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SYSTEMS THEORY IN RELIGIOUS STUDIES: A METHODOLOGICAL CRITIQUE

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SYSTEMS THEORY IN RELIGIOUS STUDIES: A METHODOLOGICAL CRITIQUE

by

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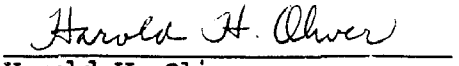
First Reader 

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SYSTEMS THEORY IN RELIGIOUS STUDIES: A METHODOLOGICAL CRITIQUE

(Order No.)

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Boston University Graduate School, 1986

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Abstract

Since the nineteen fifties many social theorists, religion specialists, and theologians have turned to general systems theory for insight into the nature of religion and its expressions. As an interdisciplinary perspective introduced by the biologist Ludwig von Bertalanffy (1901-1972) and developed by the philosopher Ervin Laszlo and others, systems theory seeks common patterns of organization (structure, function, meaning) throughout the natural and cultural worlds. Because of its high level of generality, expressed in the relational principles of integration, adaptation, emergence, and hierarchy, systems theory attempts to transcend artificial boundaries separating the sciences and the humanities. Advocates have claimed its value in interpreting a broad range of religious phenomena, including Christian theology and ethics, and Buddhist metaphysics and meditation.

Religious studies has long struggled to integrate the competing contributions of the social sciences and phenomenology. A mediating proposal came in 1968 with Robert Bellah's cybernetic-systems theory of religion (Chapter I). An account of the common origins of systems theory and religious studies in nineteenth century thought (II), and a survey of representative literature between 1950 and 1985 (III), introduce a critique of specific methodological issues.

The problem of functionalism is reinterpreted in terms of the adaptive self-regulation of open systems, and illustrated by three cybernetic theories of religion (IV). The problem of historicism is reinterpreted in terms of the emergent self-organization of open systems, and illustrated by Talcott Parsons' action theory of religion and the theories of religious evolution of Bellah and D. T. Campbell (V). Reductionism is reconceived as the heuristic relationship of theoretical constructs in a hierarchy of open systems, and illustrated by theological conceptions of nature (Ralph Wendell Burhoe) and meaning (Wolfhart Pannenberg) (VI).

In conclusion, the systems principle of integration is applied to the problems of personalism and pluralism, and illustrated in the personality theories of Bertalanffy, Koestler, Laszlo, and others. A systems theory of religious consciousness is shown to encompass the findings of religious studies broadly conceived: phenomenology and hermeneutics, social scientific theory, history of religions, philosophy of religion, and systematic theology (VII).

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INTRODUCTION: RELIGIOUS STUDIES ADRIFT

I

Our purpose in this essay will be to identify and evaluate the contribution of systems theory in recent religious studies. We shall argue that the academic study of religion, begun a hundred years ago, has yet to find a guiding paradigm, method, or theory. As one observer writes, "The study of religion, Religionswissenschaft in the broadest sense, does not lack evidence or new discoveries. What is lacking are adequate theories which will enlighten us with regard to the wealth of material at our disposal."[1] Another finds that "the field desperately needs to commit itself to a research programme. It needs a core theory that can be pursued until its potentialities have been explored."[2] An interpretation of the causes and scope of this problem is offered in the present introduction. With this background we shall argue that systems theory, or more broadly, the systems approach to the natural world and human existence, offers a perspective

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[1]Hans H. Penner, "The Poverty of Functionalism," History of Religions 11 (1971):91.

[2]Guilford Dudley III, Religion on Trial: Mircea Eliade and His Critics (Philadelphia: Temple University Press, 1977), p. 126.

on theory and method in the human sciences from which religious studies may benefit. It will be the task of the essay as a whole to defend this claim.

Systems theory was first formulated in the nineteen thirties and forties by the Austrian biologist, Ludwig von Bertalanffy (1901-1972).[3] Advancing the organismic or functionalist trend in theoretical biology, Bertalanffy interpreted life forms as "open systems," dynamic patterns of organization which display common features of integration, adaptation, emergence, and hierarchy. Like gestalt psychology and process philosophy, which were developed in the same period, systems theory focused on changing patterns, relations, and processes rather than on static quantities or qualities. With the advent of cybernetics and information theory in the forties, many systems principles were found to be applicable to non-living structures such as computers and servomechanisms, galaxies and candle flames. The dawning possibility of a unified conception of science, linking inorganic, organic, and supraorganic (mental, symbolic, social, cultural) phenomena and based upon the findings of empirical research rather than metaphysical speculation or mystical intuition occupied

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[3]Bertalanffy's earliest statement was the Kritische Theorie der Formbildung (Berlin, 1928; English trans. Modern Theories of Development, 1934; reprint edition, New York: Harper Torchbooks, 1962). This was considerably elaborated and buttressed in Das biologische Weltbild (Bern, 1949; English trans. Problems of Life, New York: John Wiley & Sons, 1952; reprint edition, New York: Harper Torchbooks, 1960). Widespread attention was gained by the publication in 1949 of "The Theory of Open Systems in Physics and Biology," in the American Journal, Science, vol. 111, pp. 23-29. The Society for General System Theory was founded in 1954, and its yearbook, General Systems began publication in 1956.

Bertalanffy and his followers into the seventies. Since the founder's death, general systems theory has continued to inspire interdisciplinary research as well as new applications in many disciplines.

Proponents of systems theory have claimed its applicability to problems in the physical and life sciences, the behavioral and social sciences, the arts and humanities, moral and social philosophy, and metaphysics. Religious studies, as a field of study bridging the humanities and the social sciences, cannot be excluded from this list. Since the early nineteen sixties a growing number of scholars have undertaken the application of cybernetic and systems approaches to the phenomena of religion, including the problems of religious experience, religious ethics, myths and rituals, the thought and practice of non-Western traditions, and the central categories of Christian theology. In some instances these applications have been nominal; the mention of such terms as systems, cybernetics, feedback, and hierarchy may be considered of passing significance in the general literature concerned with the interface of science and religion. On the other hand, the presence of this language in the titles and rubrics of more specialized religious studies since the 1960s suggests a more substantive interest. More than sixty citations of theological and religious studies containing the terms "system(s) theory" or "cybernetic(s)" may be found in the standard indexes.[4] Titles such as Religious Ethics: A Systems

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[4]Citations may be found in the Religion Index, Philosopher's Index, Social Sciences Citation Index, Humanities Citation Index, Comprehensive Dissertations Index, and Religious Studies Review.

Approach (1972) and "The World as God's Body: A Systems View" (1980) are characteristic of the many independent works in this literature, while the steady output of systems-oriented works by the theologian Ralph Wendell Burhoe since 1966 represents the most persistent contribution. Specialists in the social scientific study of religion, such as the sociologist Robert Bellah and the anthropologist Clifford Geertz, have made use of systems concepts in their work, while J. Milton Yinger states in his widely used text, The Scientific Study of Religion (1970), that "the conception of system is particularly important for the student of religion."[5] Thus a wide range of issues in religious studies and theology have been treated in the light of principles, methods, and value claims from the systems perspective.

Yet no formal study of the advent or the appropriateness of systems theory in religious studies has appeared. No scholar has attempted to argue either for or against the systems perspective in the context of the history and aims of religious studies, and no survey of published applications of systems thinking to the phenomena and problems of religion has been offered. Systems researchers outside of religious studies have periodically drawn upon religious concepts and practices to illustrate the workings of their theory, but so have they drawn examples from mathematics, the arts, and philosophy. Within religious studies, two instances of collaborative efforts to apply the findings of systems theory may be noted. The 1977 Annual Meeting of

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[5]J. Milton Yinger, The Scientific Study of Religion (New York: Macmillan, 1970), p. 20.

the American Academy of Religion featured a consultation on "Systems and Information Theory" which explored systems applications in religious ethics, text criticism, and the humanities; and the issue of Zygon: Journal of Religion and Science for June, 1981 (vol. 16, pp. 105-180) offered four essays under the theme "A Systems Approach to Self, Society, and Nature." Neither of these efforts, however, involved a critical assessment of methodological and theoretical issues posed by systems theory for the academic study of religion. Thus at a time when interest in the role of systems theory in religious studies has prompted a growing literature and the beginnings of serious scholarly exchange, the need for a critical review of its achievements and prospects seems evident.

II

The place of systems theory in contemporary religious studies may best be interpreted in light of a longstanding conflict within the field of religion. At the center of the debate has been the challenge of scientific methodology. Arrayed on one side have been those who would apply the methods of science, especially the behavioral and social sciences, to religion in the belief that religion entails psychological, social, and cultural patterns of behavior. On the other side have been those who claim for religion a separate role in human experience, one deserving specialized methods of investigation. Many scholars have been content to labor quietly at either side of the issue, identifying their work as the social scientific study of religion, or as the phenomenology or history of religion. Yet the

debate has become more heated in recent years as leading spokesmen for both positions have questioned the integrity of religious studies as a whole. In order to understand this development and the mediating role claimed by those advocating a systems theory and methodology for religion, we must turn for a moment to the origins of religious studies in the last century.

It was with the dramatic theories of Max Müller, E. B. Tylor, and Andrew Lang that the academic study of religion made its debut in the latter decades of the nineteenth century. Ushered in by the European discovery of Sanskrit literature and by the accumulated reports of travelers to preliterate societies, the comparative history of religions could now be founded upon empirical studies. Its theme was the problem of origins, the common preoccupation of naturalists and social thinkers in the era of Darwin. If science pondered the world's foundations, the beginnings of life, and the evolution of species, then history must account for the emergence of language, culture, and myth. For a time, each new speculation on the birth of religion was greeted as a revelation of utmost importance, and by 1900 James Frazer's Golden Bough was required reading the educated person.

But the first flowering of religious studies was short-lived. Conceptions of the evolution of religion multiplied and collided. Müller's view of myth as a "disease of language" (1856) was discredited by Lang (1883), Tylor's "animism" (1871) was superseded by Marett's "preanimism" (1900), and the widely held belief that monotheism grew

out of polytheism and spirit worship was confounded by Lang's discovery of high gods among the aborigines (1897) and by Schmidt's persuasive arguments for an Urmonotheismus (1912). Similarly, MacLennan's primal totemism (1869) was eclipsed by Frazer's demonstration of its absence in many early cultures (1900), and Lévy-Bruhl finally renounced his influential concept of a mentalité prélogique in tribal religion (1910).[6]

Historians and ethnographers were not alone in the early decades of religious studies. The fathers of modern social science, Marx, Weber, Durkheim, and Freud, also devoted serious attention to religion. But their contributions dampened further the quest for grand designs; the early speculations of the historians were grounded now by a net of methodological and theoretical "isms": positivism, reductionism, functionalism, relativism, determinism, and atheism. For Marx, religion was the cry of alienated consciousness, a variable dependent upon material production, labor relations, and capital distribution. Weber held that religious values shape the forms of economic life, but these same forms, treated lightly by religious founders and saints of the past, now imprison society like an iron cage. Durkheim interpreted the interplay of religion and society by equating the divine with the collective consciousness of tribes and nations, while Freud sought the religious impulse in buried memories of childhood trauma. Weber alone proposed a hermeneutic for understanding the varieties of world

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[6]Mircea Eliade, The Quest: History and Meaning in Religion (Chicago: University of Chicago Press, 1969), pp. 12-53.

religion, but he joined the others in a functionalist retreat from the truth claims of revelation. All four founders of modern social science were self-acknowledged non-believers.[7]

By the middle of the twentieth century religious studies had established itself as a ranking department in the colleges and universities of Europe and North America. Two distinct approaches to method and theory had gained recognition. The scientific study of religion, sobered from its early excesses, based its research on data obtained from anthropological fieldwork, sociological and psychological survey methods, clinical evaluations and laboratory findings. These data were interpreted to detect patterns of order relating religious thought and action to other dimensions of human culture and natural history. Often these patterns involved the functional or causal interaction among specified variables such as religious beliefs, institutions, symbols, reported experiences, and other cultural phenomena. Collaboration between religion specialists and colleagues in the social science disciplines was increasingly common.

On the other hand, the phenomenology of religion emerged as a vocal and frequently strident adversary of the methods and findings of social science. Following directions charted early in the nineteenth century by Schleiermacher and Herder, who grounded religion in human experience and feeling rather than in reason, the phenomenological approach to religion has been primarily a reaction to the challenge of

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[7]Robert W. Friedrichs, "The Functionalist Paradigm Dominating the Social-Scientific Study of Religion, and a Structural Alternative," The Council on the Study of Religion Bulletin 13 (February 1982): 1-7.

science. According to one phenomenologist, Walter L. Brenneman, Jr., the scientist's vision of a universe reduced to random patterns of matter and energy caused an intellectual crisis by the late nineteenth century. Philosophy first surrendered to this view in the positivism of Auguste Comte and J. S. Mill, then marshalled its resistance in the philosophical phenomenology of Edmund Husserl (1859-1930). Similarly, religious studies collaborated with the enemy by endorsing the evolutionist theories of Herbert Spencer and Edward Tylor, but then recovered its bearings in the phenomenology of Rudolph Otto (1869-1937). As a significant turning point, Husserl's Logical Investigations (1900) constituted "a systematic critique of the methods of psychology and the social sciences where ideas are reduced to biological facts. . . .[I]t was Husserl's goal, at this time, to release philosophy from the death grip of the scientific-biological worldview so that it might retain its autonomy."[8]

Phenomenologists insisted upon the suspension of the "natural attitude" of critical objectivity. Rather than science's quest for objective patterns of natural order, phenomenologists sought to uncover the hidden essences of human experience through subjective introspection, sympathetic understanding, and creative hermeneutics. While the scientific approach attempted to locate religious experience within the contexts represented by the established disciplines of

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[8]Walter L. Brenneman, Jr., "The Attitude of Crisis: Philosophical Phenomenology and the Phenomenology of Religion," in The Seeing Eye: Hermeneutical Phenomenology in the Study of Religion, by Brenneman, Stanley O. Yarian, and Alan M. Olson (University Park, Md: Penn State Press, 1980), p. 20.

science, phenomenology treated religious experience as a separate reality which is irreducible and sui generis, that is, based on a dimension of humanness which lies beyond the reach of science. In place of the stratified realms of scientific theory, phenomenology proposed a simple dualism (such as Eliade's sacred and profane) or a random pluralism (such as Alfred Schutz's multiple realities). Finally, the goal of phenomenology was to identify and classify the eternal, archaic, or primordial aspects of religious experience, while that of the scientific study of religion was to evaluate the functions of religion in its many changing settings.

To illustrate the extent of the divergence between these approaches, we may turn again to Professor Brenneman. The author contrasts the approach or "attitude" of the phenomenology of religion and philosophical phenomenolgy with that of the sciences:

> Within the phenomenology of religion, the attitude sought to prevent the reduction of the worlds of ancient India and the Australian aborigine to a scientific premise. It resisted the relativization of these worlds which placed them on an historical schema judged by norms that fall at the end of the time line. Within philosophical phenomenology the attitude sought to prevent the reduction of logic to a biological function that relativized it within a given evolutionary schema.
>
> Both phenomenologies seek that ontological level of the threat confronting them, a level that is essentially transcendental and not subject to historical reductionism, a level that provides certainty and escapes relativism based on speculation. We find examples of this focus in Husserl's notion of transcendental subjectivity and in Eliade's concern for a "new humanism," a humanism based upon the religious or archaic dimension of humanity and not upon a rationality subject to evolutionary change and cultural fashion.[9]

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[9]Ibid., p. 26.

Three methodological charges may be identified in this phenomenologist's polemic against the scientific study of religion. These are (1) functionalism, the charge that science defines religion by its fruits (results) rather than its roots (sources), attributes (essences), or pursuits (goals and values); (2) historicism, the charge that science relativizes the "certainty" of religious experience by subjecting it to evolutionary, historical, or cultural norms or "fashions"; and (3) reductionism, the charge that science reduces the subjective worlds of religious experience to biological, or worse, physico-chemical, laws, and that these empirical "speculations" of science fail to plumb the transcendental dimensions of consciousness.

After a century of debate, these unresolved problems of method have taken their toll on the study of religion. The very names applied to enterprise have suggested a lack of methodological focus, ranging as they have from the early Religionswissenschaft to the "science(s) of religion(s)," "comparative (study of) religion(s)," "history of religion(s)," "the academic study of religion," "religious studies," "religiology," or simply "religion."[10] Countering those who hold that religious studies should aspire to the status of a social science, many respected authorities in the field, from Rudolf Otto to Wilfred Cantwell Smith, have argued that the special subject matter of the

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[10]Reinhard Pummer, "Religionswissenschaft or Religiology?" Numen 19 (1972); "The Study Conference in 'Methodology of the Science of Religion' in Turku, Finland," Numen 21 (1974); and "Recent Publications of the Methodology of the Science of Religion," Numen 22 (1975); cited by Donald Wiebe, "Is a Science of Religion Possible?" Studies in Religion 7 (1978): 5-17.

field, characterized by such terms as "religious experience" or "faith," places it beyond the reach of empirical methods; it is a "field of studies," not a "discipline," according to Clyde Holbrook, an "interpretive art," not a "science," according to Winston L. King.[11] And while some, with Ninian Smart, would grant religious studies a place among the social sciences as long as it avoids the extremes of apologetics and reductionism, others doubt that it has achieved enough direction to merit any disciplinary niche at all. According to Donald Wiebe, "It is a well known fact that this area of study displays little or no methodological cohesiveness despite almost a century of discussion and debate."[12]

This sober conclusion has been echoed by the leading spokesmen on both sides of the controversy regarding the place of science. Writing in 1965, Mircea Eliade, the leading exponent of the history and phenomenology of religion in North America, contrasted the early passion and confidence of the field, as reflected in the popular reception of the theories of Müller, Lang, and Frazer, with the "more modest, more withdrawn, indeed more timid" efforts of contemporary researchers, and concluded that "one cannot contemplate the present situation without melancholy."[13] On the other side, the heirs of the

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[11]Wiebe summarizes these and other positions on the status of the field of religious studies.

[12]Ibid., p. 8.

[13]Mircea Eliade, "Crisis and Renewal in History of Religion," History of Religions 5 (1965): 1-2, reprinted in Eliade, The Quest: History and Meaning in Religion , p. 54-55.

scientific approach, surveying the state of research in 1973, ask, "Are we lost? Is the scientific study of religion without essential progress or direction after a century or more of work inspired by a handful of classics?" Their conclusion is that "little can be cited in the way of orderly growth based on the classical foundations."[14]

III

Given the hardening of the social scientific and phenomenological positions in the study of religion by the nineteen sixties, and the acknowledgement of stagnation in the field by leading proponents of both approaches, the time appeared auspicious for a mediating proposal. This was boldly offered in a survey article in the International Encyclopedia of the Social Sciences in 1968 by the sociologist Robert N. Bellah. Noting the limitations both of the phenomenological approach, which "jealously guarded the specific nature of religion but eschewed any explanation of it," and of the scientific approach, which "provided a number of ways of explaining religion which in the end explained it away," Bellah suggested a tertium quid in the form of what he termed the "cybernetic model."[15]

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[14]Charles Y. Glock and Phillip E. Hammond, Beyond the Classics? Essays in the Scientific Study of Religion (New York: Harper & Row, 1973), pp. 409-410.

[15]Robert N. Bellah, "The Sociology of Religion," International Encyclopedia of the Social Sciences (New York: Macmillan, 1968): reprinted in Bellah, Beyond Belief: Essays on Religion in a Post-Traditional World (New York: Harper & Row, 1970), p. 6.

Integrating the findings of biologists, social scientists, and philosophers, Bellah's cybernetic model construed human experience and behavior as "action systems" shaped by an interplay of genetic and cultural information. Personality and society are "symbolically patterned motivational systems," and religion is "the most general mechanism for linking meaning and motivation." Because the cybernetic model places great stress on each system's capacity for autonomy, learning, decision and control, it provides "the ability, lacking in previous mechanistic and organic models, to assimilate the contributions of the humanistic disciplines. . .without abandoning an essentially scientific approach."[16]

Bellah's essay marked the first explicit proposal by any scholar to apply the language and outlock of systems theory to the study of religion. Cybernetics, growing out of the computer technology of the forties, was soon incorporated in the broader enterprise of systems theory by Bertalanffy and adapted to sociology by Talcott Parsons in the fifties. Since any complex entity, whether a molecule, organism, personality, social group, or ideology may be interpreted as a system displaying the properties of integration, adaptation, emergence, and hierarchy, the study of adaptive self-regulation, or cybernetics, thus became a principal component in general systems theory.[17]

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[16]Ibid., p. 10.

[17]Ludwig von Bertalanffy, General System Theory: Foundations, Development, Applications, Revised Edition (New York: Braziller, 1968), p. 17. The founding principles of cybernetics were first systematized by Norbert Wiener in Cybernetics (New York: John Wiley & Sons, 1948).

Furthermore, the systems orientation of Bellah's model was indebted to Parsons' action theory which, like Bertalanffy's work, grew out of and reflected the interdisciplinary orientation of the times. In 1951 Parsons stressed the centrality of the systems concept for social science:

> The concept of system as a guiding conceptual scheme is of the first importance as an organizing principle and a guide to research. It may thus be said that the concept of a theory of systems is the most strategic tool for working toward the attainment of a system of theory.[18]

Parsons' emphasis on the role of interrelated systems in the analysis of personality and society was subsequently reflected in several influential essays on religion by Bellah and by the anthropologist Clifford Geertz which prepared the way for the cybernetic-systems model of 1968.[19]

The year of Bellah's essay marked several other important events in the emergence of the systems movement. Bertalanffy published his General System Theory: Foundations, Development, Applications, a collection of programmatic essays which was soon translated into six languages and enlarged for republication in 1971 and 1972; and Walter Buckley brought out a massive anthology of systems-theoretical applications to the social and behavioral sciences culled from the work

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[18]Talcott Parsons, The Social System (Glencoe, Ill.: The Free Press, 1951), p. 537.

[19]Robert N. Bellah, "The Place of Religion in Human Action," Review of Religion 22 (1958): 137-154; "Religious Evolution," American Sociological Review 29 (1964): 358-374; Clifford Geertz, "Religion as a Cultural System," in Anthropological Approaches to the Study of Religion, ed. M. Banton (London: Tavistock Publications, 1966), pp. 1-46.

of more than sixty authors.[20] At Huntington Beach, California, a symposium on "Hierarchical Structures in Nature and Art" was convened by Lancelot Law Whyte and Albert Wilson, under the sponsorship of the McDouglas Advanced Research Laboratories and the University of California, Irvine, bringing together scientists, engineers, designers, and philosophers interested in a particular aspect of systems theory. One valuable outcome of the symposium was a bibliographic essay classifying types of hierarchy, written by Donna Wilson and published with the proceedings the following year.[21] Meanwhile, an historic symposium was held in Alpbach, Switzerland to review the achievements of systems theory and related trends in theoretical biology and the social sciences. The theme of the meetings, "Beyond Reductionism," was introduced by a detailed exposition of systems theory by the biologist Paul A. Wiess and concluded several days later with Victor Frankl's argument for the role of meaning systems and the "self-transcendent quality" in human experience. Other papers by Bertalanffy, Jean Piaget, C. H. Waddington, Jerome Bruner and six others were published the following year by Arthur Koestler and J. R. Smythies, the organizers of the conference.[22]

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[20]Ludwig von Bertalanffy, supra, note 17. Walter Buckley, Systems Research for the Behavioral Scientist: A Sourcebook (Chicago: Aldine Publishing Co., 1968).

[21]Lancelot Law White, Albert G. Wilson, and Donna Wilson, eds., Hierarchical Structures (New York: American Elsevier Publishing Co., 1969).

[22]Arthur Koestler and J. R. Smythies, Beyond Reductionism: New Perspectives in the Life Sciences (London: Hutchinson, 1969).

In the years following these events, systems concepts and principles, indeed, the systems approach, entered the language, literature, theory, and practice of the life sciences, human service professions, business management, public administration, and engineering. Yet its applicability and relevance to the human sciences has been hotly debated. Arguments against the systems perspective in these disciplines have come from four sides. Social scientists of the positivist persuasion have alleged its abstractness, its failure to operationalize central principles and concepts, and its inability to engage in empirically rooted, mathematically precise, and predictively valid research; for them, systems theory is not scientific enough.[23] Humanists have questioned whether systems theory may account for the depth and richness of human experience, be it personal, social, cultural, or religious; given the putative failure of the sciences to penetrate these dimensions of reality, systems theory is too scientific.[24] As an exemplar of methodological holism and ontological organicism, systems theory is further subject to the admonitions of individualist-pluralist philosophers of science: systems theory blurs critical distinctions among levels of description, and

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[23]See, for example, David Berlinski, On Systems Analysis: An Essay Concerning the Limitations of Some Mathematical Methods in the Social, Political, and Biological Sciences (Cambridge, Mass.: The MIT Press, 1976).

[24]Joseph L. Esposito, "System, Holon, and Persons: A Critique of Systems Philosophy," International Philosophical Quarterly 16 (1976): 219-236.

fails to analyze one thing at a time.[25] Finally, as an applied methodology in the practical realms of social policy, management science, and operations research, systems theory is assailed as an elitist ideology designed to foster the social and political aims of various intellegentsia.[26]

Some disciplines within the social sciences have embraced the systems approach more readily than others. Sociology in particular, perhaps because of its intrinsic concern with the relations of wholes (institutions and societies) and parts (individual actors) and with the problem of continuity and change, has subjected the systems paradigm to considerable scrutiny. Robert W. Friedrichs, in a detailed survey of methodological currents in sociology since the nineteen fifties, predicted in 1970 that the systems paradigm would prevail over those of social equilibrium or conflict, simply because it has the capacity to encompass both. Science is after all the search for order, and only the notion of relational systems is suited to trace the evolution of order in the context of change. Friedrichs concludes that "Talcott Parsons is right in recognizing that the term ["systems"] must be regarded as a -- perhaps the -- primary sociological referent if sociology is to be viewed as a science."[27]

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[25]D. C. Phillips, Holistic Thought in Social Science (Stanford, Calif.: Stanford University Press, 1976).

[26]Robert Lilienfeld, The Rise of Systems Theory: An Ideological Analysis (New York: John Wiley & Sons, 1978).

[27]Robert W. Friedrichs, A Sociology of Sociology (New York: The Free Press, 1970), p. 294.

Meanwhile, for religious studies, the court of professional opinion has not ruled on the viability of systems theory since the time of Bellah's proposal. Much new evidence -- in the form of constructive applications of the systems paradigm to wide-ranging problems in the field -- has been filed in the hearing room. Yet the jury remains sequestered in its chambers.

IV

In the chapters which follow, we shall define the origins and scope of systems theory, cite its major applications in the field of religious studies, and assess its viability for future research in religion. While arguing for the positive value of the systems approach throughout, it will be our primary intention to identify and address the chief objections to its use in religious studies. For only by a balanced presentation of the achievements and limits of systems theory in religious studies may a verdict satisfactory to its critics be reached.

Following an exposition of the history and principles of systems theory in Chapter Two and a survey of its applications in the religious studies literature in Chapter Three, our analysis will embark upon its critique of method. For those acquainted with systems theory, such a procedure may seem ironic, for, as John W. Sutherland writes,

> The general systems theorist. . .makes his primary mark by constantly questioning the methods and intentions of science. In effect, though he may belong formally to any of several dozen substantive disciplines, his first attention must be to the epistemological predicates of science in general. This is so because general systems theory is not really a theory at all--it is fundamentally a new approach to scientific analysis,

> an approach which stands in both logical and procedural opposition to more traditional schemas such as strict empiricism, positivism, intuitionalism, or phenomenology. True, it draws its precepts eclectically from all these, but in the process of selection becomes something very different than its components.[28]

Thus we shall find ourselves in the role of one watching the watcher, of inspecting the methods of the avowed methodologists.

Specifically it will be necessary to address the charges of functionalism, historicism, and reductionism which phenomenologists have leveled at those professing a scientific account of religion. If systems theory is to be regarded as a metadiscipline based on the findings of the sciences while elucidating the value orientations of the humanities, as Bellah and others have asserted, then it must be prepared to address these charges. Each charge will be treated respectively in Chapters Four, Five, and Six. Selected examples of systems analysis in religion will be marshalled to address the charge at hand.

The methodological queries we shall direct to the systems theorists and analysts in these chapters are as follows. (1) Is the systems approach hereby adopted sufficiently empirical, i. e., is it grounded in the findings of the scientific and phenomenological studies of religion which it proposes to bridge? (2) Is it sufficiently explanatory, i. e., does it impart new understanding or clarify new relationships among these data? And (3) is it sufficiently heuristic, i. e., does it suggest new avenues for research or new methods of

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[28]John W. Sutherland, A General Systems Philosophy for the Social and Behavioral Sciences (New York: George Braziller, 1973), p. vii.

investigation? When such questions are circumspectly answered we may consider our role as methodological investigators to be fulfilled.

Certain limitations of scope and procedure must be imposed in this study. While the breadth of systems-theoretical applications in a host of disciplines other than religious studies may be noted, no effort can be made here to assess its success or failure in these fields. The literature applying systems analysis to church administration and pastoral counseling, for example, must be disregarded as irrelevant to the problem of religious studies methodology. Historical consideration of the origins of systems theory, religious studies, and the philosophies of science and religion must be restricted in most cases.

Several points may be made about the use of terminology in this dissertation. The terms "systems theory" and "general system(s) theory" will be used interchangeably to denote the metadiscipline founded by Bertalanffy and others. In these contexts the word "theory" is used advisedly and in keeping with the interpretation of the theoretical and methodological elements in the systems enterprise offered in the second chapter. On the other hand, the terms "systems thought," "systems analysis," and like combinations (". . .approach, orientation, paradigm, outlook, view, enterprise, perspective, etc.") will be used interchangeably to denote the application and dissemination of general systems theory in religious studies and other fields of study. The term "systems philosophy" will be reserved for the work of Ervin Laszlo, who alone has attempted to develop the philosophical implications of systems theory in a formal, if

introductory, way. Finally, "cybernetic(s)" and "systems-cybernetic(s)" will be utilized in those contexts in which the principles of adaptation and emergence are intended.

T W O

ORIGINS AND PRINCIPLES OF GENERAL SYSTEMS THEORY

Systems theory did not appear full-blown in the writings of Ludwig von Bertalanffy. Following the second world war, researchers from several disciplines, among them cyberneticist Norbert Wiener, economist Kenneth Boulding, mathematician Anatol Rapoport, and physiologist Ralph Gerard offered formative ingredients to the systems-cybernetic perspective. But earlier generations of thought and research had prepared the way. Bertalanffy grounds his discoveries in the remarkably independent appearance of holistic, organismic, and gestalt concepts in physics, biology, psychology, and philosophy after World War I, and he traces these influences back to the intellectual climate of the late nineteenth century,the mysticism of Nicolas of Cusa, Giordano Bruno, Jacob Böhme, Goethe, and Hölderlin, and ultimately to the metaphysics of Heraclitus.[1] In this chapter we shall focus on developments of the past one hundred years and then turn to a summary of the central principles of general systems theory.

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[1]Ludwig von Bertalanffy, Problems of Life, pp. 176-199.

I

Systems theory and religious studies share a common heritage in Darwinian thought. Both offered solutions to dilemmas posed by the fall of traditional absolutes in science and religion. In religious studies, the challenge of scientific method prompted ambitious theories of origin on the one hand, and the phenomenological quest for essences on the other. As different as these responses were -- one embracing scientific methods and the other decrying them -- both appear in retrospect as a groping for pattern and order in a period of loss. If Hegel's philosophy provided metaphysical solace to a century left "reeling under the blows of Hume, the Enlighterment, and Kant,"[2] then the speculative theories and methods of religious studies were consolation to an era sobered by the discoveries of Darwin, Marx, and Freud.

A central issue for religionists and humanists of the late nineteenth century was the debate over mechanism and vitalism. Descartes once declared animals to be machines, obeying the laws of physics like plants and planets. Later, William Harvey showed that the heart is little more than a vacuum pump at the center of an arterial plumbing network. Eventually principles of acoustics, optics, electricity, thermodynamics, and chemistry were successfully applied to problems of animal and human physiology, becoming the basis for the new sciences of biophysics and biochemistry. Nevertheless, Descartes saved

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[2]Morton White, The Age of Analysis: Twentieth Century Philosophers (New York: Mentor Books, 1955), p. 14.

for humans a higher place based on their alleged possession of the res cogitiva, an incorporeal organ of thought which animals lacked. In 1747, the French physician and philosopher Julien de La Mettrie proposed the homme machine to complement the bete machine of Descartes. All of man's movements, sensations, emotions, and thoughts, La Mettrie argued, were caused by material actions, reactions, and configurations; all arguments for an incorporeal soul or vital principle were suspect. So was mechanism enthroned.

By the nineteenth century, little evidence for the vitalistic position -- outside of human subjectivity itself -- was left. In 1828 the first organic compound was synthesized from inorganic chemicals in Wöhler's laboratory, and in 1859 Darwin published the Origin of Species. Encompassing finally the beast-machines and man-machines of speculation was the World-Machine of scientific theory, backed up by an enormous store of facts. This was a universe stripped of direction and value: "Whereas Descartes had pointed to a divine Creator as the engineer of the living machines," Bertalanffy observes, "now the origin of purposiveness in the living world seemed to be explained on the basis of chance variations and selection, eliminating all purposive agents."[3]

A distinguished feature of the new mechanistic biology was the supremacy of the cell: "Life is cell activity," declared Rudolf

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[3]Bertalanffy, Problems of Life, p. 4.

Virchow in 1855.[4] Reducing the complexity of organisms to the microscopic movements of cells paralleled the theoretical reduction of gas properties to the hidden play of molecules. The minute and random variations selected by environmental pressures in Darwin's theory might one day be measured if the particles in question were discrete and isolable enough; such was the hope of researchers. But in the years to come (still decades before the genetic code was cracked or even imagined), the cell proved a dilemma. Under ever closer inspection it appeared to be structurally complex and functionally mysterious: what happened in the nucleus? how were hereditary traits passed on? how did evolution actually work? Moreover, the exclusive focus on cell biology failed to explain the myriad questions at the level of the organism: how do cells cooperate? how do organs and functions differentiate? how does the organism cohere and, apparently, act as a whole?

The pressure to return to vitalistic explanation during the late nineteenth century was intense. Using for evidence his famous experiment of 1891 in which a half of a severed sea urchin embryo was found to mature as a whole organism, the German biologist Hans Driesch resurrected Aristotle's hoary notion of "entelechy" once again. Like Descartes' res cogitiva and Henri Bergson's élan vital, Driesch's life force was incorporeal and, as such, would elude forever the instruments and the assent of the scientific community. Nevertheless, the

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[4]Rudolph Virchow, Disease, Life, and Man: Selected Essays of Rudolph Virchow (tr. Lelland J. Rather; Stanford, Calif., 1959), p. 106; cited by Phillips, p. 24.

appearance of Driesch's two works, The Science and Philosophy of Organism (1908) and The History and Theory of Vitalism (1914), along with the metaphysical vitalism of Bergson's Creative Evolution (1907), reflects the efforts of anti-mechanistic thinkers of the time.

To say that systems theory was born in the debate over mechanism and vitalism does not mean that it was "a compromise, a muddling through or mid-course" between the alternatives, according to Bertalanffy. "Organization and wholeness considered as principles of order, immanent to organic systems, and accessible to scientific investigation, involve a basically new attitude."[5] By Bertalanffy's time this had come to be known as organicism and may be traced back to a series of journal articles appearing on both sides of the Atlantic in the 1880s. Edmund Montgomery, perhaps the first organicist, wrote for the British journal Mind in 1880:

> The whole is here in all reality antecedent to its parts. The organism is prior to its tissues, the tissues prior to their supposed elements. The centralized organism is not, as universally assumed, a multiple of ultimate units, but is, on the contrary, itself one single individuality.[6]

This article, "The Unity of the Organic Individual," and further reflections by Montgomery, entitled "Are We Cell Aggregates?" were followed in 1884 by J. S. Haldane's "Life and Mechanism," all published in Mind. Dismissing "ordinary conceptions of physical science" to explain the phenomena of life, Haldane proposed such notions as the

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[5]Bertalanffy, Problems of Life, p. 20.

[6]Edmund Montgomery,"The Unity of the Organic Individual," Mind V (1880): 326; see also "Are We Cell-Aggregates?" Mind VII (1882); cited by Phillips, p. 28.

dynamic interaction of parts and the downward influence or "manifestation" of the whole in each of the parts as ways of explaining the integrity of organisms. Finally these new conceptions were brought together in what may be the first use of the term "system" in the context of philosophical organicism. The parts of the organism, Haldane concluded, "stand to one another, and to the surroundings, not in the relation of cause and effect but in that of reciprocity. The parts of an organism and its surroundings thus form a system, any one of the parts of which constantly acts on the rest, but only does so, qua part of the system, insofar as they at the time act on it."[7]

From this time until the appearance of Bertalanffy's article on the theory of open systems the American journal Science in 1950, an uninterrupted stream of publications, spanning continents and disciplines, developed the notions of organicism and anticipated the contours of modern systems theory. In psychology, sociology, and history, this development coincided with the notion of "human studies," Geisteswissenschaften, proffered by Wilhelm Dilthey in 1883. For Dilthey, the uniqueness of human studies (including the comparative history of religions) lay in their attention to the role and problem of meaning in human experience. "Meaning" was related, Dilthey believed, to a perception of the whole of life "which fills us with the immediate sense of our undivided existence" -- a sense which is "broken" by the

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[7]J. S. Haldane, "Life and Mechanism," Mind IX (1884): p. 33 (emphasis in the original); cited by Phillips, pp. 28-29.

methodology of the natural sciences.[8] And, as one commentator observes, "Since the experience of meaning both objectively and subjectively requires the evaluation of individual phenomena in the network of the relevant whole, there is a need for a total consideration which cannot be replaced by a causal analysis." Such a consideration becomes the premise of the dialectical and hermeneutical methods of the late nineteenth century, and of systems theory in the twentieth.[9]

Within a year of Dilthey's theory in Germany and Haldane's remarks in Britain concerning the unity of organism and environment, the young American, John Dewey, based what he called a "new psychology" on an identical insight:

> The idea of environment is a necessity to the idea of organism, and with the conception of environment comes the impossibility of considering psychical life as an individual, isolated thing developing in a vacuum.[10]

Likewise, in the process of launching a profoundly new approach to the study of society, Emile Durkheim, writing in Paris, referred to social constraints and inhibitions as the downward "pressure" exerted by the totality upon the individual. Indeed, no longer may individuals be considered additively in sociological theory and method. "Rather, the

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[8]Wilhelm Dilthey, Einleitung in die Geisteswissenschaften (1883), in Gesammelte Schriften Vol. 1 (2d ed. Stuttgart and Gottingen, 1957-1960), pp. 15-16; cited by Wolfhart Pannenberg, Theology and the Philosophy of Science (Philadelphia: Westminster Press, 1976; German ed. 1973), pp. 74f.

[9]Pannenberg, p. 129.

[10]John Dewey, "The New Psychology," Andover Review II (1884): p. 285; cited by Phillips, p. 50.

system formed by their association represents a specific reality which has its own characteristics."[11] Thus the notions of whole and part, mutual causation, the levels of organization and their irreducibility swept the European and English-speaking worlds at once.

Perhaps the most lasting and influential contribution of organismic thinking to systems theory followed the discovery of the "gestalt quality" by Christian von Ehrenfels in 1890, and the development of gestalt psychology by the German researchers Wertheimer, Koffka, and Köhler in the coming years.[12] The formulation of holistic principles from rigorous empirical studies in human and animal perception confirmed many of the epistemological and ontological speculations of the early organicists and anticipated the interdisciplinary breadth of a general systems theory to come. Ehrenfels defined gestalten as psychical states or events the characteristic properties of which cannot be obtained by adding up their components. Thus a geometrical figure, a melody, or a sentence are respectively more than the sums of colored points, single notes, or separate words. Moreover the color, key, or language may change without affecting the shape, tune, or sense: gestalten are

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[11]Emile Durkheim, The Rules of Sociological Method (Eighth Ed., trans. S. A. Solovay and J. H. Mueller, ed. George E. G. Catlin, 1938; paperback ed, New York: The Free Press, 1964; first French ed., 1895), p. 103.

[12]Christian von Ehrenfels, "Über Gestaltqualitäten," Vierteljahrsschrift für wissenschaftliche Philosophie, Vol. 14 (1890); 249-292; cited in T. R. Miles, "Gestalt Theory," Encyclopedia of Philosophy, Vol. 3, pp. 318-323; q. v. for representative bibliography of the gestalt movement.

transposable. Thus gestalt properties such as the coherence of parts, functional integration, and that of "pragnänz," structural/perceptual resolution of elements based on proximity, regularity, symmetry and simplicity were discovered to be operative in problems of pattern recognition (the now-familiar goblet/faces image, melodies with missing notes, and so forth), cognitive psychology and problem-solving (Köhler's Mentality of Apes, Wertheimer's Productive Thinking), the analysis of social situations (Kurt Lewin's psychological field theories or "topological psychology"), and the physical structure of natural forms such as the soap bubble (Kaffka, Principles of Gestalt Psychology). The concept of the isomorphism (or isomorphy) of a pattern which "cuts across the divisions of realms of existence, being applicable to each of them," was born.[13]

In philosophy the holistic and organicist outlook was advanced on several fronts, by neo-Hegelian idealists, by American pragmatists, and by those naturalistic metaphysicians who came to be associated with "creative evolution" or "emergent evolution." The idealists, such as A. E. Taylor, J. E. McTaggart, and F. H. Bradley, based their holism on Hegel's doctrine of internal relations. Entities are essentially altered by the relations they keep, and it is these relations rather than any particular qualities they may possess which constitute the "more" in the expression "the whole is more than the sum of its parts." Such a position entails what may be called a vertical relation -- that

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[13]Kurt Koffka, Principles of Gestalt Psychology (New York: Harcourt, Brace & World, Harbinger paperback, 1963; first published 1935), pp. 56ff.

between the whole and its parts -- as well as the horizontal relations one expects to obtain among the parts themselves. As Bradley wrote in 1893, "Everywhere there must be a whole embracing what is related or there would be no differences and no relation."[14] Meanwhile, the American pragmatist, Charles Sanders Peirce, while diverging sharply from the idealists on many issues, could agree on the importance of a logic of wholeness and internal relations. Revising after 1885 the three onto-epistemological categories which form the emerging threads in his several systems of thought, Peirce identified "Firstness" as perceptual immediacy or quality, "Secondness" as the principle of individuation, a dyadic or horizontal relation, and "Thirdness" as the source of context, convention, norm, law, and habit -- this latter made possible by the new relation of the parts, not only to one another as in Secondness, but now to the overarching whole itself.[15] Like Dewey and James, Peirce developed his philosophy in an evolutionist vein: the answer to the pragmatist's question "What is it good for?" must always be "Survival, adaptation, improvement." But Peirce went farther. The very habits of inquiry and belief, echoed in James' "will to believe" and Dewey's process of "valuation" were rooted for Peirce in an evolutionary cosmology in which the universe itself is a vast living organism with feelings, volitions, and habits. By linking the habit of

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[14]F. H. Bradley, Appearance and Reality, 2d ed. (New York: Oxford University Press, 1962; first pub. 1893), p. 18; cited by Phillips, p. 8.

[15]Collected Papers of Charles Sanders Peirce, A. W. Burks, C. Hartshorne, and P. Weiss, eds. (Cambridge: Harvard University Press, 1931-1958), Vol. 1, pp. 220-231.

inquiry or belief, understood under the category of Thirdness, with the "habit" of the cosmos to be lawful or intelligible, Peirce proposed a highly original epistemology which prefigured the critical realism of later systems theorists such as Bertalanffy and Laszlo.[16]

The rise of evolutionary, organismic, and functionalist thought reached its zenith in the 1920s. With each passing year of this remarkable decade new classics appeared in philosophy and the sciences, all illumined by a similar cast of mind. The two volumes of Samuel Alexander's Space, Time, and Deity (1920) were influential in the formulation of C. Lloyd Morgan's Emergent Evolution (1923) and Jan Christian Smuts' Holism and Evolution (1926). Whitehead introduced his "philosophy of organism" in Science in the Modern World (1924) and Process and Reality (1929), while new works of similar outlook by the philosophers Bergson (1920), and Broad (1925), the psychologists Koffka (1924) and Köhler (1925), and the biologists Haldane (1923) and Woodger (1929) all played variations on organicist themes.[17]

Well-established by now were the notions of organization and "wholes," "system" (in an increasingly technical sense), the embeddedness of human meanings and values in the whole of life, and its embeddedness, in turn, in the matrix of nature and the social order,

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[16]For an account of the arguments linking Peirce's evolutionary cosmology with his doubt-belief theory of inquiry and his doctrine of categories, see Murray G. Murphey, "Charles Sanders Peirce," Encyclopedia of Philosophy (New York: Macmillan and Free Press, 1967), vol. 6, pp. 76-77.

[17]For a useful account of the period, see Ian G. Barbour, Issues in Science and Religion (New York: Harper Torchbook, 1971), pp. 324-336.

gestalt qualities and principles, the isomorphism of system laws in various realms and levels of discourse, the notion of internal relations, horizontal and vertical relations, the functional or "pragmatic" basis of all entities and activities, and the possibility of a world organism whose life is immanent in that of all others. What was new in the output of the twenties? Overall, it was the effort to describe and explain in systematic -- if not quite yet systemic or systems-theoretical -- terms, the modes and means by which things may be said to have become more varied, more complex, and more interdependent over the aeons of geological time, through the stages of natural and biological history, and up and down the structural and functional hierarchies of energy-matter, mind, society, and symbol. While these issues formed the backdrop for the logical, epistemological, and ethical concerns of earlier thinkers, the new cosmologists placed them at center stage. Related questions, such as the role or purpose or final causes, the nature of personality, and the problems of theodicy and theology were addressed and resolved in a variety of ways. While Alexander and Whitehead attempted to offer accounts of religious experience and the reality of God, for example, Morgan and Smuts were reticent about these matters.

This was the setting for the appearance of Ludwig von Bertalanffy's first book. In 1928, the year of Science and the Philosophy of Organicism by the vitalist Driesch, and the English release of The World as an Organic Whole by the Russian intuitionist philosopher, N. O. Lossky, the twenty-seven-year-old Austrian

biologist published his German version of Modern Theories of Development (the English translation was completed in 1933 by the eminent biologist J. H. Woodger). Bertalannfy wrote that "the chief task of biology must be to discern the laws of biological systems at all levels or organization," and that such a discovery would point "a fundamental change in the world picture."[18]

Reflecting on the epochal convergence of theoretical insights which took place between the 1880s and the 1920s, Bertalanffy observes that "from absolutely different and even diametrically opposed starting points, from the most varied fields of scientific research, from idealistic and materialistic philosophies, in different countries and social environments, essentially similar concepts have evolved."[19] These conceptions became the basis for "general system theory."

II

During the nineteen thirties and forties Bertalanffy produced a steady stream of monographs and major works in theoretical biology, all oriented to the defense and development of the organismic conception, or, as he increasingly called it, einer allgemeinen Systemlehre. In 1948 the new fields of cybernetics and information theory, developed by

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[18]Cited by Ervin Laszlo, ed., The Relevance of General Systems Theory, papers presented to Ludwig von Bertalannfy on his seventieth birthday (New York: George Braziller, 1972), p. 3.

[19]Ludwig von Bertalanffy, Problems of Life, pp. 198-199. Such intellectual convergence may be seen as an example of Bertalanffy's principle of "equifinality," whereby, in open systems, "the same final state may be reached from different initial conditions and in different ways" (General System Theory, p. 40).

teams of researchers at American universities, were brought to public attention by the appearance of Norbert Wiener's Cybernetics, or Control and Communication in the Animal and the Machine, and Claude Shannon and Warren Weaver's The Mathematical Theory of Communication. Many of the ideas contained in these works were immediately incorporated into the systems perspective, so that by mid-century the basic principles of a general systems theory could be stated.

A comparison of the best-known programmatic statements by systems theorists over twenty-five years, in particular those of Bertalanffy (1945), the economist and a founding member of the Society for General Systems Research, Kenneth Boulding (1956), and the philosopher most responsible for articulating the systems viewpoint, Ervin Laszlo (1972), reveals the consensus which settled over the field as a result of its intensive early cultivation.[20] A summary of the four chief systems principles or "invariances" (Laszlo) will provide points of reference for further analysis throughout the dissertation.

The names Integration, Adaptation, Emergence, and Hierarchy are adopted herein as best representing the essence of the typology,

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[20]Ludwig von Bertalanffy, "Some Systems Concepts in Elementary Mathematical Consideration," (1945), reprinted in General Systems Theory, pp. 54-88; Kenneth Boulding, "General Systems Theory--The Skeleton of Science," Management Science 2 (1956): 197-208, reprinted in Modern Systems Research for the Behavioral Scientist, ed. Walter Buckley (Chicago: Aldine Publishing Company, 1968), pp. 3-10; Ervin Laszlo, The Systems View of the World (New York: George Braziller, 1972), pp. 17-76. (The four principles cited above also form the structure of Laszlo's Introduction to Systems Philosophy (New York: Gordon S. Breach, 1972), but we shall follow the presentation in the Braziller volume.

despite difference in terminology among the authors. Variants are offered in parentheses.

The Principle of Integration (holism, systemic state property). "Natural systems are wholes with irreducible properties" (Laszlo, p. 27). Any complex entity, or system, may be defined as "a set of elements standing in interrelations" (Bertalanffy, p. 55). Mere analysis of the number, species, and properties of individual elements within a system will not yield full understanding. These "summative" properties, while providing the agenda for classical science, are insufficient to account for the total behavior of a system, whether it is an atom, a micro-organism, a human personality, a nation, a galaxy, or a system of thought. It is rather the relations among elements, their structure, organization -- in short, their degree of integration -- which provide the "constitutive" properties which are requisite for explanation. The concept of system as an irreducible set of relations thus stands as a new "paradigm" for scientific research.[21] The principle of integration will be treated at length in Chapter Seven.

The Principle of Adaptation (self-regulation, self-stabilization, or cybernetics I). "Natural systems maintain themselves in a changing environment" (Laszlo, p. 34). The structure of a system, the

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[21]Bertalanffy suggests that the emphasis on the relational paradigm of systems, as opposed to the reductive paradigm of classical physics, represents a scientific revolution, as defined by Thomas S. Kuhn in The Structure of Scientific Revolutions (Chicago: University of Chicago Press, 1962). Such revolutions "bring to the fore aspects which previously were not seen or perceived, or even suppressed in 'normal' science, i. e. science generally accepted or practiced at the time" (General System Theory, p. 18).

properties of its elements and their interrelations, provide norms according to which certain states of the individual are preferred. "Behavior is described in terms of restoration of those preferred states when they are disturbed by the environment" (Boulding, p. 6). Boyle's Law accounts for the changes of temperature and pressure of a gas when its volume is altered; in The Wisdom of the Body (1939), W. B. Cannon described the "homeostasis" or relative invariance of temperature, fluid, and chemical contents maintained by the human body; in economics, Pareto's law defines the income distributions and the "natural price" of goods and services in an economy of changing production, distribution and consumption. In biology a damaged organism repairs itself by transferring functions to remaining parts or by healing or regenerating itself. An organism, anticipating age and death, provides for its own replacement through reproduction. Thus human adaptation including all life-cycle processes, may be seen as the interplay among physiological (including biochemical and genetic) and environmental (including social and cultural) forces. The mechanism for each kind of self-regulation is typically "cybernetic," that is, the work of an internal "steersman" (Greek kubernetes, whence the English "governor") following norms inherent in the system's structure.[22] The principle of adaptation will be treated at length in

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[22]Noting the frequent identification of systems theory with cybernetics, Bertalanffy offers the following clarification: "Cybernetics, as the theory of control mechanisms in technology and nature and founded on the concepts of information and feedback, is but a part of a general theory of systems; cybernetic systems are a special case, however important, of systems showing self-regulation" (General Systems Theory, p. 17).

Chapter Four.

The Principle of Emergence (growth, self-organization, evolution, or Cybernetics II). "Natural systems create themselves in response to the challenge of the environment" (Laszlo, p. 46). The growth, maturation, or ontogenesis of an organism may be interpreted again as the interplay of genetic, environmental, and, in the case of humans, cultural influences; but the emphasis here is not upon self-stabilization, but upon structural change, functional innovation, creativity and individuation. The elements of the system, whether enzymes, personality traits, or corporate officers, may be seen to differentiate their functions to meet the demands, for example, of changing diet, peer conflict, and market pressure. In species growth, evolution, or phylogenesis, environmental pressures filter and "select" random mutations which result, over vast periods of time, in structural novelty, "emergent" properties, and enhanced survival. While this process appears less passive and more "creative" at the upper end of the tree of life, the growth and survival of systems at all levels depends on their capacity for increased complexity. As the universe continues to "run down" in accordance with the laws of thermodynamics, open, evolving systems absorb energy from the environment, create new order, and provide for future growth. We shall return to the principle of emergence in Chapter Five.

The Principle of Hierarchy. "Natural systems are coordinating interfaces in nature's hierarchy" (Laszlo, p. 67). Perhaps the most striking feature of modern systems thought is its similarity to a

worldview which dominated Western philosophy and theology from Plato and Aristotle through the Middle Ages and well into the nineteenth century. The vision of a "great chain of being" spanning the universe from its minutest elements to its most ethereal forms, and mediating the spatiotemporal and logical categories of size and complexity, cause and effect, creation and evolution, and mind and matter -- such was the vision which inspired philosophers from Plotinus to Leibniz, Spinoza, Hegel, and Whitehead, and religious thinkers from Augustine and Pseudo-Dionysius to Giordano Bruno, Nicolas of Cusa, Samuel Alexander, and Teilhard de Chardin.[23] While the classical vision of hierarchy, with its static notions of plenitude, gradation, and continuity was anchored in metaphysical speculation and mysticism, however, the cosmology of the systems theorists is a dynamic conception rooted in the empirical findings of modern science. As Bertalanffy writes,

> Speaking in "material" language, this means that the world (i. e. the total of observable phenomena) shows a structural uniformity, manifesting itself by isomorphic traces of Order in its different levels or realms. Reality, in the modern conception, appears as a tremendous hierarchical order of organized entities, leading, in a superposition of many levels, from physical and chemical to biological and sociological systems. Unity of Science is granted, not by a utopian reduction of all sciences to physics and chemistry, but by the structural uniformities of the different levels of reality.[24]

This statement may be taken both as a summary of the theoretical principles of systems theory and as a pointer to its methodological objectives. The goal of systems theory consists of charting the

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[23]Arthur O. Lovejoy, The Great Chain of Being (Cambridge: Harvard University Press, 1936; Harvard Paperback, 1964).

[24]Bertalanffy, General Systems Theory, p. 87.

"isomorphic traces of order" which link the levels and realms of existence. Just as its principles may be illustrated by examples from the suborganic, organic, and supraorganic (e. g. sociological, conceptual) realms, so the systems enterprise may be viewed as a metadiscipline scanning the sciences for evidence of its conception of a hierarchy of irreducible, self-regulating and evolving natural systems. Boulding suggests that systems research may proceed either by identifying patterns of organization and behavior which are common to phenomena in the several disciplines, or by arranging all phenomena in a hierarchy of complexity at the outset. Such a hierarchy would correspond to the complexity of the "individuals" treated by the various empirical fields. In his well-known article, "General Systems Theory — The Skeleton of Science," Boulding proposed nine levels, from "frameworks" ("the geography and anatomy of the universe"), "clockworks" (solar systems, simple machines) and "thermostats" (homeomorphic and cybernetic processes) through "open systems" (simple organisms, differentiated plant-forms, animals, and humans). Level eight, sociocultural and symbolic systems, is concerned with "the content and meaning of messages, the nature and dimensions of value systems, the transcription of images into a historical record, the subtle symbolizations of art, music, and poetry, and the complex gamut of human emotions" (Boulding, p. 7).

The ninth and final level of Boulding's hierarchy is that of "transcendental systems." Venturing that even "the ultimates and absolutes and the inescapable unknowables [may] exhibit systematic

structure and relationship," he nevertheless suspects he will be accused of "having built Babel to the clouds" if he says much more (Boulding, p. 8). It is significant that Bertalanffy deletes this level without comment in his synopsis of Boulding's proposal years later (Bertalanffy, pp. 28-29). In spite of Boulding's parting remark ("It will be a sad day for man when nobody is allowed to ask questions that do not have any answers"), it is clear that for Bertalanffy, as for Laszlo and the majority of general systems theorists, the value claims implicit in systems theory are cautiously limited to those associated with scientific humanism. Here they are invoked to defend the "reality" of human meanings and to bridge the divisions in human knowledge:

> If reality is a hierarchy of organized wholes, the image of man will be different from what it is in a world of physical particles governed by chance events as the ultimate and only "true" reality. Rather, the world of symbols, values, social entities and cultures is something very "real"; and its embeddedness in a cosmic order of hierarchies is apt to bridge the opposition of C. P. Snow's "two cultures" of science and the humanities, technology and history, natural and social sciences, or in whatever way the antithesis is formulated.[25]

On the other hand, if we wish for an account of the role, if not the reality, of "transcendental systems" as they may be embedded in the symbols and values of historical religious traditions, we must turn to those who study religions, and perhaps in particular, to those who study religions with one eye on the findings of the natural and social sciences today. We shall return to examine the Principle of Hierarchy in depth in Chapter Six.

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[25]Bertalanffy, General Systems Theory, pp. xxii-xxiii.

III

In the years following their introduction to the general public in the late forties and early fifties, systems theory, cybernetics, and communication theory developed rapidly, both as independent areas of research and as aspects of a common impulse. By 1954 the movement had established itself in the founding by Bertalanffy, Boulding, Anatol Rapoport, and Ralph W. Gerard of the Society of General System Theory (later changed to the Society for General Systems Research), in affiliation with the American Association for the Advancement of Science. The Society's yearbook, General Systems, was launched the same year and has continued to the present.

In 1957 researchers interested in the application of systems thinking to practical problems in industrial production, management science and public policy met in Oxford, England to establish the International Federation of Operations Research Societies (IFORS). By 1968 there were twenty-one member societies, at least fourteen professional journals, including the Operations Research Society of America (ORSA) Abstract Journal, and more than twelve thousand participants.[26] At the Massachusetts Institute of Technology a succession of state-of-the-art computers were developed to model very complex, multivariate problems in industry, city planning, and global economics. Coordinated by Jay Forrester, a cybernetic-systems engineer known for his invention of high-speed magnetic memories, a computerized

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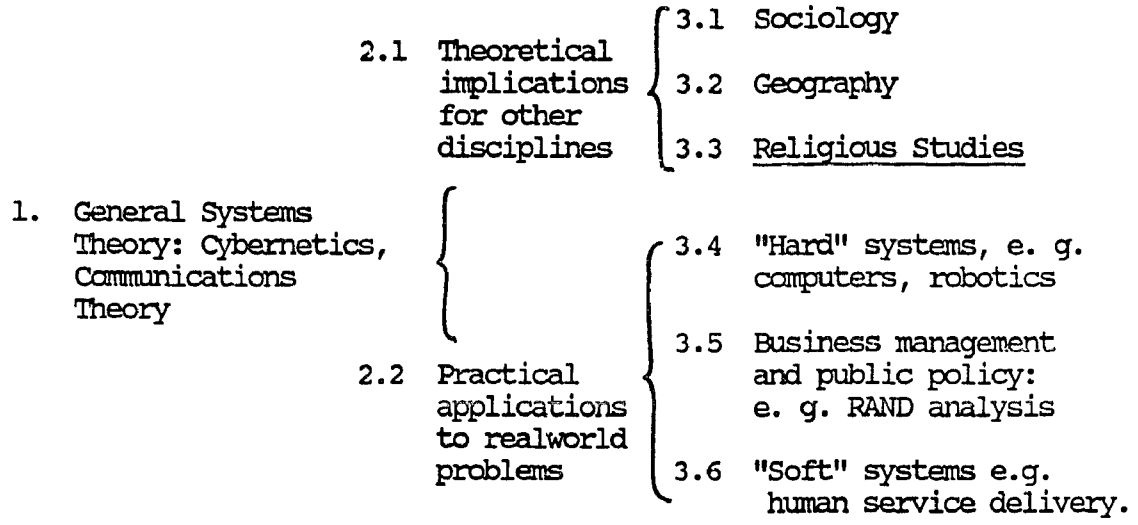
[26]Lilienfeld, The Rise of Systems Theory, p. 104.

defense alert system, and the "system dynamics" modeling behind the controversial Club of Rome reports, these projects generated massive quantities of pure and applied research.[27]

To appreciate the ramification of these new fields and to locate the application of systems thinking to religious studies within the systems movement, we may map the movement as follows:



2.1 Religious Studies in General Systems Theory
(After Checkland, 1981)

According to Peter Checkland, who presents a similar schema, the Cambridge geographers (Chorley and Kennedy, 1971; Chapman, 1977; Bennett and Chorley, 1978) who virtually rewrote their discipline from a systems point of view, offer the paradigm case in theoretical

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[27]Joel de Rosnay, The Macroscope: A New World Scientific System (New York: Harper and Row, 1979), pp. 63-64.

application.[28] The case of American sociology is more complex, as we have seen, but the wide influence of Parsonian systems theory there cannot be disputed. As for religious studies, no one will claim that it has been "rewritten" or revolutionized in recent years; however, its potential influence by systems thought would place it on the map as indicated. At a future time, one may imagine systems appraisals of the religious studies profession, religion departments, theological seminaries, their faculties, students, institutional support systems, the ebb and flow of theories and methods, funding sources, and salary and benefit standards. Such "soft systems analyses" of a realworld situations, undertaken to resolve difficulties or advance the profession, would be located at 3.6 on the map. Such analyses may be seen as quite different from our present concern, the application of systems thinking to the subject of religion per se.

From the outset, systems theorists have written both for specialists and for the general public. Early on, Norbert Wiener published popular essays on cybernetics and society, and technology and human values. His The Human Use of Human Beings (1950) explored problems of law and language, the social role of scientists, and economic dislocations of automation, while God and Golem, Inc. (1964), subtitled "A comment on certain points where cybernetics impinges on religion," looked at the analogy between human creation, divine creation, and modern industrial machine "creation" (mechanical self-

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[28]Peter Checkland, Systems Thinking, Systems Practice (Chichester, New York: John Wiley & Sons, 1981), pp. 95-97.

reproduction), to see if any functional differences may be found. His conclusion was that all are the same in systems terms, yet motives mark the product: some creatures are intended for evil (like the "Golem" or monster of the legendary Rabbi of Prague), and others for good (most peacetime technology, in Wiener's view).[29]

Another influential spokesman for systems ideas was the late Arthur Koestler. A celebrated novelist and journalist, Koestler coined several neologisms which have entered the systems vocabulary. In The Ghost in the Machine (1967), he wrote of the "Janus effect" by which "holons" or subsystems face both down the structural-functional hierarchies in their role as wholes, and up the hierarchies in their role as parts.[30] Other best-selling popularizations of systems ideas by philosophically-minded scientists have included Douglas Hofstadter's Pulitzer-Prize-winning Gödel, Escher, Bach: An Eternal Golden Braid (1979) and Fritjof Capra's Tao of Physics (1975) and The Turning Point (1982).[31] Outside of the periodical literature devoted to systems research, the most ambitious publication associated with the movement

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[29]Norbert Wiener, The Human Use of Human Beings: Cybernetics and Society (New York: Avon Books, 1967; first published in 1950); God and Golem, Inc: A Comment on Certain Points where Cybernetics Impinges on Religion (Cambridge, Mass.: M. I. T. Press, 1964).

[30]Arthur Koestler, The Ghost in the Machine (London: Hutchinson, 1967); Koestler further develops the system theory of his "holarchy" in his last major work, Janus: A Summing Up (New York: Random House, Vintage Books, 1978).

[31]Douglas Hofstadter, Gödel, Escher, Bach: An Eternal Golden Braid (New York: Basic Books, 1979). Fritjof Capra, The Tao of Physics (Boulder, Colo.: Shambhala, 1975); The Turning Point: Science, Society, and the Rising Culture (New York: Simon and Schuster, 1982).

has been the International Library of Systems Theory and Philosophy, edited by Ervin Laszlo and published by George Braziller of New York. Works in this series by Bertalanffy, Laszlo, H. H. Pattee, and John W. Sutherland have become standard reference sources for systems research.

IV

Robert Lilienfeld, in his sustained critique of the rise of the systems movement, points to two types of writing in the new fields of systems and cybernetics. In one the authors are concerned with highly technical problems, while in the other a kind of evangelical fervor or missionary spirit prevails.

> Almost to a man, the practitioners within these fields appear to feel that their work is of more than merely a "technical" value. They appear to be convinced that the discoveries and concepts they have developed are of major philosophical, societal, and even religious significance: they offer new images of humanity and society, of God and the creation of human beings, and of their interrelations.[32]

Lilienfeld is not alone in identifying the tone of challenge and urgency in the systems literature, and examples of quasi-religious rhetoric are not difficult to find in the popularizing genre.

On the other hand the rise of organicist thinking over the past century has been the result of independent contributions, many of them modest and unpretentious in their objectives. It is true that an atmosphere of fascination pervades the early Gestalt literature, and passages of great beauty and mystery may be found in the writings of

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[32]Robert Lilienfeld, The Rise of Systems Theory, pp. 1-2.

emergentist philosophers and biologists in the twenties and thirties. But now with confirmation of theoretical and technological advances in physics, computer science, population genetics and microbiology, most systems theorists propose a broad agenda of research which is based more on empirical grounds than ideological aspiration. Notions such as the isomorphism of principles at all levels of complexity would seem to approach the metaphysical, yet scientific theory cannot proceed under the assumption that truth is partial, regional or temporary. Whether in systems theory we have made the acquaintance of commissars or theologians in disguise must be determined as an outcome of the analyses to follow.

THREE

APPLICATIONS AND EXPERIMENTS: 1950-1985

I

If any place and time may be credited as the epochal meeting ground for systems theory and religious studies, it was Cambridge, Massachusetts in the nineteen fifties. The legacy of organicist thinkers at Harvard, such as Alfred North Whitehead, Walter B. Cannon, and Lawrence J. Henderson, and the rapid development of cybernetics, communication theory, and systems dynamics at MIT provided a rich environment for cross-disciplinary exchange.[1] The impetus for a new institute for the study of religion and science was provided by Ralph Wendell Burhoe, director of the Cambridge-based American Academy of Arts and Sciences, and by Edwin Prince Booth, professor of historical theology at Boston University. Meanwhile, the implications of Talcott Parsons' systems-oriented sociology for religious studies were beginning to be explored in graduate seminars at Harvard by students such as Clifford Geertz and Robert Bellah.

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[1]See Joel de Rosney, The Macroscope: A New World Scientific System, pp. 57-64, for an account of the development of theoretical interests, complex scholarly alliances, and funding arrangements at MIT from the time of Wiener in the forties to Forrester in the seventies.

More than one venture in cross-disciplinary research during this period echoed Bertalanffy's call to systems thinking and a return to human values in the sciences. Parsons, who regarded the concept of system as the central organizing principle and guide to research in the social sciences, collaborated with Edward A. Shils in 1951 to edit the influential collection of essays, Toward a General Theory of Action. "Action" was defined as a human behavioral system whose fundamental property is the interdependence of subsystem variables to achieve self-maintenance and equilibrium within a changing environment.[2] As in The Social System, published the same year, Parsons underscored the crucial role of ideas and beliefs in the shaping of human action: religion was to become a central theme in much of his sociology.

Another interdisciplinary venture which emerged in the early fifties and was to have a growing influence on religious studies was the founding of the Institute on Religion in an Age of Science (IRAS). Meeting on Star Island off the coast of New Hampshire in the summer of 1954, the Institute's founders represented two pioneering groups concerned about the roles of science and religion for the modern world. One group, led by Professor Booth of Boston University, had sponsored a series of interfaith conferences on Star Island since 1950. Church leaders and theologians representing the Christian, Jewish, Hindu, and Buddhist traditions met each summer to debate the prospects of religion in a time of growing secularity. The other group consisted of

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[2]Talcott Parsons and Edward A. Shils, eds., Toward a General Theory of Action (Cambridge: Harvard University Press, 1951), pp. 107, 180.

scientists who were members of a Committee on Science and Values of the American Academy of Arts and Sciences. Led by Ralph Burhoe, executive officer of the AAAS, this group was invited in 1954 to address the theologians on the topic "Religion in the Age of Science." Fifteen papers on the interactions and implications of science, religion, ethics, and human values were presented by the scientists. Three months later the Star Island conference committee voted to form the IRAS with Edwin Booth as its first president.[3]

During the late fifties and into the sixties the IRAS sponsored, in addition to annual Star Island conferences, scores of symposia, publications, and a curriculum enrichment program begun at Boston University School of Theology and featuring faculty and student dialogues with teams of visiting scientists. The Institute's primary contribution to the wider scholarly community, however, would be its publication of Zygon: Journal of Religion and Science, beginning in 1966 under Burhoe's editorship. In the following years, the influence of systems thought ran strongly through the pages of Zygon, though neither it nor the Institute ever adopted any official position on the study of religion and science. Burhoe's emerging "scientific theology," first presented as installments in Zygon over the journal's twenty-year history, stands as perhaps the most unflagging effort by anyone to apply systems principles to the study of religion. Writing for a book on systems theory in 1973, Burhoe reiterates the position

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[3]Ralph Wendell Burhoe, "The Institute on Religion in an Age of Science: A Twenty-Year View," Zygon 8 (1973): 59-72.

which may be traced back to his work in the 1950s:

> I suggest that systems analysis is essentially talking about the same reality that men have called God, especially when our analysis rises to higher or more comprehensive systems in a hierarchy of systems to include the world system or ultimately the cosmic ecosystem. That is, when we are talking about the system that ultimately determines human destiny, we are talking about God.[4]

Robert Bellah's early essays reflect the direction of the sociology of religion under the tutelage of Parsons. Bellah's application of cybernetic language and principles to religious studies in 1968 was prefigured in "The Systematic Study of Religion," a paper written and circulated at Harvard in 1955 in an attempt "to think through the main theoretical problems in the scientific study of religion." Bellah saw religious symbols as playing a central role in the regulation of human personality and culture: "only if such systems are postulated are many actions worth doing," he wrote.[5] Three years later Bellah published an article in the Review of Religion in which he further developed the notion of a "superordinate religious system" as a symbolic mechanism governing personality development and social behavior.[6] During the sixties Bellah was joined by Clifford Geertz, now a respected anthropologist, in advancing a theory of religion in

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[4]Ralph Wendell Burhoe, "The World System and Human Values," in The World System: Models, Norms, Applications, ed. Ervin Laszlo (New York: George Braziller, 1973), p. 163.

[5]Robert N. Bellah, "The Systematic Study of Religion" (1955), first published as an appendix to Beyond Belief: Essays on Religion in a Post-Traditional World (New York: Harper and Row, 1970), pp. 260-288.

[6]Robert N. Bellah, "The Place of Religion in Human Action," Review of Religion 22 (1958): 137-154.

systems terms. In his influential essay, "Religion as a Cultural System" (1963),[7] Geertz seized upon the notion of religion as a system of symbols which evokes specific moods and motivations; its implications, developed in a detailed definition, were immediately cited and further elaborated in works by Bellah. In "Religious Evolution" (1964) and "The Sociology of Religion" (1968), we read again of religion as symbol system and as "control system linking meaning and motivation."[8]

While the development of general systems theory in its early years followed on the heels of technological and theoretical advances in the English speaking countries, its roots in Continental philosophy and social science, especially Gestalttheorie and French sociology, have bred important parallels in Europe. The structuralist movement associated with the anthropologist Claude Lévi-Strauss and the psychologist Jean Piaget may be seen to share many principles with the systems approach. Indeed, Lévi-Strauss cites the concept of system, along with the quest for general laws, the stress on relations, and the shift to unconscious process as identifying marks of structuralism (following N. Troubetzkoy's paradigm for structural linguistics), while

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[7]Clifford Geertz, "Religion as a Cultural System," first presented at Cambridge University in 1963; published in Anthropological Approaches to the Study of Religion, ed. Michael Banton, A. S. A. Monographs, Vol. 3 (London: Tavistock Press, 1966); reprinted in Geertz, The Interpretation of Cultures (New York: Basic Books, 1973), pp. 87-125.

[8]Robert N. Bellah, "Religious Evolution," American Sociological Review 29 (1964): 358-374; reprinted in Beyond Belief, pp. 20-50; "The Sociology of Religion," reprinted in Beyond Belief, pp. 3-19.

Piaget supplies "the idea of wholeness, the idea of transformation, and the idea of self-regulation."[9] An outstanding application of this perspective in religious studies was Homo Hierarchicus: The Caste System and Its Implications (1966) by the French anthropologist Louis Dumont. Acknowledging his debt to Lévi-Strauss, Dumont speaks of structure as a "system of relations. . .not a system of elements."[10] The caste system of India is best understood, he argues, if each rung of the social hierarchy is interpreted in relation to the whole system, rather than as an independent social, economic, or religious unit. Inasmuch as the concepts of structure and system are interwoven and mutally defined — a pivotal chapter is entitled "From System to Structure" — one may see that this work is deeply resonant with that of the systems theorists. Certainly Bertalanffy and Boulding would endorse Dumont's assessment of the challenge awaiting modern methodologists in the social sciences: "After a long period dominated by a tendency which led to atomization, the essential problem for contemporary thought is to rediscover the meaning of wholes or systems."[11]

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[9]Claude Lévi-Strauss, Structural Anthropology (trans. Claire Jacobson and Brooke Grundfest Schoepf; Harmonsworth, 1972; French edition, 1958), p. 33; Jean Piaget, Structuralism (London, 1971), p. 5; these correspondences of structuralist and systems principles are noted by D. C. Phillips, pp. 83-84.

[10]Louis Dumont, Homo Hierarchicus: The Caste System and its Implications, trans. George Weidenfeld (Chicago: University of Chicago Press, 1977; first published, Paris: Editions Gallimard, 1966), p. 40.

[11]Ibid., p. 41.

Another early application of systems principles in religious studies was the attempt of an American theologian, Herbert W. Richardson, to formulate what he termed a "theology for a sociotechnic age."[12] Richardson was acquainted with the parallel emergence of systems theory and cybernetics in the post-World War II period, and he believed that insights from these new disciplines would prove to be crucial to the revitalization of a theology lost in "the death of God." "Theology must develop a conception of God which can undergird the primary realities of the cybernetic world, viz. systems," he wrote.

> Cybernetics is concerned with the control of probability systems whose terms are the manifold decisions of free individuals. Just as the personal God of the modern intellectus undergirded the ultimate value of individuals, so the God of a sociotechnic intellectus must be reconceived as the unity of the manifold systems of the world.[13]

Elsewhere in his book, Richardson cites Robert Bellah on the importance of symbol systems, Kenneth Boulding on the epistemology of "images," and the gestaltists Köhler and Wertheimer on the principle of wholeness.

At the same time that anthropologists and theologians were beginning to adapt systems-cybernetic terminology to the needs of religious studies, writers directly associated with the formulation of systems theory were turning their attention to the phenomena and terminology of religion. In 1963 the historian and political theorist Karl W. Deutsch developed a section of his cybernetic analysis of

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[12]Herbert W. Richardson, Toward an American Theology (New York: Harper and Row, 1967).

[13]Richardson, p. 23.

political communication and control by introducing a series of traditional theological categories: humility and pride, faith, reverence and idolatry, love and grace.[14] In 1969 Ervin Laszlo, the emerging philosopher of the systems perspective, concluded his model of the "meta-sensory circuits" of human cultural experience with interpretations of the meaning and role of science, art, and religion. Defining theology as a religious construct rooted in "a feeling which refers beyond itself," he proposed that "the specific characteristic of the empirical datum of religion is that it is not a seeing (as in science) but a feeling, and that it is not a feeling as (as in art) but a feeling that. . . ."[15] In another work of similar terminology and temperament, the ecologist Howard T. Odum devoted a full chapter of his 1971 study, Environment, Power, and Society, to the formulation of a systems theory of religion.[16]

II

During the seventies the application of systems thought to religious studies continued with increasing frequency. J. Milton Yinger opened his now-standard textbook, The Scientific Study of

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[14]Karl W. Deutsch, The Nerves of Government: Models of Political Communication and Control (New York: The Free Press, 1963), pp. 229-242.

[15]Ervin Laszlo, System, Structure, and Experience: Toward a Scientific Theory of Mind (New York: Gordon and Breach, 1969), pp. 69-77.

[16]Howard T. Odum, Environment, Power, and Society (New York: Wiley Interscience, 1971), pp. 236-153.

Religion (1970), with a chapter on the definition of religion, stating that "the conception of system is particularly important for the student of religion."[17] Later, the author developed a "field theory of religion" based on the functional analysis of open systems evolving amid clusters of environmental conditions; in this connection he cites works by Parsons, Walter Buckley, and Ludwig von Bertalanffy. In another text often used at the introductory level, Frederick Streng notes that social scientists increasingly view religion "in the context of a comprehensive system of personal and social development." Specifically, the development of systems theory and cybernetics is mentioned in light of their similarity to structuralist and functionalist thought and of their possible contribution to an understanding of religious experience (e. g., related to death, social change, hope, awe, peace, integrity). Streng points out that the systems approach encompasses a great number of variables in its account of religion, such as the roles of language, society, feelings, visual symbols, physical perception mechanisms, and genetic determination; yet some scholars regard this approach as "oversimplified because it tends to reduce 'religion' to something else, rather than considering religious phenomena in their own right."[18]

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[17]J. Milton Yinger, The Scientific Study of Religion (New York: Macmillan, 1970), p. 20.

[18]Frederick Streng, Understanding Religious Life, Second edition, The Religious Life of Man Series (Encino, Calif.: Dickenson Publishing Company, 1976), pp. 49-50. It may be noted that this section concerning the existence and reception of cybernetic-systems approaches to the study of religion was lacking in the first edition, which appeared in 1969.

In 1971, Professor Jay W. Forrester of the Systems Dynamics Group at the Massachusetts Institute of Technology (the group responsible, with the Club of Rome, for the controversial Limits to Growth) was invited by the Division of Overseas Ministries of the National Council of Churches to speak on the role of institutional religion in the modern world. Based on the computer modeling approach he and his colleagues had developed to interpret the evolution of urban and geopolitical systems, Forrester presented a systems view of religion, conceived as the custodian and advocate of those "long-term values" which transcend local self-interest and regional competition; the influence of churches, broadly defined, represents a critical variable in the evolutionary struggle between destructive growth and salutary "world equilibrium," according to Forrester.[19]

Meanwhile, Ralph Wendell Burhoe collected several of his systems-theological essays under the title Science and Human Values in the Twenty-First Century (1971), James F. Smurl published Religious Ethics: A Systems Approach (1972); and Ervin Laszlo released both The Systems View of the World (1972) and his long-awaited Introduction to Systems Philosophy (1972).[20]

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[19]Jay W. Forrester, "Churches at the Transition between Growth and World Equilibrium," Zygon 7 (1972): 145-167; reprinted in Toward a Global Equilibrium: Collected Papers, ed. Dennis L. Meadows and Donella H. Meadows (Cambridge, Mass.: Wright-Allen Press, 1973), pp. 337-353.

[20]Ralph Wendell Burhoe, ed., Science and Human Values in the Twenty-First Century (Philadelphia: Westminster Press, 1971); James F. Smurl, Religious Ethics: A Systems Approach (Englewood Cliffs, N. J.: Prentice-Hall, 1972); Ervin Laszlo, The Systems View of the World (New York: George Braziller, 1972), Introduction to Systems Philosophy (New York: Gordon and Breach, 1972).

In West Germany, two influential writers turned their attention to systems theory and its relation to religious studies during the early seventies. Niklas Luhmann, a prolific sociologist at the University of Bielefeld, set about to construct a functional systems theory, or Supertheorie, by means of which all the special sciences, including dogmatic theology, may be properly understood.[21] According credit for many of his ideas to the structural-functionalism of Parsons, modern evolutionary and communications theories, general systems theory, and the philosophical phenomenology of Husserl, Luhmann has stirred up considerable controversy within the German academic community. Beginning with a published debate with Jürgen Habermas in 1971, his work has centered on the notions of organizational complexity, the boundaries of system and environment, and the evolutionary role of religious symbols. The Christian doctrine of God, for example, is construed as a "contingency formula," that is, one which serves to translate "indeterminable complexity" (as in the theological notions of divine perfection and personality).[22] This account of the function of the doctrine of God then permits an assessment of the success or failure of the God-formula at any time or place; one reason for the

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[21]See Garrett Green, "The Sociology of Dogmatics: Niklas Luhmann's Challenge to Theology," Journal of the American Academy of Religion 50 (1982): 20-34. Fourteen of Luhmann's essays have been translated by Stephen Holmes and Charles Larmore under the title The Differentiation of Society (New York: Columbia University Press, 1982). See also the special issue of Sociological Analysis, Vol. 46 (Spring 1985), devoted to Luhmann's systems theory of religion.

[22]Niklas Luhmann, Funktion der Religion (Frankfurt am Main: Suhrkamp Verlag, 1977), p. 201; cited by Green, p. 26.

rise of secularity, Luhmann holds, is the fact that the idea of perfection has been replaced since the eighteenth century by the principle of development as the highest ideal of bourgeois society. A static God cannot capture the minds of moderns convinced by science of the relativity and mutability of all phenomena.[23] Other Christian doctrines Luhmann deems obsolete, such as that of the resurrection, that must also be discarded or reworked in light of systems functionalism. Theology is thus challenged to employ the tools of systems analysis in its formative role as a guidance mechanism for religion and society.

Another West German scholar concerned with the potential relationship between systems theory, systematic theology, and human science is Wolfhart Pannenberg, professor of systematic theology at the University of Munich. In his massive Wissenschaftstheorie und Theology (1973; English version, Theology and the Philosophy of Science, 1976), Pannenberg devotes much of his attention to the rise of the human sciences under the influence of Wilhelm Dilthey, and to the systems perspective which he believes to be implicit in this tradition. He argues that the struggle between the hermeneutic-phenomenological and social-scientific approaches is one over the problem of human meaning: who will interpret it and who will theorize about it? But the deadlock between these positions obscures a fatal similarity: they both assume that all human meaning is humanly created. Pannenberg stresses "the fact that human beings not only create structures of meaning as

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[23]Luhmann, p. 133; cited by Green, loc. cit.

individual systems but are also capable of experiencing semantic networks. . .which go infinitely beyond the reality of their own existence." What is required is an approach which will admit sources of meaning from beyond the human level. Theology and natural science are such approaches -- but both are anathema in human studies. To break the deadlock, Pannenberg asserts that only

> the introduction of the concept of system and related cybernetic considerations can correct the exclusive association of questions of meaning with the human sciences and clarify the meaning of such fundamental hermeneutical concepts as whole and part by relating them to the problems of general systems-theory.[24]

Such a correction and clarification will serve, Pannenberg believes, to open the way for a freer flow of interpretations among all fields of inquiry, including theology, phenomenology and hermeneutics, and the social and natural sciences.

In the mid-seventies two important doctoral dissertations, along with derivative journal articles, were devoted to the application of systems theory to religious studies. In spite of the similarity of systems thought to certain philosophical tendencies in the Asian religious traditions, especially in its principles of holism and hierarchy, no one since Louis Dumont had attempted a systems interpretation of any Eastern religion. This deficiency was addressed in 1976 by a journal entry and two years later by the dissertation of

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[24]Wolfhart Pannenberg, Theology and the Philosophy of Science, trans. Francis McDonagh (Philadelphia: The Westminster Press, 1976; German edition, Frankfurt am Main: Suhrkamp Verlag, 1973), p. 131 et passim. Professor Pannenberg reiterated a portion of this argument in "Meaning, Religion, and the Question of God," in Knowing Religiously, Leroy S. Rouner, ed. (Notre Dame, Ind.: University of Notre Dame Press, 1985), pp. 153-165.

Joanna Rogers Macy, entitled respectively, "Systems Philosophy as a Hermeneutic for Buddhist Teachings," and "Interdependence: Mutual Causality in Early Buddhist Teachings and General Systems Theory."[25] Macy argues that correlations between Ervin Laszlo's systems philosophy and Buddhist thought present numerous opportunities for reciprocal interpretation. On the one hand, "Buddhism could endow systems insights with religious meaning -- helping us see, in systemic patterns, causes for both man's suffering and his liberation, and offering methods for utilizing these insights in religious techniques." On the other hand, systems philosophy may provide a basis for interpreting the central Buddhist doctrine of interdependence in light of modern scientific principles manifested "throughout the observable universe."[26] Macy explores her topic from both angles in the dissertation, but limits herself to the systems interpretation of the Buddhist law of causality (pratityasamutpada) in the journal article.

It is worthy of note that Joanna Rogers Macy also chaired a special consultation on Systems and Information Theory at the 1977 Annual Meeting of the American Academy of Religion in San Francisco. The papers offered at this session included "Systems Philosophy and the Humanities: Fad, Fraud, or Fitting?" by Ronald Cavanagh, Syracuse University; "Ethical Strategy and Cybernetic Systems: Policy Testing in

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[25]Joanna Rogers Macy, "Systems Philosophy as a Hermeneutic for Buddhist Teachings," Philosophy East and West 26 (1976): 21-32; "Interdependence: Mutual Causality in Early Buddhist Teachings and General Systems Theory" (Dissertation, Syracuse University, 1978).

[26]Macy, "Systems Philosophy as a Hermeneutic. . . ," p. 21.

a Computer Model" by Frederick Kile, Lutheran Aid Association; and "Scripture as a Self-Regulating System: A Systems Approach to Buddhist Texts" by Douglas E. Goodfriend, University of Chicago.[27] Perhaps worthy of further note is that Cavanagh found systems philosophy to be "fitting" in the context of the humanities for, inasmuch as contemporary human problems "are essentially systems problems to the extent that they are inter-relational and involve large numbers of variables. . .the inclusion of systems philosophy as a standpoint within the humanities is neither fad nor fraud."[28]

The second dissertation to appear at this time was that of James E. Huchingson, entitled "A General Systems Approach to Theology, with Special Reference to Teilhard de Chardin," completed at Emory University in 1977. Huchingson develops the notions of context-independence and context-dependence in order to elucidate such notions as divine transcendence and immanence, human consciousness and relatedness, the function of symbols, and the resolution of specific theological issues: the meaning of providence, the reality of evil, and the purpose and value of christological doctrine. Concepts borrowed from Teilhard de Chardin are used throughout to mediate the application of systems theory, drawn here from Bertalanffy, Ashby, and Laszlo, to traditional theological discourse. A similar method of mediation is

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[27]American Academy of Religion, Annual Meeting Conference Program, San Francisco, December 28-31, 1977, p. 28.

[28]Ronald R. Cavanagh, "Systems Philosophy and the Humanities: Fad, Fraud, or Fitting?" (unpublished manuscript, delivered at the American Academy of Religion Annual Meeting, San Francisco, December 28, 1977), p. 10.

adopted in Huchingson's contribution to the Journal of the American Academy of Religion in 1980, entitled "The World as God's Body: A Systems View," wherein the author utilizes elements of Charles Hartshorne's process theology "to avoid cognitive shock and to enhance the fit between the language of systems and that of the traditional concept of God."[29]

In 1981 three publications confirm the continuing interest accorded systems theory within the religious studies community. For the first time complete issues of two interdisciplinary scholarly journals (outside of systems journals themselves) were devoted to systems-oriented contributions. Writing for Psychology and Theology, Martha L. Rogers and three colleagues at the Rosemead School of Professional Psychology (California) offered a series of biblical exegeses based on systems applications in clinical psychology. "The Call of Abram: A Systems Theory Analysis," "A Systems View of Jesus as Change Agent," and "The Apostle Paul: Problem Formation and Problem Resolution from a Systems Perspective" may be the first attempts by anyone to apply the systems orientation in the field of biblical studies.[30] Also appearing in 1981 was the first issue of Zygon to be devoted to systems articles. With contributions by Ervin Laszlo, James

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[29]James E. Huchingson, "The World as God's Body: A Systems View," Journal of the American Academy of Religion 48 (1980): 335-344.

[30]Martha L. Rogers, "The Call of Abram: A Systems Theory Analysis"; Paul Deschenes and Martha Rogers, "A Systems View of Jesus as Change Agent"; Dessis Morgan, Dale Levandowski, and Martha Rogers, "The Apostle Paul: Problem Formation and Problem Resolution from a Systems Perspective," Psychology and Theology 9 (1981): 111-127, 128-135, 136-143.

Huchingson, Victor Ferkiss, and Kathleen Johnson Wu ("On Lao Tzu's Idea of the Self," introduced by the editor as "an ancient version of systems philosophy"), the issue was entitled "A Systems Approach to Self, Society, and Nature."[31] Finally, Harold H. Oliver, Professor of New Testament and Theology at Boston University, devoted a section of his constructive essay, A Relational Metaphysic, to the systems philosophy of Ervin Laszlo.[32] Calling the latter's work "one of the most successful of modern attempts to revitalize the metaphysical enterprise," Oliver concludes his summary of Laszlo's position by citing its religious dimension, implicit in the notion of "reverence for natural systems"; as Laszlo writes, "We are not alone: we are in nature."[33]

III

Out of the wealth of systems applications which followed in the wake of Bellah's proposal for the sociology of religion, the question arises, how may these disparate offerings be sorted for evaluation? Aware that the titles and authors at hand have never appeared together before, the reviewer is struck by the the discontinuity of disciplines and dispositions represented. While sociologists, anthropologists, and theologians predominate among the religionists, the contribution of

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[31]Zygon 16 No. 2 (June, 1981).

[32]Harold H. Oliver, A Relational Metaphysic (The Hague: Martinus Nijhoff Publishers, 1981), pp. 75-91.

[33]Ervin Laszlo, Introduction to System Philosophy, p. 289, cited by Oliver, p. 93.

several systems theorists is notable. Some contributors are inclined to enter new territory with caution, using familiar sources to prepare the way (Huchingson's use of Teilhard and Hartshorne), while others (like Luhmann) move briskly between worlds, risking toppled icons in the process. Some would construct a symmetrical pattern of mutually defined terms (Macy's double hermeneutic for systems theory and Buddhist teaching), while others point streams of recent information from the natural sciences at familiar sacred symbols in an apparent attempt to wash them clean. The reviewer of this material meets uneven quality, isolated passages of substance, unpublished works of care and insight, impenetrable essays in translation, and volumes of wind.

Three criteria are applied in the selection of materials in the following chapters. First is the effort to present a representative sample of the best materials at hand, including examples of systems analysis (Deutsch, Laszlo), phenomenology of religion (Macy), social theory of religion (Parsons, Bellah, Campbell), and systematic theology (Burhoe, Pannenberg). The second criterion is the effort to test the potential methodological objections to the systems approach to religion which we derived from Walter Brenneman's statement of the phenomenological attitude: the objections of functionalism, historicism, and reductionism. To this end, the grouping of materials under the rubrics of cybernetic theories, action theories, and systems theologies will permit exploration of each objection and, not incidentally, illustrate the working of the cardinal systems principles: integration, adaptation, emergence, and hierarchy. The

third criterion has been to select materials which come closest to offering innovative theoretical options for religious studies. In this instance, as we have proposed, good theory is assumed to be empirically grounded in the findings of current religious studies research; explanatory, or capable of shedding new understanding on familiar patterns or relationships; and heuristic, or capable of pointing to new and fruitful avenues of research. Obviously not all of the work selected will be found to meet all of these standards, but it may be assumed that these contributions represent the best resources available at present.

F O U R

CYBERNETIC THEORIES OF RELIGON

Functionalism and the Principle of Adaptation

The word "cybernetic" does not sit well in the lexicon of religious studies. A spectre of robotic arms, glowing control panels, and heat-seeking missiles troubles the imagination as the language of technology is pointed at a living religion. Unlike the term "system," which passes unnoticed among the sciences and humanities by virtue of its commonness (e.g. "systematic theology"), the prospect of a cybernetic theory of religion arouses suspicion. One wonders what advantage is obtained by splicing terms from the disciplines of the engineer and the exegete. How do the cybernetic problems of communication and control illuminate the depths of Christian or Hindu existence? What religious experience corresponds to the interpretive categories of a cybernetician: signal, noise, coding, storage, recombination, feedback? Should not the tacit protocols of the two cultures — the separation of natural science and human studies — be respected?

Cybernetics occupies a central position in the logic of systems theory. As the study of self-regulation and self-organization, cybernetics provides the means for understanding two of the four cardinal systems principles, adaptation and emergence. Further, cybernetics offers a key for solving the methodological problems associated with functionalism, an approach to scientific explanation which arose concurrently with the organismic and systems perspectives, and not coincidentally, with religious studies. It is only in the context of self-regulating or cybernetic systems, according to the philosopher of science Ernest Nagel, that the functions or fruitful consequences of any phenomenon may be interpreted.[1] Thus the outline of a unique circle of relationships may be drawn: organismic social theory and religious phenomena present problems of interpretation which give rise to functional analysis; functionalism poses logical problems for scientific method, especially that of teleology, which are resolved by means of cybernetic concepts; and cybernetics, as integrated into modern systems theory, is directed to the interpretation of social and religious phenomena.

These relationships, based on methodological and historical developments, may not be presupposed. In the following pages we shall trace the connections between systems thought, religious studies, functionalism and cybernetics (I); illustrate these relationships with

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[1]Ernest Nagel, "A Formalization of Functionalism, with Special Reference to its Application in the Social Sciences," in System, Change, and Conflict: A Reader on Contemporary Sociological Theory and the Debate over Functionalism, N. J. Demerath and R. A. Peterson, eds. (New York: Free Press, 1967), p. 78.

Karl Deutsch's cybernetic analysis of Christian ethical discourse (II); and Joanna Macy's interpretation of two forms of Buddhist meditation (III). Finally we shall evaluate the force of the methodological charge of functionalism leveled by phenomenologists and other critics of the scientific study of religion, in light of the cybernetic interpretations presented (IV).

I

Implicit in the idea of living systems is the coordinated action of parts to regulate and sustain the whole. As William Harvey discovered in 1628, the heart functions to pump blood through the body; later the function of the blood in supplying nutrients and removing wastes was specified by biologists. Such was the success of biology by the nineteenth century that the metaphor of a social organism, while found in ancient sources, Christian ecclesiology, Hobbes and Rousseau, became commonplace. In 1852 August Comte defined a society as an organism in which families function as cells, economic and social classes function as tissues, and cities play the part of organs.[2] Following Darwin's discoveries, such static literalism was largely abandoned, but the social organism lived on. Herbert Spencer pioneered a language of structure and function which grafted the biological metaphor onto the social sciences for decades to come. "There can be

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[2]August Comte, System of Positive Polity, Vol. 2 (New York: Burt Franklin, 1875; original, 1852), p. 242; cited by Jonathan H. Turner and Alexandra Maryanski, Functionalism (Menlo Park, Calif.: Benjamin Cummings, 1979), p.7.

no conception of structure without a true conception of function," he wrote. "To understand how an organization originated and developed, it is requisite to understand the need subserved at the outset and afterwards."[3] The needs of the organism, be it an individual or a group, were to be understood in terms of adaptation and survival in a changing environment, as each structure functions to satisfy some need. Functionalism thus "sums up and designates the most general of the many consequences of the impact of Darwinism upon the sciences of man and nature."[4]

Religion became intimately associated with the rise of the functionalist approach in the sociology of Emile Durkheim and the anthropology of his admirers, Malinowski and Radcliffe-Brown. Durkheim embraced the organicism of Spencer and wrote in 1893 of the "solidarity" or integration conferred by specific structures of society, especially the division of labor.[5] In The Rules of Sociological Method (1895), he anticipated a major objection to the functionalist approach, namely that it is a specimen of teleological explanation. Are social structures in some mysterious way "caused" by the final advantages they confer? Not at all, Durkheim replied; the

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[3]Herbert Spencer, "Social Function, in The Works of Herbert Spencer, Vol. 6 (Osnabruck: Otto Zeller, 1966; original, 1876), p. 451; cited by Turner and Maryanski, pp. 11-12.

[4]Horace Kallen, "Functionalism," in E. Seligman and A. Johnson, eds., Encyclopedia of the Social Sciences, Vol. 6 (New York: Macmillan, 1959), p. 523; cited by D. C. Phillips, p. 89.

[5]Emile Durkheim, The Division of Labor in Society (New York: Free Press 1933; original 1893. This work contains forty references to Herbert Spencer, according to Turner and Maryanski, p. 16n.

efficient cause and the function produced are entirely different. "We use the word 'function' in preference to 'end' or 'purpose' precisely because social phenomena do not generally exist for the useful results they produce."[6] Yet it was on this point that Durkheim stumbled years later in his theory of religion. "All religions serve the same needs," he hypothesized, and "the different totems of the tribe fulfill exactly the same functions that will later fall upon divine personalities."[7] But when such elementary forms of religious life as totems, myths, symbols, and deities are said to be shaped by the "needs they serve" or the "functions they fulfill," it appears that the ends have somehow bent back in time to shape the means.

A. R. Radcliffe-Brown saw the teleological problem as an unnecessary bar to successful functional analysis. Impatient with the evolutionism running through much of the social science of his day, he suggested three remedial distinctions: stress the contemporary or "synchronic" relationships of things, such as their functions, and not their developmental or "diachronic" features; stress social

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[6]Emile Durkheim, The Rules of Sociological Method, Eighth Edition, trans. Sarah A. Solovay and John H. Mueller, ed. George E. G. Catlin (New York: Free Press, 1938; original, 1895), p. 95.

[7]Emile Durkheim, The Elementary Forms of The Religious Life (New York: Free Press, 1948; original, 1912), p. 179; cited by Turner and Maryanski, p. 22, who also note that in the years 1912 and 1913 four of the great social thinkers of the time were engaged, quite independently, in similar research. Durkheim, Freud, Malinowski, and Radcliffe-Brown all published accounts of the religious practices of the Australian aborigines in these years, and all from a functionalist perspective. Freud's Totem and Taboo (1913), for example, argued that the tribal totem functions to prevent a perennial abrogation of the incest taboo.

anthropology for its structural-functionalism, not ethnology with its historical outlook; and speak of the "necessary conditions of existence" and not of "needs," which tend to introduce a gratuitous subjectivism into functional analysis.[8]

As influential as these proposals were during the first half of the century, it was Bronislaw Malinowski who championed and enthroned the functional method in the social sciences. Malinowski was the first to use the term "functionalism" and to claim its preeminence for social anthropology. Writing for the first supplementary volume of the Encyclopedia Britannica in 1926, Malinowski defined functional analysis as

> the explanation of...facts...by the part they play within the integral system of culture, by the manner in which they are related to each other within the system, and by the manner in which this system is related to the physical surroundings.... The functional view...insists therefore upon the principle that in every type of civilization, every custom, material object, idea and belief fulfills some vital function, has some task to accomplish, represents an indispensable part within a working whole.[9]

Thus the function of magic is to serve as "a remedy for specific maladjustments and mental conflicts, which culture creates in allowing man to transcend his biological equipment," while myth performs the

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[8]A. R. Radcliffe-Brown, "On the Concept of Function in Social Science," American Anthropologist 37 (1935); Structure and Function in Primitive Societies (London: Cohen & West, 1952); Method in Social Anthropology (Chicago: University of Chicago Press, 1958); cf. Turner and Maryanski, pp. 40-41.

[9]Bronislaw Malinowski, "Anthropology," Encyclopedia Britannica, First Supplementary Volume (London and New York, 1926), pp. 132-133.

"indispensable function" of preserving the cultural values of society.[10]

Anyone familiar with the systems outlook will recognize its seeds in Malinowski's functionalism. The stress on embeddedness prefigures the principles of integration and hierarchy, while the fulfillment of "vital functions" of a culture by its constituent institutions and customs suggests the dynamics of adaptation and emergence. Like his predecessors in anthropology, Malinowski was intrigued by religion, magic, myth, ritual and primitive science insofar as each suggested man's efforts to cognize and control the experiences of life and death. Following Durkheim, who illustrated the stabilizing/destabilizing role of symbolic representations in individuals and societies (especially in Suicide, 1897), Malinowski proposed a hierarchy of needs extending from the biological through the social and symbolic, or as he called them, "derived" needs. "It is obvious," he reflected, "that culture solves not merely simple organic problems, but creates new problems, inspires new desires, and establishes a new universe in which man moves, never completely free from his organic needs, but also following new needs and stimulated by new satisfactions."[11] In such a context, he asserted that religion answers the human need to believe that the individual survives the death of the body and lives on in the life of

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[10]Ibid., p. 136.

[11]Bronislaw Malinowski, "Man's Culture and Man's Behavior," American Scientist 29 (1941): 201. For Malinowski's theory of the hierarchy of needs, see A Scientific Theory of Culture and Other Essays (Chapel Hill: University of North Carolina Press, 1944), and Turner and Maryanski, pp. 47-57.

the tribe.[12]

Radcliffe-Brown and Malinowski dominated anthropology for thirty years with their remarkably congruent approaches to method and their great interest in religion. But their functionalism was not without its critics. Perhaps the most celebrated essay on the subject was Robert K. Merton's "Manifest and Latent Functions," which appeared in 1945.[13] After deploring the haphazard use of terminology in functional analysis -- where the word "function" is frequently used interchangeably with such terms as "use," "utility," "purpose," "motive," "cause," "intention," "aim," "consequence," and "result" -- Merton turned to three methodological abuses or "false postulates" in functionalism which he believed marred its true value for social science. Because each of these may be illustrated with the phraseology of Malinowski's Britannica definition, and because Merton repeatedly featured the abuse of functionalism in the study of religion, his objections deserve our attention.

Merton called the first false postulate "The Functional Unity of Society." Malinowski often wrote of "the integral system of culture" or of the "working whole" of society, just as Comte and Spencer had envisioned the unity of the social organism. Very well, Merton replied, then what of the hostilities within a society caused by

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[12]Bronislaw Malinowski, "Baloma: The Spirits of the Dead in the Trobriand Islands," In Magic, Science, and Religion and Other Essays (New York: Free Press, 1944; originally published in 1916).

[13]Robert K. Merton, "Manifest and Latent Functions," reprinted in Demerath and Peterson, pp. 9-75; originally published as "Sociological Theory," American Journal of Sociology 50 (1945): 462-473.

conflicting religious beliefs? What of inquisitions, holy wars and civil wars between rival religious factions and the conflicts between religious and secular institutions? The anthropologist's mistake has been to generalize from the functional unity sometimes found in small preliterate societies to the realm of large, complex, and highly differentiated modern societies which are the proper concern of sociologists. And "in no field, perhaps, do the dangers of such a transfer of assumptions become more visible than in the functional analysis of religion."[14]

"Universal functionalism" was Merton's term for the second false postulate. Malinowski had insisted that "every custom, material object, idea and belief system fulfills some vital function." This insistence, Merton reports, grew out of the virulent controversy over "survivals" which divided anthropologists early in the century. According to survivals theory, any object, custom, or belief which appears irrational or useless to the scientist -- whether the exorcism rites of aborigines or the sacraments of modern faiths -- must be considered a holdover or survival from a former time when these items were intelligible or when the faithful could not have known better. Malinowski objected that such a theory denigrates the very cultural facts which anthropology is supposed to interpret, and may indeed hasten the demise of traditional cultures. For Merton, however, neither extreme was necessary. If a cultural phenomenon is unintelligible or seemingly pointless to the researcher, then it may

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[14]Merton, p. 18.

well require more careful research: not all consequences of the practice or belief may be positive, not all may be conscious or intentional, and not all may function at the same levels of analysis.[15]

To guide such investigations, Merton proposed a series of methodological distinctions he styled as "A Paradigm for Functional Analysis in Sociology." He distinguished functions and dysfunctions, holding that both may follow from a given phenomenon and that the notions of multiple consequences and net balance of consequences are needed to sort them out. He distinguished manifest (intended) from latent (unintended) functions, which may also be co-present in a given phenomenon. Finally, he proposed the notion of levels of functional analysis, recognizing, as did Malinowski, that a given item may be differentially functional/disfunctional and manifest/latent for the individual, the community, the society, or the culture at large. No longer may the analyst simply equate existence with advantage.[16]

Merton's third false postulate in the critique of functionalism was that of "Indispensability." Not only must every cultural fact be considered useful or needful, Malinowski claimed; insofar as it "fulfills some vital function, has some task to accomplish, [it] represents an indispensable part within a working whole." Once again religion provides the prime examples. Merton questions whether it is the function which is indispensable, or a particular cultural form

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[15]Merton, p. 21-23.

[16]Merton, p. 42-43.

which fulfills it. If magic, for example, is claimed to provide "a remedy for specific maladjustments and mental conflicts," and myth is interpreted as a language for preserving cultural values, then the question arises, are these the only means available to achieve these ends? Obviously not, for modern therapies and literatures abound which are neither magical nor mythical, but which evidently offer emotional solace and pass on cultural values. Thus Merton proposed to break the postulate of indispensability in two: social science must attempt to isolate and identify those functional prerequisites or preconditions which are indispensable to the wellbeing of a group, society, or culture; and science must also identify and enumerate the functional alternatives, equivalents, or substitutes which may satisfy these conditions, for "just as the same item may have multiple functions, so may the same function be diversely fulfilled by alternative items."[17]

Merton's critique illustrated the ways in which organicism, functionalism, and religious studies had become entwined since the time of Comte and Spencer. But more important, the methodological sophistication of his proposals, which allowed for degrees and levels of functional integration, multiple consequences, and functional equivalents may well have rescued the functionalist approach from certain demise. Now the infinitely variable, objectively observable consequences of social forms could be studied on their own terms without the intrusion of gratuitous postulates and assumptions. After the twilight of genetic theories of religion in the style of Müller,

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[17]Merton, p. 24, 44-45.

Tyler, and Lang, functionalist theories might continue to provide insights into the meaning and ends of religion. "By their fruits ye shall know them, not by their roots," William James recommended in 1902; "not its origin, but the way in which it works on the whole."[18]

But one cloud remained on the horizon. Durkheim, we saw, attempted to anticipate the problem of illegitimate teleology — the idea that ends somehow bend back to influence the means — by distinguishing "function" from "purpose." A function entails "a correspondence between the fact under consideration and the general needs of the social organism," while purpose involves conscious human intentions which "are too subjective to allow scientific treatment."[19] Proper sociological method required that any hint of conscious purpose be ruled out of consideration as a survival of teleological or vitalistic thinking; only impersonal correlations and correspondences between phenomena may be scientifically established. Yet Durkheim realized that he had gone too far. For of what value may a human science be when all purposes, motives, aims and intentions have been eliminated? Nevertheless, the tools were not available in Durkheim's day for the resolution of this dilemma. After suggesting that "the bond which unites the cause to the effect is reciprocal to an extent which has not been sufficiently recognized," Durkheim relegated the issue to a footnote:

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[18]William James, Varieties of Religious Experience (New York, Collier Books, 1961; original, 1902), p.34.

[19]Durkheim, Rules of Sociological Method, p. 95.

> We do not wish to raise here questions of general philosophy, which would not be in place. Let us say, however, that if more profoundly analyzed, this reciprocity of cause and effect might furnish a means of reconciling scientific mechanism with the teleology which the existence, and especially the persistence, of life implies.[20]

The profounder analysis which Durkheim envisioned was not to come until the discovery of cybernetics by Norbert Weiner and his colleagues at MIT in the 1940s. The occasion was not general philosophy, of course, but the exigencies of wartime technology. Ironic as it seems in the present context, it was the development of computer-guided torpedoes and missiles which provided the key to a new teleology that would prove to be equally serviceable to engineers, philosophers, and social scientists. In the process, the study of cybernetics would attempt to clarify what Durkheim called the "reciprocity of cause and effect" and even the mystery of the persistence of life.

A few years before the term cybernetics was coined, Wiener and two colleagues wrote a short paper on "Behavior, Purpose, and Teleology" (1943).[21] Step by step, the authors proposed a branching set of definitions which would place the problem of teleology on entirely new ground. Behavior was defined as a change of an entity with respect to its surroundings. The change in question could be active, emitting energy, or passive, withstanding it. Active behavior may be purposeful, directed toward the attainment of a goal, or non-

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[20]Durkheim, The Rules of Sociological Method, pp. 95-96n.

[21]Arturo Rosenblueth, Norbert Wiener, and Julian Bigelow, "Behavior, Purpose, and Teleology," Philosophy of Science 10 (1943), 18-24; reprinted in Buckley, pp. 221-225.

purposeful, random. Purposeful behavior may be teleological, controlled by information or "feedback" about the position or change in position of the goal, or again, non-teleological. (Feedback may be negative, reporting the behavior's deviation from the goal and guiding its return to course, or positive, accentuating the deviation and leading to the abandonment of one goal and the search for another.) Negative-Feedback-controlled, teleological behavior may be predictive or extrapolative, that is, capable of anticipating changes in the initial goal and modifying itself accordingly, or it may not be so. In sum, then, such behavior is capable of great adaptability and persistence in reaching its goal, and as such, it is the essence of purposefulness, whether of servomechanisms, living organisms, or human beings. "Teleological behavior," the authors conclude, "becomes synonymous with behavior controlled by negative feedback."[22]

What benefits are claimed for this analysis?

First, the cybernetic approach places the focus of attention on the actor, and not on the consequences, results, or "functions" of the action. Specifically, it is the actor's dynamic relation to the goal of action, mediated by feedback over time, which is important, and not a static picture of actor, action, or goal. Such a focus promises an empirical account of intentions, meanings, conceptions, and experiences which were hitherto lacking a context of interpretation. Second, this dynamic relation of actor and goal -- the reciprocal quality which Durkheim anticipated -- is held to apply to a vast array of behavior,

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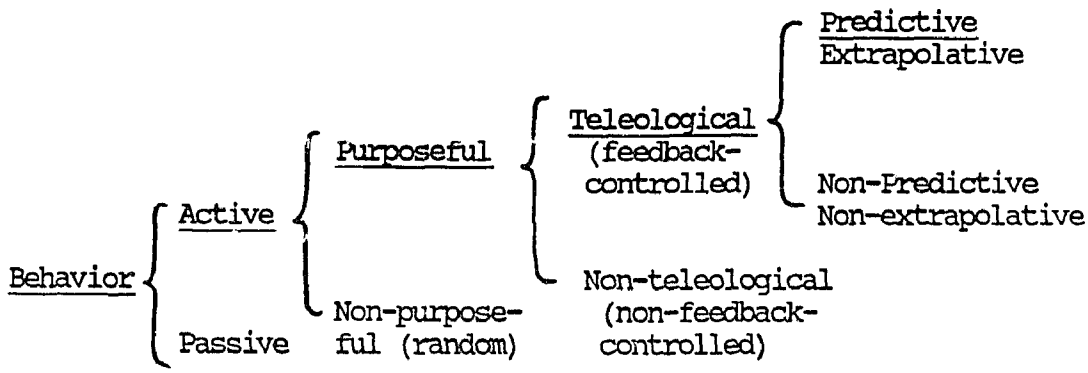
[22]Rosenbluth, Wiener, and Bigelow, p. 225.

from that of computers and cats-and-mice to the performance of sacraments and the saying of prayers. With greater scope of application, it is believed, comes greater power of explanation, illustration, and confirmation. Third, the cybernetic paradigm, by postulating the reciprocal action of subject and object, reconceives



4.1 A Cybernetic Account of Teleological Behavior
(After Rosenblueth, Wiener, and Bigelow)

certain perennial philosophical distinctions, such as those of mind-body, social-natural, and immanent-transcendent which may be shown to arise from a static or unicausal understanding of subject-object dualism. These claims will be illustrated in the cybernetic theories of religion which follow.

Thus we may see how the cybernetic program completes a methodological progression begun in Spencer's organicism and the quest

to identify "functions" and "needs." Spencer and his followers realized that the meanings of particular structures or actions, including the symbols and utterances of the social realm, could not be understood without a context. In the shadow of evolutionism, this context was thought invariably to be the struggle for survival with its many adaptations along the way. But human actions -- and religious ones especially -- were often impossible to place in such a context; they clearly defied biological reduction. Yet they could not be deemed pointless, mere survivals of a ruder time. Robert Merton proposed that not all functions were positive, intentional, or necessary, but the ground rules remained the same as they were for Spencer, Durkheim, and Radcliffe-Brown: function meant to flourish, dysfunction spelled demise.

Cybernetics makes no assumptions about the source or status of "needs." In Malinowski's hierarchy of needs, the upper end -- that of symbolic or derived needs -- "establishes a new universe in which man moves." At the lower end, needs are biochemical. Throughout the hierarchy it is thus the discrete (though never independent) aims or "functions" of each organ, system, creature or person which provide the matrix of its meaning and interpretation. In human bodies the goal of shivering and sweating, triggered by waves of proprioceptive nerve pulses, is the temperature norm of 98.6° F. For Cistercian friars in retreat, communion with God the Father is the goal of silence.

II

> Analytical understanding of a process need not diminish its sublimity, that is, its emotional impact on us in our experience or recognition. Faust becomes no more trivial by our knowledge of goal-changing feedbacks than a sunrise becomes trivial by our knowledge of the laws of refraction.[23]

Karl W. Deutsch began his work on a cybernetic model of man and society in the 1950s as the influence of Wiener's Cybernetics was percolating up through the sciences. This was a time of rapid advance for interdisciplinary studies responding to the impact of cybernetic and systems ideas. As a political scientist, Deutsch published frequently in Philosophy of Science, Philosophy and Phenomenological Research, Public Opinion Quarterly, and Daedalus, and his titles reflect the direction of his thought: "Mechanism, Teleology and Mind" (1951), "Communication Theory and Social Science" (1952), "Some Notes on the Role of Models in the Natural and Social Sciences" (1955), and "Social Communication and the Metropolis" (1961). These studies culminated in The Nerves of Government: Models of Political Communication and Control, published in 1963 and reissued with a new introduction in 1966.[24]

Deutsch's contribution to the application of systems theory to religious studies is twofold. First, he demonstrated the way in which

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[23]Karl W. Deutsch, "Toward a Cybernetic Model of Man and Society," in Buckley, ed., p. 399n; originally published as "Some Notes on Research on the Role of Models in the Natural and Social Sciences," Synthese 7 (1955): 506-533.

[24]Karl W. Deutsch, The Nerves of Government: Models of Political Communication and Control (New York: The Free Press, 1963; reissued with a new introduction in 1966).

the cybernetic outlook may be applied in considerable detail to an area of social research not unlike religious studies. As the study of a specific human interest or activity, political science may be said to resemble religious studies by its reliance on theoretical models from other disciplines, especially sociology, anthropology, psychology, and history. Consequently the author's efforts to render central categories of human experience -- learning, will, memory, recognition, consciousness -- in cybernetic terms is of intrinsic interest for religious studies. Second, Deutsch makes unexpected use of terminology associated with Christian ethics and theology in a key portion of his book. The section in question deals for the first time with the potential failure of political institutions to achieve their goals. "The Self-Closure of Political Systems" takes up the problem of politics and evil in terms of the dichotomies of "humility and pride," "lukewarmness and faith," "reverence and idolatry," "curiosity and grace," and "eclecticism and spirit." Deutsch admits that these sections "may seem couched in a language unfamiliar to the political scientist, though not to the person interested in religion," but he defends his choice of words nevertheless.[25] A review of Deutsch's cybernetic model of political life reveals the logic of his argument.

Throughout history conceptual models have arisen to shape the organization of knowledge and culture. Early models included the pyramid (product and metaphor of social hierarchy), the wheel (symbolizing fate and temporal repetition), and, as we have seen, the

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[25]Deutsch, p. 229.

machine and the organism. Contemporary culture, "with its extensive use of self-monitoring, self-controlling, and self-steering automatic processes," is dominated by the image of the computer.[26] The power of the ruling model of each age, Deutsch insists, has been the insight it has shed on those human qualities, activities, relationships, and institutions which are otherwise taken for granted. Computerized machines or "learning networks" are often equipped to "perceive" aspects of the environment, "interpret" stimuli, "recognize" patterns, carry out motor actions based on operational preferences or "values," "elect" among alternative inputs and actions, "experience" conflicts or jamming under stress, and override previous operating rules in the light of newly learned or "remembered" information. This does not mean -- and Deutsch is consistent on this point -- that computers are human or that human experiences are reducible to the operation of machines.

> None of these devices approach the overall complexity of the human mind. While some of them excel it in specific fields (such as the mechanical or electronic calculators), they are not likely to approach its general range for a long time to come. But, as simplified models, they can aid our understanding of more complex mental and social processes, much as sixteenth century pumps were far simpler than the human heart, but had become elaborate enough to aid Harvey in his understanding of the circulation of the blood.[27]

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[26]Ibid., p. 75. Deutsch never translates his cybernetic model into a single image to match the clarity of the machine and the organism. This may be because other cybernetic applications such as switchboards, telecommunications, and automated ballistics were equally revolutionary at the time. By the 1980s, of course, the prospects of the computer have surpassed the others in our cultural imagination.

[27]Ibid., p. 81. This passage is quoted from the author's "Higher Education and the Unity of Knowledge," in L. Bryson, et al., eds., Goals for American Education (New York: Harper and Row, 1950), pp. 110-111.

It is in this spirit that the author develops a three-layered system of analogies linking machine language with psychodynamic concepts and sociological notions. Implicit in this methodology is the assumption of interlevel isomorphy or functional equivalency which is characteristic of systems thought. An example of this procedure is Deutsch's definition of consciousness as "a collection of internal feedbacks of secondary messages. Secondary messages are messages about changes in the state of parts of the system, that is, about primary messages. Primary messages are those that move throughout the system in consequence of its interaction with the outside world."[28] But secondary messages may also serve as primary messages -- as when one considers one's method of interpreting data about religion -- and these considerations are subject again to meta-consideration, ad infinitum. Having thus defined a psychological category in cybernetic terms, Deutsch immediately moves for illustration to "consciousness in social organizations," wherein he speaks of the routing slips which become attached to inter-office memoranda in a large bureaucracy. Guide cards, index tabs, catalog numbers, filing systems and executive summaries all may function as secondary messages, helping to funnel information to decisionmakers, to storage, or to the shredder. This level of information may be defined as more "conscious," in terms of the organization's purposes and goals, than the raw information which arrives in the mail or over the phone lines each day. Deutsch offers definitions of will, autonomy, integrity, meaning, and values in

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[28]Ibid., p. 98.

similar fashion, moving from cybernetic to psychodynamic and sociological contexts.[29]

Why do political systems fail, and how may "self-closure," losses of power, input, steering capacity, memory, adaptability and self-restructuring capacity be prevented? This is the territory of Robert K. Merton's concept of the dysfunction, and to Merton reference is made. But Deutsch also recognizes this as the territory of St. Augustine, Luther, Calvin, and Kierkegaard. In spite of their differences these thinkers were all outspoken critics of the political order, and indeed, their perspective was couched in terms of politics and evil, not politics and dysfunction. Accordingly Deutsch introduces theological language as an example of a coherent and familiar value system which, when interpreted in the context of his cybernetic model, offers insight into the problem of self-closure. Like any other set of secondary messages, these symbols represent high-level protocols for processing information about the relation of the system to its environment and about the management of specific complexes of meta-messages within the system itself.

Deutsch begins with the dichotomy of humility and pride. At stake, he argues, is the dependence of the system upon inputs of power (line voltage, nourishment, privilege) and information (location, direction, opinion of others) from the environment. Humility is a way of signifying the maximum openness of the system to the inputs of its surroundings, whether physical, social, cultural, or spiritual (the

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[29]Ibid., pp. 105-109.

sense of "one's proportion to the universe," in G. K. Chesterton's phrase). The sin of pride, on the other hand, is self-closure to these vital inputs and, in effect, the starvation of an open system. A corollary of the humility-pride continuum is that of reverence-idolatry. Assuming the quantity of "throughput" in the system has been established by a proper balance of humility and pride, the quality is now at stake. Reverence is the preference for information which is high on prevailing scales of values, whether for nature, for life, for God, for the spirit rather than the letter of the law, for the universal; as opposed to the idolatry or preference for the "lower" values of the local, the letter of the law, the immediate, and self-interest.[30]

This notion of a balance or equilibrium of information flow conferred by religious meta-messages is illustrated by the remaining pairs of terms in Duetsch's lexicon: curiosity-grace, eclecticism-spirit, and lukewarmness-faith. Deutsch does not attempt to account for the source of self-closure or the motive of its inhibition by theological or other ideas. Cybernetic analysis is functionalist in this respect (as Radcliffe-Brown conceived it), in that it describes the dynamics of a process but eschews an account of its etiology.

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[30]Ibid., p. 233. Earlier in the text, Deutsch offers an example of a value hierarchy which he derives from systems theory and calls "orders of purposes." These include, from the lower to highest, immediate satisfaction, self-preservation, preservation of the group of species, and pre-philosophy, or religion" (pp. 92-93). These levels will be seen to correspond to the levels of biological, personal, social, and cultural systems in the action system analysis of Talcott Parsons, to whom Deutsch acknowledges indebtedness.

Personalities, political parties and automobiles break down; the question is not why, but how.

In The Nerves of Government Deutsch offers the first major study of political life in terms of cybernetic theory. As a nominalist with regard to the epistemological status of conceptual models, he does not presume that governments, electronic switchboards and human nervous systems are equivalent, but rather that their functional similarities may be exploited to promote understanding of the disparate information we currently possess about each one. In this context Deutsch proposes that certain ethical and theological terms may be treated as meta-messages which function to regulate flows of information in an open system or learning net, and that inasmuch as these messages contribute to the self-regulation of the system in specifiable ways, religion may be said to be "cybernetic." The significance of the model for religious studies, then, is not in its provision of a fine-grained analysis of the use of particular religious symbols in public life, but rather to demonstrate that such an analysis could be undertaken in principle. To Deutsch must go credit for first breaching the wall which separates the religious studies language community from that of the computer engineers. Whether the broken brickwork may be refashioned to make a gate remains to be seen.[31]

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[31]Following the appearance of The Nerves of Government, Deutsch has been consistently acknowledged as a pioneer in the application of cybernetic-systems theory to the social sciences. Robert Bellah''s cybernetic model of religion, offered in 1968, is admittedly patterned after Deutsch's analysis, and in 1969 Bellah speaks of Deutsch and Parsons as the two systems theorists who "have conceived of human action as multilayered and open." Deutsch's foray into theological

III

Joanna Rogers Macy is a religion scholar and public lecturer who has made extensive use of cybernetic and sytems theories in her work. A specialist in Buddhist literatures and meditation techniques, Macy argues that Buddhism and systems thought offer insights and models for mutual interpretation which are not provided by other hermeneutic tools. Macy explores these possibilities in her doctoral dissertation on the concept of interdependence or mutual causality as reflected in the Buddhist teaching of dependent co-origination (pratityasamutpada) and in the systems concept of cybernetic feedback control.[32] In "Systems Philosophy as a Hermeneutic for Buddhist Teachings" (1976) she illustrates these correspondences by means of a cybernetic interpretation of Buddhist meditation practices.[33] Inasmuch as this work is readily available, shorter, and methodologically congruent with the dissertation, we shall focus our attention on it.

Macy bases her cybernetic theory of meditation on Ervin Laszlo's systems philosophy, and especially on his 1969 volume, System,

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language is specifically recalled. "Deutsch," he writes, "has spoken of the propensity for all highly complex systems to break down, and has borrowed the theological term 'grace' to designate the indispensable but unpredictable situational conditions that seem to be necessary in order for any complex system to function at all" ("Between Religion and Social Science," an address given at UCLA in 1969 and first published in Beyond Belief, pp. 237-259).

[32]Joanna Rogers Macy, "Interdependence: Mutual Causality in Early Buddhist Teachings and General Systems Theory" (Dissertation, Syracuse University, 1978).

[33]Joanna Rogers Macy, "Systems Philosophy as a Hermeneutic for Buddhist Teachings," Philosophy East and West 26 (1976): 21-32; hereinafter Hermeneutic.

Structure, and Experience.[34] Here Laszlo develops an "information-flow design for self-stablizing self-organizing systems." Translated, this means a model identical to that of Wiener, Deutsch, and other systems theorists, but with the options of negative feedback control ("self-stabilization") and positive feedback control ("self-organization") differentiated and illustrated in detail. These options and their ramifications may best be offered in tabular form. We use Laszlo's shorthand expressions, "Cybernetics I" and "Cybernetics II" to represent the two basic types of feedback control.

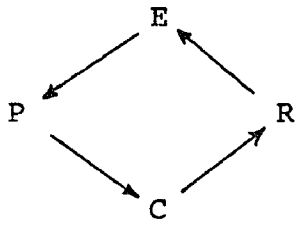
	Cybernetics I	Cybernetics II
Systems Principles	Adaptation	Emergence
Systems Philosophy (Laszlo, 1969, 1972)	Self-Stabilization	Self-Organization
Behavior	Adapt behavior to match inner norms	Modify inner norms to match environment
Means (Wiener, Deutsch)	Negative Feedback. Reduce deviation from inner norms	Positive Feedback. Amplify deviation from inner norms
Examples	Shiver/Sweat to maintain 98.6° F. Convince others of your views.	Train body to run 26 miles. Accept views of others.
Meditative techniques (Macy, 1976)	Contemplative (samatha) Projective (parinamana)	Mindfulness (satipatthana) Insight (vipassana)

4.2 THE TWO TYPES OF FEEDBACK CONTROL IN SYSTEMS-CYBERNETIC ANALYSIS

[34]Ervin Laszlo, System, Structure, and Experience: Toward a Scientific Theory of Mind (New York: Gordon and Breach, 1969); hereinafter SSE.

The basic difference between these options is reflected in system behavior: in Cybernetics I the system sticks to its goals in the face of changing circumstances, while in Cybernetics II it seeks new goals in order to keep pace with change. Arthur Koestler (1967, 1978) has referred to these principles as "self-assertion" and "integration" and suggested that the business of open hierarchical systems is to find the proper balance of the two in the face of prevailing conditions.

In this context Laszlo sets for himself the task of "constructing a model for the simplest possible system which could perform the operations observed of the human mind." This appears as follows:



Where E = Environment (source of variable inputs)
P = Perception (input filter)
C = Constructs, codes, control (coupler of input/output)
R = Response (output operator)
And where E → P → C → R = the unidirectional feedback process wherein all four variables may change as E and C interact over time.

4.3 INFORMATION FLOW DESIGN FOR SELF-STABILIZING SELF-ORGANIZING SYSTEMS (Laszlo, 1969)[35]

Macy summarizes the workings of this model as follows:

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[35]Laszlo, SSE, pp. 2-3.

> Input from the environment (E) arrives in the form of percepts (P). These P's are decoded or understood by the systems code (C), which extracts message from noise throughout gestalten which order sensory apprehensions and through constructs which permit conceptual apprehension. The system acts upon the environment (E), to effect subsequent P's, through its output or response (R); this feedback function is essential to the life process on any and every level.[36]

According to Laszlo, this feedback control model is applicable to many levels of system functioning, including the homeostatic or physiological, the sensory or perceptual/cognitive, and the many metasensory or cultural levels, including those of scientific, artistic, and religious activity. (These may be seen to correspond to Deutsch's secondary message levels). Table 4.4, "Levels of Feedback-Controlled Experience" (below), illustrates some possible specifications for E, P, C, and R at these levels.

Inasmuch as we have cited the homeostatic ability of the human body to regulate its internal temperature (Cannon offers many more examples in The Wisdom of the Body), let us consider examples from the other levels. At the sensory or perceptual/cognitive level, a face in the crowd (E) "jumps out at us" (P) as that of a childhood sweetheart (C), causing an immediate double-take and perhaps more (R). At the metasensory level, a faint strain of music (E) is heard (P) emanating from the radio and sounding remarkably like Beethoven's String Quartet No. 10 in E^{b}, Opus 74, "The Harp" (C), prompting us to turn up the volume (R). Or we may, as Laszlo suggests, experience a feeling of sacred presence (P) in the midst of daily activity (E), and feeling

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[36]Macy, Hermeneutic, p. 26.

LEVEL	ENVIRONMENT (E)	PERCEPTION (P)	CONSTRUCTS (C)	RESPONSE(R)
Homeostatic Feedback	Bodily environment (mileau interieur)	Proprioceptive sensing	Organic norms e. g. 98.6° F	Physiological response (sweat, etc.)
Sensory Feedback	Perceptible range of external world	Exteroceptive Sensing	Gestalt systems (shapes, colors)	Behavioral response (touching)
Metasensory Feedback				
Science	Rationally constructable aspects of experienced world	Experimental data; measurements	Scientific construct systems (mathematics, theories, etc.)	Operational manipulations
Art	Emotively apprehendable aspects of experienced world	Emotionally connotative perception	Aesthetic constructs ("Style" "Beauty")	Aesthetically productive activity
Religion	Transcendentally constructable aspects of the experienced world	Emotionally significant perception	Religious construct systems (Theologies, beliefs, myths, philosophies)	Religious activities (rituals, sacraments, etc.)

4.4 LEVELS OF FEEDBACK-CONTROLLED EXPERIENCE
(After Ervin Laszlo, 1969)

that the Holy Spirit is near (C), open our heart in silent prayer (R). Laszlo contrasts the "feeling that" of religion with the "seeing as" (e.g. a red patch) of sensory experience, the "seeing that" ($E=mc^2$) of science, and the "feeling as" (powerful, beautiful) in aesthetic experience. In this view, he concludes, "the roots of religion lie in a feeling which refers beyond itself and demands comprehension in terms of constructs with which it is epistemologically correlated."[37]

Laszlo's examples of religious experience and its constructs are drawn from the theistic traditions of the West. Yet Macy wishes to demonstrate the remarkable congruency of the systems outlook and Buddhist teachings. According to her interpretation, shared assumptions and methods of the two outlooks include empiricism, the reliance on demonstrable experience, agnosticism in matters of metaphysical or nonempirical questions, and instrumentalism in the formulation of practical norms. Agreement on substantive issues include (1) a process perspective: all reality is characterized by flux (Buddhist "impermanence") or "energy flows" (Laszlo) which are nonetheless patterned by (2) a principle of interdependence (Buddhist

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[37]Laszlo, SSE, p. 70. Laszlo develops his naturalistic theory of religious activity with help from William James and A. N. Whitehead. Quoting James approvingly concerning the presence in human consciousness of "a sense of reality, a feeling of objective presence, a perception of what we call 'something there' " (James, p. 62), Laszlo takes the following position on the question of transcendent reality: "Whether or not we agree to the validity of these feelings, as signifying a real, although non-natural presence, has little to do with our commitment to recognize the reality of the feeling itself.... We accept the historical evidence for the occurrence of such feelings and attempt to elucidate the pattern of cognition and behavior resulting in reference to it through our basic information-flow scheme" (SSE, p. 70.)

"dependent co-origination") or "an interdetermined network of mutually qualifying causes and effects" (Laszlo), which renders meaningless the classical dualism of mind and body and suggests (3) an integrated hylomorphic psychology (Buddhist "name-and-form") or "biperspectivism" wherein "mind is but the internal aspect of the connectivity of systems within the matrix" (Laszlo), which in turn renders meaningless the traditional dichotomies of subject-object, self-other, suggesting (4) a relational epistemology and ontology (Buddhist "non-self") wherein experience is "a continuous chain of events from which we cannot without arbitrariness abstract an entity called 'organism' and another called 'environment.'"[38]

With these preliminaries accomplished, Macy proceeds to her cybernetic analysis of meditation systems. For purposes of clarity we shall take up first her discussion of the contemplative and projective meditations conforming to Cybernetics I, then proceed to her discussion of mindfulness and insight meditations under the rubric of Cybernetics II.

Beginning meditators are often plagued by the agony of "monkey-mind," the frantic scurrying of thought patterns, bodily sensations, memories, fantasies, emotions and desires. Having to sit immobile in unfamiliar and, for most people, uncomfortable positions "drives the monkey wild." for this reason, a centering device of one kind or another is used in many meditation systems to calm the mind. Such "calming" (samatha) or contemplative techniques may utilize a physical

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[38]Macy, Hermeneutic, pp. 22-25.

object (candle flame, rosary) or sensation (the coolness of the breath at the nostril or the rise and fall of the stomach in breathing), or a vocally or silently repeated mantra to focus and narrow attention. The effect is always the same: the monkey mind is attached by a leash to a peg at the center of the clearing, and as the monkey scurries and turns, winding its leash about the peg, it is slowly and gently drawn toward the center where movement stops. The instructions are common, whatever the tradition: "When you experience the rise of thoughts and sensations, gently bring your attention back to [the meditation object]."

In Macy's analysis, the meditation object is the C, the source of thoughts and feelings is E, and P's are the range of percepts, including the meditation object projected by R, which are progressively narrowed to correspond only to C. She continues,

> One-pointed focus on a C is used first to suppress and then transcend reception of P's. Reception is narrowed, so to speak, to those P's produced on the basis of the chosen C; the unvarying nature of these P's (like a steady sound one ceases to hear) may be related to the experience of merging which then can occur. In any event, a process of matching and negative feedback obtains there, a function of Cybernetics I .[39]

Macy presents this process in terms of Laszlo's information-flow model as follows on the next page.

In addition to this contemplative meditation, two examples of what may be called projective meditations are included by Macy under this model. In the parinamana meditation from the Perfection of Wisdom

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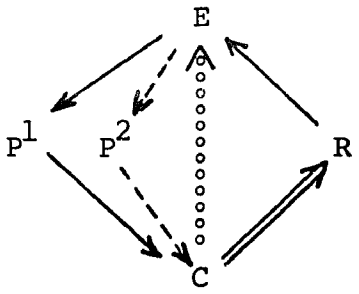
[39]Macy, Hermeneutic, p. 28.

Scripture, the concept of the power and goodness of all buddhas and sentient beings (c) is imaginatively "rolled up in a ball" and projected outward (R) into the suffering world (E) which is transfigured (parinamana) and perceived anew (P) as the body of the Buddha (buddhakaya). Similarly, in one Vajrayana visualization practice of Tibetan Buddhism, an elaborately detailed visual image of a tutelary deity, along with the concept of its qualities and powers, its essential emptiness and voidness, and its identity with the meditator (C) are meditatively projected (R) in the imagination (E), which is perceived to reflect and illuminate (P^2) the true qualities of the world and of the meditator, namely wisdom, radiance, compassion, and emptiness.



⟶	Pre-meditation perception	P^1= pre-meditation percept
- - -⟶	Feedback controlled perception	E = source of experience
		C = Meditation object
⟹	Negative feedback	R = Refocus attention
∘∘∘∘⟶	C is manipulatively projected onto E	P^2= Percept matches object

4.5 CYBERNETICS I MODEL OF CONTEMPLATIVE/PROJECTIVE MEDITATIONS
(After Laszlo, 1969; Macy, 1976)

While these contemplative and projective meditations represent techniques used, respectively, by beginners and advanced meditators, the mindfulness (satipatthana) and insight (vipassana) meditations are perhaps the most universal of the Buddhist techniques, called by one authority "the heart of Buddhist meditation." Here the structures presented by unfiltered experience (E) are admitted to consciousness (P) in such way that the meditator's concept of reality is decisively altered. (C^1—C^2). It is as if the camera shutter of experience, which had been intentionally narrowed by negative feedback in the Cybernetics I meditations, is thrown open wide by the deviation-amplifying effect of positive feedback in Cybernetics II, that is, by a deliberate act (R). The more the picture (P) of reality (E) deviates from old C's, the more it is allowed to, so that the mass of psychophysical static revealed will remain in its raw state, uncut and unedited except to name discrete items — "left knee ache, memory of mother, phone bill due, etc." — which appear like lost properties on the set of a dreadful motion picture. As Macy puts it, mindfulness (or as it is also called, "bare attention") is an effort to apprehend the P's before they are coded by established C's.

> The mediator seeks to register the raw data of physical sensations and the arising of mental events without interpreting them according to previously formed gestalten or constructs. By remaining aloof from every thought which operates in terms of established C's, he refrains from perpetuating the validity of these old C's. Rather than processing the noise to extract message, he, in effect, switches off the message in order to receive more of the

> noise. This amounts to a deliberate attempt to produce mismatching and positive feedback. P's are "unhooked" from previous C's, which are first set aside, and later decommissioned if inadequate to deal with the new perceptions.[40]

Unlike the earlier meditations where C is manipulatively projected onto E, in satipatthana the structure of E is adaptively mapped onto C, which is transformed, whether gradually or suddenly (whole schools of Buddhism have evolved over this point) in a process Laszlo terms exploratory self-organization (see following page).

The question remains why a meditator would wish to amplify the "mismatched flow" of undigested experience by means of positive feedback, or more fundamentally, why a meditator would wish to change old C's for new. The answer here must be that of the devotee, namely, that the old perceptions and constructs fostered hatred, greed, and delusion and blocked the access to the ultimate religious goal, the attainment of Nirvana and the end to rebirth and suffering. Strictly speaking, this motivation does not enter into the cybernetic model of the process adopted to affect the change, but the results of the change may be inferred from the model: a steady diet of unfiltered experience gives rise to certain new constructs: a process perspective, the notion of interdependence of causes and effects, and the collapse of mind-body and subject-object dualism. These correspond to the Buddhist doctrines of anicca, pratityasamutpada, nama-rupa, and anatta. These are the new C's, the "insights" conferred by insight meditation.

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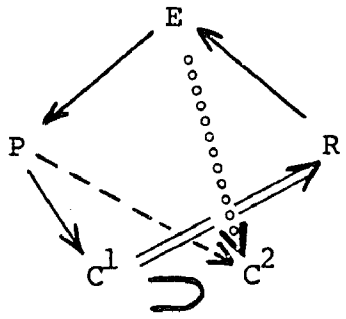
[40]Macy, Hermeneutic, pp. 27-28.



→ mismatched flow

⟹ positive feedback

- - → matched flow

°°°° → E is adaptively mapped onto C^2

⊃ exploratory self-organization

E = source of experience

P = meditative percepts

C^1 = old reality constructs

C^2 = new reality constructs "insight"

R = mindfulness, bare attention

4.6 CYBERNETICS II MODEL OF MINDFULNESS/INSIGHT MEDITATIONS
(After Laszlo, 1969; Macy, 1976)

IV

In this chapter we have argued that cybernetic theories of religion in recent years have offered solutions to methodological problems which go back to Herbert Spencer and the organicists of the late nineteenth century. These thinkers wanted to know what function religious activities and beliefs played in the scheme of things, especially the Darwinian scheme of things. The answer, it turned out, was not that religious beliefs and rituals are "necessary" for the survival of societies, but that cultural phenomena, including those of religious faith and practice, may be interpreted in light of the goals

and aspirations of particular communities and as part of the process communities develop to realize these goals.

We have seen that items of religious belief may themselves represent such goals, such as the affirmation of social equilibrium or openness to the future reflected in the ethical ideas of humility and faith. And we have seen that religious practices may be understood as the means by which certain goals are achieved, such as the reorganization of perception in the practice of meditation. In neither case is the functional necessity of religion or its particulars claimed for the wellbeing or survival of society or its members. But in both cases religious phenomena are seen as functioning parts of a social process which includes self-regulation and self-organization, adaptation and emergence.

Cybernetic theory avoids the problems of classical teleology because the goals of society are not said to "cause" or "determine" the means or outcomes of action. Rather the means and outcomes are influenced and guided through the agency of feedback control. Persons, groups, organisms -- even mere machines -- cannot be called "cybernetic" unless they have the capacity to steer toward a goal. To do this they must be able to "see" or "hear," to "consider" or "interpret" or "understand" their position and progress relative to that goal. Religious symbols and actions provide "eyes," "ears," and the "emotionally significant perceptions" which orient faith communities to the "transcendentally constructable aspects of the experienced world."

How do cybernetic theories of religion fare, methodologically considered? Specifically, how do the contributions of Karl Deutsch and Joanna Macy measure up in light of the criteria we have established for a methodological critique?

Are these theories sufficiently empirical? That is, are they grounded in the findings of the scientific and phenomenological studies of religion? In the case of Deutsch's use of Christian categories, the answer must be no. Deutsch appears to assume that the meanings of these terms are commonly understood, and does not attempt to ground them in current theological discussion. This assumption proves problematic, however, when most of the terms he uses -- humility, faith, love, grace, and spirit -- are taken to convey approximately the same message, the need of requisite "openness" of systems to their environments in order to counter "self-closure." It is no secret that Medieval, Reformation, and Modern theologies amount to more than this. Yet, in Deutsch's defense, it was not his intention to elucidate religious language by cybernetic analysis, but rather the reverse. Inasmuch as he has succeeded in pointing to certain parallels in the structure of these languages, then we may conceive in principle a systems theology which is properly grounded in contemporary scholarly discussion.

Macy, on the other hand, has taken pains to elucidate the traditional as well as the contemporary meanings of her primary materials. As a Sanskrit and Pali scholar and as a practitioner and teacher of Buddhist meditation, she must be considered qualified for

this task. Her work thus opens the possibility of a cybernetic analysis in religion which does not ignore or falsify the integrity of religious experience. What would "native Buddhists" think of such an approach to their faith and practice? (One is ever aware of Wilfred Cantwell Smith's requirement of native assent as a fundamental criterion in religious studies, and of its wide respect among methodologists.)[41] No published response to Macy's work by a Buddhist scholar has appeared, yet one may take note of Macy's high regard among Buddhist intellectuals and villagers in Sri Lanka, where she has lived and studied, and of her activity as an instructor and lecturer at Buddhist institutions in this country.[42] At some point it becomes necessary to regard Macy's cybernetic theory of Buddhism as the work of a Buddhist, as this is her adopted tradition.

Are cybernetic theories of religion sufficiently explanatory? Do they shed new understanding upon or clarify new relationships in religious studies? One methodologist has written that "the problem with functionalism is not that it explains religion away, reduces

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[41]"[N]o statement about religion is valid unless it can be ackowledged by that religion's believers." So Smith wrote in his celebrated essay, "Comparative Religion: Whither--and Why?" In Mircea Eliade and Joseph M. Kitagowa, eds., The History of Religions: Essays in Methodology (Chicago: University of Chicago Press, 1959; sixth printing, 1973), p. 42.

[42]Joanna Rogers Macy, Dharma and Development: Religion as Resource in the Sarvodaya Self-Help Movement, with an Introduction by A. T. Ariyaratna (West Hartford, CT: Kumerian Press, 1983). Ariyaratna, the founder and president of Sarvodaya, describes Macy as "a serious student of religion, deeply informed by the study and practice of Buddhism" (p. 14). She is a regular lecturer at the Providence Zen Center, among many others.

religion or translates religion. The fact of the matter is that functionalism does not explain religion at all."[43] If such an assessment is accurate, then cybernetic theories of religion, as a type of functionalist analysis, must be considered as a failure. Yet the writer in question has based his assessment on a rehash of problems in functionalist analysis which the contributions of Robert Merton and Norbert Wiener overcame four decades ago, namely those of illegitimate teleology and the failure to yield causal explanations and reliable predictions.[44] Summing up these advances, Ernest Nagel demonstrated in 1956 and reiterated in 1977 that functional analysis makes perfect sense in the context of self-regulating or cybernetic systems, that "the concept of being goal-directed can be explicated without employing in the analysis any specifically biological notions and in particular without using any expressions that have a teleological connotation." In short, Nagel concluded, "functional explanations can be shown to have the same structure as explanations in the physical sciences."[45]

What then do these theories explain? Deutsch and Macy have suggested ways in which religious symbols and rituals contribute to the goal-seeking behavior or persons and groups, and they have attempted to

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[43]Hans H. Penner, "The Poverty of Functionalism," History of Religions 11 (1971): 97.

[44]Penner relies heavily on C. G. Hempel's "The Logic of Functional Analysis," in Symposium on Sociological Theory, ed. L. Gross (New York: Harper and Row, 1959), pp. 271-307. Hempel, however, concedes the points made in functionalism's defense by Nagel in 1956 (pp. 296-302).

[45]Ernest Nagel, Teleology Revisited and Other Essays in the Philosophy and History of Science (New York: Columbia University Press, 1979), pp. 290, 314.

show how these "work." The results, especially in the case of Macy's theories of Buddhist meditation, must be said to go beyond phenomenological reports of "the meaning of meditation" for its practitioners, as important as that task remains for religious studies. They have shown, for example, why an insight meditator may undergo a permanent shift in perception regarding the nature of reality, while the mantra meditator will return to the same reality between trances. On the other hand, the mantra meditator may achieve a state of psychosensory withdrawal useful, say, at dental appointments, while the insight meditator will remain minutely, perhaps excruciatingly, aware of every sensation, thought, and feeling. The point is not that these manifestations of practice were unknown to previous research, or indeed to instruction texts going back twenty centuries, but that the dynamics of these effects were never before explained in contemporary terms.

Are cybernetic theories of religion sufficiently heuristic? do they suggest new avenues for research or new methods of investigation? One may expect heuristic potential to be the strong suit of new theories in the social sciences, whatever their failings in other respects. Yet this may not be presupposed, the only true criterion of heuristic power being the frequency of citation a work enjoys in the pages of others. On this account, Macy's innovative contributions have not yet prompted further research or discussion to date. One may surmise that Macy's activities as a lecturer and organizer in recent years have limited her rate of scholarly publication.

The same may not be said of Deutsch's work. For it was The Nerves of Government which provided the cybernetics in Robert Bellah's theory of religion in 1968. Bellah states, referring to Deutsch's model, "Only in the last few years has a new model of human action developed that will allow us to utilize the insights of Weber, Durkheim, and Freud without falling back into the old controversies about idealism and materialism, rationalism and irrationalism, and humanism and science."[46] Bellah's definitions of personality and society, "action system," and religion all bear the marks of Deutsch's influence, including the concern with "situations of threat, uncertainty, and breakdown." Here the self-closure and dysfunction of systems is treated again as a pretext for religious symbolization, but now the cybernetic analysis is in the hands of one familiar with the writings of Augustine, Luther, and Kierkegaard, as well as with those of Eliade and Parsons.

As the use of analogies from electronics, neurology, and bureaucratic life is admitted to the human sciences, systems theorists will have to acknowledge the fearful spectre of robotic arms, glowing control panels, and heat-seeking missiles. If their success is to be judged in the field to religious studies, it will rest on their

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[46]Bellah, Beyond Belief, p. 9. Another author comments that the influence of Deutsch's work upon others wishing to apply cybernetics to social science cannot be exaggerated. "Again and again one finds references to [The Nerves of Government] as having provided the basic conceptual logic of the cybernetic model as it applies to social science. There is good reason for this claim. The book is a massive attempt at metatheoretical advocacy for cybernetic concepts." Manfred Stanley, The Technological Conscience: Survival and Dignity in an age of Expertise (New York: The Free Press, 1978), p. 146.

capacity to shed new light on the reality of religious experience, and not on their expertise in circuitry. Yet unless the adaptive values of religious faith and practice are ruled out of consideration, then systems functionalism in a cybernetic mode must take its place in the fund of theoretical resources for religious studies.

F I V E

ACTION THEORY AND RELIGIOUS EVOLUTION:

Historicism and the Principle of Emergence

> In laying hands upon the ark of absolute permanancy, in treating the forms that had been regarded as types of fixity and perfection as originating and passing away, the "Origin of Species" introduced a mode of thinking that in the end was bound to transform the logic of knowledge, and hence the treatment of morals, politics, and religion.[1]

By 1909, the year of these reflections, both John Dewey and The Origin of Species were fifty years old. Also fifty were Henri Bergson and Edmund Husserl, who contributed their own distinct opinions on the problems of temporality, historicity, and change. Dewey and Bergson were at home in the era of Darwin; each explored and extended the notion of biological evolution to account for the emergence and multiplicity of history, culture, and consciousness.[2] Husserl, on

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[1]John Dewey (1859-1952), "The Influence of Darwin on Philosophy," in Darwin, Philip Appleman, ed. (New York: Norton, 1979), p. 305. This essay was first presented in a public lecture at Columbia University in 1909 and published the following year in Dewey's The Influence of Darwin on Philosophy and other Essays in Contemporary Thought (New York: Henry Holt and Co., 1910).

[2]Henri Bergson (1859-1941), in L'Evolution créatrice (1907), offered a critique of theories of evolution, including those of Lamarck, Darwin, Theodor Eimer, and Herbert Spencer, as well as his own theories of objective and subjective time and the élan vital.

the other hand, railed at the twin plagues of naturalism and historicism, insisting that philosophy separate itself from the ephemeral findings of science in order to discover the primordial contexts of experience.[3] How apt that Husserl should call these contents by the old Greek name eidos (". . .it belongs to the meaning of everything contingent that it should have essential being and therewith an Eidos to be apprehended in all its purity"),[4] for it was Aristotle's eidos which the scholastics translated as "species," and species which Darwin forever subjected to the tides of time.[5]

After a decade of turmoil in philosophy and world affairs, the "problem of historicism" was identified and investigated by Ernst Troeltsch in 1922. Unlike Husserl, Troeltsch regarded historicism and naturalism as great advances in modern thought. They are distinct but complementary: historicism views events as moments in a process of development, while naturalism sees them as manifestations of immutable natural laws. One finds uniqueness and pluralism in the sea of time; the other, repetition and order. Naturalism goes back to the quantifying and generalizing (nomothetic) methods of Galileo, Bacon, and Newton and forms the outlook of modern science, Naturwissenschaft.

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[3]Edmund Husserl (1859-1938), "Philosophie als strenge Wissenschaft," Logos 1 (1910): 289-314; trans. Quentin Lauer as "Philosophy as Rigorous Science" in Edmund Husserl, Phenomenology and the Crisis of Philosophy (New York, 1965).

[4]Edmund Husserl, Ideas: General Introduction to Pure Phenomenology, trans. W. R. Boyce Gibson (London: Collier-Macmillan, 1962; first published in German in 1913), p.47.

[5]Dewey, p. 307.

Historicism, the heir of Hegel and Darwin, of dialectical, developmental, individualizing (ideographic) thought, forms the basis of the "human studies," Dilthey's Geisteswissenschaften, including sociology, anthropology, and the history of religions. Both approaches to knowledge are valid, Troeltsch and many others held, but historicism is not without its problems.[6]

Metaphysical Relativism is the patent danger of ideographic analysis. Historicism, by this reading, leaches order and meaning from history. How may knowledge of human affairs be gained if every social arrangement, product, cultural symbol, and event is treated as unprecedented and impermanent? The anthropologists Malinowski and Radcliffe-Brown offered functionalism as the clear alternative to historical relativism; each passing item, according to this method, may be shown to satisfy some lasting value or norm. But in the crisis years between the two world wars, few lasting values and norms could be identified. Even Troeltsch, a Lutheran curate and professor of systematic theology, member of the Prussian Landtag, undersecretary of state for religious affairs, and author of respected works in the history and sociology of religion, was unwilling to appeal to trans-

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[6]Ernst Troeltsch, Der Historismus und seine Probleme(1922), cited by Maurice Mandelbaum, "Historicism," Encyclopedia of Philosophy, Vol. 4 (New York: Macmillan, 1967), pp. 22-23. The terms "nomothetic" and "ideographic" were introduced by W. Windelband in Geschichte und Naturwissenschaft (1894), and systematically developed by Troeltsch's contemporary, Heinrich Rickert, in Die Grenzen der naturwissenschaftlichen Begriffsbildung (1902). Both Troeltsch and Rickert agreed with Dilthey on the need for a division of the disciplines, though Rickert based his on the methodological distincion rather than on the content of the disciplines.

historical values, whether theological or political, to evade the fact of relativism. It was better to seek the sources of value within the historical process, he believed — just as naturalism grounds its laws in empirical observation — than to violate the fragile canons of method in the infant human sciences.[7] Two years after Troeltsch's "Historicism and its Problems," Karl Mannheim advanced the discussion with his own essay, acknowledging the inevitability of cultural and moral relativism and the perspectival character of knowledge, but proposing a "sociology of knowledge" powerful enough to interpret it.[8]

Yet another appraisal of historicism has been offered. For many years the Austrian philosopher of science Karl Popper developed a critique of historicism diametrically opposed to that of Troeltsch and Mannheim.[9] Popper held that it was the belief in metaphysical determinism, in historical destiny, nomothetic regularities, predictabilities, and powers which threaten modern society, not a lack of norms or values. "Every version of historicism expresses the feeling of being swept into the future by irresistible forces," he

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[7]Mandelbaum, p. 23.

[8]Karl Mannheim, "Historicismus," Archiv für Sozialwissenschaft und Sozialpolitic 52 (1924), trans. and ed. Paul Kecskemeti in Karl Mannheim, Essays on the Sociology of Knowledge (London, 1952). For an account of this development and its continuing vitality, see Peter L. Berger and Thomas Luckmann, The Social Construction of Reality: A Treatise in the Sociology of Knowledge (New York: Mentor Books, 1967).

[9]Karl R. Popper, The Poverty of Historicism (Boston: Beacon Press, 1957). In a historical note, Popper dates his conception for this book to 1919-20, and various drafts and versions to 1935-36, and 1944-45.

wrote. The "emotional appeal of historicism" is explained by its provision of an alternative to historical relativism: "It really looks as if historicists were trying to compensate themselves for the loss of an unchanging world by clinging to the belief that change can be foreseen because it is ruled by unchanging law."[10] Popper argued that Darwinian theory was based on random processes and could not support theories of irreversible progress or development. Those who purport to find norms or values in history are the very ones who attempt to shape and predict the future; they are the enemies of an open society.[11]

What then is historicism — ideographic analysis resulting in relativism or nomothetic analysis resulting in determinism? Maurice Mandelbaum urges the abandonment of metaphysical interpretations such as these in favor of a methodological approach. Historicism need not be taken as a statement about the world, but rather, and more profitably, as a belief concerning the nature of explanation and evaluation. In this view,

> Historicism is the belief that an adequate understanding of the nature of anything and an adequate assessment of its value are to be gained by considering it in terms of the place it occupied and the role it played in a process of development.[12]

No specific process of development is implied in this definition — the facts must be examined for traces of order in each case. The past

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[10]Ibid., pp. 160-161.

[11]See Karl R. Popper, The Open Society and Its Enemies, 2 vols. (London: Routledge and Kegan Paul, 1945; 4th revised ed., London, 1961).

[12]Mandelbaum, p. 24.

tense is used, it may be assumed, to rule out issues of prediction and control; it is the explanation and evaluation of faits accomplis which is proposed, not a feat of prophecy or a program of utopian engineering. Finally, the process of development which is discovered or hypothesized in each case may be very local or very general -- again, the facts must speak for themselves.

With such a definition in mind, we shall investigate in the following sections the challenge posed by historicism to religious studies and systems theory (I), and the solutions embodied in the theories of action and religious evolution contributed by Talcott Parsons (II), Robert Bellah (III), and Donald T. Campbell (IV). In the final section (V) we shall review our findings, arguing that the systems principle of emergence offers a useful approach to the problems of religion in history.

I

In religious studies the problem of historicism has erupted repeatedly after the collapse of the nineteenth century quest for origins. Following Husserl, the phenomenology of religion "resisted the relativizations of [cultural-religious] worlds which placed them on an historical schema judged by norms that fall at the end of a time line," and resisted "a rationality subject to evolutionary change and cultural fashion."[13] For some phenomenologists, such as Alfred Schütz, this resistance followed the direction pointed by Troeltsch and

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[13]Brenneman, p. 21.

Mannheim toward the search for immanent values, essences, or inner logics offered by each segment of temporal reality, each "finite province of meaning."[14] For others, such as Heidegger and the existentialists, the quest for essence eventuated in a headlong assault on "Being" and "Time" themselves.[15] While these strategies reflect the range of definitions concerning the specific threat of historicism, all phenomenologists may be found to be united in their rejection of a process, whether historical or methodological, which robs human existence of meaning and purpose.

Nor have systems theorists been silent in the matter of historicism. As we saw in Chapter Four, cybernetic functionalism devoted considerable attention to the problems of goal-direction and purpose, holding that it is the functional aims of each organ, creature, group, or system which provide the key to its meaning and interpretation. These finite provinces of meaning (to borrow Schutz's useful phrase) grow out of the relations between parts and wholes, actors and situations, rather than arising from any outside source. The system and its environment co-vary through the medium of feedback control: when the environment changes to a degree significant to the stability of the system, the system realigns its course by means of negative feedback, returning to its original direction or state. In this way a process of development is seen to include both system and

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[14]Berger and Luckmann, pp. 25-28.

[15]Martin Heidegger, Sein und Zeit (1927), English trans. John Macquarrie and E. S. Robinson, Being and Time (New York: Harper and Row, 1962).

environment and to promote stable relationships and values. Tides of relativism are stemmed by local increments of adaptive self-regulation.

Yet the theory of negative feedback control (Cybernetics I) does not exhaust the problem of historicism. What happens when a process of development generates unprecedented relationships and values? In this instance the systems principle of emergence, also termed self-organization, positive feedback control, Cybernetics II, evolution, or simply growth, offers the basis for interpreting novelty and development. Unlike the principle of adaptation, which presupposes the existence of relatively stable norms and goals embodied, encoded, or entertained in the transducing network of the system, emergence accounts for the transformation of old norms and the appearance of new ones. Against a backdrop of environmental change which exceeds the system's capacity for self-regulation, the process of mutation, internal reorganization, or structural change is manifested. Sometimes amplified by positive feedback, the system's deviation from previous norms is accelerated. If successful, adaptive self-organization restores equilibrium between the system and its environment, but now at a new level of complexity. The environment may be modified in turn as the new value, norm, structure, or emergent reality enters the picture. If unsuccessful, of course, the system and its environment may be threatened.

Darwin taught that genetic mutation in living things is both random and independent of the environment. Its results are filtered in time by natural selection, of the "fit" of the mutation to the current

state of the environment. This process is open-ended and may result in the rise or fall of individuals, traits, or species. Hence novelty arises from the correlation of random changes in nature. But humanists have never been willing to accept such a theory to explain the creative achievements of human imagination and culture. The Nobel laureate geneticist, Hermann J. Muller, for example, conceives of human cultural evolution as radically discontinuous with that of nature:

> Through billions of years of blind mutations, pressing against the shifting walls of their environment, microbes finally emerged as men. We are no longer blind; at least, we are beginning to be conscious of what has happened and of what may happen. From now on, evolution is what we make it, provided that we choose the true and the good. Otherwise, we shall sink back into oblivion.[16]

Yet it is by no means self-evident that human cultural evolution is discontinuous with the biological variety. Cannot "the true and the good" be identified in each situation by means of cybernetics I and II? Clearly, it is at this point that systems theory, which argues for continuity, stands at odds — though not irreconcilable odds, we shall argue — with the humanist value claims of the phenomenological tradition.

II

For thirty years the sociologists Talcott Parsons and Robert Bellah, and the psychologist Donald T. Campbell have devoted their attention to the problems of cultural evolution, religious evolution,

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[16]Hermann J. Muller, "The Guidance of Human Evolution" (1950), in Philip Appleman, ed., Darwin, Second Edition (New York: Norton, 1979), p. 420 (emphasis added).

and historical relativism. Working independently, by and large, each has acknowledged the influence of systems thinking on his work and each has advanced the prospects of systems theory in religious studies by his contributions. Irvin Laszlo regards Parsons as the thinker "who consistently furnishes the clearest systems analysis in social theory,"[17] while Campbell's presidential address "On the Conflicts Between Biological and Social Evolution and Between Psychology and Moral Tradition," presented before the American Psychological Association in August, 1975, represents an important moment for systems analysis in academic social science.[18] Both scholars, along with many others, cite Robert Bellah's 1964 essay, "Religious Evolution," as the locus classicus on the subject. Taken together, the contributions of these writers may be regarded as reflecting current systems thinking on religious evolution and the problem of historicism.

Talcott Parsons has traced his education as a systems thinker back to his undergraduate studies in biology, his year under Malinowski at the London School of Economics, his discovery and deep resonance with the legacy of the late Max Weber at Heidelburg, his association at Harvard with the physiologist and sociologist Lawrence J. Henderson and the biologist Walter B. Cannon, both of whom extended the concepts of system and homeostasis to account for phenomena at the physico-

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[17]Irvin Laszlo, Introduction to Systems Philosophy (New York: Gordon and Breach, 1979), p. 103.

[18]Donald T. Campbell, "On the Conflicts Between Biological and Social Evolution and Between Psychology and Moral Tradition," American Psychologist 30 (1975): 1103-1126; reprinted in Zygon II (1976): 167-208.

chemical, organic, and sociological levels, and finally, his study of the economic equilibrium theories of the Italian sociologist Vilfredo Pareto.[19] The Social System and Toward a General Theory of Action bear witness to Parsons' full embrace of the systems concept by 1951. Between 1952 and 1957 Parsons attended the annual meetings of the Conference on System Theory at the University of Chicago. Here he encountered the entomologist Alfred Emerson and the notion of cybernetic control in living systems, particularly insect and human societies. The possibility of the continuity of organic and human sociocultural evolution and of the functional equivalence or isomorphism of genetic and symbolic patterning, as Emerson held, became dominant considerations in Parsons' theory-building from then on.[20]

Many of these influences were brought together by Parsons during a seminar on social evolution which he co-taught with Robert Bellah and S. N. Eisenstadt at Harvard in the Spring of 1963. Papers by each were published the following year in the American Sociological Review. Parsons' contribution, entitled "Evolutionary Universals in Society," contains the following passage, upon which the remainder of this chapter may be regarded as commentary:

> To quote the biologist Alfred Emerson, within a major sphere of man's adaptation, the "gene" has been replaced by the "symbol." Hence it is not only the genetic constitution of the species that determines the "needs" confronting the environment, but this constitution plus the cultural tradition. A set of "normative expectations" pertaining to man's

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[19]Talcott Parsons, "On Building Social System Theory: A Personal History," Daedalus 99 (1970); reprinted in Parsons, Social Systems and the Evolution of Action Theory (New York: Free Press, 1977), pp. 22-76.

[20]Ibid., pp. 28-29.

> relation to his environment delineates the ways in which adaptation should be developed and extended. Within the relevant range, cultural innovations, especially definitions of what man's life ought to be, thus replace Darwinian variations in genetic constitution.

Parsons continues,

> Cultural "patterns" or orientations, however, do not implement themselves. Properly conceived in their most fundamental aspect as "religious," they must be articulated with the environment in ways that make effective adaptation possible. I am inclined to treat the entire orientational aspect of culture itself, in the simplest, least evolved forms, as directly synonymous with religion.[21]

In order to draw out the many valuable insights in this statement, it is necessary to trace the outlines of Parsons' "theory of action" as it developed over time. In The Structure of Social Action (1937), Parsons paid some of his debts to Durkheim, Weber, and Freud by choosing to focus his sociology on the shared symbolic systems or cultures embodied in society.[22] Durkheim, as we have seen, stressed the role of symbolic representations in his notion of collective conscience; Freud probed the dynamics of symbolic transformation in his theory of the unconscious; and Weber argued for the priority of symbolic influences over material conditions in The Protestant Ethic and The Spirit of Capitalism (1904-5, first translated into English by Parsons in 1930).[23] In the concept of "action," Weber included "all

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[21]Talcott Parsons, "Evolutionary Universals in Society," American Sociological Review 29 (1964): 341 (emphasis added).

[22]Talcott Parsons, The Structure of Social Action (New York: McGraw Hill, 1937; reprint ed., New York: Free Press, 1949.

[23]Max Weber, The Protestant Ethic and the Spirit of Capitalism, trans. Talcott Parsons (London: Allen and Unwin, 1930; New York: Scribner's, 1930).

human behavior when and insofar as the acting individual attaches a meaning to it."[24] Similarly for Parsons, action came to mean the efforts of human beings to realize their symbolically defined intentions in the context of symbolically defined environments. Here the influence of Malinowski may be inferred, both in the focus on "derived" (i.e. symbolic) needs, and in the intimation of a hierarchical ordering of forces linking the meanings and values of "action" to the underlying biological conditions of "behavior."

In the 1950s Parsons' action theory became highly schematized, assuming a formal pattern it has retained ever since. The "four-function" or "pattern-variable" scheme was introduced in order to illustrate the functional differentiation of symbolically patterned subsystems within the general action system. Following Durkheim's notion of the division of labor, Parsons holds that social evolution is marked by the degrees of independence achieved by subsystems in society. Individuals in society strive to meet their biophysical needs, to seek psychic satisfactions, to get along with others, and to understand their place in the world. Parsons calls these activities adaptation (A), goal-attainment (G), integration (I), and latent pattern-maintenence (L) and locates them respectively in the behavioral organism, the personality, the social system, and the cultural system.[25] Just as the personality may function semi-independently

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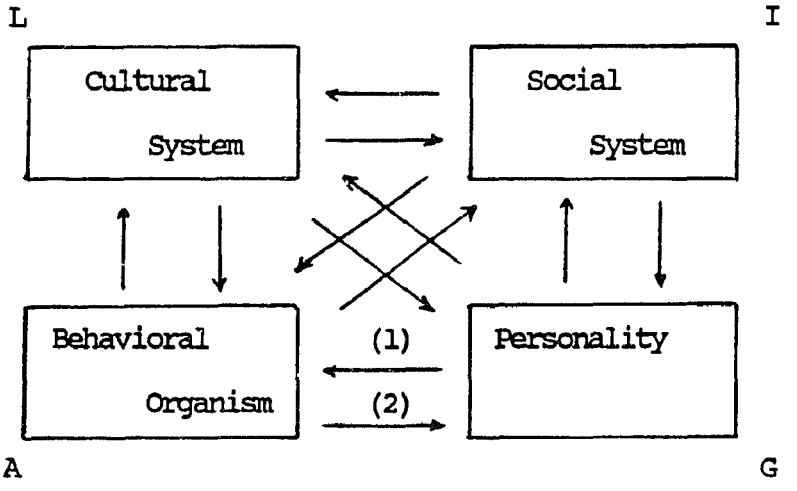
[24]Max Weber, The Theory of Social and Economic Organization (1925), ed. Talcott Parsons (New York: Free Press, 1964), p. 88.

[25]Talcott Parsons and Neil J. Smelser, Economy and Society (New York: Free Press, 1956), pp. 16-18, and Chapter II, passim. The

from the social system -- as when a citizen speaks out against the government -- so each of the subsystems in human action is in constant interaction with the other three:



5.1 PARSONS' GENERAL ACTION SYSTEM

Examples of the interactions among action subsystems are those indicated between the behavioral organism and the personality: in exchange for proper diet, sleep, exercise, and grooming, (1) the person is generally blessed with good health (2). Parsons sometimes refers to these interactions as "media of exchange."

Each subsystem in Parsons' A.G.I.L. scheme may be broken down according to the same four functions. In recognition, for example, of the fact that the social system itself has adaptive, goal-attaining,

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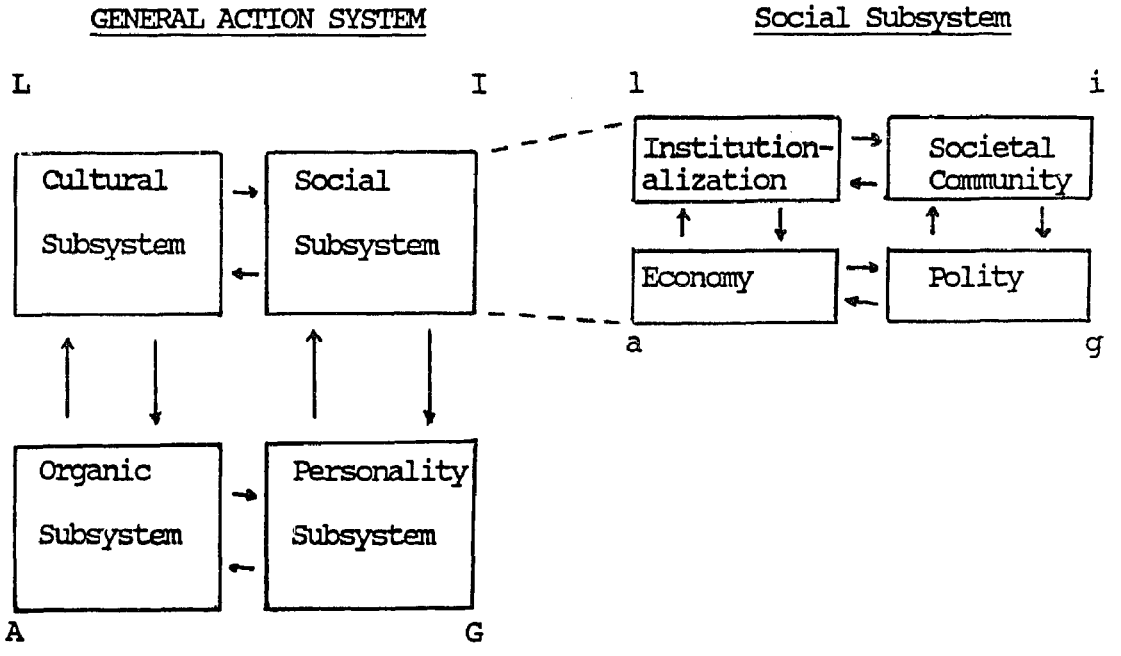
isomorphy of these patterns with the systems principles we have identified may be noted, assuming the equivalence of Parsons' integration and adaptation with their Bertalanffian counterparts, and the rough equivalence of goal attainment with emergence, and latent pattern maintenance with the principle of hierarchy.

integrative, and latency objectives, one may specify its respective subsystems as economy, polity, community, and institutionalization. In this way, it becomes apparent that the four basic functions are at work at all levels of the hierarchy: the social subsystem may be said to be functionally isomorphic with its three corresponding subsystems, as well as with the general action system of which it is a part.



5.2 TWO LEVELS IN PARSON'S PATTERN-VARIABLE SCHEME

By 1966 Parsons had begun to speak of "two basic, interrelated hierarchies -- those of necessary conditions and of cybernetic control."[26] The former was thought to press "up" the hierarchy,

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[26]Talcott Parsons, Societies, Evolutionary and Comparative Perspectives (Englewood Cliffs, N.J.: Prentice Hall, 1966), p. 113.

imposing constraints or offering possibilities by structuring the material, logistic, and conceptual factors and resources of the action system. Such consideration as the climate, one's physical health, economic and educational opportunities, the structures of language and the epistemological worldview of one's native culture come to mind in this regard; while not intractable, these factors are experienced as "givens" which may be modified only with effort. On the other hand, the cybernetic control hierarchy is conceived to operate "down" the levels of complexity, shaping and patterning the conditions and resources of aciton. Such phenomena as the pursuit of scientific discoveries, the democratic process, one's choice of career, the decision to study a foreign language, to change one's diet or to move to Sri Lanka may be cited in this instance; these actions we associate with the exercise of human "free will." Parsons' doctoral dissertation on German theories of capitalism contrasted the top-down social change of Weber's Protestant Ethic thesis with the bottom-up class struggle scenarios of Marx's revolutionary socialism.[27] Commenting much later on this twin hierarchy model, Parsons wrote,

> I believe that basic innovation in the evolution of living systems, both organic and sociocultural, does not occur automatically with increases of factors or resources at the lower (conditional) levels of the cybernetic hierarchies, but depends on analytically independent developments at their higher levels.[28]

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[27]Talcott Parsons, "'Capitalism' in Recent German Literature: Sombart and Weber," Journal of Political Economy 36 (1928): 641-661; 37(1929): 31-51.

[28]Parsons, Societies. . ., p. 113.

Eventually the two hierarchies in this analysis came to be conceived as a single interactive process.

We may illustrate the cybernetic hierarchy by combining the two levels of figure 4.2 in two alternate ways: (a) stacking a subsystem with the other subsystems in a more conventional vertical hierarchy, or (b) nesting the subsystem back into the general action system. In the following illustration the cultural system is subdivided to three subsystem levels to suggest finer-grained analysis. The shaping (down) and conditioning (up) forces are represented by arrows once again on the diagram which follows.

We are now in a position to understand the theoretical context for Parsons' conviction that the "orientational aspect" of culture is directly synonymous with religion. Religion, for Parsons, is the latent pattern-maintenance (L) or orientation-motivation subsystem within the cultural system, which plays the same (L) role in the action system as a whole. Religion is not only a "cultural universal" in the sense in which language, kinship, and technology are cultural universals; it is also conceived as the very source of symbolic, social, personal, and biophysical transformations in human action. In his comparative study of major civilizations in evolution (1966), Parsons specifies religion as the primary shaping force in history.

> [O]n the level of the longest time perspective and broadest comparative scope. . . the emphasis in accounting for the main patterns and processes of change has been placed at the highest cybernetic level. This level is cultural rather than social and within the cultural category, religious rather than secular.[29]

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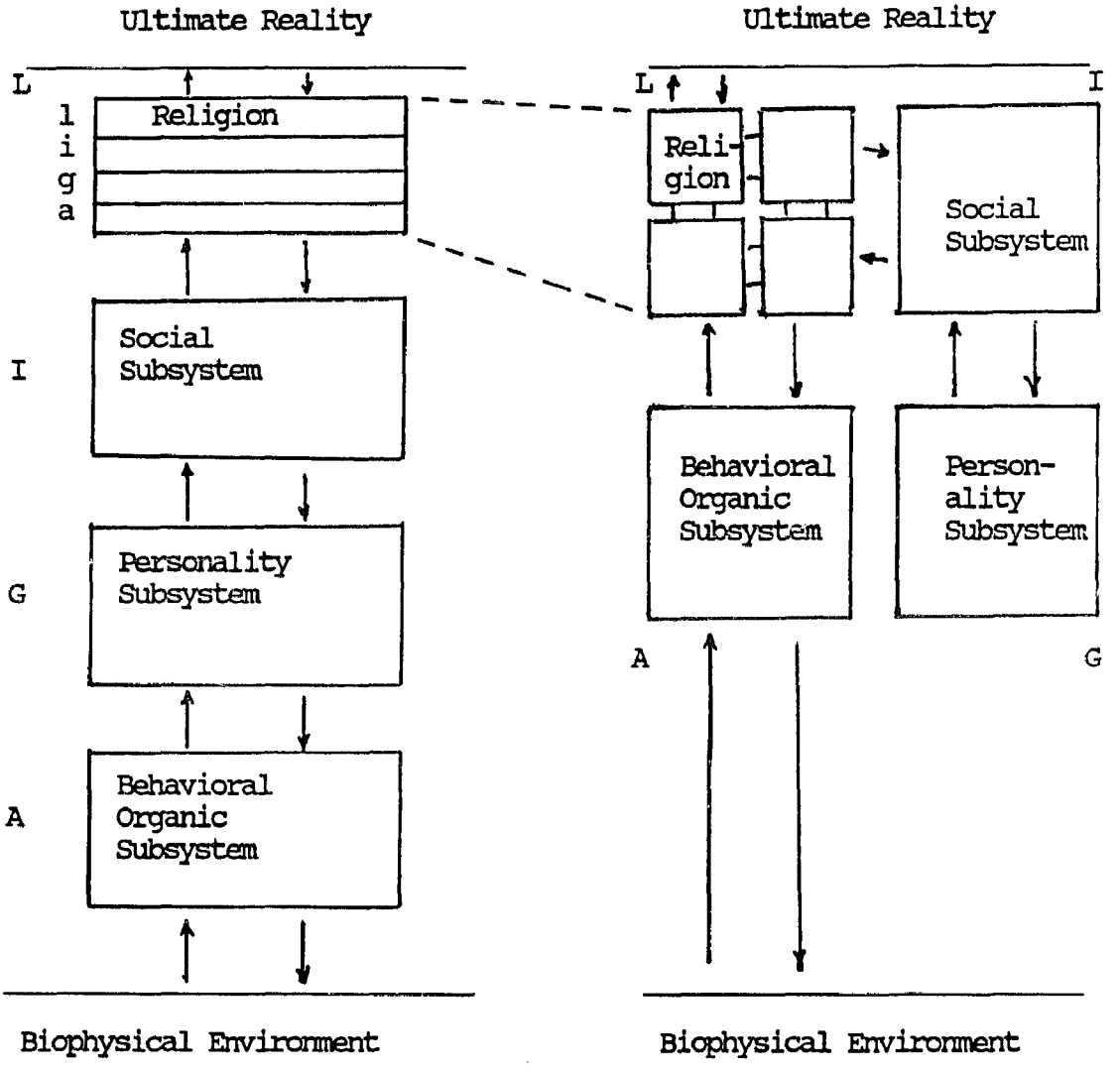
[29]Parsons, Societies..., p. 113-114.



5.3 Vertical and Nested Projections of Parson's Cybernetic Hierarchy: General Action System with Cultural System Detail[30]

Yet religious-cultural innovation "must be articulated with the environment in ways which make effective adaptation possible."[31]

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[30]After Jackson Toby, "Parsons' Theory of Societal Evolution," in Talcott Parsons, The Evolution of Societies, ed. Jackson Toby (Englewood Cliffs, N.J.: Prentice-Hall, 1977), pp. 5-10.

[31]Parsons, "Evolutionary Universals in Society," p. 341.

History offers a myriad of examples of religious ideas, sects, and movements which have died out because of insufficient social, political, or economic support. The "seed-bed societies" of ancient Israel and Greece are prime examples of societies unable to survive in spite of "superior" cultural-religious values; yet these same values were adopted and carried on by societies more proficient at the lower levels of action.

"To be an evolutionist," Parsons concludes, "one must define a general trend in evolution — one cannot be a radical cultural relativist who regards the Arunta of Australia and such modern societies as the Soviet Union as equally authentic 'cultures,' to be judged equals in all basic respects."[32] It is finally the general adaptive capacity which marks the evolutionary success of economies, social systems, cultures, and religions. Social evolutionary theory cannot be equated with historicism, Parsons insists, if historicism is taken to mean historical relativism: general adaptive capacity depends upon specifiable abilities and achievements in each area of human action, and these achievements may be seen to be cumulative rather than arbitrary or interchangeable. Nor may social evolutionary theory be equated with historicism if the latter is taken to mean historical determinism. "Once the problem of causal imputation is formulated analytically" -- that is, in terms of the interdependence of variables in a cybernetic hierarchy -- "the old chicken and egg problems about the priorities of ideal and material factors simply lose

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[32]Parsons, Societies..., pp. 109-110.

significance."[33] Symbol and gene, nurture and nature begin to be seen as coadapting pressures in the evolution of human action.

Once historicism is identified as a method of genetic explanation whereby systems are evaluated as constituents in a process of development, Parsons' action theory demonstrates its value. The ordering of variables in complex human situations is the most difficult task of the historian. Personalities, political and social pressures, economic and environmental exigencies, and, most elusive of all, ideological and cultural influences must be worked into the analysis. This is not to say dumped in as vegetables to broth, but painstakingly reconstructed as a reality built of roles and expectations, structures and functions. Parsons' contribution has been best known as "structural-functionalism" because of its attention to the place each element plays in the social system. While this approach was primarily synchronic (some critics have said "static")[34] in the early years -- in keeping with the functionalism of Durkheim, Malinowski and Radcliffe-Brown -- his encounter with cybernetics and evolutionary thought in the fifties reintroduced the temporal (diachronic, dynamic) dimension into his model. Since the seminar on social evolution in 1963, all of Parsons' theoretical and applied studies have reflected this shift.

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[33]bid., p. 115.

[34]Cf. Max Black, "Some Questions about Parsons' Theories," in The Social Theories of Talcott Parsons, ed., Max Black (Englewood Cliffs, N. J.: Prentice-Hall, 1961), pp. 274-277; and Walter Buckley, Sociology and Modern Systems Theory (Englewood Cliffs, N. J.: Prentice-Hall, 1967), pp. 23-31.

Parsons' tendency to elevate religious symbols to a position resembling a metaphysical first cause in cultural evolution is gratuitous in the context of his sociology. Whether the "downward flow" of arrows in some ultimate cybernetic hierarchy matches or exceeds the "upward flow" is strictly undecidable, or as Parsons admits, "an old chicken and egg problem" which vanishes in the light of analysis. In the end, Weberian examples will always be met by Marxist rejoinders. Meanwhile -- and this is the primary value of Parsons' contribution to a systems theory of religion -- religious symbols are identified as constitutive of human action in an evolutionary framework, and historical interpretation may not be considered complete without due reference to them. Religion is thus postulated, theoretically and methodologically, as a universal constituent of cultural evolution.

What historical evidence may be marshalled to support such a hypothesis? It is to Robert Bellah's analysis of religious evolution, first presented in the 1963 seminar, that Parsons consistently turns when speaking of the history of religion in the broadest context.

III

Bellah begins "Religious Evolution" with a fine line from Aeschylus -- "Time in its aging course teaches all things" -- and a series of historical and methodological notes which are of direct relevance to our discussion. For non-specialists in religion, he

traces "the systematically scientific study of religion" back to nineteenth-century historiography and especially the evolutionary views of Hegel and Darwin. Comte, Spencer, Durkheim, and Weber are also credited for the early emphasis on origins and development in religious studies. Yet by the third decade of the twentieth century evolutionary thinking had retreated in all the social sciences, and in religious studies especially. Bellah declines to report the circumstances of this retreat (which we have attributed to the counter-offensives of phenomenology and early functionalism), but asserts that his essay represents an effort to encompass both trends.[35]

Evolution, which the author conceives to operate "at any system level," is defined as

> a process of increasing differentiation and complexity of organization that endows the organism, social system, or whatever the unit in question may be with greater capacity to adapt to its environment, so that it is in some sense more autonomous relative to its environment than were its less complex ancestors.[36]

The expressions "at any system level" and "whatever the unit...may be" signal the influence of general systems theory and particularly the ideas of structural hierarchy and functional isomorphy. The notions of increasing autonomy, differentiation, and complexity are in accord with Parsons' paradigm of evolutionary change, in which enhanced adaptive capacity is achieved by increased differentiation of subsystem roles

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[35]Robert N. Bellah, "Religious Evolution," in Beyond Belief, (New York: Harper and Row, 1970; first published in American Sociological Review 29 [1964]), pp. 20-21.

[36]Ibid., p. 21.

and tasks, increased efficiency ("adaptive upgrading") resulting from specialization, and articulation of values across the system.[37] Bellah is concerned, and rightly so, that his definition not revive the myth of progress which did much, in the hands of nineteenth-century utopians and social Darwinists, to discredit the application of evolution theory to human science.

> I do not assume [he writes] that evolution is inevitable, irreversible, or must follow any single particular course. Nor do I assume that simpler forms cannot prosper and survive alongside more complex forms. What I mean by evolution, then, is nothing metaphysical but the simple empirical generalization that more complex forms develop from less complex forms and that the properties and possibilities of more complex forms differ from those of less complex forms.[38]

Evolution is not a juggernaut, then, in the sense of Karl Popper's historicism. The complex and differentiated religious symbolizations of historic and modern societies, as Bellah says later, are not better, truer, or more beautiful than the "compact" symbolizations (Erich Voegelin's term) of the primitives; "if progress is used in an essentially ethical sense," he concludes, "then I for one will not speak of religious progress."[39]

Change there is, however, and the religion which changes in this interpretation is "a set of symbolic forms that relate man to the ultimate conditions of existence." Bellah stresses that it is neither the ultimate conditions ("or, in traditional language, God") which

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[37]Parsons, Societies..., pp. 21-25.

[38]Bellah, p. 21.

[39]Ibid., p. 22.

evolve, nor "man in the broadest sense of homo religiosus," but rather the collective representations which, following Durkheim, Bellah has argued are constitutive of social reality.[40] Such symbols "are not delusions," he writes elsewhere, "nor do they simply stand for some other phenomena such as natural forces or...social morphology";[41] rather, they fulfill the unique and specific function of expressing reality in its fundamental or "depth" dimension (Tillich's expression is often used) and the experience of wholeness ("the totality that includes subject and object and provides the context in which life and action finally have meaning").[42] As these symbols ramify over time, Bellah claims, religious action, including the roles of individuals and organizations, change concomitantly, and these changes in turn foster shifts throughout the sociocultural order. Thus Bellah accords causal primacy to religious symbolization in society as Weber, Durkheim, and Parsons have done before.

The reader is guided through five eras of religious evolution, termed primitive, archaic, historic, early modern, and modern; and each

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[40]This does not involve a theological or anthropological judgment on Bellah's part to the effect that the human species and its environment are static; these dynamics are simply rendered tacit in order to focus upon the change in symbolization. In point of fact, rather dramatic changes in the character of homo religiosus and the conditions of his existence are revealed by the analysis which Bellah pursues.

[41]Bellah, "Sociology of Religion" (1965), in Beyond Belief, p. 8. Bellah further developed his theory of "symbolic realism in two papers presented in 1969 and published together as chapter 15 in Beyond Belief. One of these, "Christianity and Symbolic Realism," was also published in the Journal for the Scientific Study of Religion 9 (1970): 85-115 with responses from critics.

[42]Bellah, Beyond Belief, p. 252.

era is analyzed with respect to its sacred symbol systems, modes of religious action, religious organization, and the social implications which follow. The geographic sweep of the survey is truly global, as developments in Australia, South and East Asia, the Middle East, Europe and the Americas are interwoven. We are reminded of the oneiric monism of paleolithic thought in which self and society are caught up in illo tempore (as Eliade called it), le monde mythique (Lévy Bruhl), the "everywhen" of "the Dreaming" (Stanner); and of the dramatic emergence of gods, priests, sacrifice, oral literature, divine kingship and social hierarchy in the archaic period (roughly the neolithic and bronze ages). In these primitive and archaic periods, Bellah richly illustrates the process of differentiation in symbols, rituals, and social arrangements. The absence of rigid dogmas, separate deities and religious functionaries among the Dinka tribespeople of Australia, for example, bespeaks the pervasiveness of religious action, mythic consciousness, participation and identification in their everyday lives. The rule of elders and the veneration of ancestors and heroes appears in retrospect to set the stage for the explosion in later times of priests, kings, and deities; yet Bellah introduces no teleological principle to predict this development.

The most striking fact of religious evolution is the onset, during the first millenium B. C. and extending through the Medieval period in the West, of a "religious rejection of the world characterized by an extremely negative evaluation of man and society and the exaltation of

another realm of reality as alone true and infinitely valuable."[43] This phenomenon of "world rejection," first identified by Max Weber in 1915,[44] is taken to explain the otherworldly outlook of Plato's Phaedrus, the ethical intensity of Hebrew prophecy and apocalyptic, and the inner logic of Indian yoga, Buddhist philosophy, Taoist asceticism, and Islamic mysticism. At issue, however, is not the diversity of subjectivity or transcendentalism. Religious "moods and motivations," as Geertz calls them, are well catalogued in the secondary literature. It is rather the ways in which these subjective -- or, as Bellah insists, symbolic -- dimensions are "articulated with the environment" which begs for attention. And the environment in action theory, we know, is more than the woods nearby; it is the psychosocial, institutional, and cultural milieu into which and unprecedented symbolism imposes itself. Thus it is not "how it feels" to reject the world which interests Bellah, but how the symbolic expressions of world rejection may be correlated with other well-documented changes in history.

It is a fact, for example, according to Bellah, that a clearly structured conception of the self emerged only in tandem with world rejection:

> Devaluation of the empirical world and the empirical self highlights the conception of a responsible self, a core self, or a true self, deeper than the flux of everyday experience,

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[43]Ibid., p. 22.

[44]Max Weber, "Religious Rejections of the World and their Directions" (1915), in From Max Weber, trans. and ed., H. H. Garth and C. W. Mills (New York: Oxford University Press, 1980; first published 1946), pp. 323-362.

> facing a reality over against itself, a reality which has a consistency belied by the fluctuations of mere sensory impressions. Primitive man can only accept the world in its manifold giveness. Archaic man can through sacrifice fulfill his religious obligations and attain peace with the gods. But the historic religions promise man for the first time that he can understand the fundamental structure of reality and through salvation participate actively in it.[45]

Similarly, the appearance of metaphysical dualism in the Iron Age is correlated with the widespread incidence of religious asceticism and monasticism, the rise of literacy and a new cultural-religious elite, the consequent need for this elite's legitimation of the political and social order, and finally the growth of marked conflict between political-military and cultural-religious interests (prophet vs. king, ulema vs. sultan, pope vs. emperor, etc.). Rebellions and reform movements were as often fostered by the transcendentalism of world rejection in the historic period as were church-state alliances.

Finally, two eras later by Bellah's reckoning, religious evolution has seen the collapse of metaphysical dualism, and with it the variegated phenomena of world rejections, ascriptive class hierarchies, and transcendental warrants for secular institutions and cultural reform. With Kant and Schleiermacher religious symbolization becomes grounded in the structure of the human situation itself, with all the open-endedness and fragmentation this implies. The collapse of dualism does not auger a return to the monism of aborigines but to "an infinitely multiplex" symbolization which mirrors the conscious pluralism of the modern world. Now the self which emerged over against

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[45]Bellah, Beyond Belief, pp. 33-34.

the transcendent reality of the historic period is capable, within limits, of maintaining itself in the context of immanent reality. Now the notion of religious action is freed potentially from all parochial contexts and permitted to infuse creative activities, ethical striving, and vocational work. In particular, being religious becomes associated with the act of symbolization itself. Man becomes "capable, within limits, of remaking the world, including the very symbolic forms with which he deals with it, even the forms that state the unalterable conditions of his own existence."[46] Differentiation and complexity achieve self-consciousness.

In "Religious Evolution" Bellah accomplishes several tasks at once. First and foremost, he illustrates the way in which a cybernetic systems analysis, here in the form of Parsonian action theory, may be used to structure and interpret a massive body of research findings in the comparative history of religions. At this level of analysis any theorist must rely upon the work of others in order to paint relations and developments in the broadest strokes. The criteria for judging such reliance must be the eminence of materials cited and the skill with which they are handled. In this area Bellah claims a distinct advantage in having published, by his mid-thirties, numerous studies in a wide range of related topics, including Native American ethnology ("Apache Kinship Systems," Harvard Phi Beta Kappa Prize Essay, 1952), East Asian history of religion (Tokugawa Religion, 1957, his doctoral

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[46]Ibid., p. 42. "In this respect," Bellah notes, "the present paper is a symptom of the modern religious situation as well as an analysis of it" (p.40).

dissertation), Islamic studies (from his two years at the Islamic Studies Center, McGill University), and the sociology of modernization in several culture areas.[47] In the process he has become acquainted with primary literatures in Chinese, Japanese, and Arabic and with the copious secondary sources which appear in his notes. Taken with the other essays in Beyond Belief, "Religious Evolution" presents a virtual synopsis of contemporary religious studies.

A second contribution is the revival of interest in the macro-development of world religions which has been absent since the last works of Frazer, Schmidt, and Lévy-Bruhl at the turn of the century. At the same time, it proffers solutions to the methodological problems which brought this line of work to a halt. Bellah has attempted to define the process of evolution in such a way as to avoid the twin evils of relativism and determinism. By focusing on religious symbol systems as specific human products in an environment containing other independently evolving cultural patterns, and then by relating these patterns one to another on a giant canvas of historical change, Bellah has illustrated Mandelbaum's instrumentalist definition of historicism, namely, a method by which the nature of (in this case) religion and the assessment of its value, is best interpreted in light of the place it has occupied and the role it has played in a process of development. This process of development is presented with a studied objectivity: the world of the aborigine is not "judged by norms that

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[47]See "Bibliography of Robert N. Bellah," Beyond Belief, pp. 289-291, covering works from 1952 to 1970.

fall on the end of a time line" (Brenneman), but rather on its own terms, as reported in the most current studies available.[48] The functional advantages and disadvantages apparent in each stage of complexity are consistently noted. Indeed, in citing, "the collapse of meaning and moral standards" and "the possibilities for pathological distortion in the modern situation," Bellah is closer to Eliadian nostalgia than to Comtian triumphalism.[49]

Additional contributions of "Religious Evolution" -- such as its provision of a theoretical perspective on the problems of modernity and secularization, which occupy Bellah in subsequent writings -- may be easily cited. Yet an important area of concern remains untreated and unclear in this and other essays by Bellah. This is the relation of religious evolution, and more broadly, of sociocultural evolution, to biologial evolution as formulated by Darwin and by contemporary researchers. Bellah notes the influence of Darwin and "the evolutionary tendency" in early religious studies, but he does not state what he understands these things to mean. He also cites the

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[48]Bellah relies primarily, for example, on Godfrey Lienhardt, Divinity and Experience (London: Oxford University Press, 1961) and E. H. Stanner, "On Aboriginal Religion," Oceania 30-33 (1959-63) for his treatment of Australian religion, works considerably more sophisticated than those of Baldwin Spencer and F. J. Gellen, on which Durkheim, Freud, and Malinowski relied at the turn of the century (Turner and Maryanski, pp. 23n and 33n).

[49]The theme of cultural loss has been developed more recently in The Broken Covenant (New York: Seabury Press, 1975); in "Religion and the University: The Crisis of Unbelief," the William Belden Noble Lectures delivered in Memorial Chapel, Harvard University in November, 1982; and in Habits of the Heart: Individualism and Commitment in American Life (Berkeley, University of California Press, 1985), written with Richard Madsen, William M. Sullivan, Ann Swidler, and Steven M. Tipton.

retreat of evolutionary thought in the first decades of this century without going into the reasons. His caution over the question of religious progress suggests his concern over the methodological issues of teleology and the role or existence of trans-historical values. Like Parsons, Bellah speaks of the increase of adaptive capacities, differentiation, complexity, and autonomy relative to the environment. Yet these terms are all borrowed from biological science without much ado.

If a systems theory of religion purports to speak in the language of biology, then something must be said about the relation between the two.

IV

In August 1975 Donald T. Campbell, an experimental psychologist at Northwestern University, used the occasion of his presidential address before the American Psychological Association to argue, on grounds of neo-Darwinian theory, for the human value of religious moral traditions. "I emphasize respect for tradition and a concern for the roots of human nature in biological evolution," he notes in his preliminary remarks. Recognizing, however, that both religion and biology are distasteful to many psychologists (and, we may add, to social scientists and humanists at large), Campbell styles his presentation "an iconoclastic approach," "an exercise in quasi-scientific speculation," and "provocations about new areas of

scientific concern to which psychology should attend."[50] In point of fact, the paper is carefully argued, fully documented, and constructive in tone. Its author is widely respected as an authority on the question of sociocultural evolution, having developed his position cautiously and publicly over thirty years.[51] What he calls his "long-standing avocational interest in evolutionary theory" was undoubtedly a leading reason for his election to the APA presidency.

Campbell identifies his presuppositions and allegiances as follows:

> On the grounds of deep intellectual conviction, I speak from a scientific, physicalistic (materialistic) world view. The evolutionary theory I employ is a hard-line neo-Darwinian one for both biological and social evolution, the slogan being "blind variation and systematic selective retention."

After asserting support for the notion of emergent laws which are specific to the higher levels or organization-biology, psychology, and

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[50]Donald T. Campbell, "On the Conflicts Between Biological and Social Evolution and Between Psychology and Moral Tradition," American Psychologist 30 (1975): 1103-26; reprinted in Zygon 11 (1976): 167-208. Citations here will be from Zygon. Campbell's informal remarks appear at pp. 167n. and 168n.

[51]A partial list of Campbell's monographs on sociocultural evolution should include "Adaptive Behavior from Random Response," Behavioral Studies 1 (1956): 105-110; "Perception as Substitute Trial and Error," Psychological Review 63 (1956): 330-342; "Methodological Suggestions from a Comparative Psychology of Knowledge Processes," Inquiry 2 (1959): 152-182; "Blind Variation and Selective Retention in Creative Thought and in Other Knowledge Processes," Psychological Review 67 (1960): 380-400; "Variation and Selective Retention in Socio-Cultural Evolution," in Social Change in Developing Areas, ed. H. R. Barringer, G. I. Blankston, and R. W. Mack (Cambridge, Mass,: Schenkman Publishing Company, 1965) and G. W. Stocking, Race, Culture and Evolution: Essays in the History of Anthropology (New York: Free Press, 1968); "On the Genetics of Altruism and the Counter-Hedonic Components in Human Culture," Journal of Social Issues 28 (1972): 21-37.

sociology, and not reducible to those of physics and inorganic chemistry, the author continues:

> I also accept a kind of "downward causation" from higher levels of organization to lower levels, where natural selection operates at a higher level. I do recommend that scientists cultivate an awe for the as yet not understood wonders that biological and social evolution may have produced. But I reject teleological or supernatural explanations for these teleonomic facts. Moreover, I qualify my "respect-for-tradition" argument by emphasizing that the wisdom produced by evolutionary processes (biological and social) is wisdom about past worlds. If there are grounds for believing that the relevant aspects of those worlds have changed, past adaptations may now be judged to be maladaptive.[52]

Implicit in Campbell's sociocultural evolution theory, as he points out in a section of his paper concerning "Social System versus Individual System," is the pervasive influence of "systems analysis," which he also calls the "systems perspective" and "systems theory."[53]

"On the Conflicts between Biological and Social Evolution and Between Psychology and Moral Tradition" offers fresh solutions to two familiar dilemmas. The dilemmas are: (1) the proposition that biology favors selfish genes while society, particularly religion, teaches altruism and (2) the observation that professional psychologists,

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[52]Campbell, "On the Conflicts...," p. 169. For elaboration of the author's position on reductionism, see his "'Downward Causation' in Hierarchically Organized Biological Systems," in Studies in the Philosophy of Biology, ed. Francisco J. Ayala and Theodosius Dobzhansky (London: MacMillan, 1974), pp. 137-166.

[53]Ibid., pp. 190-191. Campbell dates his interest in adaptive process and natural selection to his reading of W. Ross Ashby's Design for a Brain in 1952. This book, following Norbert Wiener's Cybernetics, was a pioneering statement of the systems perspective in its functional consideration of biological, psychological, and mechanical processes. The works of Wiener, Ashby, and Campbell may be taken together as supporting the compatibility of cybernetic-systems theory and neo-Darwinian evolutionary theory.

trained and selected to be critical of all conventions and orthodoxies, tend to side with "the genes" over "the teachings," with nature over nurture, with "self-gratification over restraint." Besides smacking of orthodoxy itself, Campbell suggests, such a tendency may be dangerous to those who must consult, study under, or read the works of psychologists. Religious systems of belief and practice have been winnowed and tested by experience over many thousands of years, he argues, and thus may contribute more to human well-being than do the nostrums and recipes for living offered by psychological and psychiatric "speculations." In order to resolve these conflicts, the author turns to natural-selection theory as it intersects both genetic and cultural phenomena.

Campbell marshalls evidence from the study of population genetics to confirm the inevitability of the selfish gene, the statistical advantage enjoyed by competitive -- aggressive, territorial, dominating -- traits. In spite of the debate by geneticists from J. B. S. Haldane (1932) to V. C. Wynne-Edwards (1962) over the possibility of "altruistic" genes preserved by "group selection" (e. g. the argument that acts of self-sacrifice promote the survival of the group and thus of the genes which permitted the acts), scientific consensus has rejected such a possibility. Genetic material is selected as a result of genetic competition among individual conspecifics; self-sacrifice, whether in the competition for sexual partners, food, or territory, inevitably results in a loss of fitness for the individual.

> Thus the net gain in procreational opportunities is greater for the nonaltruists, and the proportion of the altruistic

> gene in subsequent populations should steadily diminish to some asymtote determined by the mutation rate.[54]

But is the inevitibility of the selfish gene not dramatically refuted by the celebrated cooperation of the bees, the ants, and the termites? E. O. Wilson, in launching Sociobiology as a special area of research, joined a long line of naturalists and philosophers who have remarked on the biological altruism which reigns in the corridors of insect societies. Herbert Spencer long ago extolled the "marvelous degree" of willing subordination among the ants, and Maurice Maeterlinck observed that "a greedy ant, a sensual ant, an ant capable of any of the seven deadly sins, or even of a small venial sin, is unimaginable."[55] Insect societies are characterized by urban lifestyles, apartment-like dwellings, the long-term storage of food, and a division of labor which distributes food-gathering and processing, military, and reproductive roles among totally separate

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[54]Ibid., p. 181. Campbell's rich citations on the question include J. B. S. Haldane, The Causes of Evolution (London: Longmans, 1932), V. C. Wynne-Edwards, Animal Dispersion in Relation to Social Behavior (Edinburgh: Oliver & Boyd, 1962), and M. T. Ghiselin, The Economy of Nature and the Evolution of Sex (Berkeley, CA: University of California Press, 1974). The "mean gene" hypothesis is carried to its logical extreme by Ghiselin: "No hint of genuine charity ameliorates our vision of society, once sentimentalism has been laid aside....Where it is in his own interest, every organism may reasonably be expected to aid his fellows. Where he has no alternative, he submits to the yoke of communal servitude. Yet given a full chance to act in his own interest, nothing but expedience will restrain him from brutalizing, from maiming, from murdering -- his brother, his mate, his parent, or his child. Scratch an 'altruist,' and watch a 'hypocrite' bleed. (p. 247, cited by Campbell, p. 183).

[55]Herbert Spencer, The Principles of Ethics (New York: Appleton, 1982), p. 300; Maurice Maeterlinck, The Life of the White Ant (London: Allen & Unwin, 1927), p. 18; cited by Campbell, p. 186.

castes. Thus the exception to the rule of selfish genes in biologial evolution is made possible by a mechanism unique to the social insect: the elimination of genetic competition among the cooperators.

> A cowardly soldier has no more offspring than a brave soldier that sacrifices her life in battle, for both are sterile. It is only the queen mother and her drones that have offspring, and their procreational opportunities are increased by effectively brave soldiers. Likewise, the soldier that stands and fights is not in genetic competition with the worker that flees back to the nest.[56]

While not every aspect of these mechanisms is fully understood (how do the workers suddenly become fertile at the death of the queen?), their evolution by blind variation and selective retention may be traced in outline without much difficulty. Thus when all is said and done, Campbell shows, the case of the social insects must be taken as an exception to the rule of the selfish gene; for in all other cases, including the human, the apparent cooperators are in direct genetic competition with one another.

The question of the conflict between biological and social evolution must now be raised in earnest. Since the Neolithic age, human societies, like the insects, have been characterized by urban community, stored foodstuffs, division of labor, and acts of self-sacrifice and generosity. Indeed palace eunuchs, kamakazi pilots, and cloistered monks might be taken as direct descendants of termite drones. But there is a very important reason why such continuities may not be defended on genetic grounds, namely, the fact that none of the behavioral traits is biologically based, as they must be in insects.

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[56]Campbell, p. 185.

Wasps may "practice the three most formidable vows of our severest orders: poverty, obedience, and chastity" (Maeterlinck), but they have neither choice nor awareness in the matter. The monastery, on the other hand, is governed by social-cultural norms and expectations, indeed by the explicit and conscious renunciation of the "ways of the world" represented by and allegedly encoded in the selfish gene. Campbell concludes (1) that human cooperation, social complexity, altruism, and cultural tradition are made possible only by social evolution, never by biological evolution, and (2) that this social evolution has had specifically to counter the selfish tendencies inbred in the genetic heritage of Homo sapiens.[57]

These hypotheses are developed by reference to religious teachings. While the tradition of Numbers 31, for example, (Moses' injunction to victorious Israelites to kill every Midianite man, male child, and non-virgin woman) may reflect the firm grip of biology in certain realms of human conduct, and at a certain time and place, the preponderance of Biblical piety and legislation supports the emerging values of mercy, righteousness, ethical universalism, and self-sacrifical love, even in the encounter with enemies. These values are understood as "behavioral dispositions optimizing social system purposes rather than individual purposes, where these differ." And because such purposes may not be powerfully expressed in abstractions or by reference to specific leaders (who are transient and imperfect at best), "transcendent reifications of these real and persisting

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[57]Ibid., p. 189.

collective interests were needed." Cross-cultural surveys confirm that "belief in transcendent deities that are concerned with the morality of human behavior toward other human beings occurs more frequently in more complex societies."[58] Finally, belief in an afterlife which rewards the sacrifices and hardships imposed by social teachings encourages the individual "to optimize behavior over a longer time perspective than one's own life." Religious burial customs involving the interment of valuables, work implements, livestock, and even human workers may only be explained as symbolic-ritual means of legitimating the afterlife and its prerequisite hardships.

Thus empowered by theological and metaphysical warrants, religious traditions exert demonstrable historical pressures in the patterning of social behavior. Considered in evolutionary perspective, the goal of these pressures, whether they are conscious or unconscious, has been to enhance the fitness for survival, successively, of the clan, the tribe, the confederacy of tribes, the nation, and ultimately, of all the nations. The author cites Egyptian coffin texts, Aztec and Chinese precept systems, ancient sin lists, divine commandments, and moral preachments as some of the mechanisms familiar to anthropology and the history of religions.

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[58]Ibid., pp. 191-192. Campbell cites G. Swanson, The Birth of the Gods (Ann Arbor: University of Michigan Press, 1960); G. Lanski, Human Societies: A Macrolevel Introduction to Sociology (New York: McGraw-Hill, 1970); as well as Talcott Parsons, "Evolutionary Universals in Society," and Societies: Evolutionary and Comparative Perspectives; and Bellah, "Religious Evolution."

What, then, is the relation between biological and social evolution? At first, Campbell's analysis appears to support the assertion of Hermann J. Muller and legions of humanists that the two are discontinuous. In spite of billions of years of blind mutations and selfish genes, evolution is now "what we make it, provided we choose the true and the good" (Muller). Or, as Sir Thomas Henry Huxley proclaimed at the end of his Romanes Lecture on "Evolution and Ethics" in 1893,

> Let us understand, once for all, that the ethical progress of society depends, not on imitating the cosmic process, still less in running away from it, but in combatting it. It may seem an audacious proposal thus to pit the microcosm against the macrocosm and to set man to subdue nature to his higher ends; but I venture to think that the great intellectual difference between the ancient times with which we have been occupied and our day, lies in the solid foundation we have acquired for the hope that such an enterprise may meet with a certain measure of success.[59]

But such a reading of Campbell would be mistaken. To argue that biological and social evolution are at odds in the tug-of-war of human ethics is not to say that they are discontinuous forces in nature, and even less that an immaterial or supernatural force is locked in combat with the grosser elements. The macro- and microcosms of the Victorian Huxley smack of such Manichaeism, with the soul of man caught in the balance. Rather, for the systems theorist Campbell, the conflict of biological and social forces in human experience is analyzed as a bivariate system on a single continuum. Like Deutsch's cybernetic

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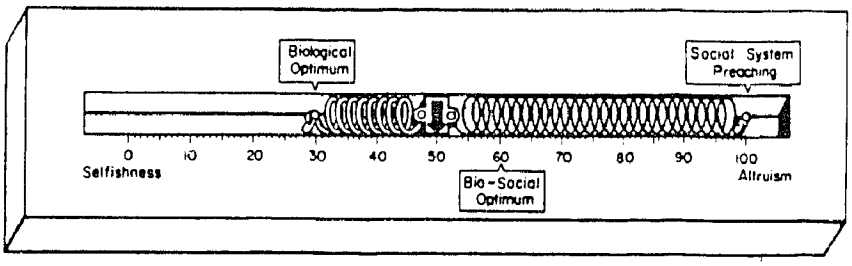
[59]T. H. Huxley, "Evolution and Ethics," in Appleman, p. 328; also published with Julian Huxley's Romanes Lecture of 1943 in Touchstone for Ethics (New York and London, 1947).

analysis of theological values, Campbell's two forces offer the possibility of optimization:

> It may help in this regard to make explicit the systems analysis implicit in the evolutionary theory I am using. On the one hand, there is biological evolution optimizing an individual person and gene-frequency system. On the other hand, there is a social-organizational-level evolution optimizing social system functioning. For many behavioral dispositions, the two systems redundantly support each other. For others, the two are in conflict and curb each other. If these evolutionary processes were to take place for a long enough time in a stable, negative-feedback ecology, a stable compromise or minimax solution would be achieved.[60]

Campbell illustrates his bipolar evolutionary theory with the help of a (rather quaint) figure, the Selfishness-Altruism meter:



5.4 Biological and Social Controls in Dynamic Tension

(D. T. Campbell, 1975)[61]

The author's reasons for placing the biological, biosocial, and social system values where he does on the scale need not concern us; the model is admittedly schematic, speculative, and unpretentious with regard to quantitative analysis and prediction. (The tension springs connecting the two evolutionary variables to the pointer nicely express the

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[60]Ibid., p. 190.

[61]Ibid., p. 193.

uncertainties of any such model at the present state of knowledge.) The sole purpose of the drawing, as of the systems analysis, is to frame the discussion of genetic-versus-social determinants of human behavior by a single parameter. This parameter, as Campbell announced at the outset, is the "hard-line neo-Darwinian one for both biological and social evolution, the slogan being 'blind variation and systematic selective retention.'"[62]

Here the deep structure of Campbell's position, developed since 1956, is revealed. Campbell holds that cultural evolution operates by precisely the same rules that genetic evolution does. If genetic material is said to vary "blindly" with respect to the environment, so do moral, ethical, philosophical, social and religious teachings. No doctrine of inspiration, revelation, moral reason, or social intelligence need be invoked to explain the origin of cultural beliefs, abilities, and skills. Like tools and technology, these have arisen by trial and error over time, with only the practical, usable, efficacious, and compellingly "true" teachings being seized upon, remembered, recorded, and institutionalized -- in short, systematically selectively retained. Such an "evolutionary

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[62]Darwin himself regarded genetic and cultural variables to be interactive. Accepting Chauncey Wright's hypothesis that the dramatic increase in human brain size over that of the lower primates was effected/required by the emergence of language. Darwin wrote, "A great stride in the development of the intellect will have followed, as soon as the half-art and half-instinct of language came into use; for the continued use of language will have reacted on the brain and produced an inherited effect; and this again will have reacted on the improvement of language." From The Descent of Man, Second Edition (London: 1874), excerpt in Appleman, p. 199.

epistemology," whether applied to the hard-won findings of the research laboratory or to the age-old wisdom of religious traditions, begets humility: none of our knowledge is final, none of our theories perfect. The scientist's elegant knowledge of hydrodynamics, expressed in mathematical notation, was achieved by the very same process as the fish's sleek knowledge of hydrodynamics, embodied in its musculature: "a blind, fumbling, trial-and-error process, with no direct confirmation or revelation." In the engineer's design of hydroelectric dams and in the fish's speed and accuracy of movement there is indirect confirmation, it is true; were it direct, however, adaptation would reach its limit and evolution would come to a halt.[63]

Yet it is here that "sophisticated social scientists," who are candid enough to acknowledge the provisional, approximative, and metaphorical nature of the findings in their own fields nevertheless

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[63]Campbell, pp. 196-197. The author cites others who share this perspective: "Karl R. Popper, Michael Polanyi, W. V. Quine, Stephen E. Toulmin, N. R. Hanson, Thomas S. Kuhn, and others have convinced us of the message of Hume and Kant: All scientific knowing is indirect, presumptive, obliquely and incompletely corroborated at best. The language of science is subjective, provincial, approximative, and metaphoric, never the language of reality itself. Evolutionary epistemology reinforces this description of humanity's disadvantaged and relativistic epistemological predicament: cousin to the amoeba that we are, how could we know for certain? The best we can hope for are well-edited approximations" (Ibid.).

Campbell argues at length for this position in "Evolutionary Epistemology," in Paul A. Schilpp, ed. The Philosophy of Karl Popper, Two Volumes (LaSalle, Ill.: Open Court, 1974), pp. 413-463 and in "Unjustified Variation and Selective Retention in Scientific Discovery," in Studies in the Philosophy of Biology: Reduction and Related Problems, Francisco J. Ayala and Theodosius Dobzhansky, eds. (Berkeley: University of California Press, 1974), pp. 137-161.

"relapse into an epistemic arrogance and literalism when dealing with religious claims for truth.

> Because such behavioral scientists no longer believe in what they assume to be the literal referents of religious words, they lose sight of the possiblility that these words refer to truths for which there is no literal language, which must be metaphorically or figuratively expressed if to be communicated at all. They hold up for religious discourse the requirements for a direct realism, a literal veridicality, even though they may recognize that this is impossible for science itself.[64]

Campbell advances reasons why he believes psychologists in particular, and scientists in general are inclined to adopt an epistemological double standard when confronting religious discourse, but we may save these reflections for later.

With this synopsis of Donald T. Campbell's presidential address we may return to the questions which prompted our inquiries into Parsonian action theory, religious evolution, and biocultural epistemology.

V

We opened with the methodological problem of historicism, considered as a double-edged sword. Since The Origin of the Species, the theory of evolution has become the dominant framework for organizing scientific inquiry into the ways of living things, including human social and cultural history. Systems theory, we have seen, is in fundamental harmony with the Darwinian perspective and seeks, among other things, to solve the recurrent problems associated with historicism. The dilemma of historicism may be stated as follows. If

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[64]Ibid., p. 197 (emphasis added).

utter flux is presupposed by research -- blind variation, random mutation, radical individualism, ideographic atomism -- then cultural, historical, moral, and metaphysical relativisms blow in like a bitter wind, and analysis is reduced to mere description. If, on the other hand, structures and regularities of change are stressed -- natural selection, increasing differentiation, adaptation, nomothetic "covering laws" -- then the risk is that events, peoples, and cultures may be "judged by norms which fall at the end of a timeline" (Brenneman), and that all will be "swept into the future by irresistible forces" (Popper). Given these extremes, we cited an alternative reading of historicism, namely, as a methodological approach which seeks the nature and value of phenomena simply by considering their place and role in a process of development (Mandelbaum). Such a definition attempts to avoid both relativism and determinism by replacing hard-science terms like "random" and "law" with more open-ended expressions such as "place," "role," "process" and "development," which need not require the presence of specific patterns, directions, or agencies in a historical account. As one philosopher of science has said, "there are not two classes of events, 'unique' and 'lawful,' but rather...any event can be considered either in its particularity or in the patterns it exhibits."[65]

With such an understanding of the problems and the promise of historicist analysis, we turned to the evolutionary theories of

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[65]Ian G. Barbour, Issues in Science and Religion (New York: Harper Torchbooks, 1971; first published 1966), p. 194.

Parsons, Bellah, and Campbell, and especially to their accounts of religion in human cultural development. All three have distinguished themselves from other social theorists by their views of religion as a positive force in society and by their use of systems analysis to develop this thesis. Parsons followed Weber and Durkheim in his elaboration of an action theory which takes human meanings and representations seriously in social analysis; and he followed Malinowski in placing religion at the "top" of a cybernetic hierarchy of semiautonomous variables. Bellah adopts Parsons' formal theory and then focuses on the religious variable as it intersects institutional and psychocultural changes over many millennia. Campbell places the evolution of religious and moral values into the context of biological evolution and develops a bipolar systems theory of their interaction.

While there are obvious differences of emphasis and, in some cases, substance among these thinkers, their common outlook on the issues which vex humanists and, within religious studies, phenomenologists and historians like Otto, Eliade, and W. C. Smith may be summed up as follows. As historicists in the sense of the term here adopted, all three stress the interaction of religion with other variables in a process of development. This process is understood in the broadest possible way: religious evolution is understood as a constituent of social-cultural evolution, which in turn is embedded in the vaster natural process charted by the physical and life sciences. Each level of the evolutionary process — organic, psychological, social, and cultural, in Parsons' model — operates semi-independently

of the others in the sense that genes and sentences, for example, are incommensurable. On the other hand, both genes and sentences (as well as religious myths, ritual, beliefs, and institutions) are subject to the same evolutionary dynamics: change is effected by spontaneous variations, while continuity is enabled by selective retention. Revolutions in religious teaching such as that of Christian love or Buddhist emptiness may, like the invention of light bulbs and penicillin, cause fundamental changes at many levels of human life experience. In so saying, however, there is no reason to rank teachings higher than inventions, or climate, or diet, or any number of other items in an assessment of historical change; neither may the latter factors be said, in principle, to rule the former. Historicism of this kind is equally charitable toward upward and downward causes.

Likewise, the imputation of any particular direction in the process of development may not be proven. Stephen Jay Gould and Richard Lewontin, the Harvard biologists, have recently reacted to this tendency to equate evolution with progress as it is manifested both inside and outside the scientific community. The "adaptationist programme" or "Panglossian paradigm," as they call it, is based on the mistaken notion of "the near omnipotence of natural selection in forging organic design and fashioning the best among possible worlds.

> This programme regards natural selection as so powerful and the constraints upon it so few that direct production of adaptation through its operation becomes the primary cause of nearly all organic form, function, and behavior....An organism is atomized into 'traits' and these traits are

> explained as structures optimally designed by natural selection for their functions.[66]

Here the alleged tautology of evolutionary theory, namely that everything which exists is equally well-adapted or it would not have survived, is countered by the view that natural selection is imperfect. Any item in the process of development may be shown to be more or less well-adapted and, furthermore, to be in process of rise or decline at any given time. Parsons speaks of the increase of general adaptive capacities in society, but he is equally prepared to examine their decrease, as in the cases of ancient Israel and Greece. Bellah creates problems for himself by defining evolution as "a process of increasing differentiation and complexity" which confers "greater capacity to adapt" by making systems "more autonomous vis-a-vis their environments." His subsequent disclaimer that evolution need be "inevitable, irreversible, or...follow any single particular course" or that moral "progress" is entailed by his argument is confirmed by his consideration of advantages and disadvantages of specific social and cultural forms, but not by his commitment to demonstrate, willy-nilly, the rise of differentiation and complexity in religious evolution. Campbell, for his part, is careful to warn that particular religious-moral teachings, while representing the distillation of centuries of life experience, may nevertheless be maladapted to the current

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[66]Stephen Jay Gould and Richard Lewontin, "The Spandrels of San Marco and the Panglossian Paradigm: A Critique of the Adaptationist Programme," Proceedings of the Royal Society of London B205 (1979): 115-151; cited by Davydd J. Greenwood, The Taming of Evolution: The Persistence of Nonevolutionary Views in the Study of Humans (Ithaca and London: Cornell University Press, 1984), p. 68.

situation. The odds, he argues, must be on the side of the religious teachings when the only alternative is the "speculations" of the social sciences; but all teachings, like natural selection itself, may fail. The direction of evolution is always onward, not always upward.[67]

When evolution is unhooked from any fixed pattern or course, Popper's "irresistible forces" melt away. Darwin's theory has no place for final causes, teleology, determinism or predictions; evolutionism, surprising as it may seem now, was rather an antidote to the cults of utopianism, optimism, and progress which held so many nineteenth century idealists in thrall. Far more variations and species may be said to have disappeared by natural selection (they remained "unselected") than survived; devolution, decay, and demise surround the improbable descent of man. The only laws in force are those of blind variation and selective retention, hardly a threat to Popper's open society or to any other free movement of the mind or spirit.

Relativism proves the harder charge to rebut, except by pointing to the meta-principles of evolutionary systems theory itself. The stuff of history, whether botanical, technological, or religious, is in permanent flux, of course: "One must be an evolutionist or not."[68] But the various elements of each situation are changing differentially. This means that every situation will present patterns of relative

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[67]It is significant that the dictionary definition of "evolution," presumably reflecting common usage, also denotes change "in a certain direction...from a lower, simpler, or worse to a higher, more complex, or better state." See Webster's New Collegiate Dictionary (Springfield, Mass.: G. & C. Merriam Company, 1975), p. 397.

[68]Greenwood, p. 23.

invariance and relative modification. In this respect, as Parsons points out,

> structural analysis must take a certain priority over the analysis of process and change. This fact is well established in biology, where morphology, including comparative anatomy, is the "backbone" of evolutionary theory. Although Darwin advanced crucial ideas about process in the principle of natural selection, he stated explicitly that he could not prove in even a single case that it has changed one species into another, but only that "it groups and explains well a host of facts...", the vast majority of which concerned structure.[69]

For essentialists, such relatively stable structures, whether organic or cultural, will be no substitute for the transcendental, eternal, or "primordial" essences which they hold are intuited by the mind or vouchsafed by tradition. But why must the Shema, the Cross, or countless other forms which fill the manuals of the comparative phenomenology of religions be discredited for their transience? (A Buddhist novice once asked the meditation master if the holy truth of Impermanence must itself be impermanent. The master smiled.) Were these truths any less eminent than the teachers who first enacted them, now also gone? The relativity of forms, while strictly entailed by the evolution of life and thought, need not entail in principle the falsification of any form per se. All forms -- and one may say with

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[69]Parsons, Societies..., p. 111. Ervin Laszlo offers a similar perspective: "There can be no science of a phenomenon in a constant state of flux: some parameters must remain constant, or invariant under transformation. These constancies and invariances furnish the systematic elements in reference to which theoretical structures can be built, mapping the fluctuating phenomena under investigation" (Introduction to Systems Philosophy, p. 101.).

Campbell, especially the oldest ones -- are eminent and worthy of respect; some are worthy of continued enactment.

It is not the object of these pages to offer definitive solutions to the perennial philosophical problems associated with time, universals, and causality. We shall return later to the question of the status of the systems principles and their potential place and role in the process of development called religious studies. Meanwhile we may welcome Ervin Laszlo's observation that the human mind is powerfully evolved to extract order and pattern from the flux of its environment.

> Our minds must (there being no alternatives as far as I can see) be capable of reducing, or assimilating, their variable input to invariant universals by some neurological process, since we do know that our experience is made up of a fluctuating kaleidoscopic stream whereas its contents are relatively stable, recurrent entities. . . .
>
> Life, as [Erwin] Schrödinger said, depends on an organization which maintains itself by extracting order from the environment. The invariance-extracting mechanism of perception, and the related invariance-extracting activities of science, art, and religion, extend this basic life-process into the domain of "philosophical" and "psychological" phenomena.[70]

Whatever the logical or epistemological status of these gestalten, "invariances" or "universals," neuroscience and systems theory are keenly interested in their mechanisms and functions. Religious studies would do well to follow these investigations as it seeks to understand the dynamics of religious thought and action.

How do evolutionary theories of religion fare when methodologically considered? Specifically, how do the action theory of

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[70]Ervin Laszlo, System, Structure, and Experience, pp. 107-108.

Parsons and Bellah and the natural selection epistemology of Campbell measure up in light of the criteria we have established for our methodological critique?

Empirical adequacy: are these theories sufficiently grounded in contemporary scientific and phenomenological studies of religion? Of the three, Bellah must be credited with the most detailed knowledge and citation of the religious studies literature. As noted already, his own research in several religious traditions as well as his wide reading in various other arts and sciences empart an unusual depth and breadth to his theorizing. Parsons, on the other hand, has often been singled out for the abstractness and even obscurity of his work. Referring to Parsons' early work on action systems in the 1950s, Max Black has fairly asked,

> Is the theory non-empirical? [A]n uneasy suspicion may arise that Parsons has provided a free-floating linguistic system, capable of gratifying those who have succumbed to its formal charm, but resisting any prosaic mooring to observational criteria.[71]

Black believes such fears are unwarranted, however, as all science must resort to high-level constructs to account for complex realities or to sum up wide-ranging phenomena. Physics, "the science that made good," is composed almost entirely of such formulations, Black notes, and compared to quarks, black holes, and naked singularities, Parsons' model is virtually palpable.[72] In religious studies, Parsons'

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[71]Max Black, p. 277.

[72]For a dissenting view, particularly in regard to the empirical value of the pattern variable scheme, see M. H. Lessnoff, "Parsons' Systems Problems," Sociological Review 16 (1968): 185-215.

reliance upon others' work follows the pattern set by his theoretical forebears, Freud, Weber, and Durkheim. "All the classical masters but Malinowski sought the raw materials for their analysis almost entirely in the written work of, or data made available by, others," a commentator has remarked.[73] The sources for Parsons' evolutionary studies in the 1960s are respected works, such as those of Basham and Zimmer on India; Gibb, Bowen, and Grunebaum on Islam; Fairbank and Fung Yu-Lan on China; and Moscati, Frankfort, and Albright on the ancient Near East.[74]

Campbell's relation to empirical studies is more complex. As an experimental psychologist first and a grand theorist second, he has maintained his involvement with primary research. In regard to the application of his two-system analysis of behavioral dispositions, he cites his participation in a series of research seminars with a score of other scholars, and his sponsorship of related student research. Like Bellah and Parsons, whom he cites, Campbell also relies on the work of others, especially in the fields of comparative ethics and cultural anthropology.[75]

Explanatory Adequacy: do evolutionary systems theories impart new understanding or clarify new relationships in religious studies? If Darwin may be said to have transformed the logic of knowledge and hence

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[73]Robert W. Friedrichs, "The Functionalist Paradigm Dominating the Social-Scientific Study of Religion and a Structural Alternative," The Council on the Study of Religions Bulletin 13 (February 1982): 1.

[74]Parsons, Societies. . . , pp. 116-117.

[75]Campbell, "The Conflicts. . .," pp. 194, 207.

the treatment of morals, politics, and religion as Dewey claimed, how do the works under review illuminate this transformation in religion?

Taken together, the contributions of Parsons, Bellah, and Campbell push the systems interpretation of religion implicit in evolutionary theory to its most highly developed level to date. A major literature has grown up in the social sciences since mid-century on the adequacy (or bankruptcy) of this approach in each field of its applications. This is not the place to review these positions or to cite the many combatants and casualties.[76] Rather we may suggest three ways in which the nature and role of religion are better understood when considered in a process of development, this being the general aim of the benign historicism practiced by the authors at hand. (1) It is fruitful, we would contend, to define religion as a set of cultural symbols which orient action systems to the ultimate (but nonetheless changing) conditions in their psychosocial, organic, and physical environments, as Parsons does, for only in so doing is religion systematically differentiated from other levels of adaptation and seen as a dynamic property of human life. (2) It is fruitful to consider the changes which religion has undergone in interaction with other levels of human experience over significant periods of time, for only in so doing (along with synchronic comparative studies) may the meaning and end (that is, role) of religion — as opposed to its specific content — be discerned at all. We would contend that advances in both

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[76]For a critical narrative survey of the debate over Parsonian systems theory in the 1950s and 1960s, see Robert W. Friedrichs, A Sociology of Sociology (New York: The Free Press, 1970), pp. 25-29.

comparative religion and the history of religion since the time of Müller, Tyler, and Lang have not been more systematically or succinctly summed up than in Bellah's "Religious Evolution." (3) It is fruitful to relate such theories of religion as emerge from its consideration in action systems and historical studies to the context of biocultural evolution as adumbrated by Campbell and others, for only in so doing may the transcendental reference of religion be interpreted in ways congruent with contemporary critical standards of thought. The prevailing logic of knowledge in the sciences and in growing sections of the humanities is a logic of process. Only insofar as a process transcends human powers of cognition and control may a theorist, in whatever discipline, speak of it as transcendent. Such transcendence may be identified as the source of the evolutionary process at all levels, or it may be found in the hitherto elusive complexity of the adaptive-selective process by which that freedom is channeled. (These issues will be at the heart of our discussion in the following chapter.)

Heuristic adequacy: have action theories and evolutionary systems theories prompted new avenues of research or methods of investigation? How have the contributions of our authors been received?

In a major book devoted primarily to blaming Talcott Parsons and systems theory for what the author calls "the coming crisis in Western sociology," Alvin Gouldner nevertheless credits Parsons as "the intellectual anchor of academic sociological theory in the modern world." As a Marxist, Gouldner is unrelenting in his attack on the

static, conservative bias he believes to be implicit in functionalist systems theory (the "piety" of functionalism), and on what he regards as the moralistic and ideological strain in Parsonian theory which looks down upon reality from an ivory tower.[77] In fundamental disagreement with Gouldner is Robert Friedrichs, whose own major study of recent sociological theory appeared the same year as Gouldner's book. Friedrichs documents Parsons' concerted (and, he believes, successful) effort to accommodate the "nettlesome dimension of 'change'" within the systems paradigm, including Parsons' turn in the nineteen sixties to the question of social evolution. In a new perspective on the methodological dilemma of historicism, in which static/nomothetic/ deterministic options are arrayed against the dynamic/ideographic/ relativistic, Friedrichs sees social science as caught in the middle; and ever since the systems view of Parsons was blasted by the conflict view of C. Wright Mills in 1959,[78] few have seen a way out. Yet Friedrichs predicts that a "dialectical image" will ultimately encompass both:

> Neither "system" nor "conflict" need be denied; rather they become necessary elements within a larger dialectical gestalt. Formally, system would still take congnitive priority over conflict simply because the former must be presupposed. But conflict is always in principle a partial product, even though it in turn contributes, as in the classical formulation of the dialectic, to a new moment of stability.[79]

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[77]Alvin W. Gouldner, The Coming Crisis of Western Sociology (New York: Basic Books, 1970), pp. 167-337.

[78]C. Wright Mills, The Sociological Imagination (New York: Oxford University Press, 1959).

[79]Robert W. Friedrichs, A Sociology of Sociology (New York: The Free Press, 1970), p. 297.

Thus for Friedrichs it is Parsonian systems theory which has provided and may, with continuing modifications, continue to provide the most heuristic intellectual framework for sociological research.[80]

Only a note should be necessary to indicate Bellah's standing among social theorists of religion. Aside from the early distinction of his essays -- including the fact that "Religious Evolution" and "Civil Religion in America" (1967) have been widely anthologized -- Bellah has occupied a special place in religious studies since the nineteen fifties. Unlike Eliade, for example, who frequently decried the encroachments of modernization, and W. C. Smith, who persistently saw "the faith of other men" in sactarian pigeonholes -- "Muslim," "Buddhist," "Hindu," "Christian," "Jew" -- Ballah has promoted a radical openness to past and future, to science and the arts, and to the unfettered merging and diverging of religious symbols and paths. These tendencies are summed up in an appreciation of Bellah's theoretical works by William C. Sheperd:

> One of the notes in the scale of Bellah's genius, to my mind, is precisely this ability to recast old but formerly redolent symbols, to rejuvenate the terms of them conceptually and expressively, and then to reapply them to a new situation, demonstrating their continuing, if altered, relevance. . . . Another note is his passion for synthesis, not only in the sense of system building but in the dynamic sense of integrating previously disparate symbolic elements, from previous times and and far-away places, from poetry as well as sociology, into new cultural modes and possibilities, so that we may be renewed and "choose life" rather then fall back on cultural

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[80]Systems theorists have been divided on the question of Parsons' place in their own enterprise. As suggested by notes 17 and 34 above, Ervin Laszlo and Walter Buckley respectively support and deny the importance of Parsons' contribution.

> defensiveness only to disintegrate culturally and symbolically from within.[81]

Here the critic sounds as if he were blurring the distinction between a social-scientific theorist and a prophetic voice crying in the wilderness. But it is precisely both roles which are imputed to Bellah:

> [H]e moves between the roles of scholar and prophet, always feeling the tension, but ever bent on threading the two into a cultural contribution designed not for the coffee table, not only for debate among fellow scholars, but as a genuine and authentic shaper of our ideas and feelings, of our ethos and world view. . . .[Bellah] self-consciously tries to break down our standard and tidy ideological distinction between being religious and studying about religion scientifically.[82]

In the end it is Bellah's willingness to re-examine, if not always to break down, the categories of religious studies which makes his theories heuristic.

Donald Campbell's APA address prompted a flurry of attention, and not all of it favorable. Following its appearance in the American Psychologist, more than forty pages of response were published in the subsequent issue, and further responses, along with its reprint, made up a full issue of Zygon later in the year. Here the founder and editor of Zygon, Ralph Wendell Burhoe, writes of "Campbell's revolution," "breakthrough," and "new conceptual system," yet he harbors no illusions about its acceptability to most social scientists: "One could expect that anyone who proposed scientific justification for

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[81]William C. Sheperd, "Robert Bellah's Sociology of Religion: The Theoretical Elements," Journal for the Scientific Study of Religion 14 (1975): 397.

[82]Ibid., p. 398.

morals and religion, a proposal that philosophers for a couple of centuries have established as essentially impossible, might not find ready acceptance from many an educated respondent." But Burhoe views Campbell's contribution -- as the previous commentator viewed Bellah's -- in a way quite beyond the usual assertions of agreement or endorsement. Burhoe sees Campbell's address as "not merely a fundamental contribution to our scientific understanding of man but also a fundamental contribution to practical religion and the possibility of the revitalization of religious wisdom and more effective morals in time to prevent something worse than a new dark age of civilization."[83]

Two avenues of inquiry open up at the suggestion that systems theories of religion have some quasi-religious or explicitly religious value or influence. One is the possiblility of systems theologies, that is, of accounts of the divine, sacred, or transcendent element in religion from a systems perspective. A number of thinkers, notably Burhoe, have pursued this line and will receive our attention in the following chapter. The other possibility is that systems theory grows out of or contributes to a way of thinking, a frame of mind, or an orientation to life which has been traditionally associated with religious piety, spirituality, or consciousness. Such a relationship may be too subtle or problematical to have resulted in a formal statement, by those either on the systems side or the religious studies

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[83]Ralph Wendell Burhoe, "Religion's Role in the Context of Genetic and Cultural Evolution -- Campbell's Hypothesis and Some Evaluative Responses," Zygon 11 (1976): 160.

side. Insofar as a relationship exists between systems theory and religious consciousness, however, it becomes critically important for the purpose of the present study to identify it and consider its implications. To these concerns we shall turn in the final chapter.

S I X

SYSTEMS THEOLOGIES:

Reductionism and the Principle of Hierarchy

I

> And he dreamed that there was a ladder set up on the earth, and the top of it reached to heaven; and behold, the angels of God were ascending and descending on it! And behold, the LORD stood above it. . . . Then Jacob awoke from his sleep and said, "Surely the LORD is in this place; and I did not know it."[1]

> And within this Tower, spacious and exquisitely ornamented, there are also hundreds of thousands of asamkhyeyas of towers, each one of which is as exquisitely ornamented as the main tower itself and as spacious as the sky. . . . Sudhana the young pilgrim [saw] himself in all the towers as well as in each single tower, where all is contained in one and each contains all.[2]

Two travelers ambushed by reality, a universe in layers, rising step-like from earth to heaven and beckoning through doors within doors: Biblical and Buddhist scriptures are widely divergent in many ways, yet each contains visions of a cosmos stratified from top to

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[1]Genesis 28.12-13a, 16 (Revised Standard Version)

[2]Gandavyuha Sutra ("Flower Garland Scripture," Mahayana, ca. Fifth Century), paraphrase by D. T. Suzuki, Essays in Zen Buddhism, Third Series (New York: Samuel Weiser, 1970), p. 133. Asamkhyeya means "myriad."

bottom and inside out, permeating all space and time, ruled by holy power, and accessible by faith. For the aspirant Sudhana, the epiphany of the Vairochana Tower, abode of Buddhas and Bodhisattvas past, present, and future, is an attainment of meditative visualization. Addressed by the Bodhisattva Maitreya, instructed in the ways of wisdom and compassion, Sudhana discovers that reality is an infinite series of concentric levels linking the mundane realm (lokadhatu) to the liberative realm (dharmadhatu) by stages of trance and absorption and by the fruits of compassionate activity toward all sentient beings. Yet in daily life as in meditation, all levels are found to interpenetrate and coexist in mindful immediacy. Zen Master P'ang observes:

> How wondrously supernatural!
> And how miraculous this!
> I draw water, I carry fuel![3]

The towering stairway in Jacob's dream recalls the giant ziggurats of Babylonia, where echelons of priests, ascending and descending pyramid steps, enact the creation of a world ruled by echelons of divinities. The Hebrew world was simpler, of course, but vertically structured nonetheless. Above the angels stood the God of Abraham and Isaac, uttering blessings of protection and posterity to the fugitive Jacob. Why here, in a strange deserted place with only a stone for a pillow? Because the Lord of the Hebrews was truly the Lord of All,

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[3]Ibid., p. 86.

present to Jacob in all his journeys, superior to foreign deities (Gen. 31.19), guarantor of treaties (31.49-53), commander of heavenly hosts (32.1-2), the gracious and harrowing companion (32.24-32). Jacob's pillow became a monument to the cosmic ladder:

> This is none other than the house of God,
> and this is the gate of heaven.[4]

From prehistoric times the idea of the holy has been communicated by the image of hierarchy. Modern usage associates hierarchy with bureaucratic structure and secular authority, but these meanings may be shown to derive from the ancient cosmology glimpsed in Jacob's dream. The Shorter Oxford Dictionary defines hierarchy (hieros arche, "holy rule") as "(1) Each of three divisions of angels. . .(2) Rule or dominion of holy things. . .(3) An organized body of priests or clergy in successive orders or grades. . .(4) A body of persons or things ranked in grades, orders, or classes, one above the other." Thus, as Louis Dumont concludes in his study of hierarchical structures in Indian society,

> [T]he religious way of seeing things requires a classification of things according to their degree of dignity. Yet the presence of religion is not indispensable, for the same applies whenever the differentiated elements of a whole are judged in

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[4]Genesis 28.16. The "gate of heaven" or "house of God" (Beth-el), the place of Jacob's dream, recalls the Akkadian "Gate of God," bab-ili (Babel, Babylon), and the standard formula for the Esagila, the principal ziggurat of Babylon and the shrine of the sun deity Marduk, i. e., "House of the Foundation of Heaven and Earth," according to Theodore H. Gaster, Myth, Legend, and Custom in the Old Testament (New York: Harper and Row, 1969), p. 138.

> relation to that whole, even if the judgment is philosophical as in Plato's republic.[5]

Dumont argues that hierarchical patterning is intrinsic to human thought. The sociological idea of the individual as a part nested in the whole of society, for example, and the capacity of the mind to entertain and pursue an ordered set of values and goals illustrate the point:

> hierarchy [is] the principle by which the elements of a whole are ranked in relation to the whole, it being understood that in the majority of societies it is religion which provides the view of the whole, and that ranking will thus be religious in nature.[6]

In modern societies of the West, and perhaps increasingly of the world, it is science which provides the view of the whole. The "Cosmos" of physicist Carl Sagan's best-selling book and television series may well be the largest category imaginable by most people today. This universe is hierarchically structured, according to the stratified disciplines of scientific research, and, as we have seen, this structure is enshrined as a cardinal principle of general systems theory. Ervin Laszlo writes,

> Because the patterns of development in all realms of nature are analogous, evolution appears to drive toward the superposition of system upon system in a continuous hierarchy, traversing the regions of the suborganic, organic, and superorganic. Organization in nature comes to resemble a complex, multilevel pyramid, with many relatively simple systems at the bottom and a few (and ultimately one) complex system(s) at the top. Between these limits all natural systems take intermed-

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[5]Louis Dumont, Homo Hierarchicus: The Caste System and Its Implications, trans. Mark Sainsbury (Chicago: University of Chicago Press, 1970; first published in 1966 in French), pp. 65-66 (emphasis added).

[6]Ibid. Cf. pp. 18-19.

> iate positions; they link the levels below and above them. They are wholes in regard to their parts, and parts with respect to their higher-level wholes.[7]

In addition to the presupposition of such hierarchical structuring by the many disciplines it affects, a study of the theory of hierarchy itself, as it is variously embodied throughout the cosmos, has grown up since the nineteen fifties, maintaining close connection with the broader enterprise of systems theory.[8]

If we accept Dumont's view of hierarchy as intrinsic to religious consciousness and acknowledge the major role played by modern science in shaping our perceptions of hierarchy today, a vital question arises. Has science assumed the place of religion in its account of the whole which orients hierarchical perception, and does such a role entail the evocation and channeling of religious sentiments for many in our culture? Our discussion of systems theologies, their relation to hierarchy theories and to the problem of reductionism in religious studies in the following pages will prepare the ground for our treatment of these issues.

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[7]Ervin Laszlo, A Systems View of the World (New York: George Braziller, 1972), p. 67.

[8]Notable contributions to this genre are Herbert A. Simon, "The Architecture of Complexity," Proceedings of the American Philosophical Society 106 (1962), and The Sciences of the Artificial (Cambridge, Mass., the MIT Press, 1969); Lancelot Law Whyte, Albert G. Wilson, and Donna Wilson, Hierarchical Structures (New York: American Elsevier Publishing Co., 1969) which contains an extensive bibliographic essay; Paul A. Weiss, Hierarchically Organized Systems in Theory and Practice (New York: Hafner Publishing Co., 1971); and Howard H. Pattee, ed. Hierarchy Theory: The Challenge of Complex Systems, Volume 5 of the International Library of Systems Theory and Philosophy (New York: George Braziller, 1973).

Another possibility raised by Dumont's analysis is that the contemporary study of hierarchy in the natural and social sciences may aid our understanding of hierarchical patterns in the religious traditions themselves. The question here is, can religious studies, particularly historical and systematic theology, benefit from advances in systems/hierarchy theory? Affirmative answers might be offered along the following lines. Hierarchy theory, like cybernetics and evolution theory, may serve to mediate valuable concepts or findings from the physical and life sciences by virtue of its high level of generality. Because of its focus on the logic of parts and wholes, interlevel relations and emergent structures, hierarchy theory may help to illuminate classical problems in theology, such as the relation of God to the world, the sovereignty and transcendence of God, and the dependence or creaturehood of man. Because natural hierarchies are conceived in both vertical and concentric forms, religious studies may gain a better understanding of non-Western theologies and spiritual conceptions which are characteristically formulated in concentric or nested symbolism. Accordingly, it may be that Jacob's upward-looking and Sudhana's inward-looking experiences of the sacred may be correlated not only with one another, but with the findings of contemporary science and philosophy.

Objections to such possibilities have been voiced, however. Because the proposed lines of investigation hug the boundaries between warring states, the fire comes, as anticipated, from both sides. In a volume on the ontological implications of systems theory, Mario Bunge

warns against all hierarchy theory as a covert form of "supernaturalism" wherein levels of organization in nature are interpreted in terms of dominance or "bossing" relations rather than by the relation of precedence or emergence in time. (We recall Oxford's second meaning of hierarchy as the "rule or dominion of holy things.") A level is a concept, Bunge argues, and not a thing; thus levels may not command or obey other levels: "All talk of interlevel action is elliptical and metaphorical, not literal."[9] Furthermore, a holistic notion of hierarchy wherein parts are intelligible solely in reference to wholes results in an unscientific attitude in which "wholes and emergents must be accepted with 'reverence' (Goethe) or 'natural piety' (Alexander)." Systems theory encourages rather "attempts to analyze systems into their composition, environment, and structure, as well as to disclose the mechanisms of their formation and breakdown."[10]

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[9]Mario Bunge, Ontology II: A World of Systems, Volume 4 of his Treatise on Basic Philosophy (Dordrecht, London, and Boston: D. Reidel, 1979), pp. 13-14.

[10]Ibid., p. 250. In spite of Bunge's reference to Goethe and to Samuel Alexander, who describes God as "the infinite circumambient ocean," and religious sentiment as "the feeling for this whole" in his Gifford Lectures, Space, Time, and Deity, (London, 1920, volume II, p. 376), Bunge makes no reference to Ervin Laszlo, whose "reverence for natural systems" he surely means and whose Introduction to Systems Philosophy is his target elsewhere. Bunge warns that his own philosophy of "systematism" "should not be mistaken for the popular 'systems philosophy,' a new version of holism according to which everything is a system (false) and the patterns of being and becoming are basically the same at all levels (false). Our systemist philosophy is neither holistic nor atomistic: it acknowledges the variety or properties, kinds and patterns found in the world and, by using certain elementary formal tools, it avoids the obscurities of traditional philosophy. Ours is, in short, a kind of scientific ontology" (p. 245).

Within religious studies, the interpretation of theological and other sacred symbol systems in terms of natural hierarchies and hierarchy theory will revive the perennial debate over methodological reductionism. Walter Brenneman, we recall, applauded the efforts of the phenomenologists of religion "to prevent the reduction of the worlds of ancient India and the Australian aborigine to a scientific premise," and to seek rather "a level that is essentially transcendental and not subject to historical reductionism."[11] As a corrective, Brenneman cites Husserl's notion of transcendental subjectivity and Eliade's humanism "based on the religious or archaic dimension of humanity." Yet others have argued that such allegedly irreducible categories as Eliade's "sacred" and Otto's "idea of the Holy" are themselves highly simplified, crypto-theological reductions of complex social, psychological, and cultural behaviors requiring multidimensional analysis. John Y. Fenton terms this "hieromorphic reductionism" and argues that it may only be useful when considered alongside reductive formulations from other disciplines as well. But such a proposal will not be accepted by many humanists, phenomenolgists, and theologians within religious studies:

> "Reductionist" has functioned as a "boo-word" in theological circles. If it could be shown that a theory of the nature and function of religion explained religion only by reducing it to other more manageable or familiar categories, the theory would normally be rejected precisely because it could be so labeled. Rejection has no doubt been justified when it comes to a host of simplistic theories that claim that religion "is only" something besides religion, e. g., wish-projection, compensation for fear, a construct of ancient priests or political leaders, etc.

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[11]Brenneman, p. 26.

> Often those who have proposed such theories have been openly anti-religious and this fact has helped to obscure the more important difficulty with reductionism, which is that it provides a simple answer for a complex question, an answer too simple in fact to account for all that goes on in religions.[12]

It is precisely to such a process that the psychologist Victor Frankl referred in his contribution to the Alpbach Symposium on reductionism in 1968. Noting the famous Freudian analyst who summed up the 1,538 pages of Goethe's oeuvre as evidence of "a manic-depressive, paranoid and epileptoid disorder, of homosexuality, incest, obsessive-compulsive neurosis, hysteria, megalomania, and so forth," Frankl concluded that the true nihilism of modern times is the nihilism of reductionism.[13]

Each methodological critique in our study thus far has turned on the complex logical and historical connections among several key ideas or sets of ideas. In Chapter Four we explored the circle of relations linking organismic social theory, functionalism, teleology, cybernetics, and religious studies, while in the following essay we examined the interplay of evolutionary theory, historicism, determinism, relativism, and religious studies. In the present chapter we shall investigate the unique relations obtaining among religious-theological notions of hierarchy, scientific conceptions of hierarchy, or "hierarchy theory," the methodological problem of reductionism, and the creative initiatives offered by two contemporary authors of what

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[12]John Y. Fenton, "Reductionism in the Study of Religions," Soundings 73 (1970): 62-63.

[13]Victor E. Frankl, "Reductionism and Nihilism," in Beyond Reductionism, Arthur Koestler and J. R. Smythies, eds. (London: Hutchinson, 1969), p. 398.

may perhaps best be called "systems theologies." We shall elaborate the nature of these relationships in the following section (II), examine representative work of the theologians Ralph Wendell Burhoe (III) and Wolfhart Pannenberg (IV), and return to the task of methodological critique in the final pages (V).

As in the cases of functionalism and historicism, we shall argue that reductionism may be reinterpreted in the light of modern systems thought so that religious studies in general, and theology in the present instance, may be illumined and enriched.

II

Is it true that religious perception — "the religious way of seeing things," as Dumont says — is essentially hierarchical? Or, if all thought is essentially hierarchical, is religious perception somehow uniquely so? Dumont concedes that the perception of parts in relation to wholes, the heart of hierarchical thinking, is not the exclusive province of theology and religion; it has occupied philosophers, political thinkers, mathematicians, scientists, and artists in every age. One may scarcely conceive of such notions as the "political order," "classical style," and "natural law" without calling to mind some calculus of levels: geopolitical districts, rules of proportion, quanta of energy. Rather, it is Dumont's contention that "in the majority of societies it is religion which provides the view of the whole, and that the ranking [of subordinate levels] will thus be

religious in nature."[14] Like other patterns of thought, religion concerns itself with intermediate wholes, the myriad Janus-faced subsystems embedded midway down the levels of complexity, comprising everything in the sensible world. But these are typically arrayed and interpreted in relation to some top-most whole, a system of systems or comprehensive reality which is of ultimate concern to members of a finite community or culture. It is the distance or interval "down" (or "through" or "up" or "out" — the hierarchy is polymorphous) from this reality which religious-theological perception fills with ranks and echelons, principalities, powers, realms and levels of intermediate existence. Examples from the sacred literatures and iconographies of the world come readily to mind.

In India, China, and Japan the Buddhist philosophy of interpenetration associated with the Flower Garland Scripture (Sanskrit Avatamsaka, Chinese Hua-yen, Japanese Kegon) has been variously called the "Round Doctrine," the "Teaching of Totality," and "the synthesis of all Mahayana thought."[15] At the heart of a scripture ranging over eight volumes is the conception of the Whole and its relation to a dazzling universe of innumerable parts. The purpose of the teaching is never to obliterate the perception of parts in an undifferentiated

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[14]Dumont, p. 66 (emphasis added).

[15]Garma C. C. Chang, The Buddhist Teaching of Totality: The Philosophy of Hua Yen Buddhism (University Park: the Pennsylvania State University Press, 1971). p. x. Suzuki calls the Avatamsaka "the king of the Mahayana sutras" (p. 72) The Gandavyuha Sutra paraphrased above is reckoned as the culminating section of the larger Avatamsaka in the Chinese canon of Buddhist scriptures, according to Suzuki, p. 71.

immediacy, but to fathom the place of each in the evolving totality of all. "O behold, son of Buddha," the text proclaims,

> Behold how numberless are sentient beings, how boundless are the universes, how infinitely different are divided things. . . You should know clearly all these infinite variances in infinite realms of infinite universes, without the slightest effort or error. So in this manner all the Buddhas inculcate in the Bodhisattva of the eighth stage the desire to strive for the infinite wisdom of distinction. O son of Buddha, without this urge [from all Buddhas] this Bodhisattva would enter Parinirvana and abandon all altruistic deeds.[16]

Having so achieved the perception of whole and parts for the benefit of others, only two more stages are required for the attainment of Buddhahood. Like the many graded initiations of Buddhist soteriology (e. g. the eight-fold noble path, the six perfections of wisdom), the ten stages of the bodhisattva path, set forth in 35,000 verses in the Avatamsaka, offer a striking example of the place of sacred hierarchy in Buddhism.

Radial, axial, and concentric hierarchies are attested in the earliest records of Asian thought. Vedic cosmology conceived the universe as expanding from and returning to a seminal point (sunya) both empty and full, just as the yogin of later Samkhya philosophy inhales and exhales in harmony with the cosmic principle.[17] The notions of creative center (bindu, "dot, seed, zero," whence our zero

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[16]Ibid., p. 39. According to Chang, "a passive Nirvana and the wisdom of non-distinction are not the ultimate goals for which a Bodhisattva should strive. He should go beyond the realm of non-distinction in order to reach the dynamic realm of the Hwa Yen Totality of Buddhahood" (p. 55).

[17]Heinrich Zimmer, Myths and Symbols in Indian Art and Civilization, ed. Joseph Campbell (Princeton: Princeton University Press, 1972), pp. 47-53.

and decimal point) and the wheel of life (chakra) found expression in social and religious thought as well as philosophical speculation. Emperors and Buddhas were called chakravartins, "wheel-turners," movers of the wheel of the law (dharmachakra) on earth and in heaven. The dharma-wheel surmounted scores of the Buddhist emperor Ashoka's 30-foot megaliths, erected in the third century B.C.E., and adorned the gates and parapets of Buddhist stupas and Medieval Hindu temples. The wheel is emblazoned today on the national flag of India.

Concentric patterns of ritual and architecture evolved from the ancient custom of circumambulation. Circling a sacred tree, mound, or ediface enacts the spritual pull of the center, like planets caught in the sun's gravitation. The mandala or magic circle was developed as a visual device to focus meditation, but increasingly it served as the plan for temple gounds and stupa sites. At the Great Stupa of Sanchi, near modern Bhopal, begun by Ashoka and completed at the time of Christ, lay Buddhists and monks mingled in the daily rounds:

> The ritual of circumambulation was performed by entering the precinct through the east gate and walking clockwise. This direction related the devotee's movements with the passage of the sun (east, south, and west) and put him in harmony with the cosmos. In fact, his involvement with the stupa was a bodily engagement within a gigantic three-dimensional mandala or sacred diagram of the cosmos, which slowly and systematically transported him from the mundane world into the spiritual one.[18]

The apotheosis of the Buddhist stupa was built on the Island of Java in the eighth century, C.E. at Borobudur. There thousands of devotees

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[18]Roy C. Craven, A Concise History of Indian Art (New York and Toronto: Oxford University Press, n. d.), p. 71.

ascend the terraced man-made mountain, the largest monument in the world, their clockwise rotations punctuated by prostrations before stone-cut reliefs depicting the lives and legends of buddhas and bodhisattvas. Transcending the lower realms of earthly passion, each successive terrace represents a stage of the ten-fold bodhisattva training. Surmounting the top three levels are seventy-two smaller stupas, each enclosing a sitting buddha with hands in the dharma-teaching or "wheel-turning" gesture. At the pinnacle is an empty stupa suggesting the peace of Nirvana.

Not all Asian hierarchies were concentric, of course. In the first centuries of Buddhist architecture the Buddhist stupa, consisting of a rectangular relic chamber (dhatugarbha) perched atop a massive dome or "egg," was transformed in shape and name as it made its way to Ceylon (dagoba), Tibet, Southeast Asia (pagoda), China, and Japan. Now the moundlike structure had shot up to become a multileveled building dominating temple complexes and landscapes. As before, the levels (now floors) represent stages of spiritual attainment. In some cases the human body itself is superimposed on the structure: the tantric theory of the seven energy centers, chakras, aligned with the spinal column, reinforce the increasing verticality of the architecture. In the Nepalese version,

> The chakras, as radiating centers of psychic force, gave a new impetus to the interpretation of the human body as a cosmic transformation. Not only was the spinal column compared to Mount Meru, the axis of the universe, and therefore called "merudanda," but the whole psycho-physical organism was explained in terms of solar and lunar forces, which, through fine channels. . . moved up and down between the seven chakras which in turn represented the elementary qualities of which

> the universe is built and of which the material elements are the only visible reflexes.[19]

In spite of the elongation and elevation of the later pagoda, however, "no parallel to the heavenwards-storming gothic attitude" of the European cathedrals may be assumed.[20] For the Buddhist, even like the seventeenth-century Mughal emperor Akbar, sitting crosslegged at the hub of his wheel-shaped throne room (and by extension of his empire and the universe), remained firmly rooted on earth, convinced that higher states of consciousness, like political power, reflect the overcoming of illusory contrasts and passing conflicts, not the arrival in a different world.[21]

Meanwhile in the Western world, the religious vision of wholeness prefigured in Babylonian pyramids and Jacob's dream continued on into modern times. Plato set the stage for philosophical speculation about the cosmic hierarchy with the principle of plenitude, "the thesis that the universe is a plenum formarum in which the range of conceivable diversity of kinds of living things is exhaustively exemplified."[22] Reality entails fullness: the ideal Forms can have no meaning or potency unless they are manifested in sensible phenomena and unless all

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[19]Lama Anagarika Govinda, Psycho-cosmic Symbolism of the Buddhist Stupa (Emeryville, CA: Dharma Publishing, 1976), p. 78.

[20]Ibid., p. 98.

[21]Vincent A. Smith, Abkar, The Great Mogul - 1542-1605 (Delhi: S. Chand & Co., 1958), p. 323.

[22]Arthur O. Lovejoy, The Great Chain of Being: A Study of the History of an Idea (Cambridge, Mass.: Harvard University Press, 1936, 1964), p. 52.

possible phenomena are fully manifested. To this Aristotle added the idea of continuity: "Nature passes so gradually from the inanimate to the animate that their continuity renders the boundary between them indistinguishable; and there is a middle kind that belongs to both orders."[23] (Certainly this estimate holds today when microscopic observations of crystal and virus behaviors elude the categories of life and death.) But the master link in the Great Chain of Being, the "unit idea" in Western philosophy which Arthur O. Lovejoy traced up to the turn of the twentieth century, was the principle of gradation or hierarchy. While the differences between species, considered with reference to some determinate attribute such as degree of development at birth, may be very small, they are nevertheless perceptible. Aristotle, the true father of classification in natural history, proposed eleven grades of living things from zoophytes at the bottom to man at the top. In the De Anima he conceived a hierarchy of life forms based on a gradation of their "powers of soul," from nutritive (plants) through rational (man) "and possibly another kind superior to his," each order summing up and going beyond the powers of the animate beings directly below it. So the conceptual apparatus necessary to reflect the ancient religious intuition of a Whole composed of concatenated parts was complete. Lovejoy writes,

> The result was the conception of the plan and structure of the world which, through the Middle Ages and down to the late eighteenth century, many philosophers, most men of science, and, indeed, most educated men, were to accept without question -- the conception of the universe as a "Great Chain of

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[23]Aristotle, De animalibus historia VIII, 1, 588b, cited by Lovejoy, p. 56.

> Being," composed of an immense, or — by the strict but seldom rigorously applied logic of the principle of continuity — of an infinite number of links ranging in hierarchical order from the meagerest kind of existents, which barely escape non-existence, through "every possible" grade up to the ens perfectissimum — or, in a somewhat more orthodox version, to the highest possible kind of creature, between which and the Absolute Being the disparity was assumed to be infinite — every one of them differing from that immediately above and immediately below it by the "least possible" degree of difference.[24]

Through its long history the Great Chain of Being pervaded every area of serious reflection, investigation, and meditation. To call it a religious vision as opposed to a philosophical speculation or scientific hypothesis is to impose useless differentiation upon a worldview which was virtually universal in the Mediterranean and Europe for twenty-three centuries. Some of its expressions will appear more "religious" than others by modern standards. Pseudo-Dionysius, a writer of the fifth of sixth century, composed two treatises on hierarchy in which the ten celestial ranks include God, Seraphim, Cherubim, Thrones, Dominions, Powers, Authorities, Principalities, Archangels, and Angels; while the ten ecclesiastical ranks comprise Christ, chrism, communion, baptism, bishops, priests, deacons, monks, laity, and catechumens.[25] As late as 1810 the naturalist Lorenz Oken, protege of Schelling, could write, "The philosophy of Nature is the

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[24]Lovejoy, p. 59.

[25]Pseudo-Dionysius, The Celestial Hierarchy III, 1., cited by E. F. Osborn, "Pseudo-Dionysius," Encyclopedia of Philosophy, Vol. VI (New York: Macmillan, 1967), pp. 510-511. According to Pseudo-Dionysius, "The hierarchy is a holy order, a knowledge and an activity which assimilates to the divine nature as far as possible and which through the light granted from God is raised in due proportion to the imitation of God" (Ibid.).

science of the eternal transformation of God into the world," as a preface to his exposition of the evolutionary hierarchy understood by most thinkers of his day.[26] Like the deep imprint of Avatamsaka philosophy upon the rituals, folk tales, and architecture of Asia, the holistic hierarchy of the Great Chain of Being cast its spell upon the West.

Two forces conspired to break the static power of the Great Chain. In the sixteenth century Protestant reformers rejected the earthly hierarchy of Roman Catholic rule, as well as the celestial dominions, principalities, and powers which linked it to heaven. "The defining characteristic of early modern religion," Bellah writes, "is the collapse of the hierarchical structuring of both this and the other world."[27] Meanwhile a steady accumulation of empirical and logical objections to the Great Chain mounted. In 1764 Voltaire pointed to the disappearance of many species in natural history (against the dogma of permanent species based on Plato's eternal forms), to the resulting gaps in the scala natura (especially that between apes and men), and to

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[26]Lorenz Oken, Lehrbuch der Naturphilosophie, I.4, cited by Lovejoy, p. 320.

[27]Robert Bellah, "Religious Evolution," in Beyond Belief, p. 36. "God, of course, remains hierarchically superior to man, but the complex stratified structure of which purgatory, saints, angels, and so on, are elements, is eliminated. Also, the strong reassertion of covenant thinking brought a kind of formal equality into the God-man relation without eliminating the element of hierarchy. Strictly speaking then, early modern (and modern) religion does not abandon the idea of hierarchy as such, but retains it in a much more flexible form, relative to particular contexts, and closely related to new emphases on equality. What is abandoned is rather a single overarching hierarchy, summed up in the symbol of the great chain of being" (Ibid., p. 49, n. 37).

the lack of sufficient reason and tangible evidence for heavenly hosts.[28] Earlier, Leibniz imagined the Great Chain as a process in which all forms come to fruition, suggesting even that vertebrates be traced back through amphibians to marine animals.[29] By the time of Darwin and Wallace the metaphysical idea of the evolution of species was widely known and accepted, especially among thinkers associated with the Romantic movement in philosophy and the arts; all that remained was for someone to demonstrate its workings.

The idea of natural selection — the survival of chance variations in shifting environments — offered a new picture of hierarchy to the West. The old doctrines of plenitude and continuity were gone: evolution bloweth where it listeth, leaving unicorns, talking apes and angels unrepresented. Nor were the known levels of form and function seen as parts, products, or precursors of some towering Whole. Each rung of the ladder of life must be explained by the substance, shape, and spacing of the rungs directly below it. Accordingly, attention shifted away from the topmost rungs, such as Aristotle's powers of the soul, and away from any conception of the whole ladder, such as Oken's — and, of course, Hegel's — eternal transformation of God into the world. Science now sought to find and study the smallest, least evolved particles imaginable. The theory of cells, for example, heralded as early as 1665 by Robert Hook, was advanced in the 1830s and

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[28]Voltaire, "Chaine des êtres créés," Dictionaire philosophique, First Edition (1764), cited by Lovejoy, p. 252.

[29]Lovejoy, p. 256.

'40s by M. J. Schleiden, Theodor Schwann, and the great theorist Rudolph Virchow. The year 1847 epitomized the shift of attention to the lowest rungs of analysis, whatever the field of study. Virchow founded his Archiv für pathologische Anatomie und Physiologie, dedicated to explaining disease from the bottom up, "from cells to societies,"[30] while three Berlin physiologists, Karl Ludwig, Hermann von Helmholtz, and Emil DuBois-Raymond, declared all living processes, from growth to consciousness, to be explicable in terms of physics and chemistry. Marx and Engels drafted the Communist Manifesto (published the following year) in part to demonstrate that the epiphenomena of history, culture, and social stratification were ultimately reducible to the monopoly of material wealth and the means of its production.[31]

Reductionism is the viewpoint that "the behavior of any system can be exhaustively explained by the laws governing its component parts." Applied to religion, for example, reductionism may be taken to mean that

> religion is just psychology, psychology is basically biology, biology is the chemistry of large molecules, whose atoms obey the laws of physics, which will ultimately account for everything![32]

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[30]Now called the Virchovian Spectrum, this conception was formalized in Die Cellularpathologie (Berlin: Hirschwald, 1858), according to Chauncey D. Leake, "Historical Aspects of the Concept of Organizational Levels of Living Material," in Whyte, Wilson, and Wilson, eds., Hierarchical Structures, pp. 152-153. See above, Chapter Two, note 4, for reference to Virchow's writings in English translation.

[31]Whyte, Wilson, and Wilson, p. 152.

[32]Ian G. Barbour, Issues in Science and Religion, pp. 6-7. Barbour's discussion of emergence and reductionism, levels of scientific analysis, and parts and wholes (pp. 324-337) is, like many other sections of this book, notable for its balance and clarity.

In its ideal form, reductionism presses for physical explanation based on controlled observation, inductive generalization, and mathematical notation. The particles-in-motion cosmology of seventeenth century science (Galileo, Newton), the sensationalism and empiricism of the eighteenth century (Locke, Hume) and the positivism of the nineteenth century (Comte, Mill) finally produced the crises of method and theory in religions and philosophy to which we have referred. Early reductionist theories of religion -- religion as a disease of language, a projection of human values, a tool of bourgeois oppression, etc. -- have been countered in the present century by theological neo-orthodoxy (Barth, Brunner), existentialism (Buber, Bultman), and the phenomenology of religion (Otto, Eliade). The advance of mechanistic theories (La Mettrie, Virchow) which prompted a return to vitalism by some (Dreisch, Bergson), fostered the preference for organicism, pragmatism, process thought, and functionalism in many others. Finally, as we have seen, the deadlock between mechanism and vitalism in theoretical biology led Bertalanffy to formulate principles which were to become the basis for a new theory of living systems. Stressing that the systems view of life was not merely "a compromise, a muddling through, or midcourse" between reductive alternatives, Bertalanffy offered systems theory as a decisive remedy to the abuses of reductionism <u>per se</u>.

Writing in 1955, Bertalanffy attempted to reinstate the vision of hierarchy and the "sense of reverence" which, Dumont claims, has been its companion through the ages.

> We come, then, to a conception which, in contrast to reductionism, we may call perspectivism. We cannot reduce the biological, behavioral, and social levels to the lowest level, that of the constructs and laws of physics. We can, however, find constructs and possibly laws within the individual levels. The world is, as Aldous Huxley once put it, like a Neapolitan ice cream cake where the levels -- the physical, the biological, the social, and the moral universe -- represent the chocolate, strawberry, and vanilla layers. We cannot reduce strawberry to chocolate -- the most we can say is that possibly in the last resort all is vanilla, all mind or spirit. The unifying principle is that we find organization at all levels. The mechanistic world view, taking the play of physical particles as ultimate reality, found its expression in a civilization which glorifies physical technology that has led eventually to the catastrophies of our time. Possibly the model of the world as a great organization can help to reinforce the sense of reverence for the living which we have almost lost in the last sanguinary decades of human history.[33]

Bertalanffy's vision of hierarchy was no mere rattling of the old Chain of Being. In systems theory, following the discoveries of Malthus, Lyell, Darwin, and Mendel, the model of the world "as a great organization" is a world in process, intelligible not only at atomic and molecular levels, but displaying dynamic patterns, functions, "and possibly laws" at every level.[34] The levels are semi-autonomous and semi-irreducible: following Huxley's droll simile, we might say the

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[33]Ludwig von Bertalanffy, "The Meaning of General System Theory" (1955), in General System Theory, p. 49.

[34]Bertalanffy and other systems theorists are cautious not to claim too much. Laws in natural science entail statistical regularities, projections, and predictions which are not possible in the human sciences. Because systems theory encompasses the physical, biological, and human sciences, it must be reticent concerning lawful generalization. Laszlo writes, for example,"I do not suggest that the general theory of systems I shall sketch here. . .represents the sole valid, and hence necessary, approach to sound empirical theory. I only suggest that such general systems theories grasp some forms of order in the world which elude other types of theories" (Introduction to Systems Philosophy, p. 15).

chocolate and strawberry levels have some ingredients in common (milk and sugar) and some not in common (cocoa and fruit).[35] The common ingredients in systems theory are what have come to be called systems principles: integration, adaptation, emergence, and hierarchy. These "invariants" are manifested in dazzling variations at every level, hence no level in the systems hierarchy may be considered as more important for analysis than another.[36] As a humanist, von Bertalanffy was open to the possibility that finally all may be mind or spirit (vanilla!) but this could not be allowed to cloud the impartiality of his "perspectivism." Here each subject of investigation, be it a microbe or a manuscript, becomes the point of departure, the perspective or system from which the concentric spheres of its practical environment may be explored. The epistemological premise of systems theory entails the reconstruction of the world from the perspective of each constituent system. The process begins with the investigator:

> Cognition is dependent, firstly, on the psycho-physical organization of man. We may refer here in particular to that approach in modern biology which was inaugurated by Jacob von Uekhüll under the name of Umwelt-Lehre [ambient theory]. It essentially amounts to the statement that, from the great cake of reality, every living organism cuts a slice, which it can perceive and to which it can react owing to its psycho-

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[35]Herbert A. Simon calls this system property "near decomposability." See "The Architecture of Complexity," in Sciences of the Artificial, pp. 99-108.

[36]The doctrine of "emergence," according to which properties at one level of organization (such as the wetness of water) are not predictable from the properties of their constituents (hydrogen and oxygen), is a cardinal principle of organismic biology (e. g. J. S. Haldane, J. H. Woodger), emergent evolutionism (Alexander, Morgan, Smuts), and systems theory.

> physical organization, i. e., the structure of receptor and effector organs. Von Uexküll and Kriszat (1934) have presented fascinating pictures of how the same section of nature looks as seen by various animals; they should be compared to [Benjamin L.] Whorf's equally amusing drawings which show how the world is modeled according to linguistic schemes.[37]

So the reductionism of mechanistic science is abandoned for the perspectivism of systems hierarchy. Here attention need not be directed solely to the bottommost rungs of nature, as in classical physics and molecular biology, nor solely at the pinnacle of the cosmic pyramid, as in archaic and historic religions. For now, as Arthur Koestler put it, "infinity yawns at both the top and bottom of the stratified hierarchies of existence, and the dichotomy of self-assertive wholeness and self-transcending partness is present on every level, from the trivial to the cosmic."[38]

Where, then, in systems theory is the center or the whole about which or within which the ranks and echelons of infinite hierarchy are arrayed? How do hierarchies of natural systems evoke the "reverence" of which Bertalanffy and Laszlo speak, in the absence of an ordering principle or language of totality which is claimed essential by Dumont? In short, does systems theory provide fertile ground for theological seed to grow?

We may recall Kenneth Boulding's speculative systems hierarchy of nine levels culminating in "transcendental systems" and the question whether "the ultimates and absolutes and inescapable unknowables

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[37]Ludwig von Bertalanffy, "The Relativity of Categories" (1955), in General Systems Theory, pp. 227-228.

[38]Arthur Koestler, Janus: A Summing Up, p. 67.

exhibit systemic structure and relationship."[39] We may also recall Laszlo's cybernetic hierarchy of feedback-controlled experience which culminated in "transcendentally constructable aspects of the experienced world," i.e., emotionally significant perceptions related to religious symbols, theologies, myths, rituals, and philosophies.[40] Turning to scientific constructs of the microhierarchies of nature in another context, Laszlo notes that as the quantitative abundance of subsystems decreases going up the hierarchy (there are incalculably fewer plants than atoms), their qualitative differentiation increases (there are only 82 stable atomic elements, but some million plant and animal species). Extrapolating thus the "greater variety introduced into populations of smaller size," one is driven to the conclusion: "Ultimately a single, highly diversified and qualitatively rich organization tends to emerge, lending systemic order and unity to all subsidiary levels of systems in the microhierarchy." But Laszlo declines here to enter theological discourse as, he is well aware, his organicist predecessors Bergson, Alexander, Whitehead and Teilhard de Chardin have done. "On earth," he concludes, "this highest-level organization is the currently forming global sociocultural ecosystem."[41]

Talcott Parsons, in his last major contribution (1978) to the cybernetic action theory he developed since the nineteen fifties,

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[39]Ibid., p. 36.

[40]Ibid., p. 85.

[41]Laszlo, Introduction to Systems Philosophy, p. 179.

ventures closer to a theological statement in "A Paradigm of the Human Condition."[42] Updating the pattern-variable hierarchy we examined above, the new paradigm was developed in the context of meetings convened by Parsons at the University of Pennsylvania between 1974 and 1976 and attended by Robert Bellah, Clifford Geertz, and others. We recall that religion was previously identified as the latent pattern-maintenance or orientation-motivation subsystem of the cultural system, which generates major symbolic, social, personal, and biophysical transformations in the general action system.[43] As "the highest cybernetic level," religion was depicted as the interface with "ultimate reality" just as the behavioral-organic or adaptive subsystem interfaced with the biophysical environment. Now, in Parsons' latest version, the "conditions" within which the human action system was formerly sandwiched -- ultimate reality and the biophysical environment -- have themselves been incorporated into the four-function hierarchy.

L	Telic System	Action System	I
A	Physico-Chemical System	Human Organic System	G

6.1 GENERAL PARADIGM OF THE HUMAN CONDITION: TALCOTT PARSONS, 1978

[42]Talcott Parsons, "A Paradigm of the Human Condition," in Action Theory and the Human Condition (New York: Free Press, 1978), pp. 352-433.

[43]Ibid., pp. 108-112.

In this version, Parsons reasons that the action system ("the point of view of the observer") is the integrative (I) cell of the human condition, while the physico-chemical and organic systems fulfill, respectively, the adaptive (A) and goal-seeking (G) functions. This leaves the latent-pattern-maintenance (L) cell for what Parsons calls the telic system. He writes:

> Clearly, we think of the telic system, standing as it does in our treatment in a relation of cybernetic superordination to the action system, as having to do especially with religion. It is primarily in the religious context that throughout so much of cultural history belief in some kind of "reality" of the nonempirical world has figured prominently. With full recognition of the philosophical difficulties of defining the nature of that reality we wish to affirm our sharing the age-old belief in its existence.
>
> For many purposes, of course, it is not necessary to go beyond this; we can content ourselves with the bare statement that "something is there." But for some of our purposes this statement of self-denial will not suffice.
>
> This consideration is linked with the fact. . .that at least for Kant the existence of the meta-reality must be taken into consideration in positively structured ways. Kantian epistemology without giving content to the categories would surely be a poor thing, as would Chomsky's linguistics be, if he insisted that the existence of deep structures must be assumed but that nothing more can be said of them. We thus wish to contend both that the assumption of this meta-world must be assumed notably with respect to religion and that the attempt must be made, in the course of theoretical work, to give it relevant specific content. What this content is to be will depend on the exigencies of theory construction as their relevance to the problem develops.

Yet the theological potential of Parson's telic system remains untapped. Robert Bellah contributed some highly suggestive subsystem categories to the model, viz., ultimate agency (A), ultimate fulfillment (G), ultimate order (I), and ultimate ground (L), and then added as "media of exchange" with other systems, faith and grace (input

and output from the physico-chemical system.[44] But due most probably to lack of space -- all four systems of the general paradigm are sketched in at the subsystem level -- the rich colors of theological meaning conjured up by Bellah's suggestions are never applied to the canvas at hand. Parsons again provided a systems-cybernetic framework within which religious studies, and here, theological formulation, may be pursued; indeed, some of these possibilities are developed in other late essays on the sociology of religion.[45] However, it is to the work of others that we must turn to resolve our questions concerning the fruitfulness of systems-hierarchy theory for theological reflection.

III

> It may be said that natural selection is daily and hourly scrutinizing throughout the world, every variation, even the slightest; rejecting that which is bad, preserving and adding up all that is good; silently and insensibly working, whenever and wherever opportunity offers, at the improvement of each organic and inorganic conditions of life.
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> --Charles Darwin (1959)

> O Lord, thou hast searched me, and known me. Thou knowest my downsitting and mine uprising; thou understandest my thought afar off. Thou compassest my path and my lying down, and art acquainted with all my ways. . . .Search me, O God, and know my heart: try me, and know my thoughts, and see if there be any wicked way in me, and lead me in the way everlasting.
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> --Psalm 139:1-3, 23-24

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[44]Ibid., pp. 382, 390-391. No media of exchange with the organic system are proposed.

[45]See especially "The Gift of Life and Its Reciprocation" (1972) and "Religion in Postindustrial America: The Problem of Secularization" (1974), in which the role of the transcendent or telic level of symbolization is interpreted in the context of medical ethics and secularization theory, respectively. These essays are collected in Parsons' Action Theory and the Human Condition, pp. 264-322.

With these texts Ralph Wendell Burhoe concluded an address on "Natural Selection and God," asserting that the two are virtually identical in meaning, despite their separation by more than 2000 years of cultural advance. Here the method of Burhoe's "scientific theory," begun in the nineteen fifties, is clearly illustrated. Familiar theological notions -- God, soul, divine judgment, grace -- are translated, reinterpreted, and frequently reconceived in the light of Darwinian theory, contemporary theoretical biology and physics, cybernetics, and general systems theory.[46] In a paper given at the third meeting of the Society for the Scientific Study of Religion (1951), Burhoe established his approach: the idea of the human soul was presented as a confluence of energies expressed by the terms "cosmotype" (the environing habitat), "genotype" (biological patterning), and "culture-type" (symbolic patterning).[47] These terms were not to be taken as mere analogies, metaphors, or pointers toward meanings encoded in ancient texts, according to Burhoe. Rather, "[t]he sciences present a model about life that is equivalent in meaning to religious views of the soul," as Burhoe has written more recently; "The real core of human nature is not any particular body but an enduring

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[46]Ralph Wendell Burhoe, "Natural Selection and God," presented April 7, 1970, at the Center for Advanced Study in Theology and the Sciences, Meadville/Lombard Theological School, Chicago; first published in Zygon 7 (1972: 30-63; reprinted in R. W. Burhoe, Toward a Scientific Theology (Belfast: Christian Journals Limited, 1981), p. 110. The Darwin passage is from The Origin of Species, Harvard Classics Edition (Cambridge: Harvard University Press, n. d.), p. 97.

[47]Unpublished ms., cited in Toward a Scientific Theology, pp. 139-140.

pattern of flow."[48] Let us examine Burhoe's outlook and methodology more closely.[49]

At the heart of Burhoe's theology is a deep apprehension concerning the human prospect. He writes of "an ominous cloud of anomie and absurdity advancing over the horizon of human perspectives. As man's view of himself and his world and powers to transform them are enhanced by the sciences, his traditional convictions about his worth, meaning, and purpose in the scheme of things is disintegrating."[50] Similar forebodings were voiced in all of Burhoe's writings in the early seventies, a time when the despair of the antiwar and counterculture movements was compounded by the Cambodian bombings, Watergate, and the ecological forecasts of the Club of Rome. "To prophesy," Burhoe wrote, means not only to foretell the future, but "to speak for God. . .to say something about the ultimate meaning and

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[48]Ibid., p. 140.

[49]Most citations below will be drawn from Burhoe's two published volumes, Science and Human Values in the Twenty-first Century, which he edited and to which he contributed four chapters and an Epilogue (Philadelphia: Westminster Press, 1971); and Toward a Scientific Theology (Belfast: Christian Journals Limited, 1981), a collection of essays perviously published in Zygon, with a Preface by Don Browning, professor of religion and psychological studies, The Divinity School, University of Chicago, and an introduction based on Burhoe's address at the Guild hall, London, May 13, 1980, upon receiving the Templeton Prize for Progress in Religion. The titles of these two volumes will be abbreviated hereinafter as SHV and TST.

[50]Ralph Wendell Burhoe, "The Concepts of God and Soul in a Scientific View of Human Purpose," in TST, p. 113; presented to the Symposium on Science and Human Purpose held at the Institute on Man and Science at Rensselaerville, N. Y. in October 1972 by the Institute on Religion in an Age of Science; first published in Zygon 8 (1973): 412-442.

concerns of life in the face of dramatic changes which many suppose will soon be upon us. . ."[51]

These themes and impulses were not new. In 1950, in the charter document he penned as founder of the Committee on Science and Values for the American Academy of Arts and Sciences, Burhoe proclaimed:

> We believe that the sudden changing of man's physical and mental climate brought about by science and technology in the last century has rendered inadequate ancient institutional structures and educational forms, and that the survival of human society depends on a reformation of man's world view and ethics, by grounding them in the revelations of modern science as well as on tradition and intuition. . . .It is our hope that the fragmentary sketches of the cosmos and man, made by the various scholarly and scientific disciplines, when pieced together and looked upon as a whole, may reveal a picture of the situation on the basis of which one can make sounder judgments for the ordering of individual and social life.[52]

For Burhoe this statement became the basis for major projects yet to come: the annual Star Island conference and the Institute on Religion in an Age of Science (1954), the Center for Advanced Study in Theology and the Sciences (later renamed the Center for Advanced Study in Religion and Science), affiliated with the Chicago Cluster of Theological Schools (1965), and Zygon: Journal of Religion and Science, affiliated with the Meadville/Lombard Theological School and the University of Chicago (1966). For our purposes, the AAAS statement provides an overview of Burhoe's thought, which may be condensed in the form of four central convictions as follows.

First, science and technology dominate the modern era for better

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[51]SHV, p. 18.

[52]"Some Roots of Zygon," Editorial, Zygon I (1966): 117.

or worse, and when the truth claims of science and religion come into conflict, "science always wins":

> Religions like scientific technologies are behavioral patterns that depend on beliefs informed by more than common sense. Because the new sciences have produced more credible and effective new myths of the nature of invisible reality beyond common sense knowledge and because little effective translation of the truths in the traditional religious myths have been made from an earlier metaphysic or world view to the scientific one now reigning, religions have become less credible and effective in contemporary culture.[53]

Second, religion must be rejuvenated to insure human survival, for only religion provides certain critical functions required "for the ordering of individual and social life":

> While medicine, agriculture, manufacture, and the other arts of human living contribute to the solution of the various subdepartments of life's needs, the function of religion in this view has historically been the salvation of the whole man in the context of the total reality in which he lives. It attempts to relate us to our ultimate goals and conditions.[54]

Third, an effective and credible renewal of religion may only be based on "the revelations of modern science," which, for Burhoe, are increasingly expressed in terms of general systems theory. In 1970 Burhoe grounded his theories in "Such disciplines as biochemistry; neurophysiology; cybernetic, homeostatic, information and general

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[53]Ralph Wendell Burhoe, "The Phenomenon of Religion Seen Scientifically," in Allen W. Eister, ed., Changing Perspectives in the Scientific Study of Religion (New York: John Wiley and Sons, 1974), p. 19.

[54]Ralph Wendell Burhoe, "Potentials for Religion from the Sciences," in TST, pp. 34-35; first presented at the first conference of the Center for Advanced Study in Theology and the Sciences in January 1965; first published in Zygon 5 (1970): 110-129.

systems theory; behavioral psychology, and the like,"[55] but by 1978 he speaks simply of "a presently developing general-systems evolutionary theory."[56] In one essay the terms "system" and "systems" appear seventeen times in the course of two pages of analysis and citation.[57]

Finally, Burhoe believes that all of the traditional values of theology may be preserved when "the fragmentary sketches of the cosmos and man made by the various scholarly and scientific disciplines [are] pieced together and looked upon as a whole." Such a "cosmic" or "scientific" theology, based on evolutionary systems theory, would stand in relation to religion as biomedical research stands to medical practice, that is, as theory to praxis. "If theology today were the scientific or rational account of the problems or functions of religion in this sense, it might well be called, as it was in the past, the queen of the sciences."[58]

The vision of the whole offered in Burhoe's theology is made up not of the spiritual principalities, powers, angels and archangels of ancient religion, nor of the weird biological hybrids forming the links of medieval philosophy's great chain of being. It is made rather of

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[55]Burhoe, "Natural Selection and God," in TST, p. 83.

[56]Ralph Wendell Burhoe, "Religion's Role in Human Evolution: The Missing Link between Ape-Man's Selfish Genes and Civilized Altruism," in TST, p. 201; first presented at the Symposium on Sociobiology and Religion at the annual meeting of the American Psychological Association, Toronto, 1978; first published in Zygon 14 (1979): 135-162.

[57]Burhoe, "The Phenomenon of Religion Seen Scientifically," pp. 16-17.

[58]Burhoe, "Potentials for Religion from the Sciences," TST, p. 34.

the "fragmentary sketches" of reality emerging from the sciences, and when these disparate observations, hypotheses, models, and theories are summed up at any time in a statement of great generality, they may be found to point to a transcendent and sovereign reality beyond.

> In the concepts emerging today from the several dozen interlinked systems of scientific symbols, there is being revealed a cosmic system which is utterly transcendent to man, an interrelated whole or ecosystem of which man is a creature and in which man by the total system has been ordained to play a significant role as a co-creator of living systems at the top of the evolutionary hierarchy of life on earth so long as he continues to adapt or to obey the immutable and insuperable requirements laid out by this superordinate system in which human values, hopes, and fears can be said ultimately to rest, at least so far as we can see things today in the scientific view.[59]

Thus for Burhoe the interrelated whole of the cosmic system or ecosystem is both "transcendent," in the sense that the powers of nature are undeniably beyond man's understanding and control, and "supernatural," in the sense that the workings of nature are hidden from common-sense perception and prior to human definition of what shall be called natural. In the end, God is "our Creator and the Lord of our History — the larger, environing reality that brought us into being and in which we live and move and have our being."[60]

With a return to the idea of the whole within which or through which all things may be ordered and comprehended, the possiblility of sacred hierarchy as defined by Dumont and illustrated by the protean traditions of religious myth is revived. Here the muted expressions of

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[59]Burhoe, "The Phenomenon of Religion Seen Scientifically," p. 32.

[60]Ibid.

awe and reverence found occasionally in the writings of systems thinkers like Bertalanffy and Laszlo are amplified and broadcast in unapologetically theological terms. Burhoe writes of the "revelations" of science, of the need to "prophesy" for the cosmic Lord of History, of "salvation of the soul on the last day" (via adaptive generativity), and of the importance of renewal in the churches.[61] Following Burhoe, Donald T. Campbell writes boldly of "worshipping man's ecological niche," of the "attitude of awe of superior unknown powers," and of the "prayer and spiritual wish that we may live lives loyal to [the Creator's] purposes in such a way to optimize man's survival over eternity, not just our lifetime."[62]

It is no secret that such expressions of theological naturalism strike many today as reductionistic, if not blasphemous, in the extreme. Even supporters of Burhoe's project raise questions about its faithfulness to the meanings and intentions of religion. One critic finds Burhoe's repeated references to natural selection and the "weeding out" of unfit religious dogmas and beliefs to be highly misleading for theology, for it "tends to reduce (oversimplify) the description of cultural events -- semantically suggesting a

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[61]Burhoe, "The World System and Human Values," in Ervin Laszlo, ed., The World System: Models, Norms, Applications (New York: George Braziller, 1973), pp. 176-185.

[62]Donald T. Campbell, "'Downward Causation' in Hierarchically Organized Biological Systems," in Francisco J. Ayala and Theodosius Dobshansky, eds., Studies in the Philosophy of Biology: Reduction and Related Problems (Berkeley, Calif.: University of California Press, 1974), pp. 183-185. Campbell cites Burhoe's Science and Human Values in the Twenty-first Century.

panbiologism and a social Darwinism which perpetuate misinformation and injustice in cultural processes."[63] Another critic questions whether theology may be pursued from a standpoint outside of faith, for "if [the theologian Langdon] Gilkey is correct in writing that 'the role of the theologian is not so much to talk about religion as to talk from it and to interpret and understand not so much religion as all else from a religious perspective,' then Burhoe is a species of antitheologian, for he does indeed talk about religion and from a secular perspective."[64] By recalling Ian G. Barbour's remark that in the eye of reductionism, "religion is just psychology, psychology is basically biology, biology is the chemistry of large molecules," and so forth, we may reach in three short steps the "hidden realities" which Burhoe equates with God. And when Burhoe suggests that critics unfamiliar with his work "will have to accept on faith that all my translations [of concepts from theology] into physicalistic language are valid and that the physicalistic model operates to explain and make coherent all the otherwise disjunctive bits and pieces,"[65] few are likely to go along.

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[63]George A. Riggan, "Epilogue to the Symposium on Science and Human Purpose," Zygon 8 (1973): 475.

[64]John A. Miles, Jr., "Burhoe, Barbour, Mythology, and Sociobiology," Zygon 12 (1977): 53-54.

[65]Burhoe, "Religion's Role in Human Evolution. . . ," TST, pp. 212-213.

Peter L. Berger has offered a critique of reductionism in theology which might have been written with Burhoe in mind.[66] In an era of pluralism, positivism, and the death of God, Berger claims, religion adopts at least three "cognitive strategies" for survival: the deductive possibility denies modernity by reasserting orthodoxy in an uncritical leap of faith (Karl Barth), the reductive possibility begins with modernity, abandoning parts of the tradition which are incompatible with it and translating the rest into modernist terms (Rudolph Bultmann), while the inductive possibility starts from personal experience in its quest to recover and authenticate the sacred (Friederich Schleiermacher). Berger does not attempt to hide his disdain for the first two options or his endorsement of the third. Although he never mentions Burhoe, Berger's analysis of the reductive possibility with reference to Bultmann's demythologizing project appears tailor-made for application to Burhoe's translation method; indeed, Berger styles the reductive appoach "the translation model."[67] Unlike orthodox and neo-orthodox thinkers who reject the assumptions and findings of modernity, the reductive thinker regards them as superior to anything which has gone before. "This is very much so in Bultmann's case," Berger notes: "The cognitive superiority of all those electricity- and radio-users over the authors of the New Testament is apodictically stated as a self-evident fact." Yet "it seems not to

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[66]Peter L. Berger, The Heretical Imperative: Contemporary Possibilites of Religious Affirmation (Garden City, N. Y.: Anchor Press/Doubleday, 1979).

[67]Ibid., pp. 110ff.

have occured to Bultmann that, in certain respects, modern man may be cognitively inferior to human beings in earlier periods of history."[68]

Berger claims that reduction by translation typically requires the substitution of this-worldly for other-worldly references, of empirical for supra-empirical phenomena, and of the human for the "more-than-human." Unlike the dynamic universe of the theological past, penetrated by forces and beings from another world, secularity "asserts the closed character of the universe -- there are no miracles, no demons, no supernatural realms of any sort."[69] While Rudolph Bultmann substituted "the gloomy categories of Hiedeggerian existentialism" for the rich and hopeful mythology of the New Testament world, other terminologies imported from psychology, political science, and ethics have found equal favor among reductionists. For his part Berger believes that only mythological language will suffice "if man is to come to terms with the transcendent dimensions of his existence." Following the philosopher Karl Jaspers, he declares that any attempt to demythologize religion "will result, willy-nilly, in a fundamental impoverishment of thought -- to wit, the impoverishment of the loss of transcendence."[70]

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[68]Ibid., pp. 111-112.

[69]Ibid., p. 112.

[70]Ibid., pp. 117-118. Elsewhere, Berger writes of "the quasiscientific legitimation of the avoidance of transcendence. My thesis is this: The functional approach to religion, whatever the original theoretical intentions of its authors, serves to provide quasiscientific legitimations of a secularized world view. It achieves this purpose by an essentially simple cognitive procedure: The specificity of the religious phenomenon is avoided by equating it with

But Berger's analysis does not fit Burhoe's theology in all respects. Unlike Bultmann, Burhoe is interested in recovering the sense of mystery and majesty traditionally associated with the doctrine of God. He believes that the cosmic ecosystem, as approached and revealed by science, is both "supernatural" (mysterious and refractory) and "transcendent" (beyond human comprehension and control), and he stresses the necessity of special languages ("the several dozen interlinked systems of scientific symbols") in order to evoke or, as Berger says, "come to terms with the transcendent dimensions of [man's] existence."

It is in Burhoe's emphatic response to the charge of reductionism that we see the systems principle of hierarchy at work.[71] The argument involves both epistemological and ontological dimensions. Human communication entails a hierarchy of symbolization connecting a ground of preverbal experience -- "produced by interactions of genes and environment, particularly in the unconscious machinery of the brain" --with the symbolic heights of cognitive abstractions and manipulations. The "connectibility" of these poles of experience may be pursued in either upward or downward directions. One may seek the

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other phenomena. The religious phenomenon is 'flattened out.' Finally, it is no longer perceived. Religion is absorbed into a night in which all cats are grey. The greyness is the secularized view of reality in which any manifestations of transcendence are, strictly speaking, meaningless, and therefore can only be dealt with in terms of social or psychological functions that can be understood without reference to transcendence." From "Some Second Thoughts on Substantive versus Functional Definitions of Religion," Journal for the Scientific Study of Religion 13 (1974): 128-129.

[71]Burhoe, "The Phenomenon of Religion seen Scientifically," pp. 29-30.

sources of verbalization in some underlying sense experience of symbolic manipulation by means of operational definitions, rules of correspondence, or the protocols of semantics and syntax. One "reduces" the expression to component or prevenient conceptions, perceptions, or sensations in order to ground it in phenomenal experience. Conversely, one may speak of the "reducibility of all physics to the laws of Newtonian mechanics," or of the reducibility of all descriptions of four-legged, barking mammals to the expression "dog." Hereby we expect an increase in referential power in exchange for a loss of phenomenal detail. This epistemology of cognitive reductions is best understood by the metaphor of hierarchy:

> Far beyond the capacities of any participating individual to fully analyze them, human cultures have erected level after level of articulated systems of linguistic and other symbols that are carefully organized to reduce the millions of data given in perception to a manageable size, so as to enable very finite brains effectively to anticipate and operate very complex organisms within a very complex world. Each higher level in a hierarchy of "reductions" contains symbols that embrace whole categories of symbols in the layer below. . . .To say that the world or anything in it [such as religious symbolization] is sui generis does not mean that we cannot reduce to some more effective order of scientific scheme our first levels of impressions, perceptions, or symbols of it. In fact, if we want to understand phenomena, rather than merely be immersed in them, we must reduce them to symbolic structures manageable by our genetic and cultural machinery for rational handling.[72]

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[72]Ibid., p. 30. In "Potentials for Religion from the Sciences," Burhoe develops the concept of cognitive hierarchy in terms of "a logical pyramid where the numerous concrete and mundane values are represented in the large area of the base of the pyramid, and the single word or abstract concept that represents man's supreme value is at the highest peak of the pyramid. In such a pyramid there are logical connections structuring the arrangements of elements on each level and also structuring the connections from concrete values at the base to the most general, most abstract, overall value at the top. The several layers of words or ideas near the peak of the pyramid would be the region representing my definition of religion, where we would find

Cognitive reduction, then, for Burhoe, is intrinsic to the process of knowing and acting in the world. There cannot be too much of it, as implied by the term "reductionism," nor should it function as a "boo-word" in religion and theology. Burhoe takes Bellah to task for claiming, in the latter's theory of "symbolic realism," that religious symbols are unlike any others in that they are sui generis or irreducible. This must mean that they have no referent or that they do not sum up or point to any human experience, Burhoe concludes. If theologians and secular intellectuals are to discover a common language, as both Bellah and Burhoe wish, then a calculus of translation or modulation from one level to the next, whether up or down the hierarchies of abstraction and specification, must be postulated and pursued. The "arbitrary isolation of religion" within its own symbolic representations masks the "larger context of meaning," which, for Burhoe, is dramatically revealed by the panoply of the sciences. And just as the feelings, values, and hopes of man, born in the conscious and unconscious interplay of person, culture, and environment, may be investigated by natural and social scientific research methods, so the emotions, beliefs and behaviors of religion may be explored by the same means.

The results of such investigation will confirm that religious symbols have a unique role to play among the stratified representation systems of human language. Here Burhoe endorses the classic systems-inspired definitions of religion offered by Bellah and Geertz in the

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words representing comprehensive systems of positive values such as 'life'"(TST, p. 31).

sixties:

> Religion [is] that symbol system that serves to evoke. . .the totality that includes subject and object and provides the context in which life and action finally have meaning[Bellah].
>
> Religion is a system of symbols which acts to estabish powerful, pervasive, and long-lasting moods and motivations in men by formulating conceptions of a general order of existence and clothing these conceptions with such an aura of factuality that the moods and motivations are totally realistic [Geertz].[73]

Here the "totality that includes subject and object" and the "general order of existence" signify, for Burhoe, the ontological hierarchy which science believes it maps by its own interlocking symbol systems; "for the greatest 'aura of factuality' today is possessed by the conceptual schemes of the hard sciences."[74] This is the horizon of meaning and existence within which theology and religion nest and to which their symbols point.

Ironically, it is to Schleiermacher more than to Bultmann that we must turn to find a precedent for Burhoe's position.[75] For it was Schleiermacher, in a time of increasing materialism, rationalism, and secularity, who sought to redefine and represent religion to its cultured despisers, who demanded that revelation be grounded in experience, and whose experience was that of the absolute dependece of man in the face of the infinite sovereignty of God. The "inductive

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[73]Ibid., pp. 32-33, citing Bellah, Beyond Belief, pp. 252-253, and Geertz, Interpretation of Cultures, p. 90.

[74]Ibid., p. 33.

[75]Riggan, p. 473: "[Burhoe's] definition of God is implicitly obligated to a theologian of the nineteenth century, Friedrich Schleiermacher, who linked the God concept to man's recurrent sense of absolute dependence."

possibility" offered by the young author of the celebrated speeches On Religion (1799) was rooted in his sense that, as Berger writes,

> the empirical universe is a symbol of the infinite, and it is "miraculous" in that it is ongoingly permeated with signals of the latter's transcendental reality. Schleiermacher's understanding of revelation (which of course greatly shocked all orthodox theologians) was in line with this, as it were, symbolic interpretation of empirical reality. He defines revelation as "every original and new disclosure of the universe and its innermost life to man."[76]

It must be clearly recalled that Schleiermacher's inductive procedure began with the primary data of subjective consciousness ("a plurality of revelations," Berger notes) and not with the findings of science.[77] Yet when the only alternative warrants for religious truth are ecclesiastical authority, biblical inerrancy, and theological rationalism, the commitment to inductive reasoning shared by the great Lutheran theologian and the Unitarian systems thinker must seem, if only for a moment, compatible.

The comparison prompts questions which go to the core of theological reflection. Who will defend the exclusive claims of subjectivity to be the sole or proper source of revelation? If "every finite thing. . .is a sign of the Infinite," as Schleiermacher avers,

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[76]Berger, pp. 130-131. The citation is Berger's translation from the German edition of Über die Religion, in Samtliche Werke, I (Berlin, Reimer, 1943), p. 249.

[77]Schleiermacher was unrelenting in his efforts to differentiate religion from science and ethics. In one of many passages in this vein, he writes, "Science, it is true, is extolled as giving us immediate knowledge about God, that is the source of all other knowledge; only we are not now speaking of science, but of religion." On Religion: Speeches to its Cultured Despisers, trans. John Oman (New York: Harper and Row, 1958), p. 94.

then who will disqualify the profound discoveries of science as "original and new communication[s] of the Universe"?[78] On the other hand, who will certify that Schleiermacher's apprehension of "the faintest trace of the original unity [of consciousness]" and of the Whole to which that unity returns[79] is a disclosure of divine transcendence and not a figment of the romantic imagination? And by what right may that Totality be unequivocally identified as the Christian God and not the Dharmadhatu, the Buddhist realm of liberation? For thirty years philosophers of science have argued that the creative process at the heart of scientific discovery is unintelligible apart from the intellectual passions, needs for conviviality, and tacit commitments of scientists themselves.[80] Epochs in the history of science come and go as "the entire constellation of beliefs, values, techniques, and so on shared by the members of a given community" evolve and change.[81] Sociologists of knowledge remind us that society and all of its products, including theology and science, have both objective and subjective poles, linked by the human activities of externalization, objectivation, and

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[78]Schleiermacher, pp. 88-89.

[79]Ibid., pp. 42-43.

[80]Michael Polanyi, Personal Knowledge: Towards a Post-Critical Philosophy (Chicago: University of Chicago Press, 1962; first published 1958), passim.

[81]Thomas S. Kuhn, The Structure of Scientific Revolutions, Second Edition, Foundations of the Unity of Sciences, Vol. II, No. 2 (Chicago: University of Chicago Press, 1970; first published 1962), p. 175.

internalization.[82] In such a world the products of imagination, speculation and feeling cannot be valued in principle more highly than those of experimentation, calculation, and formal inquiry. Indeed the boundaries between these realms cannot always be found.

Burhoe and Schleiermacher share a vivid sense of the fragile embeddedness of human life in a cosmos alive with mystery and power. Each expresses this essentially Christian intuition in hybrid terms drawn from the cultural milieux of their times, Schleiermacher echoing the pietism, romanticism, and optimism of his era, and Burhoe, the theological minimalism, the global ecumenism, and the deep foreboding fears of our own. The German spoke to his circle of friends, many of whom were co-contributors to the Athenaeum, a journal of aesthetic and literary criticism:

> You lie directly on the bosom of the infinite world. In that moment, you are its soul. Through one part of your nature you feel, as your own, all its powers and endless life.[83]

The American has written for his own circle, the readers of Zygon: Journal of Religion and Science, and the annual pilgrims to Star Island, off the coast of New Hampshire:

> In this picture, man finds himself created by grace, nourished by grace, and saved by grace of a system far transcending himself and his knowledge.[84]

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[82]Peter L. Berger and Thomas Luckmann, The Social Construction of Reality: A Treatise in the Sociology of Knowledge (Garden City, N. Y.: Archor/Doubleday, 1967), passim.

[83]Schleiermacher, p. 43.

[84]Burhoe, "The World System and Human Values," p. 184.

IV

Burhoe has not been the only theologian in recent years to turn to systems theory, particularly the principle of hierarchy, for insight into the structure of theology and its central category, the doctrine of God. Nor has he been alone in rejecting the isolationist and existentialist theologies associated with Barth and Bultmann. Burhoe's abiding concern with the status of religion and theology in a world of science and technology is paralleled in the writings of Wolfhart Pannenberg, professor of systematic theology at the University of Munich. Perhaps more remarkable than the similarity of their concerns, however, given the cultural and intellectual distances separating Chicago and Munich, is the congruence of their approaches. For, like Burhoe, Pannenberg is a true heir of Schleiermacher, focusing his own theology on the human experience of embeddedness, expressed in terms of cosmic and cognitive contextuality and the logic of parts and the Whole.

Early in his career, Pannenberg distanced himself from the deductive neo-orthodoxy and the reductive demythologyzing which dominated German Protestant theology in the fifties and sixties.[85] If theology is based on revelation, he reasoned, and if revelation is the indirect self-disclosure of God in history, then theology must involve or acquire the skills of historical investigation. Revelation cannot be investigated in isolation from the traditions of meaning and

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[85]Wolfhart Pannenberg, "Dogmatic Theses on the Doctrine of Revelation," Revelation as History, trans. David Granskou (New York: Macmillan, 1968; original German Edition, 1961), pp. 125-158.

interpretation in which it is received and recorded. But these traditions must be understood in turn to be embedded in cultural and historical realities which point finally to a universal history. Any understanding of such a totality may only be proleptic or anticipatory, of course, but once such a context is admitted, the task of theology must be seen as continuous with that of the sciences. Each department of human experience is served by a special science; theology is the science of the self-disclosure of God in history; and theology, like the others, must open its methods and its findings to the impartial scrutiny of the larger scientific community. Thus were neo-orthodox and existentialist hermeneutics rejected.

Pannenberg offered a major statement of this position in 1973 in his Theology and the Philosophy of Science. Here he wished to secure the place of theology within the curriculum of the secular university, not only for the sake of theology, but for the wellbeing and finally the survival of the special sciences and philosophy as well.

> If theology were now forced to disappear from the universities on the ground, maintained by many people, that it is essentially tied to authority and therefore unscientific, this would be a severe setback for the Christian understanding of truth, even if theology were taken over by educational establishments belonging to the Church and continued to be studied there. But such a change could also contain dangers for the sciences, in particular because without critical collaboration of theology and philosophy, the unity of knowledge, which prevents the sciences from totally disintegrating into a set of completely separate disciplines and ossifying, would no longer be appreciated. Collaboration between theology and philosophy is necessary because philosophy alone cannot provide a basis for the understanding of the unity of the perception of meaning, the historical roots of intellectual life.[86]

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[86]Wolfhart Pannenberg, Theology and the Philosophy of Science, trans. Francis McDonagh (Philadelphia: Westminster Press, 1976; German

Theology alone embodies "the historical roots of intellectual life" by articulating its proleptic vision of the "unity of the perception of meaning," without which the separate sciences and philosophy remain disjunct and moot. Theology is more than equal to the other disciplines in this respect, and plays, as it did in Medieval times, the sovereign role. How does Pannenberg defend such a claim?

Like Burhoe, Pannenberg presupposes both the intellectual dominance of science today and the threat that dominance poses for theology. Taken as a whole, science offers a paradigm (in the Kuhnian sense) "which no longer needs epistemological justification but instead, as a result of its overwhelming successes, now itself lays down where and in what sense we shall talk of knowledge."[87] Meanwhile, the philosophy of science may be said to have overtaken and replaced the traditional role of epistemology, as knowledge is increasingly secured by the public standards of science and not by the "idea of knowledge hidden in consciousness."[88] Such a philosophy, especially under the influence of the Vienna positivists Ernst Mach, Moritz Schlick, and Rudolf Carnap, has forced theology to eat dried crumbs from the table of science. And despite a wide-ranging debate over the merits of positivism and its cousin, analytic philosophy, many have concluded that theology is incapable of assertions and predictions

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edition, Frankfurt am Main: Suhrkamp Verlag, 1973), p. 13.

[87]Ibid., p. 27. Pannenberg is indebted here to Jurgen Habermas, Knowledge and Human Interests (Boston: Beacon Press, 1971), pp. 67-69.

[88]Ibid., p. 28.

(A. J. Ayer), unintelligible outside of natural causes (A. MacIntyre), unsupportable by analytic propositions (J. N. Findlay), incoherent in the face of evil (J. L. Mackie), and mute except to express ethical preferences (R. B. Braithewaite), attitudes toward life (P. Van Buren), and "bliks," unverifiable outlooks on empirical reality (R. M. Hare).[89]

In order to rehabilitate theology as a "science of God" in the face of such criticism, Pannenberg launches a formidable counteroffensive on three fronts.[90] Building on the critical rationalist position of the Austrian philosopher of science Karl Popper, Pannenberg argues first that the "observation statements" upon which the analytic or positivist philosophy of science rests are meaningless in the absence of a theoretical or metaphysical conception of "reality as a whole." Such a conception remains largely tacit in science because it cannot be tested directly and because the special sciences are directed toward parts of the universe, not the whole. Nevertheless, the success or failure of competing theories rests in large part on their congruence with such a conception. As Popper writes, "Scientific discovery is impossible without faith in ideas

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[89]Ibid., pp. 34-35. Pannenberg refers to A. Flew and A. MacIntyre, eds., New Essays in Philosophical Theology (London, 1955), and F. Ferré, Language Logic, and God (London, 1961; New York, 1969).

[90]Three chapters, comprising the first half of Theology and the Philosophy of Science, are devoted to this task; they are entitled "From Positivism to Critical Rationalism," "The Emancipation of the Human Sciences from the Natural Sciences," and "Hermeneutic: A Methodology for Understanding Meaning." Only the most abbreviated account may be offered here.

which are of a purely speculative kind, and sometimes even quite hazy; a faith which is completely unwarranted from the point of view of science, and which, to that extent, is 'metaphysical.'"[91] The very notion of truth in science cannot be maintained outside of some overarching conception of totality or eternity, and it is to philosophers that science has turned in the past to articulate it.

Next Pannenberg turns to what he believes to be the unjustified separation of the human and the natural sciences based in the widely-held methodological distinction between "understanding" (verstehen) and "explanation" (erklären). Introduced by Wilhelm Dilthey in 1883 in the attempt to save the human sciences or Geisteswissenschaften from the reductive tendencies in the sociology and psychology of his day, the distinction came to mean the contrast between the study of persons as subjects ("the subjectively intended meaning of action is the proper object of understanding" for Max Weber), or their study as behavioral objects (the explanation of what to Weber was mere "external conduct").[92] But the effect of the distinction, like that between the ideographic or individualizing methods of the historical sciences versus the nomothetic or generalizing methods of the natural sciences, was to isolate and fragment human studies from the rest of science. Once again, with efforts by the analytic philosophy of science to

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[91]Karl Popper, Conjectures and Refutations (London, 1963; 3rd edition, 1969), p. 38; cited by Pannenberg, p. 40. Popper's Logic of Scientific Discovery (1934), a direct rebuttal to the Vienna positivist position, and E. A. Burtt's The Metaphysical Foundations of Modern Science (1924) are also cited in this connection.

[92]Ibid., pp. 80-83.

discredit the possibility of verstehen-sociology, the social sciences became vulnerable to the methodological imperialism of the positivists. As in his discussion of positivism, Pannenberg moves to higher ground, arguing that both understanding and explanation involve "fitting what is to be explained into its appropriate systematic framework. In historical explanation this system is provided by the series of events, and in scientific explanation by the theoretical framework of a 'natural order'. . . ."[93] Science directs its attention to the many particulars of the inorganic, organic, and social world, but the method which makes it "science" is recognizably one in every instance.

Finally, Pannenberg identifies the human sciences by their reliance on hermeneutic, where hermeneutic is the investigation of meaning, and meaning is "the relation of parts to whole within a structure of life or experience."[94] In this third counteroffensive against the reductive dogmatism of the analytic philosophy of science, the Munich theologian consolidates his argument that all science entails "the fitting of particulars into a whole," and lays the groundwork for his defense of theology as the science which alone investigates the logic, the attributes, and the activity of the Whole. This argument is inextricably bound to Pannenberg's favorable assessment of general systems theory.

The importance of systems theory in Pannenberg's theological position cannot be overstated. For him, systems theory is the heir of

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[93]Ibid., p. 149.

[94]Ibid., p. 156.

the hermeneutic tradition which begins with Schleiermacher, continues with Dilthey and Weber, is ushered into the modern discussion by Parsons, and finds its latest advocate in the West German sociologist Niklas Luhmann. In every instance, "the conception of explanation used by systems theory coincides with the method of hermeneutic."[95] This method, as we have repeatedly seen, involves the contextualizing (or in systems terms, the nesting, embedding, or hierarchizing) of experience in such a way that the category of the whole is made manifest in every particular. In theological terms, this means that the reality of God constitutes the horizon of meaning which encompasses the fullness of intellectual and spiritual life in man. In what respect may systems theory be associated with this tradition?

Pannenberg traces formal systems theory back to the gestalt psychologists and to the important 1939 monograph, "The Structure of Wholes," by the American psychologist Andras Angyal.[96] Here the concept of "system" is introduced to express the peculiar nonsummative logic of wholes wherein each element, like a note in a melody, contributes to, and in turn is modified by, a pattern which transcends the interrelations of the elements themselves. Pannenberg finds this idea prefigured in Dilthey's contextual theory of meaning in which meaning is perceived not only as a product, construct, or projection of the subject, but also in relation to "the transcendent system of a

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[95]Ibid., p. 143.

[96]Andras Angyal, "The Structure of Wholes," Philosophy of Science 6 (1939): 25-37, cited by Pannenberg, pp. 129-130.

totality of meaning in which the individual who perceives meaning experiences his own existence as meaningful." He continues,

> This means that the introduction of the concept of system and related cybernetic considerations can correct the exclusive association of meaning with the human sciences and clarify the meaning of such fundamental hermeneutical concepts as whole and part by relating them to the problems of general systems theory. . . .
>
> There seems therefore to be hope, after all, of overcoming the exclusion of the subject of meaning from the methods of natural science.[97]

In Parsons' general theory of action, following Weber, Cassirer, and Mead, language becomes the prime medium for regulating human action, and religion occupies the top rung of the "self-regulating cybernetic system" which confers meaning "down" the semi-autonomous levels of culture, society, personality, and organism.[98] Finally, in Niklas Luhmann's published discussions with the critical theorist Jürgen Habermas, Luhmann moves from action theory (without disavowing his debt to Parsons) to a systems theory in which the meaning of actions "always implies the world as a whole," the conception of a latent horizon of semantic references which harks back once again, Pannenberg believes, to Dilthey.[99]

In a lecture presented at Boston University in 1983, Pannenberg called the concern with emptiness and the loss of meaning the

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[97]Ibid., pp. 130-131.

[98]Ibid., pp. 86-88. Pannenberg relies on Parsons' Toward a General Theory of Action (1951), The Social System (1951), and Societies (1966).

[99]Jürgen Habermas and Niklas Luhmann, Theorie der Gesellschaft oder Sozialtechnologie--Was leistet die Systemforschung? (Frankfort am Main: Suhrkamp Verlag, 1971), p. 70; cited by Pannenberg, pp. 96-100.

preeminent religious issue of our time. With Paul Tillich he compared our preoccupation with meaning to the problem of transitoriness in antiquity and the obsession with sin and forgiveness in Medieval times. Breaking with phenomenology and the sociology of knowledge (Husserl, Schutz, Lessing, Peter Berger), the lecturer dismissed the idealist position which requires that all meaning be created, constructed, or projected upon reality by human subjects. An examination of the concept of meaning reveals three features which militate against such a view. First, the objectivity of meaningfulness: "It is part of the nature of language itself to represent a reality which is already given. . . .[T]rue assertions are related to the reality of the asserted state of affairs in the sense of a discovery of meaning, rather than a bestowal of meaning." Second, the many-layerdness of meaning: because of the semantic richness of linguistic utterance, "A sentence can say more than the speaker wanted to say. It can also fall short of the thought which the speaker wanted to express and which can be independently inferred from the context of the speech." Third, the irreducibility of meaning: "The semantic context of a text can be reduced neither to the intention of the speaker or author, nor to some bestowal of meaning through interpretation."[100] Pannenberg's reliance upon the systems-theoretical approach to language in these formulations, while unacknowledged on the occasion, is apparent when

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[100]Wolfhart Pannenberg, "Meaning, Religion, and the Question of God," in Knowing Religiously, Vol. 7 of the Boston University Studies in Philosophy and Religion, ed. Leroy S. Rouner (Notre Dame, Ind.: University of Notre Dame Press), pp. 156-157.

placed in the context of his argument in Theology and the Philosophy of Science. Meaning there is an objective property linking parts to wholes, subsystems to systems, in a continuous hierarchy which points to the all-embracing Whole which theology calls God.

Theology is a science, Pannenberg argues in the final sections of his book, because it investigates, that is, attempts to understand, explain, verify, and report, the historical implications of the hypothesis that God is the all-embracing Reality.

> It is part of the finite nature of theological knowledge that even in theology the idea of God remains hypothetical and gives way to man's knowledge of the world and himself, by which it must be substantiated. On the other hand, as the theme of theology, God by definition includes the empirical reality by which the idea of God must be tested, and so defines the object of theology.[101]

Perhaps not surprisingly, such a project involves all of the activities traditionally associated with the theological enterprise, including systematic and historical theology, Biblical exegesis and theology, church history, and practical theology.[102] As in the human sciences, hermeneutic is the methodology of choice because the challenge of theology is the discernment of the historical meaning of the Reality which tradition claims is the source of all meaning.

Theology differs in its task from philosophy, in spite of the latter's concern with reality as a whole, with what is common to all existing things, and with the principle of unity itself. Such questions point to the question of God and may thus be considered the

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[101]Ibid., Theology and The Philosophy of Science, p. 300.

[102]Ibid., pp. 346-440.

prolegomenon or "foreground" of theology; yet for most philosophy, from the classical ontological metaphysics of Aristotle to the transcendental philosophy of Kant, the problem of God has not been the central consideration. Whenever philosophy postpones, avoids, or rejects the question of God, Pannenberg holds, it disqualifies itself from contributing to the problem of meaning as understood in the hermeneutic tradition. It is to theology that this task falls, and by means of theology that "the roots of intellectual life" must be sought.[103]

True to the memory of Schleiermacher, Pannenberg finally places the theological task within the context of religious studies, broadly conceived. Theology must be a "science of religion" because the experience and record of the indirect self-disclosure of the all-embracing Reality is the history of religions. Defining religion as "any organization of human life in which the prevailing experience of reality as a whole is given expression and which therefore also provides a basis for the order of society and the understanding which underlies it," Pannenberg incorporates the subjective dimension of Schleiermacher's second speech from the 1799 On Religion with the

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[103]Ibid., pp. 303-305. Pannenberg is not unambiguous in his effort to differentiate philosophy from theology. He asserts that philosophy cannot avoid the question of God by refusing to formulate the question of meaning as a whole: "Strict universality is unattainable without totality, and discussion of reality as a whole is inextricably connected with discussion of the possibility of such a totality, of the unity which unifies it. This question may not be explicitly discussed as the question of God, but inevitably it cannot be about anything else" (p. 104). On the other hand, he allows that "philosophy is still possible if the question of God is excluded" (p. 305).

functionalist tradition represented by Durkheim, Parsons, and Thomas Luckmann.[104] The "critical theology of religion" or the "theology of the history of religions" has much in common with the psychology of religion, the phenomenology of religion, and the sociology of religion: "Through their position midway between empirical investigation and conceptual systemization these auxiliary disciplines link the two major disciplines of the science of religion, philosophy of religion and the history of religion."[105] But the task of the theology of religion must be distinguished from all of these, as that of testing each religion's claims to express reality as a whole and to integrate the complexity of human experience. The author readily admits that this objective is neither easily conceived nor easily executed, and that it violates the hard-won objectivity which unites the subdisciplines of religious studies ("suspension of judgment is itself a prejudice in favor of an immanent or anthropological interpretation of religion").[106] Yet the phenomenological brackets must come off if the assertions of the reality of divine powers in specific traditions are to be confirmed or falsified. Like the contest of Elijah and the prophets of Baal, the

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[104]Ibid., pp. 312-313.

[105]Ibid., pp. 368-369 and note. See also Pannenberg, "Toward a Theology of the History of Religions," in Basic Questions in Theology, trans. George H. Kehm, Vol. II (Philadelphia: Fortress Press, 1971), pp. 65-118.

[106]Ibid., p. 363.

gods must "prove themselves in the sight of the members of the religious group to be capable of mighty acts or not."[107]

Pannenberg offers few guidelines in proposing such a feat. We recall that Burhoe, reaching a similar point, turned to Clifford Geertz's systems-inspired definition of religion. Here the symbols which point to a general order of existence are deemed effective when their "aura of factuality" and the moods and motivations they inspire "seem uniquely realistic." Pannenberg's formulation is similar: "Traditional statements or modern reformulations [of religious experience] prove themselves when they give the complex of meaning of all experience of reality a more subtle and more convincing interpretation than others."[108]

V

We began our study of systems theologies by remembering the place which the image of hierarchy has had in religious imagination in all times and traditions. Sacred writings, monuments, and art have shown a universe in layers, where every soul, every time and space, and every stage of human understanding and advancement is enfolded as a part in a divine economy where nothing is excluded. Such a whole may be conceived as onion-like, in the manner of the panentheistic psychocosmologies of South and East Asia; or the transcendent God may

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[107]Ibid., p. 364.

[108]Ibid., p. 343.

look down from on high, as He does in the West, as if to remind creation of its incompleteness outside of the fullness of His grace.

Louis Dumont has theorized that hierarchical thinking, while intrinsic to the cognitive process, has been associated with religion in most societies because it was religion which offered symbols of the totality of existence. As soon as this is said, however, the question of such symbolization in secularized societies must be raised: is it not science which furnishes the most convincing images of totality today, expressed in such terms as "universe," "cosmos," "ecosystem," and even "outer space"? And is not the picture of the world offered by science a stratified "layercake" (as Aldous Huxley said), made up of quarks, DNA molecules, organ systems, kin groups, and international markets? By these criteria science would seem to qualify as religion's rightful heir, as Comte and the Huxleys and many others have asserted. Salvation in such a faith would be conceived in material terms, as Robert S. Cohen imagines:

> Bluntly, what we now know requires a liberating science, mindful of the critical human-species-wide problem, the possible doom of nature. Because science is the only species-wide ideology, if there is to be any nature to have a science of, that science must include a new value: nature itself as context for the human species. . . .
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> [H]ence fact becomes value, and a new dimension is added to the morality of science and the vocation of the scientist. It is true that science understands, without making judgments; and that tenderness, kindliness, and love are only indirectly related to the scientific venture as such. But our only species-wide ideology now gradually, awkwardly, but inevitably becomes both a new humanism and a new naturalism.[109]

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[109]Robert S. Cohen, "Reflections on the Ambiguity of Science," in Foundations of Ethics, ed. Leroy S. Rouner, Volume 4 of the Boston University Studies in Philosophy and Religion (Notre Dame and London: University of Notre Dame Press, 1983), pp. 233-234.

But no scientific religion has taken root. In spite of its skill in formulating conceptions of a general order of existence in symbols which exude the unmistakable aura of factuality, science does not attempt to shape moods and motives among its practitioners or the public at large. Its task, as Professor Cohen writes, is to question, at times to rebel and disobey, but finally and always, to know. Indeed the moods and motivations in science have been imported from without:

> Social factors, economic factors, and military needs. . .religious needs to understand the cosmos and the microcosmos, or to find grounds for wonder; and literary needs; artistic needs; political needs; needs for enjoyment and play; the tacit needs of instincts for power, and curiosity to be satisfied. These all can be illustrated as factors which have played into, or fed into science--posing problems, suggesting ideas, suggesting metaphors, supplying instruments, providing resources for thinking and for communicating, and even providing motivations. . . .[110]

The insight that science has reflected and benefitted from man's religious need to understand the cosmos (or apprehend the sacred, the divine, the whole) and to find grounds for wonder (reverence, faith, or hope) helps to balance a shameful record of inquisitions and monkey trials. Yet science and religion are hardly prepared to join forces in a new humanism or naturalism. Many points of conflict remain; reductionism heads the list.

Religion grounds its language of hierarchy and wholeness on intuition and feeling more than reason. Religion is "an affection, a revelation of the infinite in the finite, God being seen in it and it

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[110]Ibid., p. 224.

in God" (Schleiermacher);[111] religion is a "feeling that. . . ," while science is a "seeing that" something is the case (Ervin Laszlo).[112] What science sees first are the particulars and parts; the relationships and laws it discovers later are insensible, expressed in mathematics. For religion, "the object of feeling is a totality, or a whole" (Herbert W. Richardson);[113] it is the meaning of the finite parts which follow: "How wondrously supernatural. . .I draw water, I carry fuel!"[114] In principle these are complementary ways of organizing experience; science and religion have much to offer one another. In practice, however, the mythic worlds of ancient India and the aborigine have indeed, on occasion, been reduced to psycho-social needs and functions, and again to biological requirements. Science has staked its success on the demise of religion:

> As science proceeds to dismantle the ancient mythic stories one by one, theology retreats to the final redoubt from which it can never be driven. This is the idea of God in the creation myth: God as will, the cause of existence, and the agent who generated all of the energy in the original fireball and set the natural laws by which the universe evolved. . . .
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> But make no mistake about the power of scientific materialism. It presents the human mind with an alternative mythology that until now has always, point for point in zones of conflict, defeated traditional religion. . . .Every part of existence is considered to be obedient to physical laws requiring no external control. The scientist's devotion to parsimony in explanation excludes the divine spirit and other extraneous agents. Most importantly, we have come to the crucial stage in the history

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[111]Schleiermacher, p. 36.

[112]Laszlo, System, Structure, and Experience, p. 70.

[113]Richardson, p. 56.

[114]Suzuki, p. 86.

> of biology when religion itself is subject to the explanations of the natural sciences.[115]

Systems theory, on the other hand, as formulated by Bertalanffy, Laszlo, and others, has explicitly rejected mechanism, biologism, and all other reductive methodologies in favor of an approach which seeks common systems principles at all levels of the natural and social worlds. Each system or subject of investigation becomes a perspective from which all others may be investigated; no level or entity is favored, except operationally, in a matrix of relations which extends to all reality. Any figure may be highlighted in respect to its ground; any subsidiary awareness (as Polanyi says) may become focal. Such a "perspectivism," whether intentionally or as a byproduct, reanimates an epistemological dimension foreclosed by reductionism: "Possibly the model of the world as a great organization can help to reinforce the sense of reverence for the living which we have almost lost in the last sanguinary decades of human history."[116]

Burhoe and Pannenberg have capitalized on this possibility. Both share the foreboding sense that human values and meaning, particularly the traditional symbols nourished by religion and theology, are under attack in our world. Both understand that science may be seen both as the source of this attack and as a resource for overcoming it. Both are convinced of the crucial value of religious and theological symbols for human wellbeing, and both are prepared to refocus, reinterpret, or

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[115]Edward O. Wilson, On Human Nature (New York: Bantam, 1979), p. 200.

[116]Bertalanffy, General Systems Theory, p. 49.

translate these symbols in the light of contemporary understanding. Both have turned to systems theory for assistance in this task -- Burhoe to evolutionary models which place man in the context of emerging natural and biological systems, and Pannenberg to hermeneutic models which locate human cognition within a horizon of meanings which pre-exist and transcend his consciousness. Both thinkers reinterpret and neutralize the threat of reductionism by removing man, or human consciousness, from the apex of nature. By this logic, it is humanism which is offended by the reductive implications of materialist science, not theology. For theology affirms the sacredness of all realms and levels of existence, finding man to be a part of the divine totality, not its exclusive witness or emblem. Hubris has no foundation in a hierarchy of interdependent systems. In this way Burhoe and Pannenberg have carried on the theological tradition inaugurated by Schleiermacher, who wrote, "The Universe is ceaselessly active and at every moment is revealing itself to us."[117]

How successful are the contributions of Burhoe and Pannenberg when judged by the methodological criteria of empirical, explanatory, and heuristic adequacy?

To some observers, the criterion of empirical adequacy will appear illegitimate for the purpose of evaluating theological assertions. In the context of systems theologies, however, the category takes on new meaning. Here we ask (a) Does the theologian treat specific human experiences, texts, historical events or natural phenomena in a way

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[117]Schleiermacher, p. 48.

which respects these data on their own terms; (b) Is the theologian conversant with contemporary theological discussion; and (c) Is the theologian conversant with the systems theoretical literature?

By these measures, Burhoe and Pannenberg must each be granted only partial credit, in spite of the fact that both defend their arguments with extensive references and citations to the literatures they know best. Burhoe's strongest suits are his knowledge of research in the natural and human sciences, supported by his wide association with specialists from many disciplies who are active in his Institute for Religion in an Age of Science; and his familiarity with a portion of the systems literature dealing with the evolution of biological and cultural systems in man. Burhoe's primary weakness as a theologian is his failure to engage the theological traditions he purports to revitalize. As one of his chief admirers notes, "Burhoe's work presupposes, and admittedly does not always recognize the intricacies of, the exegetical and hermeneutical tasks which have been the preoccupation of most recent European and American theology."[118] This limitation is reminiscent of that of Karl Deutsch, as we noted in Chapter Four. Were it not for Burhoe's appointment on a theological faculty and his unmistakable commitment to the Christian tradition, his contribution might be better regarded as an exercise in the philosophy of religion or philosophical theology, than of historical or systematic theology.

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[118]Don Browning, from the Preface to Burhoe's Toward a Scientific Theology, p. 10.

Pannenberg's strongest claim to empirical adequacy is his thorough acquaintance with classical, Medieval, and contemporary discussion in theology, philosophy, and the history and philosophy of science. Few theologians can do a better job of informing us, exhaustively and critically, of the intellectual ferment to which Christianity has been heir these nearly twenty centuries. On the other hand, Pannenberg does not seem to know much about the other religions of the world. When he praises the "Israelite-Christian tradition" for its "unusual degree of assimilating and accomodating power" compared to the "mythical religions" (which are, in spite of several references, never defined or identified), and then goes on to say that these "are not dogmatic but empirical statements about the uniqueness of the Judaeo-Christian tradition as compared with other systems of religious tradition,"[119] he displays his ignorance of Hinduism, Buddhism, and Islam, each of which has survived and flourished by prodigious capacities of the kind noted. Pannenberg's acquaintence with systems literature seems limited to the sources cited: Angyal's article, Parsons' sociology, and the Luhmann-Habermas discussions. Thus when he writes that "the concept of explanation used by systems-theory coincides with the method of hermeneutics," but fails to indicate whose systems theory he means, the connection is not clear.[120]

Assessing the explanatory adequacy of two theological projects which have been unfolding for over twenty-five years and which have

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[119]Pannenberg, Theology and the Philosophy of Science, p. 367.

[120]Ibid., p. 134. Cf. pp. 152, 153, 156, 192, 193.

been presented here in the most abbreviated fashion cannot be undertaken except to note a final, but highly significant, parallel. Both Burhoe and Pannenberg have been taken to task for their alleged failure to account adequately for the role of the person, or personality, in their theological statements. This is significant because, as we shall argue in the final chapter, a proper understanding of the systems view of personality is critical to the future of the systems approach in religious studies; yet systems theory is frequently misunderstood and disqualified on this account.

Burhoe is cited for the failure of his account of personhood in reference to the problems of human suffering and the reality of evil. George A. Riggan, a professor of systematic theology at the Hartford Seminary Foundation, commenting of Burhoe's essay "The Concepts of God and Soul in a Scientific View of Human Purpose" (1973) writes:

> Burhoe's tripartite model of the soul depends upon analogies derived from three widely differing orders of system: cosmological, biological, and cultural. By slighting differences, these analogies lead us into simplistic abstractions--into what Whitehead called the fallacy of misplaced concretion. Consider for instance the implications of Burhoe's theodicy. Living systems, including persons, are patterns of energy flow. An observation true enough as far as it goes. Living systems that fail the test of survival cease to be. "Patterns that do not exist can hardly experience suffering. . . .Suffering is reserved for the righteous." Whereas by implication the righteous are those patterns that meet the test of survival, be it resolved that we are the righteous.
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> Against Burhoe's view, the point has been made often enough that mere survival is no criterion of justice or righteousness. Human survival and humane survival have by no means an identical connotation. Here I would add that patterns, precisely as patterns, never suffer. The poetry of personhood, and of all living systems, has its locus, neither in the rational, perduring pattern, nor in its particular, evanescent embodiment; but in the tension between the two. Human suffering cannot be

> understood if living persons are approached as though they were significant principally as patterns of energy flow.[121]

It should be noted that it is Riggan who approvingly identifies Burhoe's debt to Schleiermacher and who praises his prophetic insistence on the sovereignty of God in an era of "self-indulgent hedonism and inordinate anthropomorphism." In sum, however, the implication is that Burhoe has sacrificed the cardinal Western value of personalism in pursuit of a revitalized theism.

Pannenberg comes under a very similar attack from a professor of theology at St. Bonaventure University, John V. Apczynski, in this case in reference to his epistemology. Apczynski believes that Pannenberg's treatment of theological statements as theoretic assertions which may be subjected to public rather than personal criteria of evaluation misses not only the centrality of faith in religious tradition, but also the inevitable role of personal constituents in the knowing process.

> The crux of the issue is the question whether the personal act of integrating particulars into a meaningful coherence is an incidental psychological concomitant of knowing or a necessary constituent of knowledge. For Pannenberg the former is clearly the case.[122]

In consequence, Apczynski suggest ways in which Michael Polanyi's theory of personal knowing may serve to correct Pannenberg's error: knowing is a dynamic process whereby meaning is brought to focal

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[121]George Arkell Riggan, "Epilogue to the Symposium of Science and Human Purpose," Zygon 8 (1973): 478.

[122]John V. Apczynski, "Truth in Religion: A Polanyian Appraisal of Wolfhart Pannenberg's Theological Program," Zygon 17 (1982): 61.

awareness from the tacit dimension of subsidiary awareness, and so forth (a process described in somewhat different language by the Gestalt psychologists decades before Polanyi). Yet, as another commentator rightly points out, this analysis is not at all incompatible with that of Pannenberg. What, then, is the point at issue?

The answer, we may surmise, lies not in the critic's misreading of Pannenberg, but rather in his inability to accept the latter's shift of epistemological interest from the subject (the part) and its capacity to project or "bestow" meaning, to the transcendent source or horizon of meaning (the whole), whence meanings are discovered, apprehended, and appropriated as given or revealed. Apczynski, on the other hand, follows Polanyi's idealist epistemology in which meanings are spoken of consistently as "human achievements":

> For Polanyi, then, the highest human achievements are our transcendent ideals, expressed as truth, beauty, justice, responsibility, and religious devotion. The appreciation of their meaning requires that we integrate the lower levels of meaning over which they exercise a control. In his early writings Polanyi identified such transcendent meaning with a "spiritual reality." Subsequently, however, he understood them as emerging meaning or truth. Since our highest ideals are human achievements--that is, they have emerged as the highest forms of integration of human thought--their bearing on reality is not straightforward.[123]

The contrast between Polanyi and Pannenberg should not be exaggerated, however, for the two thinkers have much in common.[124] But

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[123]Ibid., p. 67.

[124]See Durwood Foster, "Pannenberg's Polanyianism: A Response to John V. Apczynski," Zygon 17 (1982): 75-81.

the issue of the role of personhood must be resolved if systems theory is to boast explanatory adequacy in the field of religion.

In the end, the heuristic adequacy of Burhoe and Pannenberg must be judged by the notices their writings have received in scholarly discussion and publication. By this token, Pannenberg's place in Protestant theology today seems assured. Unfortunately, Burhoe's legacy is not likely to be widely known outside of the circles he has cultivated over the past thirty-five years. But these circles, unlike Pannenberg's, have included nuclear physicists, microbiologists, astronomers, mathematicians, and systems theorists. Perhaps the best tribute to Burhoe's untiring efforts to promote the science-religion dialogue comes from a secret admirer, the self-appointed enemy of ancient mythic stories, sociobiologist Edward O. Wilson:

> Today, scientists and other scholars, organized into learned groups such as the American Humanist Society and the Institute on Religion in an Age of Science, support little magazines distributed by subscription and organize campaigns to discredit Christian fundamentalism, astrology, and Immanuel Velikovsky. Their crisply logical salvos, endorsed by whole arrogances of Nobel Laureates, pass like steel-jacketed bullets through fog. The humanists are vastly outnumbered by true believers, by the people who follow Jeanne Dixon but have never heard of Ralph Wendell Burhoe. Men, it appears, would rather believe than know. They would rather have the void as purpose, as Nietzche despairingly wrote so long ago when science was at its full promise, than be void of purpose.[125]

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[125]Wilson, p. 178.

S E V E N

SYSTEMS THEORY AND RELIGIOUS CONSCIOUSNESS

The Principle of Integration

> The real values of humanity are not those which it shares with biological entities, the function of an organism or a community of animals, but those which stem from the individual mind. Human society is not a community of ants or termites, governed by inherited instinct and controlled by the laws of the superordinate whole; it is based upon the achievements of the individual and is doomed if the individual is made a cog in the social machine. This, I believe, is the ultimate precept a theory of organization can give. . . .
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> -- Ludwig von Bertalanffy (1955)[1]

I

Since its appearance as an interdisciplinary perspective in the nineteen fifties, general systems theory has made promising contributions to many areas of science, technology, and the humanities. Religious studies and theology have benefitted from this development, we have argued, especially as systems thinkers have attempted to reinterpret and resolve persistent methodological problems in the

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[1]Ludwig von Bertalanffy, "The Meaning of General Systems Theory," in General System Theory, pp. 52-53.

social sciences and the humanities such as functionalism, historicism, and reductionism. Not all the seedlings of systems research in religious studies have taken root or grown to maturity, of course, but after thirty years of cultivation, several healthy blooms may be identified against a rich ground cover of guiding principles.

Cybernetics, never widely applied in the social sciences, nevertheless demonstrated its usefulness for interpreting problems of intentionality and goal-directedness in religion. The possibility of combining functional and phenomenological approaches to classical Buddhist meditation was illustrated in Joanna Macy's cybernetic theory of contemplative and projective techniques. Talcott Parsons' action theory and the evolutionary hypotheses of Robert Bellah and Donald Campbell approached religion as the most general source of symbolic messages which code and direct the emergence of psycho-social structures over time. Similarly, by conceiving a continuous universe of nested levels, encompassing meanings as well as physical and biological patterns, hierarchy theory offers theology a vast and intricate canvas upon which to reimage the face of God. Whether in its Burhovian or Pannenbergian versions, the conception of divine totality as an infinite natural order or of a fertile semantic horizen recalls the post-enlighterment epistemology of Schleiermacher and the ancient metaphysics of great-chain philosophers and oriental pundits.

Books and monographs devoted to systems theory in religious studies continue to appear. Zygon: Journal of Religion and Science

enters its third decade with a readership approaching 2000 scholars and interested laypersons. In sum, the range of experiements and applications of the systems outlook to many areas of religious studies and theology suggests the protean if not the promethian potential of Bertalanffy's, Weiner's, and Laszlo's insights in fields none of them ever aspired to enter.

Yet some observers of these developments are not convinced that the systems perspective will endure. James E. Huchingson, long an advocate of systems theory in religious studies, writes in a recent issue of Zygon:

> Progress in general systems theory has been slow. . . .Frustrations include the wide-spread perception that systems theory is a kind of gnostic redemption, an abstract program to be administered by an elite cadre of experts for the sake of integrating knowledge and reorganizing society. This mechanistic understanding generates a resistance which could be countered by a more open and organic model of human systems. The ambiguity of systems thought lies ironically in its ability to embrace both of these images within its conceptual scheme.[2]

Huchingson reviews three new volumes which advance the cause of systems theory in the humanities, the social sciences, and theology, concluding that the systems flame burns on, tended by a loyal circle of devotees.[3] On the other hand, he writes that few departments of humanistic systems studies have appeared since the fifties; theoretical

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[2]James E. Huchingson, "Quo Vadis, Systems Thought?" Zygon 20 (1985): 435.

[3]The books under review are Mark Davidson, Uncommon Sense: The Life and Thought of Ludwig von Bertalanffy, Father of General Systems Theory (Los Angeles: J. P. Tarcher, 1983); Ervin Laszlo, Systems Science and World Order (New York: Pergamon Press, 1983); and Wayne R. Kraft, A Reason to Hope: A Synthesis of Teilhard de Chardin's Vision and Systems Thinking (Seaside, Calif.: Intersystems Publications, 1983).

biology and most of social science remains dominated by reductive methodology; and Bertalanffy, never widely known outside biology, is largely forgotten a decade after his death. Recalling the promise of systems theory as a "grand vision of nature and human society" and "the conceptual foundation for a tremendous reshaping of our culture," Huchingson now asks whether it is "an idea whose time may never quite come, destined to be a fascinating but frustrated secondary movement in the intellectual history of the twentieth century."[4]

Two great obstacles stand in the path of systems theory as a resource for the humanities and social sciences, according to Huchingson and others. One is the dehumanization or depersonalization which some associate with the notion of system: "the term system frequently evokes Orwellian images of rigorous social control and the standardization of human beings."[5] The other is the persistent tendency of systems theorists to subsume every human interest under its grand design. The resulting pattern of thought is "excessively theoretical, all-encompassing, and vague in the extreme."

> Critics suspect that systems theory, in attempting to be about everything, turns out to be about nothing, or at least about no particular thing. Granted, systems theory demonstrates loft, but to many it lacks heft. Furthermore, the intellectual temper of the time continues to tend toward pluralism. Reality comes in many forms and these seem to lend themselves well to varying modes of inquiry which suit the particular demands of the class of objects under scrutiny. The special sciences are simply effective ways of dealing with the great diversity of things in the world in their own terms. The need for some abstractive

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[4]Huchingson, p. 436.

[5]Ibid., p. 441.

> consolidation of these accounts is not yet judged widely to be an urgent task.[6]

In the end, systems theory may be "too comprehensive for its own good."

These criticisms are not unrelated. For it is the essence of the individual to stand apart from the collective, to question, to savor reality in its multiplicity, and to fight the regimentation and standardization which modern life has thrust upon us. Since the time of Kierkegaard, existentialists, romantics, and humanists of all stripes have associated depersonalization with the term "system." "The System" has been experienced not only as a political order which subordinates the will of individuals to the needs of bureaucracy, but also as an intellectual ediface which casts all particulars into the shade of a towering universal: the World Spirit, the Universe, or Natural Selection. Closely associated with the term "system" in this regard are the words "general," "theory," and "method," all of which evoke comprehensive, impersonal dimensions of reality, thought, or action.

Two recent examples of humanist backlash against systematic theories and methodology will illustrate the point.

Clifford Geertz, the cultural anthropologist who wrote in the sixties of religion as a "cultural system" and who has consistently demonstrated his interest in the broadest range of social and humanistic studies, has turned decisively against the high-level

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[6]Ibid., pp. 442-443.

theorizing we associate with his former mentor, Talcott Parsons, and with general systems theory. Introducing a collection of his essays he calls, significantly, Local Knowledge, Geertz reports that theories about culture are becoming more pluralistic, not more general.

> Though those with what they take to be one big idea are still among us, calls for "a general theory" of just about anything social sound increasingly hollow, and claims to have one megalomanic. Whether this is because it is too soon to hope for unified science or too late to believe in it is, I suppose, debatable. But it has never seemed further away, harder to imagine, or less certainly desirable than it does right now. The Sociology is not About to Begin, as Talcott Parsons once half-facetiously annonced. It is scattering into frameworks.[7]

Such frameworks for Geertz are presented by "local" occasions in time and space, and by the arbitrary analogies ("life as a game," "life as a stage," "life as a text") which recent commentators have devised to interpret the complexities of human existence. What results is the "multiple contextualization of cultural phenomena" and the demand that interpreters (translators, exegetes, iconographers) focus on the "actors, scenes, plots, performances, and personae" while the big questions, the whys and wherefores of human conduct, are avoided in principle. Attempts, such as the structuralism of Lévi-Strauss, to find larger patterns of human cognition or behavior among the particulars of daily life are derided and dismissed as "higher cryptology" and "high-tech rationalism."[8]

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[7]Clifford Geertz, Local Knowledge: Further Essays in Interpretive Anthropology (New York: Basic Books, 1983), p. 4. The eight essays in the book span the years 1974 to 1982.

[8]Ibid., pp. 19-35.

In religious studies the humanistic reaction to general theory and methodology was dramatically evidenced at the symposium on "Methodology and World Religions" sponsored by the University of Iowa in 1974. Arrayed pro and contra on the issue of the importance of methodology in religion were professors Hans Penner of Dartmouth and Wilfred Cantwell Smith of Harvard. Penner is a structuralist who endorses the concepts of "structure" and "system" and holds, as systems theorists do, that the most fruitful approach to religion "will emphasize the wholeness of the system, and the transformational rules which constitute the basis for the self-regulation of the religious system in both its continuity and change."[9] In his interpretation of a specific ritual, the Hindu upanayana, Penner rejected the phenomenological or "essentialist" approach as metaphysical, and the (pre-cybernetic) functionalist approach as deterministic. Structuralism, on the other hand, as represented by the ritual process theories of Van Gennep and Victor Turner and the linguistics approaches of Chomsky, Fodor, and Katz, offers access to the "deep structures" of brahmanical thought which alone embody the meanings of the ancient investiture ceremony. For Penner, attention to problems of theory and method is indispensable to religious studies.[10]

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[9]Hans H. Penner, "Creating a Brahman: A Structural Approach to Religion," in Methodological Issues in Religious Studies, Robert D. Baird, ed. (Chico, CA: New Horizons Press, 1975), pp. 59-60.

[10]Ibid., pp. 60-64. Penner cites especially "The Structure of Semantic Theory" by J. J. Katz and J. A. Fodor (Language 39 [1963]: 170-210), and comments, "A well-formed theory of meaning will, I am certain, provide us with the proper framework for the study of religion. A theory of religion, if this is desired, will become a

Professor Smith, widely respected for his sensitivity to Islam and other faiths, was greatly exercised by Penner's methodological preoccupations and by the emphasis of the conference as a whole. Opening his remarks with the charge that methodology is "the massive red herring of modern scholarship, the most significant obstacle to intellectual progress, and the chief distraction from rational understanding of the world,"[11] Smith was not interested in nuances of difference between system and structure or the syntacticism, semantics, or structural linguisitcs invoked by Penner. Rather he was at pains to differentiate the commitments of the humanist from those of natural science: "to subordinate one's understanding of man to one's understanding of science is unhumane, inept, irrational, unscientific."[12] At the heart of his aversion to methodology is Smith's conviction that responsible religious studies must be centered not on structures or systems, but on persons.

> Humane knowing -- the knowledge of man by man -- is an exercise in the meeting between persons, be it across the centuries or across the world. It is, therefore, not technical, not subordinate to methodological rules. In personal relations, whether face-to-face or mediated by man's symbolic forms of expression, the use of technical procedures, unless rigorously subordinated to primarily personalist considerations, is not merely inappropriate but potentially disruptive. Man cannot know man except in mutuality: in respect, trust, and equality, if not ultimately love.[13]

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subdivision of semantic theory" (p. 92).

[11]Wilfred Cantwell Smith, "Methodology and the Study of Religion: Some Misgivings," in Baird, p. 2.

[12]Ibid., p. 9.

[13]Ibid.

After the conference Smith submitted a postscript for the published proceedings in which he juxtaposed the relative merits of methodological discourse and "solid studies of human religious life," choosing in the end the "substantive" over the "procedural."[14]

These examples should make clear the lack of consensus among the leading lights of religious studies regarding the prospects of general theories, methodologies, and interpretive models. Scholars committed to humanistic and ideographic principles of research may be depended upon to counter the claims of nomothetic approaches such as structrualism and general systems theory. Their volleys will be launched in the name of pluralism and personalism. General theory and the attention to method will be perceived as threats to the human values we associate with the uniqueness and dignity of persons. An "attitude of crisis" will arise, as Walter Brenneman says, when the aboriginal worlds of India and Australia are invaded by scientific premises and biological norms. A "new humanism" which is fit for religious studies must be grounded in the transcendental subjectivity of persons, not in speculations concerning structures, patterns, and systems.[15]

We have met the issue of pluralism in its ontological and epistemological guises before. In relation to historicism we contrasted the potential for metaphysical relativism in ideographic methodology with the universalism and determinism posed by nomothetic

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[14]Ibid., p. 124.

[15]Brenneman, pp. 26-27.

analysis. Both extremes may be avoided, we argued, by seeing events in context as semi-autonomous parts in a larger process of development. The principle of emergence illustrated in the theories of Parsons, Bellah, and Campbell allowed for an interplay between individual events (or persons) and larger patterns of history (or society). Later we found the principle of hierarchy to encompass parts and wholes without swallowing them in a static or undifferentiated monism. The layercake of social existence is flavored by many meanings and values -- projected as well as registered by individuals. The shift of attention to the formative role of Nature or the divine Whole in Burhoe and Pannenberg is meant to restore the dynamic which is missing in secular humanism; theological hierarchy is animated by divine and human actors.

We come at last, then, to the challenge of personalism. In order to be of use to religious studies, general systems theory must be able to account for the reality of individual human persons who are capable of religious experience or religious consciousness. Peter A. Bertocci defines a person as "that quality of self-conscious being who is capable of guiding himself by reasonable ideals of truth and value," and as "a complex unity of activity potentials: sensing, remembering, imagining, thinking, feeling, emoting, willing, oughting, and activities of aesthetic and religious appreciation."[16] Following Bertocci, we may accept the terms person, self, soul, spirit, mind, and

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[16]Peter A. Bertocci, "The Essence of a Person," in Studies in the Philosophy of J. N. Findlay, Robert S. Cohen, Richard M. Martin, and Merold Westphal, eds. (Albany, NY: State University of New York Press, 1985), p. 363.

psyche as references to the same phenomenon (albeit from various points of view), and we may interpret this reality in relation to the "ultimate environment" or "Environment" which Bertocci identifies as God.[17]

The systems principle of integration is uniquely suited to the task of personality theory. "Whatever a personality may be," Ervin Laszlo writes in The Systems View of the World, "it is not the mere sum of our feelings, volitions, instincts, and conceptions. It constitutes an integral unity of all these in mutual relations."[18] The principle of integration has both inner and outer expressions. We saw in the final version of Parsons' systems theory of the human condition that the human action system, "the point of view of the observer," was placed in the I-cell or integrative position of the pattern variable scheme. Integration is at work within the action system to relate its cultural, social, psychological, and behavioral subsystems, while the system as a whole must achieve some degree of "external" integration with the physical-chemical (adaptive), organic (goal-setting), and telic (latent pattern maintanence) systems which comprise the suprasystem of "the human condition." Only when the self is so placed in relation to its Environment (to use Bertocci's deeper sense of the term), may its integrative powers be fully actualized. This analysis presupposes the variability and stratification of consciousness itself.

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[17]Ibid., pp. 362-363. For the purposes of this discussion we shall not differentiate "personalism" from "personality theory," "personhood" from "personality," or "person" from "individual" and "self."

[18]Laszlo, SVW, p. 32.

As Arthur Koestler writes in his final summation of systems principles, "consciousness is not an all-or-nothing affair, but a matter of degrees." [19] The principle of integration is here conceived in tension with the opposite pull of self-assertion and developed as the key to personality theory. It is out of such a model of the integrated self -- Koestler's Janus-faced holon -- that we may draw rich resources for a theory of religious consciousness.

The implications of a systems theory of the self for our study as a whole are far-reaching. In his initial proposal of a cybernetic-systems approach to religion in 1965, Robert Bellah sought to integrate the two divergent paths in religious studies as he saw them: the scientific study of religion, committed to the rational criticism of objective religious behaviors and products; and the phenomenology of religion, committed to an empathetic or interpretive account of the subjective expressions of religious consciousness. Many historical and methodological differences have sparated these "rationalist" and "nonrationalist" positions, as we have seen, but central to all of them is the insistance upon favoring one or the other pole of the inner-outer continuum. Reductionist phenomenologists of religions such as W. Brede Kristensen will write, "For the historian only one evaluation is possible: 'the believers were completely right.' Only after we have grasped this can we understand the people and their religion."[20] And

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[19]Arthur Koestler, Janus: A Summing Up (New York: Vintage Books, 1979), p. 230.

[20]W. Brede Kristensen, The Meaning of Religion, trans. John B. Carman (The Hague: Martinus Nijhoff, 1960), p. 14; cited by Brenneman,

then reductionist social scientists such as Marvin Harris will reply by contrasting what the believers say (e.g. devout Hindu professions of reverence and nonviolence toward cattle) with what they do (selective, systematic bovicide to maximize economic productivity).[21] In the end the conflict between "emic" (native informant) and "etic" (outside observer) methodologies cannot be settled by absolutizing the perspectives of either group, but only by relying on a profoundly relational and contextual definition of personhood.[22]

Systems theory, when its full implications have been realized, offers such a definition by placing the findings of phenomenology and hermeneutics into the context of the social sciences, historical

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p. 15.

[21]Marvin Harris, Cultural Materialism: The Struggle for a Science of Culture (New York: Vintage Books, 1980), pp. 32-33.

[22]Harris draws the terms emic and etic from Kenneth L. Pike, Language in Relation to a Unified Theory of the Structure of Human Behavior, 2nd ed. (The Hague: Mouton, 1967): "Kenneth Pike formed the words 'etic' and 'emic' from the suffixes of the words pheonetic and phonemic. Phonetic accounts of the sounds of a language are based upon a taxonomy of their characteristic environmental effects in the form of acoustic waves. Linguists discriminate etically between voiced and unvoiced sounds, depending on the activity of the vocal cords; between aspirated and nonaspirated sounds, depending on the activity of the glottis; between labials and dentals, depending on the activity of the tongue and teeth. The native speaker does not make these discriminations. On the other hand, emic accounts of the sounds of a language are based on the implicit or unconscious system of sound contrasts that native speakers have inside their heads and that they employ to identify meaningful utterances in their language. . . .The importance of Pike's distinction is that is leads to a clarification of the meaning of subjectivity and objectivity in the human sciences. To be objective is not to adopt an etic view; nor is it subjective to adopt an emic view. . . .It is clearly possible to be objective--i.e., scientific--about either emic or etic phenomena. Similarly, it is equally possible to be subjective about either emic or etic phenomena" (Harris, pp. 34-35).

studies (insofar as they map the preconditions of human existence), and finally, as we have seen in the case of systems theology, into the context of the infinite hierarchy or environment which transcends, by definition, the objectivity of science and the subjectivity of humanism. It is only when the systems principle of integration, with its capacity to bridge inner and outer relations, has served to contextualize the findings of religious studies in this radical sense that religious consciousness, the most elusive, and yet the central object of religious studies, may be approached. In this way, as we have seen before, the logic of systems theory in religious studies turns on a wheel of many spokes (or perhaps ascends on a complex helix like the DNA molecule). We shall survey the interrelated personality theories of Bertalanffy, Gordon W. Allport, Victor Frankl, Arthur Koestler, and Ervin Laszlo (all of whom collaborated or drew on one another's work over a period of twenty years) in the following section (II). The resulting composite will be seen to offer resources for a theory of religious consciousness and its cultural expressions which invites the contribution of all the disciplines associated with religious studies and theology. The rationale and implications of such a proposal, including its relation to other recent currents in the field of religion will be considered (III). Finally, the principle of hierarchy, as revealed in the reflexive self-awareness of personality, may be interpreted as a defining constituent of religious consciousness itself, helping to explain its heuristic potential for the academic study of religion (IV).

II

Many thinkers have contributed to the systems conception of personality which crystallized in the late nineteen sixties. As the guiding spirit of general systems theory, Bertalanffy made the first efforts to reinterpret and resolve the perennial problems in psychology and the philosophy of mind from the systems perspective. Soon other notable contributors -- psychologist Gordon W. Allport, writer Arthur Koestler, and philosopher Ervin Laszlo -- joined Bertalanffy in formulating a humanistic psychology in systems terms. All agreed that a systems psychology must attack the many versions of reductive or "robot psychology" which dominated the field: the stimulus-response behaviorism of Pavlov, Watson, and Skinner; the homeostatic instinct theories of the Freudians; and the zoomorphic theories of Robert Ardrey (African Genesis, 1961; Territorial Imperative, 1966) and Desmond Morris (The Naked Ape, 1967). The spectre of human thought control (Nineteen Eighty-Four, Brave New World, The Hidden Persuaders, The Selling of the President) which haunted post-war social science, must be abandoned for a new image of human nature, these theorists held.

Throughout his career, Bertalanffy was an active crusader against all forms of totalitatianism, depersonalization, and oppression. As a young biologist at the University of Vienna during the Nazi rise to power, he wrote and lectured against biological theories which fostered racism; copies of one of his essays were reportedly destroyed in a Nazi book-burning. In April, 1945, the Nazis razed much of the city of

Vienna. Bertalanffy lost his home, his personal library of 15,000 volumes, and all his manuscripts and notes. His office and laboratory at the University had been destroyed by a bomb three months earlier; he was the only surviving member of his department. These traumatic events, and the many years he spent after the war as a peripatetic scholar on brief appointments in Europe, Canada, and the United States help to explain Bertalanffy's deeply-held conception of the person as a unique and precious source of creative activity, symbolic expression, and social values.[23]

Bertalanffy's first efforts to apply the systems approach to psychology appeared in 1951 in the Journal of Personality.[24] Immediately he attacked the central issues raised by humanist and personalist critics of the social sciences: the struggle between ideographic and nomothetic theories and between what he called "inner" and "outer" methodologies. Theoretical constructs are necessary in every field of knowledge, Bertalanffy argued, in order to transcend "a mere collection of an ever-increasing amount of data." This is as true for psychology as it is for physics, but significant limitations must be acknowledged in the human sciences. Model conceptions in science are "idealizations never completely realized in nature." In human

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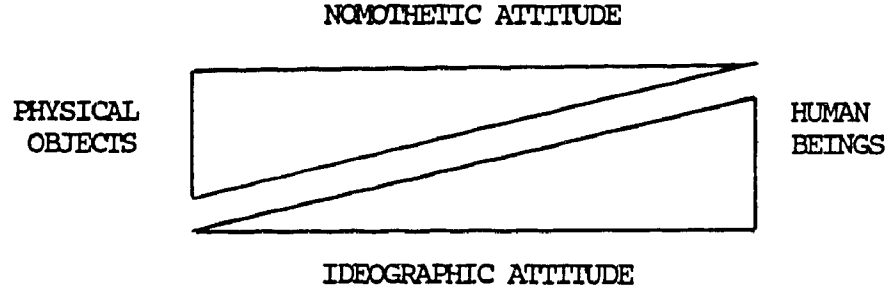
[23]For an account of Bertalanffy's life and times, see Davidson, pp. 45-70.

[24]Ludwig von Bertalanffy, "Theoretical Models in Biology and Psychology," Journal of Personality 20 (1951): 24-38; reedited and reprinted by Paul A. LaViolette, ed., in Ludwig von Bertalanffy, A Systems View of Man (Boulder, CO: Westview Press, 1981), pp. 121-132. Citations below are from the reprinted version.

nature as in nature as a whole, individuum est ineffabile, as the scholastics declared. Laws of nature are essentially statistical averages of a great number of events, which are less and less predictive at the upper levels of the natural order.

> With human beings, our interest in the individual is at the maximum. It is true that we are able to establish exact laws even here for average behavior: for example, it is an empirical law that so many persons are killed per year in car accidents or are murdered. However, our interest in human beings is not satisfied by knowing just these statistical laws. We feel that another type of insight is necessary, namely, the understanding of human beings as individuals, an aspect expresseed in its highest form in the work of the great artist and poet. This is the antithesis between "nomothetic" and "ideographic" attitudes, between "scientific" and "understanding" psychology (verstehende Psychologie).[25]

Bertalanffy illustrates this relationship in such a way that neither approach is invalidated or relegated to one end of science or the other: in systems theory both generalizing and individualizing statements must have a place.



7.1 Nomothetic and Ideographic Attitudes in Systems Theory (Ludwig von Bertalanffy)[26]

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[25]Ibid., p. 122.

[26]Ibid.

The second limitation on theory formation in psychology involves the chasm between first-person and third-person language in basic research. What later came to be known as the emic-etic distinction in linguistics and anthropology was anticipated at a fundamental level as the inner-outer or mental-physical problem in psychology. As a close observer of professional psychology -- he was a founding fellow of the Center for Advanced Study in the Behavioral Sciences at Stanford University, a visiting professor at the Menninger Foundation in Topeka, and eventually an honorary fellow of the American Psychiatric Association -- Bertalanffy was well aware of the methodological distances separating phenomenological from behavioral and neurological researchers. In 1964 he delivered a sophisticated address on "The Mind-Body problem: A New View" at the Harvard Medical School,[27] but in 1951 his remarks were elliptical and prophetic: whatever the ultimate relationship between mental and physical phenomena, they must be respected at the outset as incommensurable, irreducible, "different levels of reality."

> Our inner experience, perceptions, emotions, decisions of will cannot be reduced to action currents, hormones circulating in the blood, switching of excitations over certain synapses, and the like. The best we can hope for is to find, as far as certain aspects are concerned, a formal correspondence or isomorphy between the laws characterizing the phenomena.[28]

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[27]Ludwig von Bertalanffy, "The Mind-Body Problem: A New View," Psychosomatic Medicine 24 (1964): 29-45; reprinted in A Systems View of Man, pp. 85-108.

[28]Bertalanffy, "Theoretical Models in Psychology and Biology," p. 123.

Correspondence, isomorphy, "parallelism in the modern trends of psychology and biology" -- these were the objectives of early systems theory in the human sciences.

Three methodological emphases were proposed to foster these goals. Psychological theories must be built upon molar or holistic considerations more than on molecular or analytic ones. As a precursor to the systems principle of integration, the molar conception begins with the whole system in its relation to other systems at the same level; only secondarily will it examine subsystem structures and functions: persons are persons first, and carriers of a certain virus later. Molar and molecular approaches are complementary, Bertalanffy emphasizes, but the molar or organismic strategy "complies with the requirements of normalcy, naturalness, and closeness to life" which are paramount in biology.[29] Similarly, a systems psychology will favor formal over material models, and dynamic over static ones. Bertalanffy illustrates these criteria in terms of the systems characteristics of wholeness, progressive segregation (functional differentiation of parts) and mechanization (automation at lower levels to free upper ones for creative functions), centralization and leading parts (associated with feedback stabilization and control), finality and equifinality (reaching a desired goal by whatever route available), and anamorphosis (the spontaneous tendency of open systems to increase in complexity).

In all of these characteristics, Bertalanffy pointed the direction his own and others' work in systems psychology would take in the coming

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[29]Ibid., p. 124.

years. The stress on the primary activity or anamorphosis of open systems -- as opposed to the reactivity of behaviorist and psychoanalytic theories -- was his chief antidote to the menace of robot psychology. In future years this principle would be developed in terms of a theory of symbolization and a theory of values. The "architecture of personality" is a hierarchy of psychophysical levels which recapitulate phylogenetic and ontogenetic stages of human development. The spinal cord is a reflex apparatus; the paleencephelon, the organ of instinct, appetite, and emotion; and the cortex, the organ of personality and consciousness. But with consciousness comes the capacity for man's "universe of symbols," which Bertalanffy later considers to be a new emergent level in nature. Reasoning, true purposiveness, and active anticipation of the future are all made possible by the use of symbols. Man the product becomes man the creator.[30]

Yet Bertalanffy concludes this early paper on a dark note. The architecture of personality is flawed. The antagonism of the world of symbols, moral values, and concepts, on the one hand, and biological drives, needs, and functions, on the other, produces psycho-neuroses in persons, and "the sanguinary course of history." Human tragedy is the companion of human sublimity, and "whether the levels of personality can be properly adjusted is the question upon which man's future depends."[31]

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[30]Ibid., p. 132.

[31]Ibid.

While Bertalanffy thus established the ground rules for a systems theory of personhood, others quickly appeared to carry it on. Most notable among the psychologists were Karl Menninger, whose classic, The Vital Balance (1963), was indebted to Bertalanffy's lectures at the Menninger Foundation in the fifties, and Gordon W. Allport, who concluded his Pattern and Growth in Personality (1961) with a chapter on "Personality as System."[32] Perhaps the most succinct and best-known theoretical statement was Allport's "The Open System in Personality Theory," published in 1960 and anthologized regularly thereafter.[33] Allport admits that psychology, as a young discipline, has been driven by theoretical fads; instinct theory, behaviorism, habit hierarchies, field theory, and phenomenology have each enjoyed their heydays since the turn of the century. Systems theory, the current fashion, will undoubtedly be superseded as well, he implies, but hopefully not before its valuable ore has been fully mined. Allport assesses the contribution of systems theory in psychology in this way:

> What is called system theory today -- at least in psychology -- is the outgrowth of the relatively new organismic conception reflected in the work of von Bertalanffy, Goldstein, and in certain aspects of gestalt psychology. It opposes simple reaction theories where a virtual automation is seen to

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[32]Karl Menninger, Martin Mayman, and Paul Pruyser, The Vital Balance (New York, Viking Press, 1963). Gordon W. Allport, Pattern and Growth in Personality (New York: Holt, Rinehart, and Winston, 1961).

[33]Gordon W. Allport, "The Open System in Personality Theory," Journal of Abnormal Psychology 61 (1960): 301-310; reprinted in Personality and Social Encounter (Boston: Beacon Press, 1960); and in Walter Buckley, ed. Modern Systems Research for the Behavioral Scientist (Chicago: Aldine, 1967), pp. 343-350. Citations following are from Buckley.

> respond discretely to stimuli as though they were pennies-in-the-slot. Interest in system theory is increasing in psychology, though perhaps not as fast as in other sciences.[34]

Allport presents four criteria of open systems in personality theory which correspond roughly with the general systems principles we have identified. Open personality systems are permeable to the environment, exchanging matter and energy (criterion 1), maintaining internal equilibrium or homeostasis (2), risking disequilibrium to achieve enhancement and elaboration of internal order (3), and exhibiting "constant dependency of inner stability on the flow of environmental stimulation"(4). In his discussion of these characteristics, the author demonstrates their respective derivation from S-R behaviorism; the homeostatis theories of Freud and Cannon; the developmental theory of McDougall, Good, and Goldstein; Maslow's "self-actualization," Jung's "individuation," Bartlett and Cantril's "pursuit of meaning," and Erikson's "search for identity."[35]

What is fascinating about this paper is Allport's ambivalence regarding the fourth criterion, which we term hierarchy. Western culture, under the influence of Judeo-Christian religion, he argues, has staked its claim on the idea of an "integumented self," an independent personality residing within the skin, accountable in principle to God, but free and autonomous for all intents and purposes.

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[34]Ibid., p. 344. Kurt Goldstein's related work includes The Organism (New York: American Book Company, 1939), and "Functional Disturbances in Brain Damage," American Handbook of Psychiatry, vol. 1, Silvano Arieti, ed. (New York: Basis Books, 1959).

[35]Ibid., pp. 345-347.

Increasingly theorists such as Kurt Lewin, Martin Buber, and Gardner Murphy have challenged this view, suggesting that we overstress independence of persons. Sensory deprivation studies confirm the psychic need for contact with the outside world. Certain non-Western systems of thought, such as Shinto philosophy, conceive the self as a nested reality. "The individual does not stick out like a raw digit. He blends with nature and he blends with society. It is only the merger that can be profitably studied."[36] Field theories, social interactionism, role relations and situation theories, and Parsons' structural-functionalism all attempt to place the self in a larger dynamic context. But Allport views this as the chief difficulty in contemporary social science, and opts for what he calls a conservative position.

> It is the duty of psychology, I think, to study the person-system, meaning thereby the attitudes, abilities, traits, trends, motives, and pathologies of the individual -- his cognitive styles, his sentiments, and individual moral nature and their interrelations. The justification is twofold: (a) there is a persistent though changing person-system in time, clearly delimited by birth and death; (b) we are immediately aware of the functioning of this system; our knowledge of it, though imperfect, is direct, whereas our knowledge of all outside systems, including social systems, is deflected and often distorted by their necessary incorporation into our own apperceptions.[37]

In the end it is persons who observe and interpret systems, Allport proclaims, and not the other way around. The Western principle of the

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[36]Ibid., p. 347.

[37]Ibid.

integumented self must constitute finally the principle of integration whence psychology derives its mission.

Just as Bertalanffy's systems personalism points to a theory of symbolism and human values, so Allport holds that the integrated self encompasses specific core values which emerge as a person matures. Allport turns again to Asia for a model. The classical aims of life portrayed in the Hindu scriptures are pleasure, success, duty, and liberation. The first two of these are well represented in the research agendas of Western psychology: studies of reinforcement, tension reduction, power, status, and leadership may be readily found in the journals. Even the "duty motive" (if one may hazard such a category) has been partially investigated in studies of internalized punishment and the rise of "conscience" in children. Yet the fourth aim, the quest for a "grade of understanding -- for a philosophical or religious meaning — that will liberate [man] from pleasure, success, and duty" has eluded definition and research in mainstream Westerm psychology. Only in the existentialist "logotherapy" of the Viennese psychiatrist Victor Frankl does Allport find an echo of the self-transcending value of the Hindu moksha. Frankl places the sense of duty and the quest for meaning at the apex of his account of human personality.

> Frankl reached his position after a long and agonizing incarceration in Nazi concentration camps. With other prisoners he found himself stripped to naked existence. In such extremity what does a person need and want? Pleasure and success are out of the question. One wants to know the meaning of his suffering and to learn how as a responsible being he should

> acquit himself. Should he commit suicide? If so, why; if not, why not? The search for meaning becomes supreme.[38]

The systems principle of integration, by this reading, is most dramatically evidenced in the struggle not merely for existence, but for a comprehension of its context and its requirements. Frankl termed this struggle "Man's Search for Meaning," and by this title the celebrated account of his holocaust experiences is known.[39]

Victor Frankl (b. 1905) grew up in the post-World War I Vienna that was also home to Ludwig von Bertalanffy (b. 1901) and the Hungarian novelist and journalist, Arthur Koestler (b. 1906). Although these men were not closely associated during the years between the two world wars, each came to reject the reductionism of the older Viennese generation represented by Freud and the positivists Mach and Schlick. (Schlick sat on Bertalanffy's doctoral committee and challenged the young organicist to define "physics." Bertalanffy politely declined, inviting Schlick to try it himself. Somehow Bertalanffy passed the orals and received his degree.) Frankl, Bertalanffy, and Koestler eventually came independently to embrace the holistic and humanistic views of personality which would someday be identified as the systems perspective.

In 1967 Koestler invited Frankl, Bertalanffy, and a dozen other biologists and psychologists to a symposium at Alpbach in Switzerland.

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[38]Ibid., p. 346.

[39]Victor Frankl, Man's Search for Meaning (New York: Washington Square Press, 1963; first published 1959). Allport, a professor at Harvard University, provided the preface to this book and is credited with introducing Frankl's work in the United States.

With support from the Ford Foundation and publishers in New York and London, Koestler saw the conference as a way to encourage the anti-reductionist trends in the life sciences, and perhaps even to discern the outlines of a new paradigm. "There is a groping for a new synthesis, but also a strong feeling that it should not be a premature, abortive synthesis. Nothing would have been easier than to collect in this room a bunch of amiable cranks to concoct a New Philosophy."[40] Far from cranks, Koestler had gathered some of the eminent researchers of the day: Paul A. Weiss, C. H. Waddington, W. H. Thorpe, Paul D. MacLean, and Holger Hydén in biology and physiology; and Jerome S. Bruner, Jean Piaget, J. R. Smythies, Seymour S. Kety, and David McNeill in psychology and psychiatry. Bertalanffy, whose work was frequently cited by the others, spoke on "Chance or Law," while Frankl brought the conference to a close with his paper on "Reductionism and Nihilism." It is to Koestler's contribution, however, that we must now turn to advance the systems theory of personality.

Like many of his contemporaries, Koestler had been swept up in the ideological tides of the twenties and thirties. As a yound Zionist he ran off to Palestine to join a kibbutz, and then, returning to Europe, became a communist and ended up driving armed party members around Berlin. In 1932 he was arrested and condemned to death by Franco's fascists while covering the Spanish Civil War for a London newspaper. Suddenly finding himself with nothing else to do -- he was imprisoned

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[40]Arthur Koestler and J. R. Smythies, eds., Beyond Reductionism: New Perspectives in the Life Sciences (London: Hutchinson, 1969), p. 2.

for three weeks -- he began to ponder the dilemma of individual freedom. How can it be, he asked, that otherwise practical and rational individuals will sacrifice their reason, their liberty, and ultimately their lives for the experience of immersion in a movement or an idea which they take to be greater then they? Is not the power of abstract ideologies demonic at last? Years later these reflections led the journalist to renounce his communism and, following revelations of Stalin's atrocities, to write his first novel, the celebrated Darkness at Noon. From this time on Koestler devoted his energy to the problem of the individual and his relation to ideas, social and political forces, and the biological constraints which appear to dictate his destiny.[41]

The theory of the holon was Koestler's solution to the conundrum of human personality. Introduced in 1967 in his most important book, The Ghost in the Machine, Koestler's idea of the holon was presented at Alpbach as "an exercise in General Systems Theory -- which seems to be all the more appropriate as its founding father sits next to me...."[42] Indeed the holon is another way of speaking of a system, but a way in which the paradox of wholeness and partness, which is shared by all systems, is resolved. After a discussion of the dynamics of evolution and hierarchic order in theoretical biology, Koestler explains,

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[41]For an excellent account of Koestler's intellectual odyssey, see John A. Myles, Jr., "Retrospective: Arthur Koestler/Part One," Zygon 9 (1974): 339-351, and "Retrospective: Arthur Koestler/Part Two," Zygon 10 (1975): 191-211.

[42]Arthur Koestler, "Beyond Atomism and Holism -- The Concept of the Holon," in Koestler and Smythies, p. 192.

> A part, as we generally use the word, means something fragmentary and incomplete, which by itself would have no legitimate existence. One the other hand, there is a tendency among holists to use the word "whole" or "Gestalt" as something complete in itself which needs no further explanation. But wholes and parts in this absolute sense do not exist anywhere, either in the domain of living organisms or of social organizations. What we find are intermediary structures on a series of levels in ascending order of complexity, each of which has two faces looking in oppostie directions: the face turned towards the lower levels is that of an autonomous whole, the one turned upward that of a dependent part. I have. . .proposed the word "holon" for these Janus-faced sub-assemblies -- from the Greek holos -- whole, with the suffix on (cf. neutron, proton) suggesting a particle or part.[43]

To the notion of the holon Koesler added the systems principles of hierarchy and integration ("characteristics of open systems"), adaptation and emergence ("a dash of cybernetics"). The result was his model of the Self-Regulating Open Hierarchical Order, or as he called it later, the Holarchy.

Koestler develops the holon theory in a systematic canon of "fixed rules and flexible strategies." Drawing on considerable knowledge of modern research in many scientific areas, Koestler applies the holon idea to problems in embryology, neurophysiology, social relations, linguistics, learning theory, and cognitive psychology; "the canon represents the constraints imposed on any rule-goverened process or behavior." Like Bertalanffy, Koestler is inventive in illustrating his model, using metaphors from cybernetics ("triggers and scanners" in genetics and perception), botany ("arborization and reticulation" -- the branching-entwining relations of superimposed holons in nested structures), and daily life (the "mechanization of freedom" exercised

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[43]Ibid., p. 197.

in typing and driving a car). These principles are gathered in a systematic appendix of general properties which the author calls, in a playful reference to Wittgenstein's magnum opus, Tractatus Logico Hierarchicus.[44]

The central image of holon theory is the bi-perspectivism of the Greek deity, Janus. The holon faces down in its capacity as a whole, and up as a part of a larger totality. Koestler calls these aspects the self-assertive (SA) and integrative (INT) tendencies, and finds them manifested throughout the living world. Self-assertion entails the semi-autonomy of systems, Bertalanffy's primary activity or anamorphosis. At the physiological level, cells, muscles, nerves, and organs "have their intrinsic rhythm and pattern, often manifested spontaneously without external stimulation. . .[T]hey tend to persist in and assert their characteristic paths of activity." At the human level we encounter "the stubborness of instinct rituals, acquired habits, tribal traditions, and social customs" -- and the obsession neuroses, social deviancies, and political insurgencies which occur when self-assertive tendencies are unchecked by integration. Koestler suggests that the most fruiful application of holon theory may be in the area of individual and social psychology, especially in understanding the etiology of emotions and emotional disorders:

> There is a whole gamut of mental disorders in which some subordinate part of the mental hierarchy exerts its tyrannical

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[44]The "General Properties of Self-Regulating Open Hierarchic Order" first appeared in Arthur Koestler, The Ghost in the Machine (New York: Macmillan, 1967), and was appended to the Alpbach presentation (1969) and again to Koestler's last theoretical work, Janus: A Summing Up (1978).

> rule over the whole, from the insiduous domination of "repressed" complexes to the major psychoses, in which large chunks of the personality seem to have "split off" and lead a quasi-independent existence. Aberrations of the human mind are frequently due to the obsessional pursuit of some part-truth, treated as if it were the whole truth -- of a holon masquerading as a whole.[45]

The integrative, or as Koestler called it in an earlier work, the self-transcending tendency, is equally ubiquitous throughout the living world, "from the 'docility' of the embryonic tissues, through the symbiosis of organelles in the cell, to the various forms of cohesive bonds, from flock to insect state to tribe." In its ideal state, of course, the holon will exhibit a dynamic balance between self-assertive and integrative tendencies. At the very least a human person may be thought of as the apex of an organic hierarchy and the indispensable member of a social hierarchy. Such a position, as Bertalanffy suggested in his 1951 prospectus of systems psychology, is not without its dangers, however. Koestler concurs.

> The emotions derived from the integrative tendency have been largely neglected by contemporary psychology; one may call them the self-transcending or participatory type of emotions. They arise out of the human holon's need to be an integral part of some larger whole -- which may be a social group, a personal bond, a belief system, Nature of the anima mundi. The psychological processes through which this category of emotions operates are variously referred to as projection, identification, empathy, hypnotic rapport, devotion, love. It is one of the ironies of the human condition that both its glory and its predicament seem to derive not from the self-assertive but from the integrative potentials of the species. The glories of art and science, and the holocausts of history caused by misguided devotion, are both nurtured by the self-transcending emotions.[46]

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[45]Ibid., p. 208-209.

[46]Ibid., pp. 209-210.

Finally Koestler expresses the struggling forces within the self in terms of Freud's psychoanalytic categories of life and death: "In the present view, Eros is an offspring of the Integrative [tendency], destructive thanatos of the Self-Assertive tendency, and Janus the symbol of the polarity of these two irreducible properties of living matter — that coincidentia oppositorum which von Bertalanffy is so fond of quoting, and which is inherent in the open-ended hierarchies of life."[47]

With Koestler's conception of the role of the integrative tendency in human personality we acquire sufficient elements to fashion a theory of religious consciousness. In the previous chapter we argued, following Dumont, that religion has traditionally offered the symbolization of the totality within which man experiences himself a part. In the formulations of systems theologians Burhoe and Pannenberg, we saw that this conception of religion may be developed ontologically — the symbols reflect a world of being and becoming — or epistemologically — they reflect a world of meanings — which stretch infinitely beyond the human condition. Religious consciousness, by this reading, is expressed perfectly in terms of Koestler's integrative tendency: it is self-transcending and participatory, and it evokes the emotive-cognitve responses of projection, identification, empathy, hypnotic rapport, devotion, and love. Religious consciousness cannot exist without the balance of self-assertion, or the sense of individual personhood; flights of

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[47]Ibid., p. 210.

mystical identification cannot last forever. Religious teaching has enshrined this psychological fact: the love of God must be accompanied by the service of God, faith must go hand-in-hand with works, wisdom with compassion. Koestler's shorthand allows us, playfully, to suggest that the fullest human expression of the balance of self-assertion (SA) and integration (INT) is the SAINT, an exemplar of the truth of the holon, which is half-whole, half-part in the stratified, sacred order of existence.

Systems theorists, as such, have not provided us with a theory or a philosophy of religion -- this must be acknowledged. Bertalanffy, Allport, Frankl, and Koester were, for the most part, doughty humanists who preferred to seek the basis for man's liberation within the bounds of his individual life. Koestler was profoundly suspicious (and later in life, paranoid) about the control which integrative ideologies, including religious traditions, exercised upon otherwise rational beings. Herd psychology, as documented by the French psychologist Le Bon and exemplified numbingly in the events of the first half of our century, was both backdrop and anathema to the systems theorists: this was Bertalanffy's "robotomorphism" gone wild. Allport, with Maslow and the humanistic psychology movement in general, was curious about Asian religions and avid about the spiritual resources of the self; but these interests did not result in a theory or psychology of religion per se. And Victor Frankl's contribution remains the search for meaning, the therapeutic process in the face of life's disasters, and the faith that such meanings will be available to each soul at each moment of crisis.

The source or warrant of meaning and its miraculous discovery are not approached in logotherapy.

At last, however, we must credit the systems theorists with an approach to personhood, or to personality theory, which invites and is genuinely hospitable to a theory of religious consciousness. Bertalanffy writes,

> The realization of what appears to be specifically human is more than "self-realization" of the human individual. Rather it is self-transcendence -- that is, realization of values going beyond the individual. This is the definition of every culture, from the most primitive taboos to the highest flights of art, science, and mystical religion.[48]

For Bertalanffy the self-transcending quality of human existence is expressed specifically in the formulation of human values, which are grounded not in biological or survival needs -- the facts of music and martyrdom belie such a foundation -- nor in humanistic needs such as the self-actualization or self-expression of the humanistic psychologists; these are belied by the historical legacy of human altruism, self-denial, and sociality. Nor could human values be derived from abstract ideas or categorical imperatives floating loose in the rationalist's heaven: such a source must be rejected for the metaphysical illusion it is. Thus naturalistic, humanistic, and ontological theories of value must be abandoned for what Bertalanffy terms a "symbolistic theory of values." Man is a teller of tales and a fashioner of symbolic universes. Many animals are sleeker, stronger,

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[48]Davidson, p. 143. Bertalanffy's remarks were made at a conference on human values at the State University of New York at Geneseo in 1970.

and faster. But man is adapted to his niche in the cosmos by his manipulation of words, ideas, conceptions, and dreams. These are freely created and posited; sometimes they refer to perceptual features of the experienced world, but at other times they refer to themselves -- to other words, symbols, conceptions, and dreams. Language, and the consciousness which it makes possible, is reflexive, turning back upon itself and building level upon level of meta-meanings until a universe of symbols, only partly connected to the universe of perceptions, has been constructed. Such a universe is an emergent reality in nature, Bertalanffy claims, but it is more as well:

> The mystic says essentially the same when claiming evolution to be God becoming aware of Himself. This is old mystical wisdom; Teilhard de Chardin has only given it a modern, and not necessarily the best, expression. Only then, evolution and history are more than a tale told by an idiot, full of sound and fury, signifying nothing.[49]

In his Introduction to Systems Philosophy, Ervin Laszlo strikes many of the same chords. In his chapter on "Consciousness: Framework for a Philosophy of Mind," Laszlo follows Karl Deutsch in identifying consciousness with the internal feedbacks, secondary messages, or labels by which the mind monitors its own activity. Consciousness is, by definition, self-consciousness: man knows, and he knows that he knows. Such a conception must be developed in terms of genetic continuity and logical irreducibility, Laszlo argues, lest it fall prey to Cartesian dualism. Consciousness first developed as a means of congnizing the environment and structuring behavior for survival.

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[49]Ludwig von Bertalanffy, Robots, Men and Minds: Psychology in the Modern World (New York: George Braziller, 1967), p. 46.

Without this connection, mind becomes unmoored from its origins, floating free like Descartes' res cogitans. But as the capacity to learn evolves apace, the learning comes to include a phase of self-evaluation, "reflection," or "reflective consciousness." "In the contemporary view these terms stand for the capacity to receive information from, and to evaluate, one's own operational programs, such as codes, gestalts, principles and values."[50] Once this occurs, many "degrees of reflexiveness" become possible: "while the scientist investigates objects directly, the philosopher investigates the scientist's investigation of objects. Such a 'second degree reflection' (or 'building models of models') is a genuine characteristic of philosophy of science. . . ."[51] Likewise, all "philosophies of. . .," such as aesthetics, legal and political philosophy, and the philosophy of religion, are expressions of second-order reflection or meta-inquiry. In spite of their derivation from first-order experiences, however, these levels of reflection are logically irreducible to them: "Both evolve into permanent and autonomous cognitive activities, pursuing their own specific objectives rather than subserving those of more empirical fields."[52]

Religious consciousness, Laszlo surmises, may be that form of reflection which occurs "in an entirely 'pure' form, with all connections to empirical cognitions fully severed." Mystical states,

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[50]Laszlo, Introduction to Systems Philosophy, p. 191.

[51]Ibid., p. 193.

[52]Ibid., p. 194.

oceanic awareness, and meditative cognitions foster "an intense feeling of knowing, but a total denial of object." Nevertheless, "this is not to exclude the possibility that the mystical experience could grasp, in some way as yet not understood, some basic truth about the empirical world -- for instance, the unity of all natural entities, from droplets of water, throughout blades of grass, to human beings."[53] In the end, the criteria of genetic continuity and logical irreducibility must be said to apply, a fortiori, to religious consciousness. If such consciousness is oriented by symbols of the wholeness or totality of existence -- what Bertocci has called the Environment with a capital "E" -- then its continuity with levels of consciousness oriented by symbols of more immediate, nested environments of man, including his bodily and social environments, must be acknowledged in principle. On the other hand, the structures of religious consciouness may not be reduced to those of the world.

> In this account, the remarkable varieties of human psychological capacities receive a non-reductionist and yet non-dualist explanation. The noblest fruits of our brain-mind are seen as functional products of a self-stabilizing and self-organizing system, attaining autonomy and launching the individual on a wide variety of cognitive and behavioral pathways, over and above those required for his biological existence.[54]

Religious consciousness, then, may be defined as that mode of human reflection which is oriented by evocative symbols of the totality of existence. Such a definition is in harmony with the systems-

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[53]Ibid., p. 195n.

[54]Ibid., p. 156.

theoretical definitions of religion we owe to Bellah and Geertz. If religion is the "symbol system which serves to evoke that totality which includes subject and object and provides the context in which life and action finally have meaning" (Bellah), and which "acts to establish powerful, pervasive, and long-lasting moods and motivations in men by formulating conceptions of a general order of existence" (Geertz), then, as each of our informants has indicated, religious consciousness must be the level or mode of reflection which gives rise to and is in return shaped by these special symbols. Such a definition, along with the focus and breadth it imparts to the study of religion and the formulation of theological conceptions, must be taken as the paramount contribution of systems theory to religious studies.

III

At the outset of this dissertation we took as our point of departure the sense of intellectual disarray, even malaise, which many scholars in the field of religious studies have reported over the past twenty or thirty years. Paradoxically, at the very time when religious studies has achieved a measure of institutuional and professional security — there are approximately 900 college and university departments of religion in the United States, and numerous publishers and professional societies to support them — prominent representatives of the field have regularly acknowledged their lack of consensus in matters of theory and method and their apprehension at the dramatic

advances (and funding opportunities) enjoyed by their colleagues in the natural and social sciences. The problem in religious studies, we noted, has been manifested in many ways, not the least in chronic debate over the definition of religion, the role of the social sciences, the problem of reductionism, and the relation of the field to other broad areas of academic inquiry.

In retrospect we recognize that much of the uncertainty in religion has derived from an unrealistic expectation that a "science of religion," Religionswissenschaft, as Max Müller and his early disciples chose to call it, would emerge with its own distinctive methodology and fund of theoretical principles. During the nineteen seventies this hope began to fade. Nearly every journal in the field carried an ominous discussion of the problem. The titles were identical or nearly so -- "Is a Science of Religion Possible?" (Penner and Yonan, 1972), "Is a Science of Religion Possible?" (Wiebe, 1978), "Is Religious Studies Possible?" (Dougherty, 1981)[55] -- and the findings, while varied, were in agreement on one major point: the study of religion is an interdisciplinary enterprise which cannot afford to exclude contributions from any quarter. Certainly this state of affairs derives from the complexity of the phenomenon of religion itself. As Ninian Smart has commented,

> [T]he study of religions is in principle multi-dimensional -- dealing not just with doctrines and myths, but also with

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[55]Hans H. Penner and Edward A. Yonan, "Is a Science of Religion Possible?" Journal of Religion 52 (1972): 107-133; Donald Wiebe, "Is a Science of Religion Possible?" Studies in Religion 7 (1978): 5-17; Donald L. Dougherty, "Is Religious Studies Possible?" Religious Studies 17 (1981): 295-309.

> rituals, experiences, institutions, ethics, iconography and so on. Maybe a major focus will be on texts, though this has been an exaggerated emphasis in the past. A consequence of all this is the need to study the dimensions of religion via various disciplines -- history, philology, sociology, anthropology, history of ideas, art history, psychology of religion, and so on. Thus the study of religion is in principle multi-disciplinary.[56]

Others have recently pointed out that religious studies need not apologize for its comparitivism, its polymethodology, or its multidimensionality, for these have been its stock-in-trade and its unique contribution all along; only now are many other fields of the humanities and the social sciences beginning to catch up.[57]

Some observers have spoken of a "new wave" in the study of religion which seeks ways to mediate the "verificationist bent in the analytic philosophy of religion and the 'blind faith' acceptance of the believers under scrutiny."[58] This may be seen as part of a much broader trend in the social sciences today, led by scholars such as Robert Bellah and Clifford Geertz, which has been called the "return to interpretation."

> A growing number of scholars in anthropology, economics, history, political science, and sociology are questioning just how scientific the social sciences can and should be. They are using words such as "interpretation," "hermeneutics," and "rhetoric" in calling for a new mode of inquiry that draws as

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[56]Ninian Smart, excerpt from an unpublished paper, cited by Dougherty, p. 297.

[57]Robert C. Neville, "The Humanities and Relgious Studies," address delivered at Boston University on January 22, 1986.

[58]Dougherty, p. 296.

> much from the humanities as from the natural sciences, if not more.[59]

Examples of this trend are the publication of Geertz's essay, "Blurred Genres: The Refiguration of Social Thought" in The American Scholar (1980)[60] and the mixed methodology -- including survey techniques, intensive interviews, participant observation, ethical and philosophical reflection, and team authorship -- which produced the major study, Habits of the Heart: Individualism and Commitment in American Life (1985) by Bellah and four colleagues.[61] Also implicit in the return to interpretation is a growing iconoclasm in the philosophy of science: "The challenge to scientific positivism is not just occurring in the social sciences," according to the Harvard sociologist, Daniel Bell, "It is part of a glacial shift in modern thought, away from older certitudes, and even from the very quest for certainty." As we saw in the case of Geertz's notion of "local knowledge," Bell reports an emphatic move toward methodological and ontological pluralism.

> There is an abandonment of general, grand theories of society, revolution, or change, of the kind produced by previous generations of scholars like Talcott Parsons. There is a sense that

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[59]Karen J. Winkler, "Questioning the Science in Social Science, Scholars Signal a 'Turn to Interpretation,'" Chronicle of Higher Education, June 26, 1985, p. 5.

[60]Clifford Geertz, "Blurred Genres: The Refiguration of Social Thought," The American Scholar 29 (1980); reprinted in Geertz, Local Knowledge, pp. 19-35.

[61]Robert N. Bellah, Richard Madsen, William S. Sullivan, Ann Swidler, and Steven M. Tipton, Habits of the Heart: Individualism and Commitment in American Life (Berkeley: University of California Press, 1985).

> no single interpretation or explanation can be complete; particularism, historical grounding are important.[62]

For religious studies these trends offer a mixed blessing. On the one hand, they would appear to vindicate the eclecticism which has been the bane -- and yet the only fruitful avenue -- of religious studies for a hundred years. This undoubtedly comes as a relief to those beleaguered scholars who have attempted to defend their methodological polygamy over the years. Wendy Doniger O'Flaherty springs to mind.

> [S]ince myths are about so many things -- about life and art and the universe and the imagination -- almost everything in the realms of the natural sciences, humanities, and social sciences is relevant to the study of myths. . . .This is the toolbox approach to myth: carry about with you as wide a range of tools as possible, and reach for the right one at the right time.[63]

Corollaries to this presciption include the willingness to disagree with the native informant ("have recourse to another level of meaning that may be blocked and unconscious in the informant"), fearlessness in the face of reductionism ("any analysis will reduce the myth in some way"), and caution in the use of theory ("theory is a sauce that should enhance the flavor of the natural ingredients, not overwhelm them").[64] O'Flaherty defends the bricolage or "junk pile" method by noting its similarity to Hindu mythmaking itself: "if one behaves correctly, it does not matter what one believes." Correct behavior for the aspiring

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[62]Winkler, p. 6.

[63]Wendy Doniger O'Flaherty, Women, Androgynes, and Other Mythical Beasts (Chicago: University of Chicago Press, 1980), pp. 4, 5.

[64]Ibid., pp. 8, 10.

historian of religion is correpondingly unmethodical: "he reads an enormous amount, remembers it all, and is very, very bright."[65]

On the other hand, the recent swing to pluralism and eclecticism in the social sciences poses distinct dangers for religious studies. Years ago the historian and sociologist of religion, Joachim Wach, offered a series of lectures in India which later appeared as The Comparative Study of Religions (1958). In tracing the early stages of comparative religious studies, he noted the strong speculative bent which united its pioneers. Max Müller's era was drawn to the question, What is religion and how is it related to mythology and language? After the publication of the Sacred Books of the East (1897), interest turned to the origins and development of religions. After World War I, with phenomenology, historicism, and process thought on the rise, the interest shifted again. Now scholars in religion shared "the desire to overcome the disadvantages of exaggerated specialization and departmentalization by means of an integrated outlook, the desire to penetrate deeper into the nature of religious experience, and the exploration of questions of an epistemological and ultimately metaphysical character."[66] Wach himself absorbed these values as a graduate student in Germany (he attended lectures of Husserl, Weber, and Otto) and exemplified them in his writing for thirty years.

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[65]Ibid., pp. 7, 11.

[66]Joachim Wach, The Comparative Study of Religions, Edited by Joseph M. Kitagowa (New York: Columbia University Press, 1958), p. 5.

It is this interest in an integrated outlook, one that overcomes the disadvantages of specialization, which seeks to penetrate deeply into the nature of religious experience and to explore problems of epistemological and metaphysical importance that are lost in the current rush to "local knowledge." Without these preoccupations, certain other interests appear. O'Flaherty and Geertz, for example, are extraordinary literary stylists; both relish the use of language as a performative act. Yet there is a sense in such stylistic play that the truth is what one makes of it, that meanings and patterns in reality are made up by the "very bright," and that the world of cultural shapes and movements, not to mention the universe of space, time, and energy, are but figments of the humanist imagination.

Robert Bellah's proposal of a cybernetic systems approach to religion in 1968 was an attempt to find middle ground between what he saw as the crypto-fideism of phenomenology and the methodological skepticism of social science. Theory-construction is necessary to bring order to -- and to <u>discover</u> order in -- the dense forest of data which religious studies has become. At the same time theory-construction must respect and attempt to explain the fact of "nonrational" phenomena at the heart of religious experience. By providing a theoretical framework in which the results of both intellectual traditions may be integrated, Bellah believed that religious studies might move beyond its current state of paralysis. By interpreting the humanist's concerns with meaning and experience in a context which encompasses the scientist's concern with patterns, order,

and relationship, he concluded that the study of religion might assume its rightful place among the academic disciplines.

Despite the passage of twenty years and the abandonment of the language of the sixties (including Deutsch's cybernetics and Parsons' human action rhetoric), Bellah has remained at heart a systems thinker. This means that his commitment to methodological holism, the belief that there is a pattern which transcends particular instances and disciplines, has remained intact.

> Being concerned with the whole does not mean a mere adding together of facts from the various specialized disciplines. Such facts become relevant only when interpreted in terms of a frame of reference that can encompass them and give form and shape to a conception of the whole. It is not likely that such a conception will arise from research that is simply interdisciplinary in the usual sense of the word -- that is, involving the cooperation of several disciplinary specialists. For knowledge of society as a whole involves not merely the acquisition of useful insights from neighboring disciplines but transcending disciplinary boundaries altogether.[67]

For Bellah and his colleagues, the transcending of disciplinary boundaries, particularly those separating the humanities and the social sciences, involves regarding social science as a kind of "public philosophy. . .a tradition or set of traditions, deeply rooted in the philosophical and humanist (and, to more than a small extent, the religious) history of the West."[68]

For general systems theory,as we have interpreted it in this dissertation, the transcending of disciplinary boundaries involves their thematization by the four systems principles we have explored.

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[67]Bellah, et. al., p. 300,

[68]Ibid., p. 301.

Each of these principles -- Integration, Adaptation, Emergence, and Hierarchy -- has been interpreted as an "invariant" characteristic of open systems at all levels of the natural-cognitive hierarchy. Each of these principles may be applied, with valuable results, we have argued, to the resolution of methodological problems which bedevil the social sciences, the humanities, and religious studies: personalism, functionalism, historicism, and reductionism.

Each of the systems principles may be seen as a theoretical foundation or context for certain specialties which constitute the interdisciplinary field of religious studies and theology: phenomenology and hermeneutics (Integration), the social sciences as they are applied to religion (Adaptation), the comparative history of religions (Emergence), and the philosophy of religion and systematic theology (Hierarchy). Finally, we must warn that each of the systems principles -- and by implication, each of the respective subdisciplines of religious studies and theology -- is susceptible to distortion by overemphasis. The consequences of reifying or isolating any of these principles and their respective approaches to religion are as damaging to religious studies as a whole as were the methodological problems which they proposed to resolve at the outset. Some of the adverse consequences may be expressed in a final set of isms as follows: solipsism and idealism (Integration); behaviorism and determinism (Adaptation); optimism and utopianism (Emergence), and totalitarianism and mysticism (Hierarchy). These relationships are summarized in tabular form on the following page.

In the structure of our study we reserved discussion of the principle of integration for the last because of its importance in resolving the questions of personalism and religious consciousness. We found that systems thinkers were in agreement about the central role of language and other symbols for religious consciousness, and that they also concurred in asserting the complementarity of subjective and objective approaches to the study of human phenomena. Such a consensus permits us to conclude that a systems approach to the phenomenology and hermeneutics of religion is possible in theory. (We have seen in Joanna Macy's analysis how it might work in practice.)

Systems Principles	Methodological Challenges	Excessive Emphasis	Religious Studies
INTEGRATION	Personalism	Solipsism Idealism	Phenomenology Hermeneutics
ADAPTATION	Functionalism	Behaviorism Determinism	Social Theories of Religion
EMERGENCE	Historicism	Optimism Utopianism	History of Religion
HIERARCHY	Reductionism	Totalitarianism Mysticism	Philosophy of Religion Theology

7.1 Contributions of Systems Principles to Religious Studies

In his constructive analysis of methodological options for the human sciences, Donald Polkinghorne provides an example of the reciprocal relationship between phenomenological and systems approaches. A goal of the human sciences is to grasp the subjective meanings and motives of actors in concrete situations. At one end of the continuum this may involve face-to-face dialogue with one's contemporaries; interpersonal sensitivity and complex communicative skills will be required. But as one moves away from personal encounter, the investigation increasingly depends upon the use of abstractive ideal types of the kind of which Max Weber spoke: social roles, personality types, historical and cultural generalizations, and so on. A receding set of categories will be required to interpret the meanings and motives of increasingly distant subjects: "my absent friend, his brother whom he has described to me, the professor whose books I have read, the postal clerk, the Canadian Parliament, abstract entities like Canada itself, the rules of English grammar, or the basic principles of jurisprudence."[69] Phenomenological hermeneutics in social science thus involves the application of "a complex of hierarchically arranged concepts from direct subjective knowing to completely objective knowing."[70]

Such an epistemological hierarchy will immediately recall the systems theory of consciousness. In this view it is critical to

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[69]Donald Polkinghorne, Methodology for the Human Sciences: Systems of Inquiry (Albany, NY: State University of New York Press, 1983), p. 209.

[70]Ibid., p. 210.

recognize that the ideal types are not mere imaginative constructions with no grounding in common experience. Consciousness is accessible directly to itself, but to others only by its embodiments. Like meanings and motives, the embodiments of all experience may be studied at close range ("You seem pleased") or from great distances ("and he was with the wild beasts, and the angels ministered to him"). Without the balance of inner and outer testimonies, emic and etic methods, the principle of integration becomes a formula for idealism and solipsism, on the one hand, or nomothetic generalism on the other. The hermeneutic circle, Dilthey's notion of the interpretive movement from the specific to the general and back again, becomes a vicious circle, or as Bertalanffy would term it, a closed system, without the ongoing correction of first- and third-person accounts. The principle of integration means that the subjective worlds of India and of the Australian aboriginals must be approached on their own terms, but also seen as the center of myriad receding contexts, like ripples spreading from a pebble in the pond.

The relationship between the cybernetic principle of Adaptation and the social scientific approaches to religion (psychology, sociology, and anthropology) requires perhaps the least reiteration at this point in our analysis. The history of the academic study of religion, the concomitant growth of functionalist reasoning in the social sciences, and the renewal of functionalist methodology in the nineteen forties by Robert K. Merton and Norbert Weiner has been treated in some detail. All that remains to be said on this account is

that the behaviorism, biological reductionism, and "robot psychology" against which Bertalanffy and his followers struggled so mightily, must be seen as the hypertrophy of the principle of adaptation. Without the simultaneous noble truth of emergence, pure adaptation becomes a formula for stasis and death. (It has been said that if biological adaptation were the final goal of life, then green algae would be the supreme masterpiece of nature.) In the early years of cybernetics the logic of negative feedback was better understood than that of positive feedback; every house has a thermostat, few have music synthesizers with random signal generators for finding new harmonic relationships. Self-stabilization is as important as self-organization, whereby deviations are amplified until new integration is achieved at a higher level. Talcott Parsons' sociology of the fifties was perceived to be mired in a homeostatic conception of human action, which was politically conservative and psychologically naive. During the sixties and seventies Parsons and his collaborators worked hard to emphasize the transformative potentials of structural-functional action theory. Bellah's attention to the evolution of religious institutions and belief systems may be seen as part of this corrective.

The principle of emergence is thus suited to the work of the comparative history of religions. Historicism, the problem of universals caught in flux, may be resolved by reference to the extremely high-level principles represented by systems theory. The history of religions is an account of the evolution of holistic symbol systems in relation to concrete human settings. Ideographic and

nomothetic ideals must be seen, as Bertalanffy suggested, as reciprocal functions. Local knowledge may be all that appears in many instances: the customs and attitudes of a people remain opaque to analysis. But elsewhere the phenomena will open out to vistas of connection. Max Müller taught that in the history of religions, "To know one is to know none." To study religions under the banner of emergence is to accept the plurality and the ephemerality of revelations. The optimism and utopianism which may accompany the study of history -- especially when seen as a brand of Heilsgeschichte -- must be resisted. The myth of progress and its garish child, religious triumphalism, must be understood as the reification of the principle of emergence, along a particular party-line. Systems theory is not incompatible with eschatological longings, but its logic may not be recruited in support of particular historical vectors or anticipated outcomes. Utopianism, as much as anarchy, is foiled by the emergence of novelty in the world.

IV

The principle of hierarchy, at last, provides the broadest conceptual foundation for systems theory in religious studies. This must be understood in several ways. First, hierarchy is structurally related to the principle of integration (as Koestler's holon conception reveals), and to the dialectics of adaptation and emergence (as Malinowski's hierarchy of needs and Parsons' pattern-variable hierarchy show); more than the other principles, that of hierarchy entails a set

of relations, contexts, connections, patterns. Thus, hierarchy provides the most vivid image of the world of systems. Like the model of the DNA molecule, the image of hierarchical structure is a potent algorithm for organizing great quantities of knowledge and for solving persistent problems in nature. As Kenneth Boulding said years ago, systems hierarchy is the skeleton of science.

But the principle of hierarchy is more than inert structure. Unlike the Great Chain of Being, the systems hierarchy appears to have a life of its own. That is, it not only models a living reality -- the universe of systems -- but is acts upon human consciousness in a more or less predictable way. Louis Dumont postulated a unique relationship between hierarchical patterning and religious consciousness. Although hierarchy may or may not exist in non-religious contexts, such as philosophical reflection, it is indispensable to religion. In the majority of societies it has been religion which provided the conception of wholeness to which hierarchy points and to which all partial existence is related. Thus for most people, hierarchy recalls or evokes religious feelings and emotions. There is, to use Rudolph Otto's venerable term, a "numinous" quality about the ideas of levels, stages, degrees, and so on.

Throughout our study we have encountered intimations of a quasi-religious aura adhering to the systems outlook. Despite professions of agnostic or atheistic intention -- "Platonic ideas, or Whiteheadian eternal objects, are rejected as uncalled for; likewise the notions of

God or any transcendent Deity" (Laszlo)[71] -- systems theorists have regularly used religious language to express aspects of their thought. From Laszlo's "reverence for natural systems" to the final level of Boulding's skeleton of science ("transcendental systems"), such expressions have alternately reflected a sense of the limits of scientific understanding, or at other times, direct apprehension of sacred reality. Bertalanffy wrote two scholarly studies on the fifteenth century mystic, Nicholas Krebs, better known as Cardinal Nicholas of Cusa.[72] He was drawn to Cusanus' view that from every part of the universe the whole shines forth ("Ex omnibus partibus relucet totum"), and he was not unwilling to express this mysticism in his own terms.

> From this point of view, the universe is God's image. Nicholas approves, therefore, the dictum of the Greek philosopher Anaxagoras: "Everything is in everything" any part of the world contains, in a limited way, the infinite whole. Any part is, as it were, an organ of the universe, composing with others a complete organism. Reminiscent of Heraclitus: God, as the animating principle of an organismic world, is compared to fire, so that all becoming is due to modifications of fire, or, as we would say today, transformations of energy. This idea, which appears so modern to us, is amplified in the statement that it is number, measure, and weight that hold together the architecture of the universe.[73]

Bertalanffy was also deeply influenced by Cusanus' notion of the coincidentia oppositorum; his own concepts of perspectivism, the

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[71]Laszlo, Introduction to Systems Philosophy, p. 294.

[72]Ludwig von Bertalanffy, Nikolaus von Kues (Munich: Georg Muller, 1928); "Un Cardinale Germanico (Nicolaus Cusanus)," Nuova Antologia 265 (1929): 536-539.

[73]Ludwig von Bertalanffy, cited by Davidson (source unspecified), p. 210.

relativity of categories, equifinality, and continuous models for resolving ontological and methodological dichotomies (mind-body, nomothetic-ideographic) reflect this influence. Bertalanffy's doctoral dissertation was on the nineteenth century physicist Gustav Fechner, who held the panentheist view that all aspects of the universe may be viewed as parts of the body of God.

Critics of general systems theory have been uncomfortable with its apparent susceptibility to mystical interpretations. Lilienfeld questioned the "philosophical, societal, and even religious significance" which systems theorists attach to their findings, and Mario Bunge warned directly against hierarchy theory as a covert form of supernaturalism. Peter Bertocci sees a connection between systems theories and mysticism and questions the faithfulness of such accounts of the human person.[74] Manfred Stanley writes of the theological abuses of the cybernetic-systems outlook (specifically in the cases of Karl Deutsch and Herbert W. Richardson), and asks, "Can it be that the ultimate destination of cybernetic theology is the Oriental mystical vision of unity?"[75]

Most observers of the debate concerning the future of religious studies will agree with Ninian Smart that theological dogmatism and scientific reductionism pose the twin dangers to religious studies methodology. From its origins, the academic study of religion has tried to separate itself from all dogma, that of the laboratory as well

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[74]Bertocci, pp. 371-372.

[75]Stanley, p. 171.

as that of the church; and increasingly the crypto-theological and existentialist hermeneutics of phenomenologists such as Otto and Eliade have come to be seen as another kind of reductionism, "hieromorphic reductionism," the indiscriminate imposition of favored religious categories upon the given structures of experience. At the same time, however, methodologists have gradually, sometimes grudgingly, accepted the implications of neo-Kantian or "post-modernist" epistemology, to the effect that all knowing is a dialectical process informed by the structures of the knower as well as those of the known. The phenomenologists' assertion of the researcher's subjective contributions to religious understanding ("intuition," "empathy," "creative hermeneutics") cannot be dismissed, by this reading -- as long as the results are honestly derived, with due corrections for individual and cultural biases and ample provision for the ambiguity and ephemerality of meanings-in-context.

For these reasons Smart and many others have come to the conclusion that a "methodological agnosticism" must leave room for the "transcendent significance" of religious phenomena.[76] Stated boldly by Friedrich Heiler, this means that "any study of religion is, in the last analysis, theology, to the extent that it does not concern itself with psychological and historical phenomena only, but also with the

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[76]Ninian Smart, The Phenomenon of Religion (London: Macmillan, 1972), cited by Wiebe, p. 14. Wiebe develops this position with reference to a broad sampling of current scholarly opinion.

experience of transcendental realities."[77] We recall that Pannenberg arrived at the same conclusion, placing the theological task within the context of religious studies and speaking of a "theology of the history of religions" and a "critical theology of religion."

The systems principle of hierarchy makes such an association possible on theoretical and methodological grounds. Because hierarchical modeling of the world is structurally isomorphic to religious consciousness itself, it predisposes the researcher to respect or "resonate to" the attitudes and conceptions of men and women of faith, whether or not the researcher counts himself or herself among them. We have argued that hierarchy theory is no more compatible with Eastern than with Western modes of religious consciousness, and thus the charge of covert monism is no more compelling than that of covert theism; both forms of religious apprehension may be encompassed in the universe which systems theory models. The philosophy of religion is the critical investigation of truth claims implicit in religious symbolization. It, too, must operate within some theoretical and methodological context. The systems philosophy of Ervin Laszlo, founded on a hierarchical metaphysic of natural-cognitive systems, represents one approach to the adumbration of such a context.

Totalitarianism, understood in either its ontological or political expressions, represents the utter subordination of all parts to the

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[77]Friedrich Heiler, The Manifestation and Essence of Religion, reprinted in part under the title "The Scholarly Study of Religion," in Classical Approaches to the Study of Religion, ed. Jacques Waardenburg, Vol. 1 (The Hague: Mouton, 1973), p. 474; cited by Wiebe, p. 14.

reality -- or "will" -- of a Whole. Mysticism, understood as a pure type of religious consciousness, represents the fusion or loss of persons -- as parts -- in the reality of a Whole. Neither totalitarianism nor mysticism is supportable as the "ideology" of general systems theory, as some critics have claimed; rather, both tendencies may be explained and understood in systems terms, as may a great number of aberrations, imbalances, and abnormalities in nature. Systems hierarchy consistently interprets the natural-cognitive world as a dialectic between parts and wholes. As James Huchingson writes in his imaginative essay, "The World as God's Body: A Systems View,"

> God assumes a context for himself. Before he attends to any specific element of his world-body, God, being all-inclusive, is the one without the other. With the distress or defection of a part, however, he develops a context. His context is just that part of him expressing itself apart from him. He must reckon with it and it must reckon with him in a common, although certainly nonsymmetrical, context-dependent fashion. It may be that God the supreme One needs his own other and therefore divides in order to realize himself. Systems philosophy provides ample evidence for this dynamic of coactivity. Adjustment through feedback occurs continuously in coupled, hierarchical systems. The result is one of ever greater emergent complexity and relevant differentiation. Indeed, each of us is a coupled system with ourself by virtue of reflexive self-awareness.[78]

This is not the view of totalitarianism or of mysticism, but of a dependent co-origination, as the Buddhists say, or of a relational metaphysic, as Harold H. Oliver calls it.

Reflexive self-awareness in systems theory is the result of the co-activity of all four systems principles. Finite open systems, manifesting integration, hierarchy, adaptation, and emergence, and

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[78]James E. Huchingson, "The World as God's Body: A Systems View," Journal of the American Academy of Religion 48 (1980): 341.

bodied forth as persons, societies, humanity, and all of its symbolic universes, are reflexively self-aware, and internally related in time and space. Religions have called this a spiritual conception of reality -- the "dharma realm" or the "kingdom of heaven" -- because it is experienced as a deep sense of the presence of Something or Someone that is "there" along with each one of us. William James wrote, "It is as if there were in the human consciousness a sense of reality, a feeling of objective presence, a perception of what we call 'something there,' more deep and more general than any of the special and particular 'senses.'. . ."[79] It is not the task of religious studies to induce or to dwell within such a reflexive self-awareness, but rather to describe and analyze its origins, settings, modes, and effects. On the other hand, it cannot perform these duties unless it has both intuitive and theoretical understanding of the reality of such an awareness.

The contribution of systems theory in religious studies, both in its experiments and applications to date, and in its heuristic potential for future development, lies in its unique ability to integrate the findings of many disciplines, to respect the worlds of meaning which they purvey, and to place all of this in a non-dogmatic, but irreducible Context that is the source of religious experience.

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[79]William James, Varieties of Religious Experience: A Study of Human Nature (New York: Collier Books, 1961); first published in 1902), p. 62.

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