of Oxford says:

The West treats man primarily as the citizen of an organized society. A Russian Christian sees himself rather as a son of mother earth.

The church is . . . the plentitude, the pledge of the transfiguration of all beings and a source of victory over disunity, disease and death.<sup>28</sup>

## ZYGON

The scientist can no longer afford to be professionally alienated if not angered by such language. The reason is that all men are challenged to recognize the natural and cultural ecological matrix of the age and engage as one in the robust task of building up the efficiencies of the future. This demands that we no longer struggle individually toward some fugitive coherence but, rather, that we establish a dialogical forum which encompasses a system of mutual surveillance, a gentle but tough machinery which will permit us to carry out plans for the future, recognizing that unless we envision our future, plan it, and implement it, we shall not have it.

Permit me to close with a proposal.

We know now that we have the power to destroy the whole earth and all men. This is a jarring indication that we have lost our innocence. Presently we have no working models of human action which take this into account.

Recognizing, with Buckminster Fuller, that man has the highest capacity to introduce change in the known universe, as witnessed by the grisly truth of the ecological crisis, I would suggest the following: That the Institute on Religion in an Age of Science devote its time and energy to the development of a continuous process of interdisciplinary model building. This process would take place in a dialogical forum in which problems would be isolated, models built which would lead to creative solution, and efforts made by direct political action to implement them. The time has come to prove by action that more creative solutions can be found to the paralyzing problems of the age. We must now put teeth in our rhetoric. Should the meek ever inherit the earth, it seems they will have the creative militant to thank for it.

### NOTES

1. This is essentially what is done by Schubert Ogden in *The Reality of God* (New York: Harper & Row, 1966). In this kind of thinking, the reality of God becomes the most basic assumption of that field of life or culture called religion. Hence, theism functions much as does "event" for some scientists or "obligation" for some ethicists.

2. Michael Polanyi addresses this question cogently in *The Study of Man* (Chicago: University of Chicago Press, 1959). He here argues that there is no discontinuity between the study of nature and the study of man.

3. Lynn White, jr., *Machina ex Deo: Essays in the Dynamism of Western Culture* (Cambridge, Mass.: M.I.T. Press, 1968), p. 49.

4. Note Theodosius Dobzhansky, "Human Values in an Evolving World," in *Human Values and Advancing Technology*, comp. Cameron P. Hall (New York: Friendship Press, 1967), pp. 49-67.

5. See Victor Ferkiss, *Technological Man, the Myth and the Reality* (New York:

George Braziller, Inc., 1969); Philip Hefner, "The Relocation of the God-Question," *Lutheran Quarterly* 21 (1969): 329-41 (a revised version is in *Zygon* 5 [1970]: 5-17); and Paul L. Holmer, "Evolution and Being Faithful," *Christian Century*, November 22, 1967, pp. 1491-94.

6. For further elaboration, see Arthur Koestler, *The Act of Creation* (New York: Macmillan Co., 1967). On p. 94, he says: "The creative act of the humorist consisted in bringing about a momentary fusion between two habitually incompatible matrices." On p. 96, he says: "The concept of matrices with fixed codes and adaptable strategies, proposed as a unifying formula, appears to be equally applicable to perceptual, cognitive, and motor skills and to the psychological structures variously called 'frames of reference,' 'associative contexts,' 'universes of discourse,' 'mental sets,' or 'schemata,' etc." The "code" operative in Koestler's understanding of a matrix is not unlike the tacit component of knowledge as Michael Polanyi conceives it. Hence, the same pair of matrices can produce a number of results. Note on p. 45: "When two independent matrices of perception or reasoning interact with each other, the result . . . is either a *collision* ending in laughter, or their *fusion* in a new intellectual synthesis, or their *confrontation* in an aesthetic experience. The bisociative patterns found in any domain of creative activity are tri-valent; that is to say, the same pair of matrices can produce comic, tragic, or intellectually challenging effects."

7. Note the words in Joni Mitchell's song "Big Yellow Taxi" (quoted here by permission of Siquomb Publishing Co.):

They paved paradise, put up a parking lot  
with a pink hotel and boutique  
and a swinging hot spot.  
Don't it always seem to go that you  
don't know what you've got 'till it's gone.

8. Joseph Sittler's *The Ecology of Faith* (Philadelphia: Muhlenberg Press, 1961) uses the term "ecology" as a symbol or analogue for the organic shape of the biblical message which is to be preached.

9. Michael Polanyi, *Personal Knowledge* (Chicago: University of Chicago Press, 1960), p. vii.

10. *Ibid.*, p. 53.

11. Polanyi writes: "The most pregnant carriers of meaning are of course the words of a language, and it is interesting to recall that when we use words in speech or writing we are aware of them only in a subsidiary manner" (*ibid.*, p. 57). And on p. 59: "Hammers and probes can be replaced by intellectual tools; think of any interpretative framework and particularly of the formalism of the exact sciences. I am not speaking of the specific assertions which underlie the method by which these assertions are arrived at. We assimilate most of these pre-suppositions by learning to speak of things in a certain language, in which there are names for various kinds of objects, names by which objects can be classified, making sure distinctions as between past and present, living and dead, healthy and sick, and thousands of others."

12. *Ibid.*, p. 61.

13. *Ibid.* See esp. p. 82.

14. *Ibid.*, p. 106.

15. Note the following observations by Paul L. Holmer in "Polanyi and Being Reasonable," *Soundings* 53 (Spring 1970): 95-109. On p. 104, he writes: ". . . his way of describing human intelligence at work has a heartiness about it, an infectious zest and spirit, that appeals very much to literate people. He really does rekindle hope. He does it by breaking up that cluster of argument and mood, precept and feeling, that sense of frustration, that grips so many intellectuals. For either you are scientific and then are doomed to speak in artifices about things you do not

really care about (especially if you are an economist, a psychologist, a theologian), or you are unscientific and out of the main stream, cognitively at least, but terribly 'in' with the masses of men. Such blocs of conviction and mood are wrong; and the net effect of Polanyi's work, organic chemist turned social theorist turned philosophic guide, is not to argue away but to erode away by the sheer weight of examples such constellations. In a peculiar way, Polanyi is a social force, getting intellectual people to take their bearings again. So if this is the way the intellect is, one can take hope after all!

"It is another question, it seems to me, whether or not Polanyi's peculiar kind of epistemological theory is really a substitute for a technical positivistic theory. . . . What was wrong with positivism was not a mistake in its theory, e.g., a too great stress upon exactness, or a too Laplacean kind of schematizing; it was that there was a theory at all. . . . There is something equally odd about knowing something and then knowing about the knowing. . . . To lump that wide variety of rules and that sense for what matters under a theory, must have been one of the reasons why epistemology went the way of metaphysics and so much of the rest of pretentious philosophy."

And on pp. 105-6: ". . . 'knowledge' [is] so many things that a single theory will not grasp it at all. When the range of cases is made large enough, it seems to me that one is saved from two absurdities. One absurdity is that of forcing all kinds of knowing into a kind of positivist scheme of exactness and logically precise forms; the other absurdity is having to see all the instances of objectivity as if they really are disguised instances of tacit knowing and odd commitments. My suspicion is that Polanyi pushes too hard to get everyone into the positivist camp, where explicitness is the rule, and then argues the other extreme, namely, that implicit knowing must really obtain in all instances.

". . . Polanyi recites a lot of cases, but always with his alternative theory in mind; and his theory, though it apparently comforts the intellectually lost, is in a genre that ought not to be."

Polanyi is still the metaphysician. We can move with him only so far. He certainly lessens the grip of positivism . . . but is then quietly gripped by a new ideology. His language reveals that he feels he has captured the form of the "tacit," "subsidiary," "commitment" elements in his epistemology. In doing so he violates such words. He plays a metaphysical game.

16. Polanyi, *Personal Knowledge*, p. 143.

17. See Lawrence Kubie, *Neurotic Distortion of the Creative Process* (Lawrence: University of Kansas Press, 1958).

18. Polanyi, *Personal Knowledge*, p. 264.

19. Aldous Huxley, "The Ecological Problem," in "Selections from Ten Years of Center Dialogue," *Center Magazine* 2 (September 1969): 28.

20. Gerald Sykes, "The New Salvation," in "Selections from Ten Years of Center Dialogue," *Center Magazine* 2 (September 1969): 27.

21. Koestler, p. 178.

22. White, p. 79.

23. *Ibid.*, p. 102.

24. *Ibid.*, p. 105. Note also the following on p. 129: "We have been pondering an abstraction, the act of technical innovation. It is quite possible that there is no such thing to ponder. The analysis of the nature of creativity is one of the chief intellectual commitments of our age. Just as the old unitary concept of 'intelligence' is giving way to the notion that the individual's mental capacity consists of a large cluster of various and varying factors mutually affecting each other, so 'creativity' may well be a lot of things and not one thing."



25. Note Bernhard Erling's "Theology as Art and Science," *Journal of Religion* 47 (1967): 240.

26. White, pp. 54-55.

27. A rough translation of the pregnant Russian word *sobornost*.

28. Nicholas Zernov, *The Russian Religious Renaissance of the Twentieth Century* (London: Darton, Longman & Todd, 1963), p. 285. For a more thorough discussion of the potential significance of the Russian religious tradition for contemporary theology in an ecological matrix, see Daniel F. Martensen's "Eastern Orthodoxy and the Secular," in *Christian Hope and the Secular*, ed. Daniel F. Martensen (Minneapolis, Minn.: Augsburg Press, 1969), pp. 55-77.