

Introduction

SYMPOSIUM ON RITUAL IN HUMAN ADAPTATION

By Robert L. Moore, Ralph Wendell Burhoe, and Philip J. Hefner

THE CONTEXT

The history and vicissitudes of the interpretations of ritual by both religionists and scientists clearly is one of the most fascinating stories in the annals of Western science and religion. Indeed, a rather formidable argument could be advanced that the history of secularization in Western culture can be read as a history of the decline and devaluing of ritual process. Depreciation of seemingly irrational ritual practices of course formed one important cornerstone of the cultural transformation which found expression in both Renaissance and Reformation. The movement toward emphasis on autonomy as a psychocultural value, later to come to maturity in the Enlightenment, led to an increasing de-emphasis of the ways in which consciousness is embedded in a biosocial matrix. The archaisms of ritual behavior in both religion and magic were correctly perceived as carrying with them assumptions about human nature that were deeply at odds with the embryonic "modern" view of the nature of human selfhood, which was gathering strength among cultural and scientific elites. Ritual behaviors, first dismissed as "popery," came to be viewed as mere superstition which human progress would erase once the obscurantist forces of religion could be forced to release their hold on the human spirit.

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As we now approach the twenty-first century, it has become increasingly obvious to many scholars that any serious dialogue between science and religion must include a careful re-examination of ritual processes as a key topic. The easy dismissal of human ritual behaviors as regressive or pathological, which has been so characteristic of the modern mind, has of late come into question. Evidence from sources varying from neurophysiology to cultural anthropology, from socio-biology to depth psychology, indicates that our views of the nature and role of ritual in human culture and personality are undergoing fundamental reassessment. This multidisciplinary reassessment of the significance of ritual for human adaptation is of great importance for scholars interested in the relationship between science and religion.

The Symposium on Ritual in Human Adaptation, which is the focus of this issue of *Zygon*, was planned to provide an opportunity for an interdisciplinary update on the current state of scientific and religious perspectives on ritual. Sponsored by the Institute on Religion in an Age of Science in association with the Center for Advanced Study in Religion and Science, the Chicago Theological Seminary, the Disciples of Christ Divinity House, and the Lutheran School of Theology at Chicago, the symposium was planned by a committee cochaired by Philip J. Hefner and Robert L. Moore and including as members Ralph Wendell Burhoe and two Lutheran School of Theology graduate students in science and religion, David R. Breed and William S. Falla. Taking place on 12-14 November 1982 in Hyde Park, Chicago, the symposium attracted fifty-five scholars and other interested observers.

The particular impetus for the symposium issued from an interest in the significance of the seminal work of cultural anthropologist Victor Turner, who graciously accepted the task of being the keynote speaker and primary discussant. Of special interest was the prospect of considering Turner's work in the context of recent developments in neurophysiology and of facilitating a dialogue between Turner's processual symbolic analysis and Eugene G. d'Aquili's biogenetic structuralism. It was hoped that this dialogue would initiate an exploration of biocultural issues that would provide the context for further discussion of the current state of ritual studies from social scientific, religious studies, and theological perspectives. Accordingly, the other primary participants in the symposium, Volney P. Gay, Robert L. Moore, Charles E. Winquist, and Robert W. Jenson, were asked to address the topic of ritual in human adaptation in light of recent developments in their respective disciplines and also in relation to Turner's work and to some of the following questions regarding religion and biocultural evolution formulated by Ralph Wendell Burhoe.

NEW KNOWLEDGE AND QUESTIONS

For those concerned with understanding religious ritual, there seem to be important recent findings concerning what is called "ritual" in several areas of the natural sciences. These findings suggest ritual has a long antiquity and a close association with our genetic as well as cultural heritage in the ages-long development and adaptation that apparently led to the emergence of humankind as a new kind of life—to a creature with a much larger outer brain saturated with an unprecedented level of sociocultural heritage carrying religious values. This new culture-saturated brain raised *Homo* so far above the level of animal life that we properly speak of a new being. The scientific findings also suggest that animal-level ritual was heavily involved in the origins of the religious cores of sociocultural systems, which generated the necessary coadaptation between the cultural and the genetic heritage underlying our nature.

Beginning as early as Sir Julian Huxley's publication in 1914 of his "The Courtship-Habits of the Great Crested Grebe . . .," explorers of the evolution and nature of living creatures have been using the term "ritual" in ways never intended and still not yet recognized (even in recent editions) by some of the foremost compilers of the meanings of English words, such as the Oxford or Webster's unabridged dictionary. The scientists use "ritual" to describe animal behavior that resembles the formalized, prescribed, ceremonious behavior of humans, an animal behavior in large measure prescribed not by socially transmitted information but transmitted in the genetic coding of their behavior patterns. This usage of the term "ritual" suggests a possible organically evolved root of human ritual and source of the basic meanings and motivational power of various prelinguistic stereotyped symbols. Since such usage is not only not in the dictionaries but is not very clear to many students of human religious ritual, it occurred to the symposium organizers that it might be useful to bring together a group of scholars to reexamine the nature of religious ritual and to include any new insights emerging in the context of contemporary, biologically established views.

According to Webster *rite* is "a prescribed form or manner governing the words or actions of a ceremony." *Ritual* is "the forms of conducting a devotional service . . . : the prescribed order and words of a religious ceremony."¹ In Alan Richardson's *A Dictionary of Christian Theology*, the editor and the contributor of the definition of ritual (E. L. Mascall) concur that "properly the word 'ritual' signifies the words of a liturgical service and is therefore contrasted with 'ceremonial'."² While in some traditions this may be the case, the Oxford and Webster unabridged dictionaries emphasize the role of ceremonial acts over the role of

words in the meaning of the term. In fact, in my Oxford I do not find the term "word" used at all in its definitions of "ritual." Scholars and scientists have given increasing evidence that preverbal, instinctive acts or responses provide the verbal areas of the brain with the associations that constitute their basic meaning, emotion, and power for action; upon these associations the significance of the verbal elements of ritual depend. As a result, the meaning of the term "ritual" and our understanding of ritual's role and importance is rapidly evolving in this century. I cite a few examples.

Ethologist Konrad Lorenz, in his classic *On Aggression*, writes:

Shortly before the First World War when my teacher and friend, Sir Julian Huxley, was [studying] the courtship behavior of the Great Crested Grebe, he discovered the remarkable fact that certain movement patterns lose, in the course of phylogeny, their original specific function and become purely "symbolic" ceremonies. He called this process ritualization and used this term without quotation marks; in other words, he equated the cultural processes leading to the development of human rites with the phylogenetic processes giving rise to such remarkable "ceremonies" in animals. From a purely functional point of view this equation is justified, even bearing in mind the difference between the cultural and phylogenetic processes. I shall try to show how the astonishing analogies between the phylogenetic and cultural rites find their explanation in the similarity of their functions.³

Anthropologist A. F. C. Wallace in his *Religion: An Anthropological View* reiterates that "the primary phenomenon of religion is ritual. Ritual is religion in action; it is the cutting edge of the tool."⁴ "Ritual functions can . . . be accomplished without either learning or the use of language; but learning and language . . . serve as powerful tools for extending the range of ritual's usefulness to a species."⁵

Paul D. MacLean, Chief of the Laboratory of Brain Evolution and Behavior, National Institute of Mental Health, says: "We are testing the hypothesis that [the reptilian complex of the lower brain] is basic for such genetically constituted behavior as selecting homesite, . . . forming social hierarchies, and . . . will shed light on neural mechanisms underlying compulsive, repetitious, ritualistic, . . . forms of behavior."⁶

This Chicago symposium on religious ritual hopefully will increase our understanding, appreciation, and practical usage of higher, human ritual by considering some of the following questions regarding its roots in transcultural-genetic, neurophysiological, and preverbal, symbolical-behavioral levels of ritual behavior. Can we enlarge our understanding of ritual in religion by relating it to some of the newer implications of genetic, neurological, and ethological findings? How far do they illumine the origins and establish the perennial importance of religious liturgy and ritual behavior? What is the role of genetic information in providing basic mechanisms and in programming for

animal and human ritual? How and when did genetic structuring of ritual behavior become supplemented by nongenetic or cultural information transfer? How and when did culture emerge in the biological world? What does ethology tell us of neurological modification of genetically programmed body-language emission (and response patterns thereto), such that advantageous new behavioral patterns are established and transmitted via neurological and sociocultural behavior-shaping patterns of information? How does culture evolve or change in that context? How does one understand the evolution of culture in contrast to that of the gene pool? What mechanisms preserve adaptive patterns in cultural memory and transmissions? How is ritual, including contemporary religious ritual, involved in this process? What is the nature of and how long is the alleged chain by which genes hold cultural patterns on leash? How may such a leash be related to the collective unconscious? What other tenable models are there and what is the relative evidence for them?

What is the role of the brain as an organ for the suitable mixing of genetic and cultural information in the production of mental, verbal, or organic behavior? To what extent is the lower brain and its behavior "on a very short leash" under the control of the genotype? To what extent is the upper brain "on a longer leash" for control of the genotype? How "long" are the leashes for control of the brain and even gene-pool frequencies by socioculturally transmitted information? Insofar as the brain is under two sets of controls, how independent are they? What sort of symbiotic coadaptation has allowed for the dual control and what can we understand to have been the reasons for evolutionary selection to have moved this way? Do the interactions between the cerebral cortex and the lower brain suggest details concerning the "leashes" between genotypes and culturetypes? How do these fit with such models as Sigmund Freud's id and superego, with Carl Jung's theory of archetypes, with neo-Darwinian theory of selection, with the cross-cultural anthropological and historical studies of comparative religion?

To what extent is it true that a necessary ingredient in generating decisions and motivating their implementation are human feelings, hopes, and fears of what is most sacred? How true is it that such information is necessarily filtered through the highly genetically programmed areas in the lower (phylogenetically earlier) levels of the brain? What does this imply for the theory that the system of selective forces starting at the animal-ritual or reptilian level of our brains and operating during our development, would lead to the coadaptation of the genetic and the religious segment of the body of cultural information and thus to the emergence of the new and higher kingdom of life—humanity?

To what extent is it true that the upper cortex of the brain is the seat of programs largely structured by the culture—by information transmitted not by genes but through body-language, words, and other symbol systems, which constitute ritual, so as to modify the expression of genetic programs in nongenetic but specifically characteristic ways? How far do these higher symbols derive their meaning and force for action from their association with the earlier-established neural levels of animal ritual? To what degree are cultures and gene pools coadapted symbiotic systems, harmoniously cooperating, but each with its independent organs of memory and transmission of the information that is sacred for its life? Insofar as they are coadapted, what kind of selective processes could have produced the symbiosis? How does this picture fit with the characteristics found in the varieties of religious systems that have thus far been selected, and with the varieties of religious experience that have been noted?

What do we know about the statistically varied early genetic and later environmental (including culture and religious culture) structuring of human brains that may shed light on the nature of religious experience and motivation? What is our present picture of the necessary characteristics of the cultural shaping of systems of ritual, symbols, myths, and rational structures to produce viable categories of religious experience in a genetically varied population of brains?

What kinds of evidence—from the history of religion, comparative religion, cultural anthropology, and the psychosocial sciences generally—would tend to confirm or deny the following hypothesis about religion as interpreted from various scientific and scholarly sources? This view that some of us recently have been developing pictures a human culture as a supergenetic and superindividual, phenotype-shaping agency. It is made possible by the coadaptation or integration of two semi-independent information sources: first, the basic information in a human population's gene pool (which is only about one or two percent different from the information in a chimpanzee gene pool) and the organic expression of those genes in the absence of culture (an expression which lies largely in the lower levels of our brains and produced ape-men); and, second, "a new creation" of relatively stable, nucleated systems of environmental information remembered in and transmitted by a living sociocultural system. This view also pictures the coadaptation and cooperation of these two different information sources, whose joint phenotypic expression is humanity, as dependent upon the emergence, more than a 100,000 years ago, of the religious sector, wherein what is absolutely necessary for the survival of the gene pool and our lower brain found (and still requires) a sufficiently harmonious integration with what is sacred for the survival of

the sociocultural system, which largely is transmitted to and is structured in the outer or upper layers of our brains. The hypothesis suggests that religion's origins involve the capacity of the brain to express differentially its genetically programmed base in new and more adaptive ways under information that is transmitted from the sociocultural system. Both the genetic information and the cultural information have been established through selection or judgment by the ultimate reality system governing life. Does not this view suggest that religious culture had to begin at the animal-ritual level of the brain, the genetically programmed base for communicating ultimate concerns and engendering appropriate action? What is the new explanatory power of the above view for the significance of religion for our life in the contemporary world, as well as for religion's emergence in prehistory and ancient history?

How important is ritual behavior of one kind or another in the various developmental stages of individual and social life not only in the past but also today and in the future? To what extent are animal-ritual and prerational cultural levels of ritual behavior necessary stages in a hierarchy of stages of human development to its highest level (either subjective or objective) as suggested by ethologists such as Lorenz or psychologists such as Jean Piaget?

What is ritual's role in human communication and in the shaping of behavioral tendencies, religious and moral attitudes or motivations, and aesthetic and psychological states? How does ritual relate one to one's own inner nature, to other persons, and to the realities of the transhuman and supersensible elements of the environment?

To what extent are verbal associations and meanings dependent upon prior memories of reinforcement of more elemental behavioral repertoires, including animal rituals? What information do we have concerning the role of the nonverbal hemisphere in states of consciousness, decisions, and religious experience? Are there significant differences in the connections and dynamics of this hemisphere with the limbic system?

What evidence is there that patterns of religious ceremonial and folkway rituals have been coadapted differentially with basic genetic provisions for the maintenance and advancement of life under the demands of various ecosystems? How far do different cultures or their religious sectors constitute different ecosystems? Do shifts in religious patterns from hunting-and-gathering to agricultural societies yield any clues? To what extent do the gods and other superhuman or "supernatural" forces presented in various religions correspond with the powers that evolutionary theory sees as selecting the lifeways (including the religions) of various peoples? How far does an emerging view of

the role of the biosocial phylogeny of ritual reveal a phylogeny of god concepts, popular or theological, and sustain the value implications of those concepts?

In what ways do the evolutionary and adaptive pictures of religious ritual illuminate human responses to the system of reality that is their creator, selector, judge, and sustainer? What are the implications of these pictures for the rituals and other religious elements of modern urban life, and also for religion's role in generating noncoercive cooperation among the varied sociocultural systems of our now one world? How do the new pictures of ritual in human adaptation illuminate the theology of religious ritual? What do they suggest for further developments in religious education, for renewed richness and authenticity of religious faith, hope, and charity?

COMMENTARY

While each of the above questions is not answered in detail, the general issues they represent are addressed in various ways in the papers in this *Zygon* issue. Even though there is considerable variety, even disagreement, among the authors, readers will want to look for underlying unities on which we can proceed to probe the possibilities of a more comprehensive synthesis.

At the conclusion of his paper, Turner proposes that "it is to the dialectic, and even contradiction at times, between the various semi-autonomous systems of the developed and archaic structures of innervation, particularly those of the human brain, that we should look for the formulation of testable hypotheses about the ritual process and its role as performing noetic functions in ways peculiar to itself, as a *sui generis* mode of knowing."⁷ This insight, in one way or another, formed the controlling hypothesis of the symposium, and it is perhaps a promising basis for further thinking. Although each of the authors fills this hypothesis with his own meanings and pursues it according to his own predispositions and methodology, each accepts the premise that ritual performs distinctive noetic functions and that it is a mode of knowing that is indeed significant precisely because of the bundle of various types of information with which it reckons. Inasmuch as the elements of this bundle are characterized by dialectic, contradiction, and irreconcilable tension, what makes ritual knowing so important is that it finds a way to bring the elements together in a whole that the human being finds satisfactory and supportive of life.

Each of the following papers deals with the kind of knowledge that ritual provides and also with the nature of the tension or dialectic that permeates the stuff on which ritual works for wholeness. D'Aquili understands ritual to be an essential way in which humans respond to

and resolve the problems posed by myth. Myth emerges from the encounter of humans, both as individuals and as groups, with their environment; in this encounter they come upon information that is intractable to their efforts at meaning. For d'Aquili, "myth presents a problem of ultimate concern to a society" in an "antinomous form," that is, in the form of seemingly irreconcilable opposites such as life versus death, good versus evil, or heaven versus hell. The most meaningful resolution of the problem posed by myth is the acting out of the myth through ritual. This acting out is what humans do when they "reach far into the evolutionary past and graft an ancient motor behavior onto the product of the neocortex, that is, myth."⁸ D'Aquili defines ritual in such a way that it includes both the rhythmic behavior of lower animals and the religious rituals of human communities.

D'Aquili's way of dealing with these issues is very close to Turner's, except perhaps for the latter's insistence that there is a role for play, a sort of cultural equivalent of mutation, which defies all categories, even those of ritual. Exactly what role Turner assigns to play could be further clarified in subsequent discussions.

Moore and Gay succeed in transferring Turner's categories onto a large cultural and psychoanalytic canvas. Moore sees dysfunctions and maladaptiveness manifesting themselves in symptoms, which mass lay movements and professional therapists both seek to address through creative adaptive responses that are "transformative performances." Gay is more cautious than any of the authors, save Winqvist, in declaring that transformative responses can indeed deal with the antinomous information that humans process from their environments. He very much wonders whether our social environment today does not make satisfactory ritual resolution impossible. For Winqvist, the quest for meaning through language's probes into the interstices of reality is the only sense in which ritual seems to be a viable concept.

Jenson's contribution is perhaps most difficult for the scientist, but it does fit into the framework I have set forth on the basis of Turner's hypothesis. Jenson's version of the antinomous factor is the "conversation" that takes place between humans with each other and between humans and reality which is finally God. What transpires in that conversation is the making of the human person into a vulnerable creature who gives himself to the power that carries him, as an unfinished creature, into the future that completes him, finally. Jenson poses a number of pressing questions, which to him seem to obstruct the communication between science and theology. Does evolutionary thinking perform an inevitable reductionism, in that it extrapolates everything from the past rather than opening up to the future? Does ritual defined behaviorally exclude human religious rituals, since such

a definition lifts up the repetitious behavior of animals as the norm? Jenson seems to give answers to these questions that obstruct efforts to synthesize scientific and theological modes of thought, even though those answers are not necessarily required either by the science he surveys or the theology he espouses. A reading of his paper and d'Aquili's reveals possibilities for dialogue and synthesis that go beyond the explicit expectations of either author, since d'Aquili defines ritual broadly and entertains ritual as an encounter with a dimension of ultimacy (through myth), whereas Jenson conceives of ritual as clearly a grappling with the reality that confronts the human in the quest for life in the environing world.

The symposium presented a forceful proposal for our further reflection: Ritual is the means for dealing with, responding to, and resolving problems that the human organism finds otherwise intractable. The perceiving and presentation of the problem, the sorting out of the problem, and the ritual-responding are done by the biogenetic, psychocultural mechanisms of the human being; and correlations between the mechanisms and the representations of the reality that is filtered through the mechanisms are for the first time being mapped. If it were not for the evolutionarily developed mechanisms, there would be neither the perception, the representation, nor the ritual response. This raises questions for both theology and science. For theology, reflection must take into account that, no matter what one thinks of the distinctions between God and world including between God and humans, our perception, knowledge, and response to God are filtered through human mechanisms of brain and behavior that are rooted in our evolutionary past. Moreover, this filtering *constitutes* perception, knowledge, and response to God. Science must take into account that the more our scientific knowledge increases, the clearer it becomes that the responses of our myth and of our rituals are inescapably and integrally rooted in the basic equipment of our species as we face our environment and attempt to deal with it. The representations of myth are enabled by our evolutionary past, located in our brains, but they present issues as only a complex creature like *Homo sapiens* could and must conceive. The ritual responses are similarly based in our ancient evolutionary past and yet they are organized for the complex meanings that are required only by a creature like *Homo sapiens*.

The Chicago symposium was one episode in a long chain of reflection on the place of ritual in human existence. The Institute on Religion in an Age of Science will devote its 1984 annual conference, on Star Island at the end of July, to continuing the reflection. In the meantime we hope this issue of *Zygon* will stimulate further research into the role ritual plays in helping individuals and societies to adapt to

and flourish in the larger universe and its underlying creative and sustaining activity.

NOTES

1. Philip Babcock Gove, ed., *Webster's Third New International Dictionary of the English Language Unabridged* (Springfield, Mass.: G. & C. Merriam, 1976), p. 1961.
2. Alan Richardson, ed., *A Dictionary of Christian Theology* (Philadelphia, Penn.: Westminster, 1969), p. 297.
3. Konrad Lorenz, *On Aggression*, trans. Marjorie Kerr Wilson (New York: Bantam, 1967), pp. 54-55.
4. Anthony F. C. Wallace, *Religion: An Anthropological View* (New York: Random House, 1966), p. 102.
5. *Ibid.*, p. 237.
6. Paul D. MacLean, "The Brain's Generation Gap: Some Human Implications," *Zygon* 8 (June 1973): 115.
7. See Victor Turner, *Body, Brain, and Culture*, in this issue, pp. 221-45.
8. See Eugene G. d'Aquili, *The Myth-Ritual Complex: A Biogenetic Structural Analysis*, in this issue, pp. 247-69.