# REFLECTIONS ON A THEORY OF THE EARTH

*by James E. Huchingson*

> There can be no theory of any account unless it
> corroborate the theory of the earth,
> No politics, song, religion, behavior, or what not,
> is of account, unless it compare with the
> amplitude of the earth . . .
>
> Walt Whitman[1]

Recently I watched a national newscast which carried the story of the archeological discovery of a huge sundial in Rome. The ancient instrument, some two hundred feet in diameter, not only told the time but also displayed the day and the month. The reporter concluded his story with the comment: "Not bad for no moving parts."[2] Now a moment's reflection reveals a fallacy in that remark. Sundials contain one major moving part, the earth itself. The instrument works because the earth's rotation alters the angle of the sun's rays as they strike the planet's surface. In all fairness to the reporter, he undoubtedly intended his remarks to be offhanded and entertaining. Still his comments betray an all too typical lack of appreciation for the earth as a single whole or system in itself.

The times call urgently for a theory of the earth which will guide our destiny and secure our survival. In this awkward age of rapid transition, if not historical dislocation, the central task is a straightforward one. In the words of Pierre Teilhard de Chardin, it is *voir ou périr* ("to see or perish").[3] Walt Whitman's "Song of the Rolling Earth" conveys the same message. Only from a perspective which embodies a conceptual vision inclusive of the earth as the appropriate unit of attention can the problems of our deteriorating global habitat be addressed.

It is important to understand the radical shift in attitude toward our planet presently taking place. Previously the earth was seen as the arena for the struggles of survival and dominance among vast multitudes of living things. It also provided the theater where the human

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species could play out its historical drama of the rise and wane of civilizations. As nature, earth established the environmental conditions, the nurture and challenge, for all life forms. The focus, however, remained primarily on the actors rather than the mute stage, the "face of the earth." Now our attention has been raised to the next higher level of the terrestrial hierarchy, that of the earth as a single system. The planet itself is beginning to emerge as the proper unit of our concern. We are coming to understand it as the whole system that includes humans and other species rather than as the vague and external background of existence for its occupants. This planetary totality must be encountered and addressed at its appropriate level of inclusiveness and integrity. This is a matter with which humankind has never before been forced to deal.

We appear to be moving toward a threshold leap in perspective from the existing parochial loyalties and preestablished categories that isolate nation from nation and humankind from the natural world to a more comprehensive vision of the world in the interdependence and diversity of its components.[4] This leap requires the profound employment of the tools of reason and imagination. Ervin Laszlo claims that "we are headed toward a global civilization, and, as all previous smaller-scale civilizations have, it too will produce a conceptual synthesis."[5] It is his further conviction that this synthesis must be scientifically based in order successfully to manage the vast complexities of the world's activities.[6] In the absence of such a theory of the earth we have no way to generate vision and vector action in ways that dampen the import of damaging global trends.

In my judgment such a program of reconceptualization must be coupled with deep sources of motivation if it is to be successful. This aspect of any conceptual synthesis can be broadly assessed as its religious dimension. My essay will include this dimension by engaging the task of constructing a cosmic naturalism that is founded on natural science and that provides mythic meaning and symbolic guidance. Most important, it will focus on the planet earth as the appropriate world-referring symbol for our situation. I want first to explore the function of myth and symbol in the formation of a truly adequate planetary world view. Second, I will propose a cosmic naturalism synthesizing essential insights from both science and religion. Third, I will suggest one or two specific themes for an appropriate planetary theory based on this view. Finally I will examine several possible benefits that accrue from its implementation.

## Myth and Symbol

It is necessary to understand precisely how the motivating power conveyed by religion transforms an emerging theory of the earth into

a plan of action. The key to this task lies in a clear description of the role played by myths and symbols in a cultural context. This description includes an account of how mythic and symbolic forms arise and operate and how the concepts of science may be transmuted into powerful cultural and religious images.

Myths are often thought of as folk stories or legends, narrative accounts of events which, though entertaining and epic, probably never occurred. While they may not be reliable or verifiable scientific accounts, myths convey a dimension of human significance which science and reason alone do not address. This significance is elaborated by Langdon Gilkey: "Myths . . . are not just ancient and thus untrue fables; rather, they signify a certain perennial mode of language, whose elements are multivalent symbols, whose referent is in some strange way the transcendent or the sacred, and whose meanings concern the ultimate or existential issues of actual life and the questions of human and historical destiny."[7] The "issues" and "questions" are expressions of the deep concern we feel about origins and destinies, about where we fit in the scheme of things. Myths further address the matter of how we should conduct our lives in the light of this understanding. Thus a myth may be acclaimed true when it faithfully expresses the meaning of human existence and when it recommends authentic action, sustaining and even furthering that meaning. The power of a myth is determined by the extent to which it "crystallizes the great central values of a culture" and encourages the members of that culture to participate in its narrative.[8]

The formative importance of myths is clearly evident in American life where stories taken from biblical history and national experience are fused to create a synthetic and overarching perspective. According to the national myth America was the new paradise, the Promised Land for all those persons from the pilgrims to the East European immigrants who came seeking freedom from persecution and poverty. Conquest of the frontier was a fundamental task for this chosen people in their relentless effort to transform a wilderness into a land of wealth and power. The epic adventure did not cease when the Pacific Ocean blocked further settlement. The great commission of Christ to go into the world and deliver its peoples came to be understood as the destiny of America to expand its dominion to lands beyond the sea. When this effort required the lives of American soldiers on foreign soil, the notion of redemptive sacrifice on behalf of democratic principles was inserted into the mythic structure. The supreme sacrifice of these martyrs is not tragic because it is a necessary element in the nation's divinely ordained mission, which is to preserve the peace and to extend the benefits of freedom to all people.[9] This national myth is an ingredient in our political and educational institutions. By telling and retelling the story in high-school

history textbooks or in the rhetoric of Memorial Day ceremonies, Americans absorb the values and modes of conduct recommended by the narrative.[10]

With certain significant exceptions, this account is basically a story of the white race. Until recently American blacks have suffered from the lack of an equally integrative mythic account. The beginnings of such an account are contained in Alex Haley's *Roots*.[11] The overwhelming response to Haley's book and the television series it spawned are ample testimony to the fundamental human dependence upon stories for the articulation of individual and corporate identity.

Symbols resemble myths in several ways. They convey the values of a society and reinforce their legitimacy. Symbols, like myths, are intended to express the deep truth about the nature of human life in the world and to suggest appropriate modes of conduct in the light of that truth. Symbols differ from myths in that the dramatic and narrative character is missing. The Christian cross and the American flag are symbolic signatures of deep meaning. They may tacitly suggest significant historical events, but the dimension of time is absent from their inherent character. The signs, ciphers, and formulae of scientific grammar are not symbols as here understood. Nevertheless they often provide a rich and ready source of material for the process of symbolization. Albert Einstein's equation for the equivalency of matter and energy, $E = MC^2$, was never intended to be a value-laden symbol. Yet it has entered public life as just that. It has come to signify both the profound mystery and authority of high theoretical science and the terrible Promethean power of nuclear energy.

Symbolic and mythic accounts often arise together and support each other. The symbol of the presidency is potent in American cultural and political life. We tell stories of individual presidents, such as George Washington, Abraham Lincoln, and John F. Kennedy, which contribute concrete substance to the encompassing symbol. This example suggests the importance of history as a fertile source of mythic accounts and symbolic images. Such events are instructive in that they are selected out of all the happenings and objects of our everyday experience and assigned a status that is larger than life. Saturated with experiential significance, they are looked to for both proximate and ultimate guidance by the community.[12]

The Exodus, so important to the various liberation movements within the Judeo-Christian context, is an excellent illustration of this dynamic of myth and symbol. The parent event is of course the rescue of the Hebrews from bondage in Egypt around 1300 B. C. While such a rescue may have been accomplished without miraculous support, it was such an unlikely occasion with profound consequences for the birth of ancient Israel that the hand of God was detected in every scene. Later generations of Hebrews, looking back upon their corpo-

rate history, bracketed out the Exodus as absolutely distinctive. The concrete event became celebrated and interpreted; that is, it was transmuted into myth and symbol. As a constitutive story, it provided imperatives for conduct, a sense of universal destiny, and solace and support in times of oppression.

The concrete historical event is thus lifted from the realm of any factual chronicle and raised to a different level of reality. While retaining its original historical quality, the mythic transmutation is far more than a journalistic account. Consequently it is universal and transferable. This unique availability is readily apparent in one appraisal of the civil rights leader Martin Luther King, Jr. In the rubric provided by the universalized Exodus story, King is understood by his followers to be a black Moses leading his people up from slavery into a promised land of social, economic, and political freedom. Also like Moses, he viewed this land from the mountaintop but was denied the satisfaction of entering it himself. The Exodus story is a concrete universal. It may be applied validly to any struggle by an oppressed people to be free. Being both instructive and evocative, it is an ideal mode of generating and validating action.

It should be obvious from this short study of the origins and dynamics of myth and symbol that such images are indispensable elements of any sociocultural system. They work existentially to provide meaning for both being and doing. In addition, myths and symbols work functionally to order and frequently to alter community structures. A description of these functions might include the following.

Social institutions are the enfleshment of mythic and symbolic images. While this claim is clearly the case with religious institutions where symbolism is rife, it is just as true of secular institutions. The earlier example of the American presidency amply illustrates this point. For better or worse, a novice President takes his cues from the themes and traditions of his predecessors. This involves more than simply following precedent. It is also a matter of attending to the environment of the institution, to the nuances of leadership and the exercise of power. Instructions for such intangibles are often coded into the symbols associated with the position. One may become expert in the management of the office and miss altogether the symbolic or mythic expectations placed upon its occupant. Such insensitivity can lead to bitter consequences. This example also points up the living nature of symbolic and mythic images. Far from being simple and static elements of our institutions, they are dynamic and information rich. In cooperative interaction they form systems which move and flow almost palpably.

A second function of myth and symbol is to control the flow of energy, material, and information either by amplifying or by dampen-

ing disturbances in the cultural system. Some images encourage change by directing energy to the point of crisis. In a complex social system a breakdown in prevailing patterns often represents the opportunity for a breakthrough. The local chaos generated by the disturbance is really both a field of new possibility awaiting realization and released energy awaiting focus. Destruction often liberates vast potential for reconstruction. Mythic and symbolic images provide the impetus for the actualization of novel possibility by reinforcing disorganizing tendencies already at work in the situation. Ideologies of revolution often promote this positive feedback behavior. The Exodus imagery of the aforementioned black liberation movement is a relevant example. A liberation movement encourages the breakdown of the oppressive establishment by aggravating existing stress to a point where social and symbolic structures buckle. Then it transforms the raw momentum into new structures, fulfilling its own cherished myths and symbols.

Other image systems, especially those lending support to the status quo, tend to cancel deviation. They perpetuate or transmit the wisdom of previous generations as tradition, and they inspire individuals or groups to behave in accord with that tested experience. When these managing capacities go awry, myths and symbols become pathological or counterfunctional. They may evoke conduct unfavorable to the continued well-being of institutional structures. For example, nineteenth-century Americans pursued a destiny provided by the role model of the rugged individual who claimed his fair share of the vast frontier and was constrained only by the limits of his own fortitude, enterprise, and endurance. In the context of preindustrial America this symbolic figure was fitting. Today, in an age of global interdependence, industrialized urban existence, and scarce resources, such imagery is simply counterfunctional. It recommends modes of conduct inappropriate to the prevailing context. These modes include consumption over conservation, the atomized individual over the integrated community, and competition over cooperation.

A third aspect of this functional analysis is vital to our understanding of human nature. Myths and symbols assist the human creature partially to transcend his biological nature and the various constraints it imposes upon him by contributing to a dimension of self-reflexiveness. We employ our rich imagination to replicate or map mental images of ourselves in the world. This simulation process is the basis of self-reflection. However, it remains merely the pastime of the uninvolved, inner spectator until judgments are made about our perceptions, that is, until we actually evaluate the situation which we have modeled. Such assessments take place in several ways. In the first place we may invest ourselves in symbolic role models, which carry

implicit recommendations for conduct. Second, we may name ideals, such as love, justice, peace, or adventure, and then pursue a destiny in conformity with their symbols. Third, we may belong to a larger community and live out a myth or story based on the corporate destiny of its members. In a final option we may generate *de novo* a vision of what we wish to be and pursue this goal with singular passion. The Apollo project is one example of this kind of creative envisioning. In all of these alternatives the imaginative mapping of our condition, when coupled with symbolic or mythic images of value, can partially override the preprogrammed dictates of natural and social determinants of behavior. Its employment constitutes the unfinished character of the human species.

Finally there exists a special class of myth and symbol which is unique in its characteristics and novel in its effects. This is the world-referring image that identifies the cosmos as an all-embracing whole. World views, including the medieval geocentric universe and the seventeenth-century mechanistic model, are illustrative of the category. Religious cosmologies also qualify as examples. The Judeo-Christian view of a transcendent creator and a semi-independent creation, the Hindu notion of immense cosmic cycles or Yugas, born of the dreaming and waking of the god Brahma, and the Buddhist version of *anicca* or the impermanence of the world, all pertain to the fundamental nature of things. They accordingly carry tremendous symbolic weight.

World-referring images perform a number of functions in human affairs that are similar to those provided by Laszlo's conceptual syntheses. These include the validation of social order, the establishment of priorities for inquiry and action, personal guidance through the vicissitudes of life, and mystical inspiration.[13] In nonsecular cultures the institution of religion satisfied these needs. Today, however, the candidates for a dominant conceptual synthesis are primarily scientific. This is to say that they draw heavily upon the portrayal of reality that science provides. Science eschews as official policy, in accord with its commitment to objectivity, any obligation to make value recommendations. Hence, whenever scientific accounts are employed to satisfy the functions of universal conceptual syntheses, they undergo a transmutation of character. A subjective dimension is added to their facticity; suddenly they become imbued with human meaning and drama. When this conceptual transmutation occurs we have a myth or a symbol. Its significance deepens by almost imperceptible degrees from particular and proximate toward universal and ultimate meaning. At the completion of the process, there is an identifiable religious myth or symbol.

The theory of evolution provides an excellent illustration of this process of transmutation. In its original form the paradigm of evolu-

tion was born of a need to explain the great jumble of evidence collected by Charles Darwin and others. It was and still is both an objective account, subject to rational-empirical verification, and a potent paradigm lending fertile insight into the development of life. The evolutionary model proved so fertile that within a generation after its introduction its field of application had widened to include a great many natural and social processes. For good reason Loren Eiseley entitled his book on the subject *Darwin's Century*.[14]

The twentieth century belongs to Darwin as well. The basic tenets of his paradigm are fundamental for many of the scientific and cultural questions before us. Its legacy includes the predominance of processive models in understanding natural and human phenomena, the overriding significance of environmental stimuli upon the behavior of living things, the wide employment of functional explanations of the origin and persistence of structures and processes, and finally the use of the concept of survival as the key to value and conduct. The broad idea of evolution exhibits a pervasive influence and an impressive unity, so much so in fact that it may be taught to children as an important part of their initiation into modern society.[15] The paradigm has lodged itself so firmly in our collective mind, and has been applied so systematically to almost every compartment of human knowledge, that its claim to universality is hardly in question.

With its entry into our cultural life, evolution becomes mythologized. In the popular mind "primal man . . . is . . . the creature who rises against tremendous odds from the primeval swamps and progresses steadily upward towards the day in which he will rule the cosmos by technological prowess."[16] It seems to follow from this epic account that man is intended to fulfill the role of *Homo faber*. This is his essence, and he ought to conform. With the insertion of prescriptive terms such as "ought," "should," and "must" into the discussion, the fundamental character of the evolutionary paradigm is transformed. It is no longer a theory useful only for its instrumental value in detecting patterns of connection in material phenomena. Rather it is a ubiquitous myth out of which we define our destiny. Teilhard de Chardin expresses this massive significance very well: "For our age, to have become conscious of evolution means something very different and much more than having discovered one further fact. . . . It means . . . that we have become alive to a new *dimension*. The idea of evolution: not, as is sometimes still said, a mere hypothesis, but a condition of all experience—or again . . . the universal curve to which all our present and future ways of constructing the universe must conform. . . ."[17]

The mythologization of evolution provides an important way of establishing one's identity in the scheme of things. Each of us belongs

to a community, family, nation, and race by virtue of a common story. To participate is to share the story with others. The concentric circles of communal belonging radiate as the story becomes more inclusive. Telling the evolutionary story of life—and including one's self as a character in that tale—is one way of composing an epic myth of ultimate identity at the cosmic level. The transmutation is complete. The language is no longer the tentative and neutral syntax of scientific inquiry. It is the bold, normative syntax of ultimate things, that is, the mythic and symbolic world of religion.

One can claim that, when restricted to their respective domains, science and religion perform very different duties. The goal of science is understanding; the goal of religion is transformation.[18] While this division of labor applies in both ideal and practical contexts, we must always remember that it is the one and the same person who seeks both understanding and transformation. Because of this common element, an absolute quarantine between the two realms can seldom be maintained. The individual or the cultural community, seeking the contours of a unified scheme of things, transmutes the notions of science into ciphers of the ultimate. If this cognitive and spiritual alchemy is carried out lucidly and carefully, the resultant synoptic vision may well offer the possibility of reconciling fact and value, explication and inspiration, in an integrated perspective.

## Cosmic Naturalism

A naturalistic standpoint is cosmic if it includes dimensions of the empirical and the existential within its rendering of the world.[19] Religion and science have chosen alternative pathways to achieve human fulfillment. Despite this difference, they can share attitudes toward reality which can be characterized as a cosmic naturalism. These attitudes may be used to advocate a world-referring image of the planet earth acceptable to both orientations.

A number of the major religions commend the natural world as a source of meaning for human life. For the theistic faiths, that is, those which understand the sacred in terms of a transcendent and personal God, the cosmos reflects the will of its creator. Traces of his original design or pattern, as well as his continuing providential activity, are to be found in the observation of nature. The Hebrew spoke of *Hokma*, the Christian of the Logos or *Lex Natura*, and the Muslim of *Shari'a*. Monistic religions perceive the phenomenal world to be rooted in the ground of absolute being. By participating in its ineffable essence, humankind and nature have a common structure. Hinduism and Buddhism contain the notion of *Dharma*; Confucianism, *Li*; and Taoism, the *Tao*. Each tradition, West or East, thematizes the integration of personal and social existence into the larger structures of the

world. In this sense these faiths recommend a form of religious naturalism to their respective communities.[20]

Orthodox science self-consciously refuses to posit any supernatural source of influence which sustains a provisional world. Subjective realities, such as claims of intrinsic value, goodness, or beauty, have no independent standing in empirical reality either. Despite their insistence on objective neutrality in these matters of religion and value, scientists occasionally recommend theoretical accounts of natural phenomena as instructive sources of insight into human nature. Those who engage in such suggestions are saying that that which is natural, in their refined understanding of the word, is also that which is good. The claim to goodness is implied obliquely rather than proclaimed outright. The natural is counseled as a worthy basis for human self-assessment, for the justification of personal and corporate conduct, and for the understanding of our destiny as a species. These kinds of judgments are evocative and prescriptive. Psychologically and in terms of their intended purpose, they do not diverge sharply from similar acts of judgment found in religious naturalism.

The connection between scientific and religious forms of naturalism is subtle. It lies in a hidden commonality of perspective, unspoken yet not unfelt. Often this perspective is overwhelmed by the quarrels between the two sides. Nonetheless the passion generated in these confrontations betrays a deeper common interest in the truth which is to be lived out in a context of wholeness. When the natural world is seen to provide direction for the articulation of this interest, whether in the eyes of the scientist or the believer, the term "cosmic naturalism" is applicable.

One essential feature of this cosmic naturalism is that of goodness. Despite the ambiguity of experience, we often affirm that being is good and that knowledge based upon its structures is desirable and useful. The fact is that we do not shrug our shoulders and walk away when confronted by significant new knowledge about the universe. We seek instead to transform that knowledge into wisdom and the wisdom into purposeful conduct. It is good to know, and it is better yet to employ that knowledge in shaping morals and our human future.

Scientists are increasingly concerned with translating discoveries in such frontier fields as neurophysiology, biochemistry, and astrophysics into language available to the educated lay public. This appeal goes far beyond the dissemination of peripheral information. There is a further intention to give an account, a wondrous vision, of how things are and thus of how fittingly to respond. For example, note the confident style of the following excerpt from the astrophysicist Eric J. Chaisson's article which first appeared in *Harvard*

*Magazine*. After tracing the development of the universe from its birth to the present moment, Chaisson concludes: "We are not independent entities, alien to earth. Earth in turn is not adrift in a vacuum unrelated to the cosmos. The cosmos itself is no longer cold and hostile because it is our universe. It brought us forth, and it maintains our being. We are, in the very literal sense of the words, children of the universe."[21] Striking similarities between Chaisson's interpretation and certain Old Testament psalms should not be missed.[22] The Hebrew poet of course attributes the creation and maintenance of the world to Yahweh, Lord God of history. Modern science relocates these functions by shifting them from the transcendent to the profane realm of human experience. A sense of the essential trustworthiness of the cosmos is not lost in this translation from a theistic to a naturalistic perspective. This world-affirming spirit is a chief feature of cosmic naturalism. The truth of nature disclosed by scientific inquiry is tacitly declared to be good.

Another major feature is the emphasis upon the totality of things. In taking a holistic view I intend far more than the aggregate of beings composing our experience. The unity of life is a basic human intuition. William James clearly realized this in his description of an integrated individual: "He knows that he must vote always for the richer universe, for the good which seems most organizable, most fit to enter into complex combinations, most apt to be a member of a more inclusive whole. . . ."[23] Despite the celebration of plurality and individualism, we rely upon the constancy and unity of our world's dynamic order. Any distortion of this fundamental perception yields fragmentation and alienation—conditions which few cultures have affirmed as either proper or natural.

We assert that it is good to be and to be one. It is better for a world to be a unified totality of immense variety and complexity than to be an infinitely chaotic multiplicity. This confession of the soundness of being whole is an appropriate referent for both science and religion. Science continues to operate with the chastened hope of framing ever more inclusive theories of the world, bringing together divergent disciplinary perspectives. Most of the world's developed religious traditions espouse either monotheism or monism, meaning that all being is one and from the One, however that One is conceived.

These primary features of goodness and unity are best articulated in the medium of myth and symbol. This is especially true when the goal is to relate meaning to concrete social action, to bridge the gap between what is and what ought to be. The gap between empirical fact, however revealing of our nature, and humanly meaningful application, however practical in its consequences, is mediated by myth and symbol. The more urgent and disturbing the crisis, the more

rapidly the transmutation of scientific knowledge into dramatic, meaning-filled images occurs. Despite growing competition from other sources, science remains for a great many persons the source of *gnosis* or of saving knowledge. It seems inevitable in the modern world that scientific discoveries are received by an audience ready to accomplish their conversion into myth and symbol. This seems to me to be a licit procedure. The propensity for and justification of such activity lie in our attitudes toward the natural world as expressed in a cosmic naturalism.

### Planet Earth as a Concrete Universal

Astute observers of human religious behavior, such as Paul Tillich, Mircea Eliade, and Paul Ricoeur, have amply noted that vague abstractions and inarticulate intutitions about ultimate reality cannot inspire and then guide human conduct. They cannot help persons locate themselves meaningfully in the world unless they are crystallized in concrete myths and symbols of human experience. Ultimate reality, in and of itself, is simply inaccessible to most finite minds. This holds true for a wide-ranging cosmic naturalism as well. A concrete universal, taken as both symbol and reality, is prerequisite to the enabling of religion and science in defining and directing our existence.

The appropriate and relevant symbolic referent for a cosmic naturalism is the planet earth itself.[24] Several factors advocate this choice. The earth is the chief exemplification for us of processes at work far and wide in the universe. The effects of evolution have advanced farther here than anywhere else within the range of our detection. Also the earth, not the distant planets, must be the object of urgent and immediate concern. We attend to the planet because our home, our fragile and precious dwelling, is imperiled. Finally the earth signifies human existence and is hence mythic and symbolic. As we attend to earth we also attend to ourselves not as occupants but as inhabitants. Even as we eject ourselves in flight from the planet, we attempt to duplicate in sealed spacecraft the same conditions of life, our life, which we leave behind. There is therefore no more apt subject for our cosmic naturalism than the planet earth. Teilhard de Chardin, an able proponent of the sense of the earth, was clear on this same point: ". . . as Jacob said, awakening from his dream, the world, this palpable world, which we were wont to treat with the boredom and disrespect with which we habitually regard places with no sacred association for us, is in truth a holy place, and we did not know it."[25]

How do we characterize this concrete universal, this world-referring symbol of the planet earth? More important, how do we envision our human presence and involvement in the processes of the

earth? True to our previous suggestions, any description must draw upon the rich vision of modern science insofar as it assists us in gaining self-knowledge and guidance for the shaping of our common future. I turn here to the systems approach as the proper idiom for the delineation of this image.

Briefly, the systems approach examines the dynamic organization surrounding us in nature and human culture. The approach understands the world to be a processual whole, a hierarchy exhibiting immense complexity. Its basic concept is that of "system," understood as a set of elements standing in reciprocal relationship. Any system may be examined either by looking in, that is, by analyzing its parts and their relationships, or by looking out, that is, by accounting for the system with respect to its environment. As a distinct entity any system is in relationship with an indefinite number and variety of other systems. This larger composition is the more inclusive system, the supersystem.

The discoveries of contemporary science, as understood in the systems view, recall to us an awareness of the dynamic character of nature. Newtonian mechanics and its world view assumed that nature is characterized by inertia. Movement was envisioned as dependent upon exterior sources. By contrast, the systems view maintains that nature is best characterized by insurgency. It flows dynamically, insinuating itself here and there at every opportunity. Nature, especially in its organic manifestations, moves with ceaseless change, forever carving out valleys and flowing in new channels. Mechanism asserted that nature is a form of *techne*, to use Aristotle's terminology, in that it contains no intrinsic source of movement. Systems theory asserts that nature more closely resembles the realm of *physis*, possessing its own vital powers.

This revision of our attitude toward nature does not warrant the revival of a refined animism. Natural systems are predominately open systems, that is, complex wholes which, through an ability to absorb matter, energy, and information, respond to their context in adaptation and innovation. Open systems adjust in response to changing environmental conditions. Frequently they may innovate new forms of structure and behavior, rendering constructive alterations in their milieu. The earth is a system composed of a vast array of animate and inanimate open systems. It is an interactional continuum, a pulsating network of insurgent systems.

Unquestionably the human creature is the most radically open system on earth. We are also the most complicated of all terrestrial systems. In our openness and complexity we have immense capacities to alter and to innovate. Our abilities for self-reflexive thought and imaginative projection are magnified far beyond what our limited physiognomy would suggest. Abraham Heschel understood the im-

portance of this unique feature of symbolic or conceptual self-transcendence: "Unlike a theory of things which seeks to know its subject, a theory of man shapes and affects its subject. . . . We not only describe the nature of man, we fashion it. We become what we think of ourselves."[26] Humankind is not subservient to fixed conditions of nature and conduct. Instead we invent ourselves, recurrently altering our self-image in accord with our ever-changing experience.

Humankind is a free-standing creature, although we are only partially unique. Our pride encourages us to pretend that our powers of transcendence somehow exempt us from the open, evolving, and emerging processes of the earth. But in reality we are a product of the earth, inextricably enmeshed in its fluency.[27] The same capacities which help us maximize our independence are shared to some degree with all other systems on earth; we are of the earth, in the earth, subcutacean—under its skin, so to speak.[28] Our emerging, massive sociocultural enterprise is the most evolved expression of a natural system of earth. Still it remains a natural system. As such the human creature belongs to the interactional continuum of the global supersystem. Martin Buber expresses the context-dependent character of man almost mystically in his observation that "we live our lives inscrutably included within the streaming mutual life of the universe."[29]

Given this analysis of the earth, a vital question arises concerning the destiny of humanity and our self-proclaimed autonomy. How can an eminently open system understand its proper role in the encompassing global supersystem without compromising its context-independent properties? By this I mean the self-transcending and self-transforming features of human experience. The only answer of course is that we humans are simultaneously free standing and enmeshed. Our well-being and that of the earth depend upon our maintaining a balance between autonomous adventure and creative response to the patterned flow of things.

To venture and to respond: two movements in a dialectic of a eurythmy of the earth. This is a double vocation of tension and harmony generating further creative integration of the needs of the human species and those of the planet. Under the aspect of the venturer, humankind plays the role of *Homo faber*. We are the agents or fabricators interrogating nature in order to learn from it and then imposing technical structure upon its natural flows. Under the aspect of the responder, humankind plays the role of *Homo dialogicus*.[30] We listen to the world as patients in order to conform our actions to its process and modulation. The venturer aspect involves positive feedback taken as amplification of our own human projects as they turn upon themselves in reinforcement. The responder aspect involves negative feedback or the cancellation of runaway behavior in favor of balance, harmony, and integration.

None of this is possible without the meaningful synoptic theory offered by the world symbol of the planet earth. The theory enables us to envisage ourselves as parts of the planet (our enmeshed character) and as partners of the planet (our free-standing character). Our investment in the symbol and identification with a story or myth it would entail generate a loyalty to the earth and its destiny. The earth becomes the source of this understanding and the recipient of therapeutic action activated in fidelity to its recommendations.

### Benefits of Cosmic Naturalism

This proposal for a cosmic naturalism concentrating upon the earth as its primary symbol and articulated in the idiom of systems theory offers several advantages.

First, it encourages constructive conversation and affiliation between two major sources of authority and power for the world's peoples—science and religion. The common basis for this conversation is the minimum affirmation of the earth as good, as worthy of being cherished and attended to for the counsel it offers. Science provides perspectives and information on the structure of the planet, useful for both orientation and application. The various religious traditions contribute a dimension of ultimate meaning as specified in their various clusters of world-referring symbols and myths.

Second, cosmic naturalism overcomes the gap between knowing and willing. Anxiety and fear of the future can lead to widespread malaise in the face of growing economic and social crises. In this atmosphere theoretical knowledge derived from scientific inquiry, no matter how fascinating, cannot inspire dedicated action toward problem resolution. "To know better is to do better" is a verifiable maxim only if the knowledge is held passionately. Myth and symbol provide such passion because they manifest a dimension of meaning and drama lacking in factual or theoretical information. They encourage a "yea saying" of the whole person as knower and doer. Also, a precise primary symbol, that of planet earth and of the systems account of its character, offers guidelines for survival and advancement based on its perspective. Here the definite image informed by science provides a hybrid concept-symbol capable of both heuristic guidance and passionate allegiance.

Third, a theory of the earth and of eurythmic man responds to a deep-felt need of the individual to belong, to be meaningfully situated, both in a particular human community and in a cosmic commonwealth of being. A significant task in Western industrialized societies is precisely this type of revitalization of the concept of true community, cosmic in scope and function. When the need to belong is satisfied, the problem of inspiring resolve and sacrifice on behalf of a

larger cause diminishes. A cosmic naturalism provides a concrete account of a system of universality in which persons can feel at home and to which they can give consent and loyalty.

Fourth, a systems-based symbolization of earth encourages recognition of the intimate association between human society and the natural environment. Both humankind and nature are mutually defining companion systems coupled in perpetual engagement. We are indeed members one of another.[31] The human system can no longer exempt itself from belonging to the earth in its grand pretense of dominance and unilateral intervention into natural processes. A theory of eurythmic humanity enmeshed in larger global flows goes far toward alleviating this pathological identity.

Fifth, this approach mutes the inherent risk of world views becoming ideologies. In a cosmic naturalism this vulnerability would likely appear in the form of ontocracy.[32] In this sense the structures of nature become imperatives, seen as inevitable to human society and incumbent upon it. Nature is deified and the society is ruled by a totalitarian figure or elite class who justifies authority as ordained by the powers and principalities of the cosmos.[33] Instead, a cosmic naturalism of earth insists that human beings are radically open systems, perpetually changing in the greater flows of the context. Since true spontaneity and creative innovation are required in such an understanding, it is unlikely that a rigid social structure can be built on its vision.

Finally the perspective I have outlined here is suggestive for the growing number of scholars, statesmen, and others whose object is to forge programs for effective global management. Individuals such as Laszlo, Victor Ferkiss, Richard Falk, Alistair M. Taylor, and Harold and Margaret Sprout are observers of the earth as well as its agents. They promote an emerging planetary perspective based upon world-order models. Implementation of these global structures requires both scientific guidance and cultural response. An enabling image of a world-order model must recommend itself in terms of not only its operational efficiency but also its potential for human well-being. It is incumbent upon its advocates to commend any new global paradigm in terms both of rational persuasion and of existential and normative posits. Accordingly, a strategy for planet earth could derive benefits from the dynamic power of myth and symbol as it is found in living religious expressions.

## Conclusion

A theoretical and symbolic account of planet earth raises our awareness to the reality of humankind's intimate participation in global processes both as an instigator and as a recipient. There is no such

location as the last place on earth. There is no final sanctuary protected from the consequences of our increasingly profligate conduct toward global natural systems. The overriding task facing humankind during the remainder of this century and beyond is to put its house in order. To accomplish this responsibly we must practice a superior *oikonomia*, or caring for the planetary household, which involves both pragmatic considerations and high motivation. It may well be that only a combined effort of science and religion can effect the consensus mythology capable of accomplishing this task and thus sustaining Whitman's "amplitude of the earth."

NOTES

1. Walt Whitman, "Song of the Rolling Earth," *Leaves of Grass* (New York: New American Library, 1960), p. 193.
2. CBS Evening News, WTVJ-TV, Miami, Florida, July 16, 1980.
3. Pierre Teilhard de Chardin, *The Phenomenon of Man* (New York: Harper & Row, 1959), p. 29.
4. Alistair M. Taylor, "Evolution-Revolution, General Systems Theory, and Society," *Philosophy Forum*, 11 (March 1972): 99-140.
5. Ervin Laszlo, *A Strategy for the Future* (New York: George Braziller, Inc., 1974), p. 7.
6. Ibid., p. 9.
7. Langdon Gilkey, *Religion and the Scientific Future* (New York: Harper & Row, 1970), p. 66.
8. Theodore Roszak, *The Making of a Counter-culture* (Garden City, N.Y.: Doubleday & Co., 1969), p. 214.
9. See Conrad Cherry, "Two American Sacred Ceremonies, Their Implications for the Study of Religion in America," *American Quarterly*, 21 (1969): 741-45, 748-53; reprinted in Frederick J. Streng, et al., *Ways of Being Religious* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1973), pp. 132-37.
10 Ibid.
11. Alex Haley, *Roots* (Garden City, N.Y.: Doubleday & Co., 1976).
12. See James F. Smurl, *Religious Ethics: A Systems Approach* (Englewood Cliffs, N.J.: Prentice-Halls, Inc., 1972).
13. Laszlo (n. 5 above).
14. See Loren Eiseley, *Darwin's Century* (Garden City, N.Y.: Doubleday & Co., 1958).
15. Thomas Fawcett, *The Symbolic Language of Religion* (London: S.C.M. Press, 1970), p. 276.
16. Ibid., p. 276. An updated and far more refined description of human origins and destinies in a cosmic framework is to be found in the popular writings of the biologist Carl Sagan. By placing the human species more in continuity with basic physical and biological processes, Sagan is able to avoid the triumphalism of the conquest model here indicated. Despite this chastened revision, Sagan's rhetoric often shifts from informing the reader about recent scientific knowledge to counseling him to consider the human condition from the perspective of scientific wisdom and to act accordingly.
17. Pierre Teilhard de Chardin, *Science and Christ* (New York: Harper & Row, 1968), p. 193.
18. Roger Schmidt, *Exploring Religion* (Belmont, Calif.: Wadsworth Publishing Co., 1980), p. 102.
19. See William W. Mountcastle, Jr., *Religion in a Planetary Perspective* (Nashville: Abingdon Press, 1978).
20. Of course it should be recognized that the world is not autonomous. It is deemed valuable only insofar as it reflects the will, purpose, and power of the sacred.

Furthermore, the themes are often ambiguous and misrepresentations occasionally occur. E.g., the message of the early chapters of the book of Genesis has been historically understood in the West to approve of mankind's unkind dominance of the natural world. This understanding has been called clearly into question by contemporary biblical scholarship.

21. Eric J. Chaisson, "Cosmic Evolution: A Synthesis of Matter and Life," *Zygon* 14 (March 1979): 39.

22. See Psalm 139, esp. verses 13-18.

23. William James, *Essays in Pragmatism* (New York: Haffner Publishing Co., 1949), p. 83.

24. See John Ruskin Clark, *The Great Living System* (Pacific Grove, Calif.: Boxwood Press, 1977).

25. Pierre Teilhard de Chardin, *The Divine Milieu* (New York: Harper & Row, 1960), p. 112.

26. Abraham Heschel, *Who Is Man?* (Stanford, Calif.: Stanford University Press, 1965), p. 7.

27. Erich Jantsch, *Design for Evolution* (New York: George Braziller, Inc., 1975).

28. See René Dubos, *A God Within* (New York: Charles Scribner's Sons, 1972).

29. Martin Buber, "I and Thou," *The Writings of Martin Buber*, ed. Will Herberg (New York: Meridian Books, 1965), p. 49.

30. Olga Craven Huchingson, "Pragmatic Elements in the Moral Decision-Making of the Christian Community: A Study in the Ethic of H. R. Niebuhr and Paul L. Lehmann" (Ph.D. diss., Emory University, 1980).

31. Rom. 12:5.

32. Arend Theodoor van Leeuwen, *Christianity in World History* (New York: Charles Scribner's Sons, 1964), p. 177.

33. Rom. 8:38.