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# THE RITUAL TRANSFORMATION OF EXPERIENCE

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*All of us have been, or will be, surprised, even incredulous, when we come across the data of anthropology for the first time, at how vast are the differences between ways of experiencing.*

—R. D. Laing, *The Politics of the Family*

## I. INTRODUCTION

From its beginning a major problem for the discipline of anthropology has been how to “get at” the experiences of our informants (Pinxten, 1981).<sup>1</sup> Do the Eskimo really perceive the world differently because they have more words for snow than have we (see Eastman, 1975)? What exactly does the Yanomamo Shaman see and feel when he “flies” to another village to devour souls (Chagnon, 1977)? How does the Haitian devotee experience him/herself while “possessed” by a saint (Daren, 1953)? That these and other similar questions remain unanswered suggests an ongoing epistemological dilemma regarding ways of “getting into the native’s head”: How do we render the direct experiences of informants—and of ethnographers, for that matter—into usable ethnographic data?

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Yet the many discussions of these issues all too often beg questions raised early-on in the history of the social sciences: What exactly is experience? What is the role of knowledge in experience? What are the essential features of experience? And how can we study the structure of experience apart from culturally (historically) loaded concepts (see, e.g., Husserl, 1960)? In other words, before we can come to understand how the day-to-day experiences of an informant differ from, or are similar to, our own, we must first come to understand the structures within consciousness that produce, limit, and transform the experiences of *Homo sapiens* and other, nonhuman animals.

In this paper we sketch a theory based on *biogenetic structuralism* that accounts for the structure of experience.<sup>2</sup> This approach combines elements of the neurosciences, the cognitive sciences, and transpersonalism with the more traditional elements of anthropology.<sup>3</sup> From this perspective, we see that the everyday life-world of people is a construct of the human nervous system and is more or less fragmented into a world of "things" (i.e., conceptually and imaginably distinct and recurrent loci within the field of sensory awareness). This implies a life-world that is culturally conditioned (Schutz, 1967; Schutz and Luckmann, 1973) and prior to phenomenological "reduction" in the Husserlian sense (Husserl, 1960; also Merleau-Ponty, 1962). Reality apart from our experience of it we call the *operational environment* ( $E_o$ ) and the life-world we call the *cognized environment* ( $E_c$ ).<sup>4</sup> This is not a simple mental-physical dualism because the neurocognitive structures mediating the cognized environment are conceived as being part of the operational environment (see Rubinstein et al., 1984:26). In a sense, the cognized environment is a model constructed by the operational environment to reflect and adapt to itself. The cognized environment is portrayed in moment-by-moment experience within the person's *sensorium*, that is, by and within the "whole sensory apparatus of the body" (*Dorland's Illustrated Medical Dictionary*, 23rd edition).

## II. PHASES AND WARPS

The world of experience as it arises within the sensorium is a complex functional integration of information about the  $E_o$  stored in  $E_c$  models, and information about the  $E_o$  provided by various senses (see Pribram, 1971, 1977). Experience is constructed and mediated by the nervous system and changes during each moment of consciousness. Experience seems to be phasically organized; the shifting reorganization of neural components making up the ever-changing structure of experience seems to be organized into temporally recursive models (Tart, 1975). Episodes of experience may be as momentary as the rapid shift of sensory focus as the system scans

the  $E_o$  for interesting objects, or may be of relatively long duration like those described as "biorhythms" (see Broughton, 1975).

The *awareness* of experience involves cognition about self and world. The root meaning of "awareness" is the same as "wary" and connotes careful attention to the world and detection of danger. Because the definitive characteristic of awareness is *recollection*, *remembering*, or *recognition* of patterns in experience, awareness obviously refers in part to a role played by knowledge in experience. Further, since the recursive quality of segments of experience may be cognized as recurrent, awareness itself is organized into different "states" of consciousness.<sup>5</sup> If an experiential episode is perceived as a salient unit, then the episode may be cognized as distinct from other units of experience. It may even be lexically coded, e.g., I am "awake," "stoned," "depressed," "asleep," "out of my body," and so on. We refer to these cognized episodes of experience, and their mediating neural networks as *phases*, and to the points of experiential and neural transformation between phases as *warps* (Shearer et al., 1983).

### A. Phase Boundaries

In ordinary human experience phases of consciousness are rarely defined by their formal properties (such as level of structural organization à la Piaget, or the full compliment of constituent cognitive functions à la the Buddhist *Abhidharma*<sup>6</sup>), even though those formal properties may causally influence phase structure and function. Further, phases are never defined by the full range of ever-shifting information passing through the sensorium at a particular moment. Rather, phases seem to be commonly defined by a finite set of recurrent attributes selected from the far greater range of available attributes. In many cultures, such as the Pukapuka (Beaglehole and Beaglehole, 1938:307), the dream phase is defined as the time during which the soul may move about the world independently of the body.

Phase attributes may be bodily sensations ("I am hungry"), feelings ("I am in love"), various kinds of sensory cues ("I am listening to music"), or actions ("I am running"), or they may involve characteristic relations between perceived objects ("I dreamed I was swimming at the bottom of the ocean"). Recognizable functional organizations or operations in cognition also may be used to define phases, e.g., my thoughts are "discursive," "scattered," "profound," "lucid," or "clever."

The important point is that in any society a limited set of possible phases of consciousness is defined as normal. Members of that society are then socialized to recognize the appropriate attributes of these phases and to consider them definitive of their own and of others' mind states (see Bourguignon, 1973; Tart, 1975). This recognition operates to set boundaries on phases of consciousness typically experienced in a culture through the

establishment of conditioned, internalized control of attention (see Burridge, 1979). Because many of the structural features of consciousness are causally entrained<sup>7</sup> by attention, recognition of phase attributes (to the exclusion of, or habituation to, other possible attributes) effects powerful control of other unconscious, but experientially efficacious, formal properties. As we will show below, ritual manipulation of phase attributes, particularly by means of symbols, may be used to transform the operating neural structures mediating phases of consciousness. Such manipulation makes new experience possible.

In addition to being recursively organized, phases are commonly embedded one within another. This often forms a hierarchy of episodes, resembling the "plan" structure modeled by Miller et al. (1960), the "differentials" of the calculus, the simple components of "artificial" complexity (Simon, 1981), or the multidimensional aspect of "phase-space" (see Laughlin and Stephens, 1980:339 ff; Count, 1976). Thus, we can speak of embedded phases: one can experience "excitement" while "skiing," "today." The experience of "excitement" is embedded within the phase "skiing," which is in turn embedded in the phase "today."

### B. Emphasis upon Warps

This discussion pays special attention to the warps between phases of consciousness. This emphasis is useful, for as a phase is a discrete, cognized strip of unfolding experience dominating for some time the sensorium, a warp has a causal influence on the organization of the phase succeeding it, and a causal influence on the end of the phase preceding it. A warp is what Turner (1974:237; cf. Gennep, 1960) calls a *liminal* event—an event that mediates two cognized strips of experience. For example, if one is "happy" one moment and "sad" the next, then between these two phases of consciousness may be a warp which involves the cessation of the "happy" phase and which causes the "sad" phase. The liminal aspect of the warp metaphorically implies a sort of door or threshold through which the stream of consciousness must pass when it "leaves" one phase behind and "enters" another phase.

Four aspects of warps need to be stressed before considering the ritual control of experience. First, warps are most often momentary to the point of evanescence despite their causal importance for the organization of phases. In fact, so swiftly do they pass, that the perceiver is usually unaware of them. Typically, we are aware only of a sequence of phases and not of the warps intervening between phases. To understand both how rapid and unconscious are warps, and at the same time to recognize their causal prominence over phases of consciousness, is to begin to comprehend the

sense of helplessness many people feel when learning to control their phases of consciousness.

Second, a warp is the intersection of two relatively durable neural configurations mediating two cognitively salient episodes of experience. Warps are, in fact, excellent examples of the points of transformation between systemic states modeled in catastrophe theory (see Thom, 1975). Warps have both structural and functional aspects just as do phases. However, the functional aspect of a warp is typically *not* cognitively salient, and hence is not consciously experienced.

Third, warps also exhibit embedding. Fourth, a transformation of the neural structures comprising a warp may be induced by a great variety of factors inside or out of the nervous system. Such factors include various chemicals, events in the external  $E_o$ , events triggered by the biological clock, metabolic changes, and so on. A person may be aware of the stimulus inducing a warp. But even if he/she is aware of the stimulus, its effect upon consciousness may be missed because of levels of awareness of the intermediate warp. In general, the closer in time the trigger, the more likely is a person to be aware of its causal association with a phase of consciousness. A marijuana smoker obviously is aware of the causal relationship between "taking" and being "high," but a person suffering from allergic reaction may not be aware that chemicals emitted from the new building through which they walked an hour before caused the irritation they now feel. In the latter case, the person is aware of the stimulus ("walking through the building") and the response ("depression" or "irritation"), but is unaware of the warp between.

### C. Control of Phases Through Expansion of Warps

In order for individuals or groups to control phases of consciousness control must be exercised over the factors inducing warps. In other words, control must be oriented toward the aspects of unfolding experience *about which the perceiver is least aware*.

The simplest and most direct means of controlling a phase of consciousness is by directing the attention of the perceiver to the warp preceding it. Directing and enhancing awareness of a warp by a perceiver results in the warp "opening up" to conscious inquiry (Goleman, 1977). If that inquiry is continued, the warp will be transformed into a cognized phase. Becoming aware of a warp minimally involves discovering and learning a set of phase attributes that then become markers by which the recurrent experience may be recognized. Exercise of control at the warp between two phases can result in an expanded awareness of *three* phases. The advantage of this expanded awareness is that through it we can gain some measure of control over the processes of consciousness.

The warp between the waking phase and the dream phase of consciousness has been termed the *hypnagogic* by Maury (1848), and the warp between the dream phase and the waking phase the *hypnopompic* by Myers (1904). These warps are extremely brief and few people in Western culture are aware of them. Indeed, only a minority are aware of very much of their dream life at all. People can learn to recall their dreams (Reed, 1973, 1976), and they commonly do so by ritually transforming the hypnagogic and hypnopompic warps so that they no longer remain barriers to recall. Dream "incubation" and ritualization of warps is a common theme in cultures that consider incorporating knowledge and "power" derived from dream experience important to life (see, for example, Lincoln, 1935; O'Neill, 1976; Grunebaum and Caillois, 1966). Tibetan yogis work with their dream experiences as a meditation and learn to control events in the dream cycle by first increasing awareness of the two warps and transforming their awareness into a form that can be transferred over the warp (see Chang, 1963:88 ff.; Evans-Wentz, 1958).

Warp expansion and control is also found in the techniques of modern cognitive therapy (see Beck, 1967, 1979; Burns, 1981). It is recognized that between a perceived stimulus event and a resulting mood state there lies a warp called an "automatic thought" (Beck, 1979). The automatic thought is causally triggered by the stimulus event and in turn causes a shift in mood. It occurs rapidly and is usually unconscious to the perceiver. Cognitive therapists use various techniques to bring the awareness of clients to bear on the warp, and to discover and rationally evaluate automatic thoughts that have commonly been learned and repressed early in childhood. Via the process of discovery, expansion into awareness, and evaluation, the now cognized automatic thought is transformed into a phase of consciousness, and the client gains a greater measure of control over mood states.

### III. RITUAL AND THE STRUCTURES OF EXPERIENCE

Many anthropologists have noted the importance of ritual as a marker and mediator of social and psychological change (e.g., Turner, 1970, 1974; Gennep, 1960; Firth, 1967; Goffman, 1967; Wallace, 1966; Eliade, 1964), and this observation has been central to biogenetic structuralism as well (see d'Aquili and Laughlin, 1975; d'Aquili et al., 1979; Laughlin and Stephens, 1980:337; Laughlin and McManus, 1982:53; Laughlin et al., 1981:226; Rubinstein et al., 1984:61-84). Eliade (1964), for example, has noted the role of ritual in structuring the experiences of an initiate shaman. By learning ritual control of the warp between the normal phase of consciousness and the "transindividual" phase (as Ring, 1974, calls it), the

young shaman is gradually able to integrate alternate phases into a single personality. Likewise, by practicing various rituals (*puja*)<sup>8</sup> initiate adepts to Buddhist and Hindu tantrism learn to transform their ego-centered consciousness into phases of consciousness symbolized by various dieties (see Walker, 1982:17). In the next section we summarize some of the principles that may account for the efficacy of ritual in warp control. Later we will examine cross-phase transference.

#### A. Orientation and Enhancement of Awareness

Ritual directs the attention of participants to objects and events of cultural significance. Participants in ritual commonly come to see aspects of their society, cosmology, environmental conditions, and even themselves in a new light (see Wallace, 1966). The therapeutic effects of enhanced awareness itself, apart from any ritual manipulation of awareness, is a cornerstone of modern psychotherapy (e.g., Selye, 1978).

The essence of awareness is remembering—seeing and recognizing what one is seeing. All ceremonial ritual at least manipulates the participants' awareness of symbols. We discuss the neuropsychology of symbolism elsewhere (Laughlin et al., 1981:225) and isolate two principles by means of which symbol and awareness become integrated in experience. One principle (*semiosis*) is that the intentionality or "meaning" of a symbol is constructed through cognitive development. The second principle (*semiotropic response*) is that people have a conditioned orientation response to culturally salient symbols. Thus, during ritual, awareness is directed toward salient symbols that for the moment dominate the sensorium and penetrate to previously developed intentionality. The very arising of a symbol within the sensorium may be sufficient to penetrate to the operating structures mediating experience and to cause a warp leading to a new phase of consciousness (Webber, 1980; Webber and Laughlin, 1979; Prattis, 1984).

#### B. Retuning the Autonomic System

The system that channels energy to the sensorium is the *autonomic nervous system* (ANS). It is divided into two complementary systems: the *excitation system* and the *relaxation system* (see Gellhorn and Loofbourrow, 1963; Gellhorn, 1967; Gellhorn and Kiely, 1972; Lex, 1979; Laughlin, 1983).<sup>9</sup> The excitation system energizes adaptive responses to conditions in the  $E_c$  and is experienced as bodily arousal or stress. Stress may be experienced as either positive "eustress" or negative "distress" (Selye, 1978). The relaxation system shifts metabolic energy to vegetation, repair, growth, and development: it is experienced as relative bodily relaxation, calm, and tranquility (see especially Benson, 1976; see also Mandler, 1984:134 ff.).

These two systems operate complementarily and exhibit a characteristic balance with regard to events in the  $E_o$ . The particular excitation-relaxation balance in the ANS with respect to particular environmental conditions can be learned (Thomas, 1968; Hofer, 1974). This learning is called *tuning* (after Gellhorn, 1967:110 ff.). Evidence indicates that the general level of balance (i.e., basal level and range of flexibility of response) is established in pre- and perinatal life (Grof, 1976; Verny and Kelly, 1982). Many of the common attributes of ritual (e.g., chanting, dancing, ingesting psychotropic drugs, fasting, and other forms of privation) may be understood as *driving mechanisms* for retuning the ANS activity in participants (Lex, 1979).

Grindal (1983) reported a profound experience which occurred to him while attending a Sisala funeral in Ghana. After undergoing several days of arduous privation including fasting, lack of sleep, physical ordeal, and the like, Grindal entered a phase of consciousness in which he perceived the corpse come alive and dance and play drums. He also experienced radiant energies emitted from the corpse and other people attending the rite.

Retuning the balance of ANS functions may lead to alternate phases of consciousness. Such changes will be away from the clearly defined conceptual and imaginal distinctions between "objects" in the sensory field and between "perceiver" as subject and "perceived" as object, and will be toward the experience of *flow*:

Flow is the holistic sensation present when we act with total involvement, a state in which action follows action according to an internal logic, with no apparent need for conscious intervention on our part. Flow is experienced in play and sport, in artistic performance and religious ritual. There is no dualism in flow. . . . Flow is made possible by a centering of attention on a limited stimulus field, by means of bracketing, framing, and often a set of rules. There is a loss of ego, the self becomes irrelevant. Flow is an inner state so enjoyable that people sometimes forsake a comfortable life for its sake (Turner, 1979:154).

Flow is the experience of unfettered release of all physical-mental tensions (see Csikszentmihalyi, 1975; Laughlin, 1983). "Full-on flow" is the experiential opposite of defensive, ego-centered excitation (experienced as "distress") and is only possible when ANS functions are tuned in favor either of profound relaxation or unblocked, non-ego-centered excitation [experienced as "eustress" (Selye, 1978)]. The experience is characterized by a cessation of internal verbal chatter and fantasy. The sensorium becomes remarkably clear of fretful agitation and worry, and there is a corresponding loss of ego-centered reactivity. The experience is commonly reported to be like "breaking through" to another plane of existence, as if the "bottom had fallen out from under" one's normal phase of con-

sciousness. Whether such an experience is evaluated positively or negatively depends upon many factors including the personality of the perceiver, his/her cultural background, and the setting of the experience (see Laing, 1967:108 ff.).

Simultaneous discharge of *both* the excitation and relaxation systems apparently leads to profound alterations in phases of consciousness, and even to reorganization of personality (Lex, 1979; Gellhorn and Kiely, 1972; Jilek, 1982:Ch. 3). The most common phenomenological phase resulting from simultaneous discharge of both systems is the orgasm. Because it facilitates rapid cognitive reassignment of affect to object this mechanism may also be central to the notable success of shamanic healing techniques cross-culturally. The range of driving mechanisms that result in simultaneous discharge is enormous and includes drumming, chanting, dancing, and other rhythmic stimuli, as well as various privations, ordeals and harassments, social isolation and sensory deprivation, and drugs (Jilek, 1982).

Katz (1982) describes such an experience among the !Kung Bushmen of Africa. The experience, called *!kia*, is an extraordinary and profound phase of consciousness that results from dancing until an "energy" (*n/um*) arises in the belly and moves upward to the head. The Bushmen account is similar to that of Indian yogis of the "awakening of *kundalini*" (see Vivekananda, 1956; Krishna, 1970).

### C. Types of Transformation

Because a transformation in experience implies a transformation in the organization of the operating neural structures mediating consciousness, three types of transformation characteristic of warps may be distinguished, each defined by the level of transition occurring in structures (see McManus, 1979; Laughlin et al., 1981:225). A *developmental transformation* refers either to an ontogenetic or a momentary adaptive shift in the complexity of the cognition (Piaget, 1952; Harvey et al., 1961). There is evidence that an increase in organizational complexity of operating structures is associated with an enhanced information processing capacity and adaptability of cognition (see Schroder et al., 1967). Research also suggests a direct causal connection between complexity of cognition and complexity of perception (Piaget, 1971b, 1973). Thus both knowledge and perception may be effected by a change in the complexity of operating structures. A range of organizational structures with respect to complexity of entrainment may produce either an increment or a regression in the complexity of events arising in the sensorium. This view is consonant with those of Western phenomenology (e.g., Merleau-Ponty, 1962) and Eastern Buddhist psychology (e.g., Nāṇananda, 1976) in that perception and cognition are conceived to be inextricably and causally interconnected with respect both to

moment-by-moment functioning and to ontogenesis. By application of this view, the *actual* entrainment of structures need not be as complex as it *potentially* can be. Thus, a shift in the complexity of entrainment of operating neural structures may result in a warp in consciousness.

Within any given level of cognitive complexity, there exists a vast range of surface structures that may become entrained within the network mediating consciousness. These surface structures mediate the content of cognition. Changes in surface structure, although leaving the underlying developmental pattern unchanged, may still result in a *surface transformation* in consciousness.

Developmental and surface transformations influence both perception and behavior in a determinant way. A shift in the sensory qualities of perception or in the organization of behavior [both perception and behavior are seen as equivalent operations upon the world in Piagetian psychology (see Piaget, 1977)] may result in a *sensory transformation* in consciousness. It should be emphasized that the three types of transformations (developmental, surface, and sensory) amount to warps only if they result in an alteration of phase. That is, a shift in entrainment, at whatever level, will comprise a warp only if the individual perceiver cognizes a change in experience.<sup>10</sup> It should also be emphasized that the phase attributes by means of which the perceiver defines a phase of consciousness are a form of knowledge, and as such are determined by all levels of structure mediating them. This is true whether or not the perceiver is actually aware of such structures. In most cases, the perceiver is unaware of the levels of structure underlying their cognized experience, but when an individual does become more or less aware of formal properties underlying his/her experience, such knowledge may then become a phase attribute, although it may be mixed with content (e.g., "I am under stress and my thoughts have become scattered.")

#### D. Stages of Transformation

Because the neural structures mediating consciousness are living systems, most of the time they are in an active state of equilibrium (see von Bertalanffy, 1968; Piaget, 1971a; Waddington, 1957, on equilibrium in living systems). Equilibrium is maintained by active compensation for actual or anticipated intrusions from the  $E_o$ . Thus, the ongoing flow of experience arising within the sensorium usually manifests a continuity, especially within the boundaries of any particular phase of consciousness. Yet experience is in continual flux, mediated by continuous activity within the nervous system. When reentrainment of neural networks is sufficient to constitute a warp, it exhibits three stages of transformation. Most such activity is usually unconscious to the individual perceiver and first entails

*discrimination* among all of the intrusive information about the  $E_o$  in an effort to assimilate that information to the presently entrained network. There follows a stage of relatively *differentiated* structures in which activity is oriented toward the accommodation of operating neural structures to new intrusive information about the  $E_o$  entering the sensorium. Finally, there occurs a *functional reintegration* of neural structures into a different and again relatively equilibrated, reentrained conscious network. This three-stage view of transformation—discrimination, differentiation, and reintegration—is consonant with the views of Piaget (1971a:216) on cognitive coordinations and of Charles Tart (1975) on the transition from one state of consciousness to another. It is also somewhat relevant to Chapple and Coon's (1942) description of transformations occurring in ceremonial ritual and Turner's (1974:38 ff.) stages of social drama.

These three stages are involved in all warps and may be further elaborated into the following five steps:

1. Interruption of the ongoing functioning of neural networks, or intrusion into the operating neural structures mediating experience.
2. A comparison process between the intrusive information and that contained within the operating structures.
3. Alternations of attention, affect, or behavior indicating an attempt to reconcile discrepancy (see Mandler 1984:Ch. 8).
4. Resolution of discrepancy leading to a developmental, surface, or sensory transformation.
5. A consolidation or incorporation of new networks into the overall operating neural network.

The interruption of the functioning of consciousness signals the beginning of the end of the preceding phase and the consolidation of the new entrainment signals the beginning of the succeeding phase (see McManus, 1979:194 ff., for further discussion of this model).

We emphasize again that few individuals are aware of this five-step process of transformation, but are only aware of a shift in phase attributes—attributes that are themselves functions of the operating structures mediating the perceptual, affective, and cognitive aspects of experience.

#### E. Symbolic Penetration and the Theater of Mind

There has been an enduring interest in anthropology in the dramatic quality of many ritual social processes (see Firth, 1973:194; Goffman, 1959:30; Turner, 1974:23 ff.). The terms "drama," "dramatization," "dramatism," and the like have been used metaphorically to point up the "bigger than life" texture of social action involving role play, conflict, and

transformation within the fabric of social life. Yet there has been some confusion about the actual significance of the theatrical quality of shamanic performances, which often make use of such illusionist tactics as hidden strings and pebbles in the mouth, crude demonic regalia, speaking tubes in the middle of fireplaces, and highly stylized gestures. This has occasionally puzzled anthropologists (e.g., Boas, 1966:172, as noted in Goldman, 1975:101-102; cf. Whitfield, 1981).

The confusion dissolves when ritual drama is seen as a common and effective method for inducing alternate phases of consciousness (see Huford, 1982). Ritual drama involves the expression of a society's cosmology via enactment of elements and relations making up the cosmology (Eliade, 1963:19). Participation in the drama commonly induces alternate phases of consciousness (so-called ecstatic states, trances, visions, and the like) in which experiences arise that are later interpreted as verification of the cosmology. The role of the mystical adept (or shaman) in guiding, enacting, and interpreting the ritual, and later in interpreting transpersonal experiences, is crucial (see especially Eliade, 1964; Harner, 1973, 1980).

Two well-documented North American examples of ritual drama triggering warps and leading to transpersonal phases of consciousness are the Winter Ceremony of the Kwakiutl (Goldman, 1975) and the Sun Dance of the Ute and the Shoshone (Jorgensen, 1972). A third example from Asia is the Tibetan "mystery dramas" that involve intricate playacting and dances depicting demons and deities from the Tibetan pantheon (see Waddell, 1895; Stein, 1957; Nebesky-Wojokowitz, 1976; Jerstad, 1969).

The ontology of biogenetic structuralism is one of multiple levels of organization, each of which adapts to and is structured by the levels adjacent to it (see Rubinstein, 1979, 1984; Rubinstein and Laughlin, 1977; Rubinstein et al., 1984; Rubinstein and Tax, 1981, 1985). The causal influence of one level of organization upon the structure of another is called *penetration* (d'Aquili et al., 1979:354 ff.). One way ritual drama achieves such remarkable influence over phases of consciousness is by utilizing symbols as penetrating agents—as stimuli that penetrate to the deepest levels of neurocognitive organization of participants and cause changes in their state. This is called the principle of *symbolic penetration* (see d'Aquili et al., 1979:354; Laughlin et al., 1981; Webber and Laughlin, 1979; Webber, 1980; Webber et al., 1983; Prattis, 1984). Symbols, alone and in the context of a field of symbols, can penetrate to and evoke neurophysiological and neuroendocrine structures that are, prior to a warp, extraneous to the structure mediating consciousness. This neuropsychology of penetration has been discussed elsewhere (see especially Laughlin et al., 1981; Webber and Laughlin, 1979; Webber et al., 1983). Here it is sufficient to note that proper circumstances establish the conditions through which meaning develops in the structures mediating the experiences. Development may be

gradual, perhaps requiring years to mature, during which time the adept may participate many times in the ritual (Eliade, 1964).

Participation in full-blown ritual dramas, as in the ancient Greek mystery plays, is an encounter with esoteric mysteries, with a developmental sequence of experiences that gradually unfold, mature, and become more global in significance. Goldman (1975:102) writes about the Kwakiutl Winter Ceremony:

one arrives at an idea of hidden things, in the sense that the ceremonies deal with secret matters that are always hidden and can be experienced, therefore, only in a simulated form. The masks, the whistles, the ornaments, the dramatizations of mythical events simulate a hidden reality, a reality that does not literally exist on this side of the Cosmos, belonging only, as the Kwakiutl always say, "on the other side." The idea of simulating hidden things is one of profound religious sophistication, a recognition of the ineffable.

What is "hidden" and "ineffable" are direct transpersonal experiences of the shaman-adept for whom the mysteries are, strictly speaking, no longer hidden.

Ritual drama, then, is a *theater of mind*. One audience of ritual is the sensoria of its participants. The sensorium may be the stage upon which, by means of ritual manipulation of symbols, an  $E_c$  play is produced. This play is in turn a dress rehearsal for the final production of direct transpersonal experience.

Tibetan tantric yoga practice is a case in point. Tantric meditation is upon visualized deities described in a text. The initial permission and empowerment to do this work is bestowed by a teacher (or *lama*) in a ceremony in which the teacher enacts the deity that is the focus of the visualization practice. The ceremony is called a *wang*, which simply means 'power.' It is believed that the power that is the essence of the deity is transmitted directly from teacher to disciple at that time. From the present point of view, the empowering drama is unfolding within the sensoria of participants and involves chanting, manipulating visual stimuli, music, induced visualizations, iconic forms, and regalia, all of which may "come alive" in the dream of meditative contemplations of the yogi.

#### F. Shamanic Principle

From the transpersonal perspective, the many discussions of shamanism frequently overlook a fundamental principle: There is an almost universal drive among humans to seek and explore alternate phases of consciousness (Bourguignon, 1973), and those adept at attaining socially valued phases of consciousness are expected to help others in their quest for such experiences (see Reichel-Dolmatoff, 1971:174; Sharon, 1978:115). The mas-



ter, as one sage put it, is someone who started out on the path before the disciple. Healing shamans are quite often the persons who were themselves successfully healed (e.g., Wallace, 1969; Jilek, 1982; Whitfield, 1981):

The shaman and the yogi, the sorceress and the priestess, all derive their strength from an initiatory death and rebirth experience they must each undergo before they can truly be themselves. It is this transfigurative experience that endows them with their unique vision. In traditional societies this experience was highly valued and the right to undergo it was safeguarded religiously (Argüelles, 1975:288).

The shamanic principle may be further understood structurally as the intersection of two subsidiary principles. First, inherent in biological systems appears to be a drive toward wholeness ("health," "healiological," "holy," and "whole" having essentially the same root meaning). This *holistic imperative* may be reflected in experience as levels of successively more integrated consciousness (Maslow, 1968, 1969) and may well progress as an alternation between differentiation and reorganization of neural structures in ontogeny (Piaget, 1971a, 1977; Jung, 1971). The universal drive to explore alternative phases of consciousness (Bourguignon, 1973) may thus be seen as an experiential manifestation of the structural drive toward differentiation and reintegration of neural systems mediating consciousness. Second, an individual whose consciousness is strongly activated by the holistic imperative will frequently recognize similar, and perhaps advanced, development in another individual (Freud, 1950). This is the principle of *shamanic projection* and is represented in Western culture by the phenomenon of "transference" between patient and doctor (see Jung, 1966) and by the *guru-chela* relationship in Eastern mystical traditions.

#### IV. CROSS-PHASE TRANSFERENCE

The induction and control of alternate phases of consciousness depends ultimately upon the transfer of information across warps between phases. We call this *cross-phasing*.

##### A. Cross-Phasing as Reentrainment

For symbolic material to be transferred from one phase to another it must cross a warp. For this to happen there must occur a *minimal reentrainment*<sup>11</sup> of the neural structures mediating that material in the preceding phase with the structures mediating consciousness in the succeeding phase. The material literally must be "re-membered" ("re-collected," "re-called"); it is re-constituted in the succeeding phase. Remembering or "bringing back together," is the definitive characteristic of awareness. Indeed, it is awareness.

It is in the warp that the most rapid, abrupt, and causally efficacious reentrainment of neural structures mediating consciousness occurs. If there is a minimal reentrainment, there will be an experience of continuity of consciousness within the sensorium; if not, the perceiver will experience a discontinuity in consciousness. "Becoming aware of" the warp means a willful enforcement of minimal reentrainment throughout the warp so that reentrainment occurs in the succeeding phase.

As the following report of an experience by a Papago woman who, tired of working her field, layed down on the ground to rest illustrates, reentrainment across the warp may occur so smoothly that the perceiver experiences little discontinuity in consciousness (Underhill, 1936:42):

In front of me was a hole in the earth made by the rains, and there hung a gray spider, going up and down, up and down, on its long thread. I began to go to sleep and I said to it: "Won't you fall?" Then the spider sang to me:

Gray spider  
Magic making  
At the cave entrance hanging  
Do not think I shall fall  
Twice I go up and down  
And I return again  
Therefore I am hanging, hanging here.

The transformation from "awake" to "asleep" (the hypnagogic warp) occurred so smoothly that it warranted only vague mention: "I began to go to sleep." Rather than being exceptional, this smoothness of continuity across the warps is a characteristic experience of those who routinely attend to their dream phenomenology. Two of the authors (CDL and JS) have practiced Tibetan dream yoga and have directly experienced this smoothness of transformation, enrichment of the hypnagogic, and active participation in the dream life.

##### B. Cross-Phasing and Integration of Phases

Minimal reentrainment across warps is all that is required for integration of phases into some semblance of a cognizable continuity. There are many examples in the ethnographic literature of cultures that succeed in integrating experiences arising in trance and dream life with little discontinuity.

The role of the shaman in the integration of experiences derived from various phases of consciousness is also quite apparent in the ethnographic literature: an initiate is told in symbolic terms what he/she will experience, is placed in circumstances conducive to the arising of transpersonal experience, and then is told in symbolic terms what he/she has experienced. The symbolism that initiates experience is part of a total shamanic view of self and cosmos. The symbols penetrate to the neural structures which,

when activated and entrained to the structures mediating consciousness, thus mediate conscious transpersonal experience. This reentrainment process will involve the five step process of transformation outlined above. During this process (at the fifth, or consolidation, step) the memory of transpersonal experience, associated as it is with the initiating symbolism, is in turn integrated into the cosmology (see Ricoeur, 1962). In the Sun Dance ceremony, Buffalo (or Eagle, etc.), initially only a symbol used by the shamans to express aspects of their cosmological understanding, may later come alive, become very real, and become a source of ecstatic power of use to the initiate and his society (Jorgensen, 1972:213 ff.).

### C. Cross-Phasing and Ritual Drama

Ritual drama may operate by means of the cross-phase transference of symbolic material. In order for the drama staged in waking phase to "come alive" in dream or trance, the focus of consciousness must remain upon at least some central aspect of the symbolism across the warp. In Tibetan dream yoga, for example, yogis are taught to transform themselves into a visualized energy form (*vidam*) which encapsulates their consciousness and in which they remain conscious across the hypnagogic warp, throughout the dream phase(s), and then back across the hypnopompic warp where they transform themselves back into their worldly form (Evans-Wentz, 1958:215 ff.). Yogis are taught this and other methods in the context of the ritual drama noted earlier, or even by way of a dramatic dance ceremony (*cham*).

### D. Cross-Phasing and ANS Tuning

Too great a discrepancy in the autonomic tuning characteristic of the prewarp and postwarp phases tends to inhibit cross-phase transference. It is far easier, for instance, to maintain awareness entering the dream phase if the hypnagogic warp is entered while in *samadhi*, a phase of consciousness marked by profound bodily relaxation, not unlike that of sleep itself. Each phase of consciousness bears with it a characteristic autonomic balance. The hyperexcitation of the Sun Dance (Jorgensen, 1972), the Balinese Kris Dance,<sup>12</sup> or a West African spirit ceremony (see Rouch, 1960) will lead to experiences different than the hyperrelaxation of the Zen adept (Naranjo and Ornstein, 1971).

The excitation and relaxation systems are not simply binary alternatives. Rather, there are many tunings of the two systems possible. Also, the two systems may discharge simultaneously resulting in ecstasy and, under requisite conditions, profound abreaction and personality alteration (e.g., as in the shamanic spirit healing of the Coast Salish; Jilek, 1982:130 ff.).

Profound relaxation may, of course, lead to sleep and dreaming. But in

many Eastern and Western meditation traditions (see Ibish and Marculescu, 1978; Goleman, 1977; Johnston, 1974) initiates routinely seek a seemingly paradoxical phase of consciousness marked by the profound relaxation of sleep accompanied by enhanced awareness and alertness. The mature contemplative phase, reached in whatever tradition, is characterized by complete clarity of awareness of any and all phenomena as they arise and dissolve in the sensorium.

The ANS balance requisite to a phase of consciousness may be driven by rhythmic photic, sonic, or somaesthetic stimuli. These drivers may be augmented by enhanced concentration either upon the driver itself, or upon some associated symbol or object. Also, there are psychotropic drugs that may act to retune the ANS in favor of a desired phase of consciousness (e.g., the natural tranquilizer *Rauwolfia* used in India and the "uppers" and "downers" used in modern society).

It is quite common in religious ritual for drivers to be paired with symbolic material. The pairing of driver and symbol is an efficacious means of cross-phasing symbolic material from a phase mediated by one ANS tuning to another. As noted earlier for certain schools of Buddhism, visualization of a deity is paired with chanting of mantra in meditation, resulting (if successful) in the "coming alive" of the deity once requisite relaxation and "centeredness" has been achieved (Laughlin et al., 1984).

### E. Cross-Phasing and Types of Transformation

A radical shift in the complexity of organization of this "logic" across a warp has the effect of radically altering the perceptual array and its "meaning." A warp that involves merely a shift in sensory material within the same developmental structure, however, may not result in a radical shift in "meaning." The relationship between developmental structure and experience holds not only for waking consciousness, but also for dream and other alternative phases. For example, David Foulkes (1982) presents evidence from a longitudinal study of the development of dreams among children that developmental structure is involved in dream consciousness.

The greater the disparity in the organization of neural structures mediating two phases separated by a warp, the more difficult will be the problem of cross-phasing symbolic material. And, the greater the disparity between these structures, the harder it will be for experience in the preceding phase to be recollected in the following phase. This in part accounts for the experience that some material can be recalled only in a specific phase of consciousness (Tart, 1975, calls this "state-specific memory").

However, it would be an error to depict symbolism as wholly dependent upon the vicissitudes of structure. Rather, the relationship between structure and symbol is one of mutual causality. Symbolism may under one set

of conditions be merely an expression of structural transformation, while under another set of conditions operate to cause structural transformation. Jung (1944, 1952, 1956) demonstrated the rich variety of ways that symbolism may operate within the processes of individuation or psychic development. He showed, for instance, that symbolism may operate as a kind of psychic solvent to dissolve the boundaries between discrete processes in development, thus allowing the reorganization of elements at a different level. By loosening the logico-mathematically defined boundaries between processes, symbolism may facilitate: (1) the transductive cognitive association of material previously distinguished and cognitively separated on logico-mathematical grounds (Piaget, 1952, 1971b); (2) the unification of previously antithetical, and even competitive, material in the psyche; and (3) the simultaneous occurrence of previously disconnected structural networks. All of which seems implied at least in Jung's (1956) discussion of the alchemical tradition.

The manipulation of symbolism to dissolve cognized boundaries for the purposes of healing may be self-induced (as when the Tibetan dream yogi uses symbolism to integrate his/her waking and dream experiences), or it may be induced in interaction with a shaman. The general point is that symbols may play a crucial role in bringing about the integration of neural structures mediating experience, and thus in integrating phases of consciousness.

Effective cross-phase transference may be accomplished by at least two methods: (1) by gradual transformation of structures prior to the appropriate warp such that the shift in cognitive organization from preceding to succeeding phases is minimized, and (2) by maintaining concentration of awareness upon the symbolic material across the warp, despite the degree of disparity in organization of operating structures. These and other methods may be combined, of course, and in fact often are in ritual. This does not mean that those adept at attaining a phase of consciousness need remain dependent upon the ritual to perform such transformations. In some traditions—for example, in Tibetan tantrism—the objective is to internalize the procedures introduced in the empowering rituals so that the phases of consciousness symbolized in the ritual can be realized in individual practice.

#### F. Blocked Cross-Phase Transference

Cross-phasing may be blocked. Any factor that operates to reduce entrainment below the minimum requisite for cross-phase transference of symbolic material can be considered a *blocking factor*. Blocking factors can originate in either the inner  $E_o$  (the organism), or the outer  $E_o$  (the organism's environment).

The neural structures mediating experience are not only phasically struc-

tured, they may also be structured in mutually antagonistic configurations. Such configurations are called "complexes" in Jungian terminology (Jung, 1968:79), and may inhibit the operation of other configurations. If the organization of structures on each side of a warp is too discrepant, then cross-phasing will not occur and the factors leading to the transformation of structures are blocking factors.

From Western culture the clinical literature on unconscious complexes is a relevant body of data containing numerous examples. There are extreme cases in which individuals experience "multiple personalities," and where memory of events experienced as one personality may be (but not always) blocked from memory in alternate personalities (see Grinker, 1968; Keyes, 1982; see also the partially fictionalized accounts in Thigpen and Checkley, 1957; and Schreiber, 1974).

In addition we can note the difficulty most North Americans have in recalling and making sense out of their dream experiences. North Americans are generally enculturated to disattend their dream life, even to cognize dream life as being associated with "evil," "death," and "madness," hence something to fear (see Shearer et al., 1979, 1983, for a more complete discussion). Little wonder that few North Americans come even close to integrating dream phenomenology with waking life, a process considered routine among peoples like the Senoi and Papago. The literature in anthropology amply demonstrates the fact that people in most societies operate cognitively within a cosmos comprised of multiple realities (see particularly Schutz, 1945). And these realities are directly experienceable. Such people experience *polyphasic consciousness* within their sensoria, and consequently their view of self constitutes a polyphasic integration.

The experience of North Americans, on the other hand, typically tends toward *monophasic consciousness*, that is, ego-identification with experience derived from a single range of phases which excludes other alternative phases (see Laughlin et al., 1983). For North American culture, the only "real world" experienced is that unfolding in the sensorium during the "normal" waking phase (which includes many subsidiary phases like "high," "sleepy," "drunk," and the like), and is thus the only phase appropriate to the accrual of information about self and world (Tart, 1975). About the only time our attention is directed to alternate phases is either in drug-induced experiences sought as entertainment, or when required in therapy, thus reinforcing the association of alternate phases with pathology (i.e., "My shrink has me writing down my dreams!").

Blocked transference, and a resulting discontinuity of experience, may also be a consequence of ritual. This seems to be the case among various so-called possession cults in which individuals enter trance as a result of ritualized drivers and manifest "possession" by spirits (see Rouch, 1960, as well as his excellent film, *Les Maîtres Fous*; also see Daren, 1953;

Bourguignon, 1976). Although one must be cautious of cultural fictions, it is not uncommon for persons thus possessed not to remember the experience later on.

Blocking factors can take many forms and may be any variable contributing to a decrement in minimal reentrainment. They may in fact be the converse mechanisms to those already discussed above. Conditions might prevail that block awareness of symbolic material so that the neural structures mediating awareness are never entrained to those mediating symbolic material. This does not necessarily mean the symbolic transference has not taken place but that if it does it is at a subconscious level. A particularly powerful blocking factor is a rapid and extreme retuning of ANS activity. Again, the easiest example is the transformation which occurs between "awake" and "sleep." Because the hypnagogic warp commonly occurs within a few seconds, and the alteration in ANS tuning involved is so profound, awareness in most of us is insufficient to maintain cross-phase transference.

Yet another blocking factor may be a severe discrepancy in developmental transformation across the warp. Such a transformation will involve massive reentrainment of neural structures mediating experience, and this will be occurring in a relatively short period of time. Again, unless the structures mediating awareness of symbolic material remain sufficiently entrained during the warp, recall may well be blocked in the next phase.

Ingestion of psychotropic drugs can, of course, cause such a massive reentrainment that transference is blocked. Those drugs that trigger neural networks involving discrete neural transmitter substances may well result in blockage, as may drugs causing a rapid alteration in ANS tuning. The key element in all forms of blocked transference is loss of awareness. By implication, any activity that increases awareness of the warp will also increase the likelihood of minimal reentrainment in the succeeding phase, and thus counteract the effect of blocking factors.

## V. VOID CONSCIOUSNESS

An experience of ultimate awareness has been reported from virtually all of the great mystical traditions. This experience has been labeled in many ways: God Consciousness, Kether, Cosmic Consciousness, Nirvana, Satori. Kenneth Ring (1974:172, 1976:78) uses the term *Void* in his useful typology of transpersonal experiences. The direct experience of Voidness has been repeatedly attested by adepts from many cultures and many eras (see Goleman, 1977). The experience is claimed to be ineffable, totally positive, and of a nature that can only be described using metaphor (d'Aquili, 1982). Yet it is possible to describe both the logical and empirical necessity of the experience (as David Bohm, 1980, has implied; see also Wilber,

1980, 1982:44 ff.), and the cognitive transformations that occur as a consequence of the experience (as Franklin Merrell-Wolff, 1973a, 1973b, has done; see also Burridge, 1979:Ch. 11). It is the resulting changes in cognition that are most important, for the cognitive transformations wrought by the experience of Void have implications for the anthropological enterprise, particularly when the discipline is viewed from a transpersonal perspective.

Merrell-Wolff (1973a:76) has described very clearly the changes in his consciousness subsequent to his experience of the Void. Of particular note is his description of the effect of the whole series of insights (*Recognitions*) leading to the realization of Voidness upon his general philosophical outlook:

Probably the most important permanent effect of the whole group of Recognitions is the grounding of knowledge, affection, and the sense of assurance on a base that is neither empirical nor intellectual. This base is supersensible, superaffective, and superconceptual, yet it is both conscious and substantial and of unlimited dynamic potentiality. I feel myself closer to universals than to the particulars given through experience, the latter occupying an essentially derivative position and being only of instrumental value, significant solely as implements for the arousing of self-consciousness. As a consequence, my ultimate philosophic outlook cannot be comprehended within the forms that assume time, the subject-object relationship, and experience as original and irreducible constants of consciousness or reality. At the same time, although I find the Self to be an element of consciousness of more fundamental importance than the foregoing three, yet in the end it, also, is reduced to a derivative position in a more ultimate Reality. So my outlook must deviate from those forms of Idealism that represent the Self as the final Reality. In certain fundamental respects, at least, the formulation must accord with the atmic doctrine of Buddha, and therefore different in important respects from any extant western system.

The experience of Void is, in part, one of recognition, of knowledge. From our perspective, Voidness is perceived only when the neural structures mediating the cognitive aspects of experience within the sensorium are sufficiently matured in their development that this ultimate knowing may arise (see d'Aquili, 1982). The arising of the experience itself may be sudden—a rapid "coming together" of knowledge and experience and the instantaneous obliteration of all conceptual distinctions, including those enforcing a split in experience between subject and object, and those maintaining any boundaries to consciousness whatever. The experience of the Void is a phase preceded by a warp—what we will call the *transcendental warp*.

The "coming together" (entrainment) of neural structures at the transcendental warp is clearly a permanent stage in the development of the perceiver's neurocognitive system. It appears to bear the plateau characteristics of other previous stages of cognitive development (à la Piaget),

and its effects as a developmental transformation rapidly permeate all of cognition and experience (see Wilber, 1980).

Two of the effects most evident from Merrell-Wolff's description are the loss of ego-centeredness in experience and the loss of the view of the world as a concrete objective reality. Completely gone is any view of self as a permanent, impermeable, seamless entity (or ego). Gone as well is a cognition grounded in the belief that the phenomenal world is anything like solid and fixed. Awareness is now grounded upon Voidness, which is to say upon a reality that is beyond transient phenomena, beyond feeling, and beyond concept. All phases of consciousness are experienced in a sense as equivalent, and there is no ego-identification with one phase rather than with other phases.

It is the dissolution of those views—the reentrainment of the neural structures mediating the  $E_c$ —that is the transcendental warp, and an effect of this transformation is to remove the conditioned entrainments mediating the experience of a permanent “me” as somehow distinct and removed from an objective world “out there.” Because the shift in view effects experience of self and world simultaneously, the changes we are addressing do not result simply in a shift from a sort of positivism to a sort of subjectivism (see Pinxten, 1981). Rather, there is a complete neurocognitive reorganization so that neither a positivistic nor a subjectivistic paradigm accurately describes observation informed by the experience of the Void. Both positivism and subjectivism are overly simplistic and dualistic in relation to the transcendental paradigm in which observation is carried out from an experience of totality in which “subject,” “object,” and “observations” are but labels for partial views of what is really a single, completely integrated process—a process that is inseparable from the field of potentialities that is the Void.<sup>13</sup>

## NOTES

1. Much of the material in this paper was presented in preliminary form in Laughlin, Shearer, and McManus (1983), and Shearer, Laughlin, and McManus (1983). Rubinstein's work on this paper was supported by National Institute of Mental Health Grant Number MH-16136. For invaluable discussions we thank John Cove, Iain Prattis, Shelley Chubby, Eugene d'Aquili, Bob Gougeon, Douglas Raybeck, Derek Smith, and Ivan Brady. This paper is dedicated to the memory of Professor Hans Selye.

2. Biogenetic structuralism is a perspective developed by a group of interdisciplinary scholars to advance our understanding in the social sciences of various problems involving the relationship between brain, cognition, experience, and behavior (see Laughlin and d'Aquili, 1974; d'Aquili et al., 1979; Laughlin and Brady, 1978; Rubinstein, 1979, 1981, 1983; Rubinstein and Brown, 1984; Rubinstein and Laughlin, 1977; Rubinstein et al., 1984). Biogenetic structuralism has more in common with the kind of biological structuralism exemplified by Piaget (1971a, 1977), Pribram (1971, 1977), Crook (1980), Waddington (1957), Jantsch and Waddington (1976), Chapple (1970), and Count (1973), than it has with the semiotic

structuralism of Lévi-Strauss (1976), Lacan (1966), or Althusser (1969). The former type of structuralism is grounded in evolutionary biology—particularly neurobiology and ethology—and the latter type is not.

3. Transpersonalism explores experience and knowledge attained in alternative phases of consciousness (Tart, 1975; Zinberg, 1977; Grof, 1976; also see d'Aquili, 1982; Laughlin, McManus, and Stephens, 1981; Laughlin, McManus, and Shearer, 1983; Laughlin, McManus, and Webber, 1984; Webber, Stephens, and Laughlin, 1983 for biogenetic structural views of transpersonalism).

4. We initially borrowed the terms *cognized* and *operational* environments from Rapaport (1968) but have considerably expanded their connotations and implications elsewhere (see d'Aquili et al., 1979; Laughlin and Brady, 1978:Ch. 1; Laughlin, McManus, and Webber, 1984; Rubinstein, Laughlin and McManus, 1984:21.)

5. Zinberg (1977) substitutes “*alternate*” for the more common “*altered*” (see Tart, 1975). The latter often connotes an abnormal or aberrant condition and is thus ethnocentric. We prefer to use the term “*phase*” in order to emphasize the flowing, equilibratory, and processual nature of experience, rather than the more static and synchronic term “*state*.” The former is amenable to an anticipatory model of experience while the latter seems often to be applied as a retrospective labeling of chunks of experience. Also, the concept of phase allows the modeling of experience in relation to the embedding of phase-within-phase (or “*plan*,” see Miller et al., 1960) evidenced in the data.

6. The *Abhidharma* is one of the three great books of the Buddhist *Tripitaka* and is essentially a guide to the meditative study of consciousness (see Narada, 1975; Guenther, 1976).

7. “*Entrainment*” is a technical term in neuropsychology referring to the way neural structures link up to form more complex networks serving some more complex function. The ebb and flow of experience may be understood as the result of rapid entrainment and disen- trainment of neural structures.

8. *Puja* is a ritualized form of meditation commonly involving visualization, bodily motion, and chanting.

9. More technical terms for the excitation and relaxation systems are “*sympathetic*” and “*parasympathetic*,” or “*ergotropic*” and “*trophotropic*,” respectively.

10. For further discussion of the issue of type of transformation, see Rubinstein et al., 1984:Ch. 5. Also, we have elsewhere discussed the role of ritual control of developmental transformation in preventing nonadaptive decrement in cognitive complexity under stress (see d'Aquili et al., 1979:Ch. 7 and 9).

11. The word “*entrainment*” refers to a *synchronic* arrangement of neural structures in a greater network. The word “*reentrainment*” thus refers to a *diachronic* transformation in such an arrangement.

12. See the film *Trance and Dance in Bali* made by Gregory Bateson and Margaret Mead.

13. The issues of polyphasic consciousness and the Void have a number of implications for anthropological research and theory. These have been discussed at length elsewhere (see Laughlin et al., 1978, 1983).

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## MARKETS, TEMPLES, AND PALACES

Carl J. Couch

### I. INTRODUCTION

Somewhat in contrast to most other theorists, Simmel (1950a) did not designate a particular social process or structural dimension as the central one to which all other processes and structures were linked. Karl Marx posited the structural factor of control of the means of production as central; Émile Durkheim held that solidarity and division of labor were critical; and for George Herbert Mead taking the role of the other provided the foundation for all other social processes. Instead of attempting to construct a theory of social life on a foundation of a single or a few processual and structural factors, Simmel called for the formal or qualitative analysis of forms of social action and social relations.

Simmel did not suggest that any given form was more basic or fundamental than any other. Social life, for Simmel, took many different forms. He did not even posit an evolutionary sequence for the emergence of the forms. Any social form could be dominant and then recede in importance as other social forms emerged on center stage. Simmel's sociology is a formal and qualitative mode of thought, but essentially a nondeterministic

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