

THE CROSSINGPOINT IN PETRO RITUAL:
WHERE CULTURE FACES NEURO-PSYCHOLOGICAL REALITY
IN HAITIAN VOUDOUN

A Thesis

by

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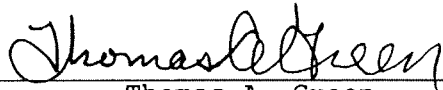
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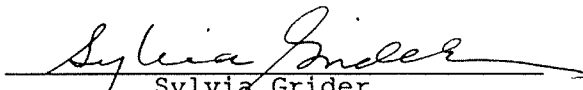
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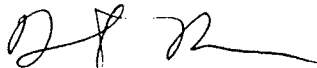
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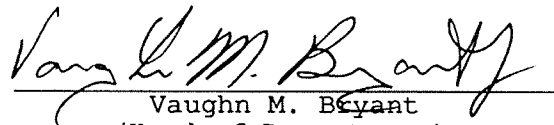
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ABSTRACT

The Crossingpoint in Petro Ritual:
Where Culture Faces Neuro-Psychological Reality
in Haitian Voudoun. (May 1992)

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This thesis argues that the Petro ritual of traditional Haitian practices of Voudoun follows the order of the human neurological processes of perceiving biologically programmed patterns which enable response and adaptation. Petro ritual instigated the Haitian slave revolt of 1791, the final step in a historical process of the slaves' capture, their transport to the New World, their association with the New World environment, and their reassociation with their own African beliefs. In this thesis, that step is compared to the product of a highly complex unconscious sensory processing of archetypal data in the human brain. The implications of this study suggest crosscultural analysis of similar processes sanctioned and staged in social environments. The argument is made that by sanctioning the enactment of a replication of the perceiving process, culture sanctions its members' adaptation process.

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Thanks to the culture doctor, to those who have watched me take
lore and set it on fire within myself, and to my father, on behalf of
settling people who have unsettling ideas.

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CHAPTER I

INTRODUCTION

Thesis Overview

"Out of Void came Darkness and Black Night, and out of Night came Light and Day, her children conceived after union in love with Darkness."

Hesiod, Theogony, 700 BC, II:116.

"To African Americans the gospel spoke of liberation, and persons had to recognize their captivity before they would understand liberation."

Richard E. Wentz, Religion in the New World, 1990:227.

Cultural traditions provide symbols which explain the lives and experiences of those to whom they belong. From their culture individuals derive knowledge about a relationship between themselves and a world to which they must adapt. Knowledge advances when prior learning gives way to supposition, which--in its original meaning--lays down a new foundation. Thus, knowledge depends upon the "sense making" processes of perception.

This thesis argues that the Petro ritual of traditional Voudoun follows the order of the human neurological processes of perceiving biologically programmed patterns which enable response and adaptation. During the late 18th century, the Petro ritual helped induce Haitian slaves into revolution. Their revolt was an enactment of the final step in an historical process of capture, transport, association, and

This thesis follows the style of Current Anthropology.

release. In this thesis that final step, now ritualized in traditional practices of Voudoun, is compared to the product of the highly complex unconscious sensory processing of archetypal data in the human brain.

In particular, this thesis analyzes the behavior process in Petro ritual by comparing it to human perception. Both the ritual and the process of perceiving employ similar ordering principles. Petro ritual utilizes disorienting motions, trance-inducing rhythm, familiar beliefs, fear, sleep deprivation, and erotic behavior as psychological and physiological stimulants. Stimulated sensory neurons cause rapid state changes through nerve cell assemblies in the brain, the hypothetical repositories of past associations which are normally excited during learning processes. Behavioral action is a function of an already-adapted neural process called innate releasing mechanisms (Tinbergen 1951); motor responses are "known" to follow certain stimuli (Lorenz 1977:53). The result of neural activity is an open-endedness and readiness to perceive and respond. From evidence presented in this thesis, the result of the ritualized stimulation of neurological processes is an open-endedness in the brains of the ritual participants which serves the interest of individual and group adaptation. This study concludes that worshippers, partaking in the cultural traditions of Voudoun, are vitalizing the process of knowledge which enables their survival.

This study of the seemingly disorderly process of Petro ritual provides a model to understand how and why Haitian social order has arisen out of chaos, how and why individual freedom arose from the bondage of slavery. A model developed by this thesis affords a method to study how perceiving enables humans to respond and adapt to an environment; how sanctioning the enactment of the process sanctions

human adaptation. I suggest investigation into the areas of the performing arts: theater, festival, and oral narrative; of religious, political, educational and legal systems; of market systems; and of various forms of culture change including social migration and settlement. I would also include individual and family dynamics. Similarly, I suggest study into the group dynamics of holiday celebrations, games, play, and processes of war. Finally, I would investigate the area of human mental health and its treatment. I mean to imply that although the survival of the individual and group is dependent upon perception, behaviorally enacting the neurological processes may also endanger survival.

Perceptual process and behavior are "ordering mechanisms" which work by way of ritual: using the neurological processes. First, the ritual proceeds through disorder, a script composed from a conglomeration of African and Native American myth, European Catholicism, and legendary Haitian history. The major Petro divinity, Ti Jean Petro, is a malevolent, child-eating, one-footed snake-like character (Courlander 1973:45). Nonetheless, the spirit stands as the ancestral reference of the cult, as its life force (Deren 1953:118). A chaotic, disorienting period during the ritual proceedings is marked by separation, characterized by disorientation. Carl Jung studied the confusing yet systematic transformation processes of the human psyche early in the 20th century (Jung 1967). Anthropologist Victor Turner (1986) has since identified the period of disorientation in ritual proceedings as a liminal period, which he believes "holds the generating source of culture and structure" (p. 158). Turner conjectures that symbols in ritual replicate key neurological features of the brain and central nervous system (p. 175). More recently,

chaos has been implicated as the ordering mechanism in human neural activity (Freeman 1991; Skarda and Freeman 1987).

Second, in both Petro ritual and neurological perception processes, there is a capturing experience. Haitian ritual participants believe that they are taken over during the ritual process, possessed by being "mounted" and "ridden" by gods called loa. The actions and attitudes expressed by the practitioner during possession are assumed to be those of the loa spirit, not the person (Deren 1953:16, 29). In the extreme, spirit possession and a trance-like zombie state can result in death. On the other hand, an "I don't know" state in perceptual processes is a state within which new neural activity patterns can be generated. According to neuroscientists Christine Skarda and Walter Freeman (1987;1991), during the processes of perceiving the neural system falls into a "chaotic well", a "catch-basin" during which a restless, but bounded neural activity is maintained. A low dimensional basin of chaotic activity resembles the early stage of recovery from "silence" under deep anesthesia; death is actually a system's steady, non-oscillating, state of equilibrium at the bottom of the "well" (Skarda and Freeman 1987:168,171).

Finally, a crossing point experience predominates in both the ritual proceedings and in neural processes of perception. In Petro ritual the ordered center is described as a crossroads, a pivot. The crossroads symbol appears in the Petro ritual, and has been called the "interferential nucleus of the cross" (Rigaud 1985:92). "Interferential" refers in physics theory to the point where the combination of two or more wave motions form a displacement; a "bifurcation point" in a complex system names the "revolutionary" moment when a single fluctuation may become so powerful, as a result

of positive feedback, that it shatters the preexisting organization of the system (Prigogine and Stengers 1984). Accordingly, in the human brain the crossroad symbol is a metaphorical image of a modality of human perception; a modality of human conceptualization; a modality of a lower, archaic brain; and a modality of an upper, developed brain meeting in neurological processes of learning at a point of mutual confrontation. Within the sensory system, the "bifurcation parameter" is related to sensory input and arousal, characterized as a counterclockwise spiral trajectory (Skarda and Freeman 1987:167).

It is the utilization of the metaphorical image of the crossroads in Petro ritual, the capturing experience, and the chaotic ordering which suggested to me that the processes of Petro ritual mimic the processes of perceiving in the neurological system. The views of Carl Jung (1953), Niko Tinbergen (1951); John Bowlby (1969), Konrad Lorenz (1977), and Anthony Stevens (1983), that behavioral action is a function of an already-adapted neural mechanism, suggested to me that Haitian Petro practitioners' neural systems "know" which behavioral response should follow a ritualized stimulus in order to ideally fulfill a survival function.

This thesis proceeds through four parts. This chapter continues by surveying the scholarship of previous studies of African culture and African identity in the Americas, ritual and the liminal state, chaos theory, and studies of the neurological processes of the human brain. Chapter II begins by describing the history of Petro ritual. The ritual's history follows the same structural process as the structure of the ritual and neurological ordering in perception. Next are described the esoterica, sacred objects, and officiant, all forms to which the meaning of the ritual is assigned, and from which

any meaning of the ritual is gained. While repetitive stimuli such as rhythmic sounds and dance movement induce physical changes in motor behavior, the additional speech patterns and responses to external stimuli, and the use of symbols, in particular the crossroads, exaggerate the orderly disorder, a capture event, and a crossing point experience, exacerbating revolutionary results. Chapter III includes a review of the organizing process described in physics theory which pertain to the neurological processes of perceiving. The implications of the findings of this study are presented in Chapter IV, following the conclusion and establishment of the hypothesis.

A Review of the Literature

This study of Petro ritual fits into a broadscale interest in American Africanisms which is guided by Melville Herskovits's (1941) pioneering work. Despite earlier assertions, including E. Franklin Frazier's (1974[1963]) that African Americans had no African heritage due to its loss during the Middle Passage, Norman Whitten and John Swzed (1970), as well as Sidney Mintz and Richard Price (1976), and Roger Bastide (1971), together with Joseph Holloway (1990), are able to reconstruct informational culture histories of the African Americans which include African traditions.

Elements of the traditional culture adapted for use in the New World are found in the mysterious and compelling theological principles and religious practices of the Haitian traditional society, Voudoun. Both Zora Neal Hurston (1981[1938]) and Maya Deren (1953) narrate Voudoun possession experiences. Anthropologist Wade Davis (1985;1988) recounts, and later explains through the use of ethnobotanical research, the experiences of Voudoun zombies. Studies

of the procedure of Petro ritual include Alfred Mettraux's (1959), Milo Rigaud's (1985), and Harold Courlander's (1960[1939]). Petro ritual symbols are explained by Robert Farris Thompson (1974;1983), and Thompson with Joseph Cornet (1981). Karen McCarthy Brown (1989) names and describes the pantheon of Petro spirits. The formulation and acting out of these Petro spirits, Brown concludes, is a non-surrendering human response to situations of extreme oppression.

It can be said that any study of Africanisms in the New World is an inquiry into how people resist oppression, how people identify themselves by drawing from their past a richer meaning of who and what they are (Mintz 1974:xv). It is by being responsible for creating their own order in a sustained culture that individuals establish their own identity. The concept of an African identity in the New World, referred in this thesis as the concept of self, has been surveyed by Alfred Pastern and Ivory Toldson (1982). Comparatively, Antonio Steven-Arroyo (1988) has formulated, based upon the archaeological record, a concept of the identity of native Americans who met the Africans arriving in the Caribbean area. Erika Bourguignon (1965) has theorized the withdrawal of the self through possession trance states as a means of self-preservation practiced among African Americans during Voudoun. Of no less importance to this thesis is Anthony Wallace's (1966) broadscale anthropological work, a study of the preservation of the individual self through religious practices.

Richard Robbins (1972) has explained anthropologists' interest in issues which incorporate the concept of self as attention to motivations for cultural behavior. Robbins points out that a study of

the disruption of individual identity structures can lead to a productive study of culture change.

Mary Douglas (1982) claims that humans reacting to the environment actively make their own environment. Accordingly, she admits to following Ruth Benedict's (1959[1934]) lead by regarding individuals at the center of a culture theory. Likewise folklorist Linda Degh (1969) concludes that, in our studies of culture, "we are talking about describing and analyzing the life and artistry of individuals" (p. 290).

This thesis focuses on the life and artistry of believers of a New World way of living who establish and maintain an individual self as well as a cultural identity. Nancy Munn (1973) explains that ritual action provides the structure for expressing or "modeling" the qualities of individual and cultural lives (p. 50). Victor Turner (1967) outlines the basic definition of ritual as prescribed formal behavior for non-technological routinized occasions--behavior having reference to beliefs in mystical beings or powers. According to Anthony Wallace (1966), ritual is none other than "religion in action, the cutting edge of the tool" (p. 102).

According to Erving Goffman (1959), ritual includes patterns of verbal and nonverbal acts, "facework", by which one expresses oneself and one's social values. Emile Durkheim (1954[1911]) explains that rules of conduct enable all to act appropriately in order that they receive their due. Goffman's verbal and nonverbal acts of expression, and Durkheim's society composed of individual acts for power, meet up in Roger Abrahams' (1977) explanation of the aspects of the folkloric performances of ritual. According to Abrahams (1975), the community's ideals are stated most clearly in

ceremonial performance events, community enactments which exhibit ritualized characteristics of nonetheless open-ended interaction whereby all add their voice, notions, and emotions, where the performance calls for a constant interplay and overlap of voices.

Ritual theories which outline self-ordering processes also point out that rituals "fail", as Nancy Munn (1973) explains, when the participants can no longer transact, through the ritual, objective relationships of subjective relevance and internalized value. Called "boundary maintaining mechanisms" by N. D. Fustel de Coulanges (1956[1864]), rituals organize social space, social order having to be constantly recreated through ritual activity, the individual's conscience "lodged within external social forms that govern it, compelling it from without" (p. 167). In Fustel de Coulanges' view, traditional human societies control themselves by projecting the individual conscience into external symbolic forms (Munn 1973:583). Emile Durkheim's (1954:206) example of totemism in central Australia demonstrates rituals as the go-between of external moral constraints and of internal feelings and imaginative concepts.

More specifically, ritual theory outlines an ordering process dependent upon disorderly proceedings. According to Victor Turner (1969), societal and individual "communitas" is reaffirmed by means of a dissociation. The ritual state of disorder is a rite of transition called the "liminal" by Van Gennep (1960). Studies conducted by Beidelman (1966) on Swazi royal ritual in Africa indicate that ritual manipulates the society by mixing or confounding categories, an operation which is both potent and dangerous, and by separating out, reordering, or checking upon existing orders of categories which should be kept apart. Through ritual action the social group is

transformed, dissolved, or maintained. Consequently, ritual affirms a coherent, identity-establishing symmetrical relationship between an individual and society. The internal logic of a so-called "cultural code" as Munn (1972:598) points out, is best studied in its connection to experiences of order and disorder created by individual intention and cultural meaning.

Concepts of ritual theory apply to the study of individuals, in particular neurocognitive functions, more specifically symbolic activity. Carl Jung (1967) suggested that innate archetypes, grounded in biology, manifest psychologically as symbols, and culturally as ritual. Victor Turner's work, "Body, Brain, and Culture" (1986), questioned the belief that all human behavior is the result of social conditioning. This thesis builds upon recent work conducted by Charles D. Laughlin, John McManus, and Eugene D'Aquili (1990) which posits that symbol making, as neural behavior, orders ritual.

My study of a chaotic ordering activity in ritual has roots in a regard of chaos as anomia, or hybris according to Euripides; anarchy and intemperance, as Plato said; and sin and wickedness found in the New Testament. Curiously, however, the same irregularity today is a characteristic of modern western morality which supports a condition of insatiability (Orru 1987; Ostwald 1969). Nonetheless, Hesiod's use of anomia to describe Typhaon, the red-eyed, firebreathing god of foreboding winds in Theogonia, would seem to apply also to centaurs in Sophocles' Trachiniae and the minotaur slain by Theseus in Socrates' Enconium for their terrible, violent, and superhuman behavior.

Notwithstanding, the term chaos has been referred to in creation theories of various cultures. Chaos is also paradigmatic physics theory. Random "organizing" events in nature, named by Edward

Lorenz (1964), became Ilya Prigogine's 1979 Nobel Prize work on complex dissipative systems, defined in his joint authorship with Isabelle Stengers (1984).

Very recently chaos has been used as an explanation for theories of human neural processes. Research on the physiology of perception has been published by Walter Freeman (1991), together with Christinę Skarda (1987) defining perception as dependent upon chaotic ordering processes of the brain. The mind is structured in orderly disorder, according to Paul MacLean (1979). The human brain has evolved in three tiers, referred to as a "triune brain", each structure nonetheless continuing to facilitate the others' functioning; the old brain, or limbic system, has some capacity for functioning independently of the new brain, or cortex. It seems that the ways in which one masters the external world, but comes to terms with the internal world, leaves one in a state which Anthony Storr (1985) explains as "divine discontent".

With similar methodology, Barbara Lex (1979) explains a related theory of separated cerebral hemispheres, enlarging upon French neurologist Paul Broca's (1861) work on specificity of brain areas to function. Carl Jung (1959) explains two equal, but different, operating "attitudes" of the mind, each with four separate functional ways of operating (p. 9). It can be said that, according to Jung's theory, the fabric of reality is constantly emerging by means of the typology and functional types of the mind's process in the brain. Anthony Stevens (1982) explains that, to Jung, subjective inner experience and objective outer behavior have a common origin in an archetype, the necessary precondition to psychic and behavioral events; that archetypes seek their own actualization in behavior and

personality; and that archetypes, as unconscious preconfigurations or patterns in the human central nervous system, match configurations in the environment, activating human behavior (p. 17-19). According to Stevens, an ethological approach to human behavior adopted by Jung has commonality with John Bowlby's (1969) belief that patterns of behavior found in all human beings seem best considered as "expressions of some common plan" with obvious survival value (p. 40). In particular, biology and Jungian psychology, according to Anthony Stevens (1982:54), assert that the way humans receive knowledge of the world through perceptual processes is programmed by evolutionary pressures. Stevens explains that "our unconscious perceptual mechanisms marshal the chaotic mass of information making itself available to our senses, rendering them comprehensible to the conscious mind" (p. 56), selecting stimuli that are most relevant to survival, activating many patterns of social behavior by means of a process called by Niko Tinbergen (1951) "innate releasing mechanisms". Konrad Lorenz (1977) explains this mechanism as the manner whereby motor responses are "known" to follow certain stimuli (p. 53). June Singer (1990) credits Jung with standing in the face of an apparent disorder in the unconscious human mind, treating his disturbed patients as if there was some inherent order in their minds' activity (p. 63).

A theory of consciousness put together by anthropologist Charles Laughlin and psychiatrist Eugene D'Aquili (1974) describes the complex relationship not only within the proceedings of the brain, but interdependent upon symbolic culture. With anthropologist John McManus (1979), Laughlin and D'Aquili have traced cognitive and sociocultural roles of ceremonial ritual among human societies. Laughlin, D'Aquili, and McManus (1990) have more recently discussed

consciousness as a relationship between symbols and cognitive, ethological, and ethnographic factors. Finally, utilizing a link between chaos and natural states of human behavior, i.e., between abnormal behavior and survival, anthropologist and psychiatrist Melvin Kopner (1990) has been able to speculate why it is that unpredictable, reckless, and risktaking personalities have survival value.

CHAPTER II

THE ORDERING OF PETRO RITUAL

Introduction

Petro ritual is a Haitian tradition which asserts "cultural community", that is, establishes a fellowship of interests having to do with emotional, behavioral, and cognitive patterns. In this thesis, an analysis of the ritual exposes one means by which African Americans resist oppression, and how a people in Haiti identify themselves by drawing from their past a richer meaning of who and what they are. The ritual is a sociocultural event construed in this thesis as a structured process based in neuropsychology.

The Petro ritual's stratagem has been attributed to African shamanics, European masquerades, and American ingenuity. On the other hand, the Haitian worshippers claim the mythic event which they celebrate is actual history. The ritual recapitulates a sequence of historical events: the capture of native Africans, their Middle Passage transport to the New World, their bondage in slavery, and their revolt for freedom. Esoterica, ritual items, and officiants have been assigned to carry the meaning of that structural design.

The following is an oversimplification of Petro ritual. Nevertheless, a repetitive processual structure is characterized; tragic historical proceedings which have become translated into a ritual suggest innate physiological mechanisms. Described in this chapter are Haitians making sense of their world, drawing from their past and their present by means of a frenzied ritual.

History

The history of Petro defines an otherwise legendary account of social turbulence, growing up, so to speak, in Haiti. Born on the island of Guadeloupe (Bastide 1971:148), the Petro cult was raised in the hills of Haiti as a protest by African slaves. The history of Petro is the telling of a mythos, of the stages of development of a prodigy, it might be said, which flaunted its inherited genius, a troublemaker which organized slaves into a dance to freedom.

The story of Petro begins in 1510 as African captives came to Haiti from various places in West Africa (Courlander 1973:2; Deren 1953:59; Herskovitz 1958:51). The seized were either criminals caught by their own people and sold as prisoners, or victims apprehended in slave raids by neighboring tribes or professional Arab raiders (Courlander 1973:2). All were victims of an inescapable plight.

The humiliated captives were crowded into pens, branded, and herded onto ships. The ensuing Middle Passage would carry their captive experience into a New World. The two-month voyage would mean packed holds, disease, death, and cruelty. One in three of the captured would arrive in the New World alive (Elkins 1976:100-101). Being shipped from Africa to work the plantations owned by French whites, the soon-to-be slaves carried with them only their shared beliefs. All departed Africa leaving behind the functioning basis of aboriginal African culture, the economic institutions and political structures, kinship groups, and linguistic habits. Their departure began four centuries of the most massive acculturational event in human history (Mintz 1974:9). Carrying their beliefs, Africans nevertheless transported from their homeland that aspect Herskovits (1958) calls a "focal unit" (p. 76). Beliefs are the aspect of any

culture which, under pressure, tend to take on great, even obsessive, importance. Dahomey and Kongo beliefs included religious activity in the form of dance (p. 270).

The surviving spiritual practices in Haiti were called Voudoun, of which the Petro ritual is a part. Voudoun has been called religious practices of action, not reason (Leyburn 1941:135), being malleable, adaptive, suited to those people who live in symbiosis with the universe and do not artificially separate from it at any moment of their existence. An emotional release, it was regarded as superstitious. Still, Voudoun was allowed by whites as a nocturnal physical diversion to the slave's ordinary routine, so that, on a Saturday and Sunday night, slave quarters in the Americas could neither be silenced nor put to rest.

More than a religion, Voudoun salvaged for survivors traditional beliefs of many separate African nations, creating commonality among their ways of living. The first rites to be practiced in the New World were called Rada, named for the Dahomean mythic town of origin, Allada, "to the East". The slaves knew that "Guinea", or Africa, lay eastward where the sun returned each morning. Ultimately, however, freedom for captive slaves would come out of the Western world to which they had been transported, in particular out of their dark experience of that world.

The fact is that, to Africans in the New World, suppression encouraged the very thing it tried to destroy (Deren 1953:62). The humiliating impediments and constraints were instead agents in an unprecedented breakout of African volition. Suppression, Stanley Elkins (1976) has written, was intended to produce among the slaves a "childlike quality", to destroy their independence. Induced by the

shock experience of capture and the Middle Passage, Elkins explains, humiliation was used by their manipulating masters to put an end to tribal values, sanctions, and standards (p. 250). But the masters' subjugation strategy nonetheless granted small roles to the slaves, that is, allowed slaves to be mothers, fathers, and fieldhands. The small roles inadvertently gave slaves an identity and meaning in the social process. Within the framework of a sense of individuality, slaves could conceive of their own importance in the larger, more transcendent goal, that of social order.

Consequently, the African Americans came to realize in 1791 that, instead of a continuum of resistance by displacing aggression through childishness—"satire, lying, feigning illness, slow working, theft, flight and strikes, self-mutilation, suicide, and infanticide, poisoning and physical abuse" (Geggus 1983:2)—they would assert their individuality, together with a notable suppressed fear of their difference. Their assertions were guised as anger. Yet with leadership, the slaves' vengeance was united (Leyburn 1941:23) into a new ritual, Petro. Petro is said to have been named for the Spanish word petreo meaning "stony", a paralyzing, coldhearted description which fits the image of a mythic West where, it can be said, the sun dies in order to be reborn.

Esoterica

As Alfred Metraux (1959) relates, Petro supposedly began in 1768 when "a Negro of Lapetit-Goave, a Spaniard by birth, abused the credulity of the Negroes with superstitious tricks and gave them the ideas of a dance, similar to the Voodoo dance but more hectic in its

movement" (p. 39). Then, on the night of August 14, 1791, a Jamaican Voodoo priest named Boukman

...brought together a great number of slaves in a glade of Bois Caiman near the Red Mountain...a storm broke...lightning scribbles the low dark clouds with brief radiance...torrential rain...in the middle of this...an old Negress rises up, her body shaking from head to foot. She sings, she pirouettes and over her head she brandishes a huge cutlass...a black pig is produced...the inspired priestess plunges her cutlass into the animal's throat. The blood spurts...distributed to the slaves: all drink, all swear to obey Boukman. [p. 42].

Despite legendary inferences, Petro ritual has continued through history, well known for the "possession" trance state practitioners experience during the ritual. As a result, practitioners are freed, able to adjust to the demands of their environment. More specifically, possession is a captive state which allows the airing of socially unacceptable impulses. An individual's behavior is granted the otherwise unpermitted prestige and authority it deserves because gods are assigned the responsibility (Bourguignon 1965:54). A sacrifice performed during the ritual averts any danger. As Meyer Fortes (1987:291-292) explains, sacrifice, a universal occurrence, is a procedure used to establish or mobilize a relationship of mutuality between the donor (the individual or group), and the recipient (the god or spirit). In that human vulnerability was constantly being reinforced through pain and suffering in a slave's world, sacrifices became "rituals of defense" (Bourdillon

1980:xiv). To put it another way, possession condoned slaves' feelings and behavior while sacrifice averted the threat of danger to themselves and others.

Ultimately, the ritual which employed captivation itself became captivating, taking on mythic proportions. In its intensity, it created a revolution among its participants. Like the ritual, the revolt was overt, systematic, and communal (Geggus 1983). The ritual and the revolution were effective for the same reasons. By destroying psychological defenses, slaves were protected from their own anger. By reinforcing the depths of their own identity, slaves became self-immunized against the more serious threat, fear of their enemy, the whites. Both ritual and revolt were conducted over time. In time the two integrated and reinforced group values, enabling the survival of both individual and group.

But more precisely, the ritual, like the historical process out of which it grew, and upon which a revolution was founded, transported "possessed" captives, leading the displaced individuals and a deposed cultural authority through a process of insuring quiescence by reenacting what Mircea Eliade calls the Original Solution determined ab origine by gods, heroes, or ancestors (Eliade 1974:21-28). According to Eliade, a reenactment of the primordial act is the transformation of chaos using the divine act of Creation.

Through the effect of ritual, Eliade explains, "form" becomes real (p. 11). Through a ritualistic journey, one reaches a symbolic "center", which Eliade explains is a place of "reality". Attaining the center is a consecration, an initiation. Eliade's concept of reality develops as follows:

...if the act of Creation realizes a passage from the nonmanifest, or, to speak cosmologically, from chaos to cosmos; if the Creation took place from a center; if, consequently, all of the varieties of being, from the inanimate to the living can attain existence only in an area dominantly sacred; whatever is founded has its foundation at the center [p. 18].

In Petro ritual, one reaches this center through a state Bourguignon (1965) calls a process of "dissociation in the service of self" (p. 55). This state is interpreted by practitioners as being "mounted and ridden" by loa, or spirits. The possession is prefaced by participants being spun in a circular movement, dancing a "laille", or swirling motion (Courlander 1985:129), and participating in movement accompanying rhythmic drumming. The effect is trance inducing. In reality, during Voudoun possession states, under increased or prolonged stress and under induced physical debilitation, the brain's processes break down. The impaired judgment increases suggestibility in order that new beliefs and attitudes be implanted. Accordingly, it is through a possession state that unfulfilled, perhaps unrealistic desires are given a "second chance at fulfillment" (Bourguignon 1965:57).

To conclude, in the late 1700's Petro ritual became a seed bed for revolution. By taking a hostage on a return trip through the Original Solution, Petro ritualized and simultaneously provided a sense of individual renewal. By incorporating a regression, by enabling slaves to return to their "roots", so to speak, Petro

established a continuity with the past, reinforcing group values and group integration (Kiev 1972:32,39).

True to the responsibility of religious practices, which Petro practices are in part, Petro offered a solution (Wallace 1966:38). Moreover, Anthony Storr (1985:148) explains that anyone discovers what kind of world he or she lives in when something happens to disrupt it. A person, he says, must be prepared to see his or her world broken before he or she can renew it (p. 147).

In short, by utilizing traditional practices, Petro enabled the enslaved to get in touch with the reality of a heinous, but real existence. Although the individual was "set up", taken through the process of physiological and psychological destruction, the intent was for the slave, and ultimately the community of slaves, to be able to confront the reality of themselves and their existence. As each person physically and psychologically collapsed, the ritual items and officiants helped each person, as well as the group, to get in touch with their own reality.

Ritual Symbols

Petro ceremony is symbolic; symbols are the result of human imagining. To borrow from Suzanne Langer (1942), symbols bear the illusory, the sensory, the dreams and the make-believe including memories and beliefs beyond experience, transporting them out of the mind, into concrete reality (p. 281). Erving Goffman (1959) explains that the mind's raw data is put into frames so that people can get a look at themselves and each other. Goffman helps us understand, for instance, that language is a framework. Language is a sort of

"bricolage", Roy Wagner (1985) says, a cultural thought process which takes on many social variations.

Consequently, Petro ritual, it might be said, is an archetypal bio-psycho-cultural thought process; its symbols carry the meaning. It might also be said that allegiance to Petro evokes a living symbol, an emotionally experienced thought process. Using Goffman's analysis, Haitians put themselves within their own frame to make sense of themselves. In that way they are also made "real". To repeat, according to Eliade (1974), only through the effect of ritual is anything made "real" (p. 11). As a result, it becomes absurd, as Maya Deren (1953) writes, to ask what the ritual action symbolizes: "the real, visible action is not the symbolic statement of some idea; it is the idea which is understood as the symbol" (p. 14). In this case, the ritual, and all of its elements, as ideas understood as symbols, are living, experienced ideas. To the Haitians, the ritual is reality, regarded in working terms because Haitian culture demands that critical needs be met. To the Haitians, Deren explains, the place where the abstract and living meet is in action (p. 73).

In Petro ritual, the point where the abstract and the living meet is symbolically regarded as a crossroads. The crossing point is where each Petro practitioner faces his or her reality. Furthermore, since what is inherent within each individual is inherent within the culture, the ritual can be explained as a metasymbol in a "mutually reflective universe" (Guss 1989:4); the crossing point is where the culture faces its reality.

The crossroads, then, is the meeting place of the image and word, thought and affect, individual and community, idea and action. Understandably, the crossroads is the most important ritual symbol in

Petro. A figure composed of the intersection of four right angles, the crossroads is also the symbolic point of access, so to speak, to the soul of the cosmos and the source of life force, cosmic memory, and cosmic wisdom. In daily life, a Haitian depends upon constant communication with one's own memory, intelligence, imagination, and invention. The crossroads is a metaphor for the depth of that memory, intelligence, imagination, affect and invention (Deren 1953:35). Whenever drawn, the sign of the crossroads becomes the juncture where communication between worlds is established, where the traffic of energies and forces between them is set up; the center is the point of crossing, the moment of arrival and departure (p. 41).

The crossingpoint is situated in the center of the sacred precincts in which the activities of Petro rituals take place. Called the poteau-mitan, or centerpost, it is usually painted in a spiral movement. As representation of the cosmic axis, the crossroads is geometrically and logically related to Legba, the god associated with the Sun. The crossroads grounds the vertical space of the astral at the forces of the horizontal. Legba is Matire Grand-Chemis, the Master of the Highway, the "highway" being, in principle and essence, "the inferential nucleus of the cross" (Riguad 1985:92). Papa Legba, as centerpost, is the "sole Being" of all the religious doctrines having the form of the post; as the keeper of the gate giving access to the life source, Legba is the divine cause of all the mysteries, the cosmic essence believed from whence come and return the loas. Whether or not a Voudoun temple has a visible centerpost, the crossroads is present: a lighted candle in the ground may serve.

A paradoxical agreement at the crossing point is also a symbolic configuration of reality for individual or culture community.

"Strike the hidden complements of life" the Yoruba elders had once taught (Thompson 1974:212). Through Petro ritual the Haitians simultaneously learn how to order into one the worlds of the two radically opposing places, Africa and the New World.

Petro continues to be a framing device which points the way to Haitian social order. Early mention associates the rite with the tasting of gunpowder. Robert Thompson (1983), citing Maya Deren's LP Voices of Haiti, defines Petro dancing as "distinctively intense, almost nervous.... Dancers, instead of riding the beat, as in Rada, seem to be running in front of it as if the beat were whipping them forward" (p. 180). Thompson (1988) relates in his foreword to Wade Davis's account Passage of Darkness that, in the classical religion of African Kongo, the cracking of whips and the firing of guns are used literally in the context of ritual conciliation, an "acoustical door to the other world" (p. xii). Continuing from his fieldnotes of the summer of 1985, Thompson relates: "In north Kongo if there is something wrong concerning conduct in the village, a society will come out with guns and fire them—to attack the village symbolically". Like Kongo gunfire, Petro "deliberately shatters the peace to dramatize something has gone wrong" (p. xiv).

A more familiar example is found in riddles where culturally recognized messages transform speech from talk into performance in order to literally tell the audience that what "co-occurs" with such devices is somehow different, taking the audience "into the heart of the structure" (Pepicello and Green 1984:8-9). The ploy is creative, nonetheless formulaic, ordering which directs one to the meaning of the riddle.

Accordingly, Haitians produce no "supernaturally extraordinary phenomena or magic" as Milo Rigaud (1985:8) has us believe. We do not need to "comprehend the esoterics of magic" in order to understand the power of Petro. Whereas symbols normally work to keep reality, too profound to comprehend, hidden from human consciousness, the symbolized reality in Petro becomes a part of consciousness, at the crossing point, where the symbolized became real.

The crossing point in Petro ritual is located, once again, at the centerpost in the temple, or hounfor. In addition to the centerpost, every hounfor has a tomb-like mound, a djevo (Rigaud 1985:14) or tombstone surmounted by a cross. As the symbol of Ghede, God of the Dead, the section is where an initiate, captured into a possession state, dies and is reborn to become an adept of the group. Ghede is the figure who "attends the meeting of the quick and the dead" (Deren 1953:37), the repository of all of the knowledge of the dead, is wise beyond all others, the Lord of Life and Death, and the axis of the physical cycle of generation and the metaphysical cycle of resurrection (Deren 1953:37).

Ritual participants are integrated throughout the proceedings by the drummer. Accompanying the drumming, the participants become a single body; they move as one. The drummer influences and controls the procedure of possession as the assistant to the spiritual leader, or houngan. Deren (1953) explains:

He may observe that a loa threatens to overcome the houngan who must execute some complex ritual detail, and he can relieve the situation by making the drumming less intense. On another occasion, he may, by simply maintaining that

intensity, make futile a serviteur's resistance to possession. Above all, it is in his 'breaks' that he has most control. In a 'break' the maman (and this is the only drum which 'breaks') ceases to beat with the other drum in the fixed rhythm and works at a highly syncopated, broken counterpoint to them for a short period, only to slide back and resume the pattern again. This 'break' is related to the cumulative tension which the dancers inevitably experience from constantly repeating a single small movement. Some movements, being by nature tense and tiring, accumulate such tension rapidly. Moreover, it is logical that such an accumulation should be more frequent toward the end of a ceremony than toward its beginning, and also that it should have a good deal to do with the subtle fluctuation of the intensity of the drumming itself, since the musculature ardor of the dancers derives from this [p. 239].

In addition, as participants dance, loa and participant become one. So that daring leaps "vertically into the air" (Metraux 1959:129) are the physical evidence of an integrated human with the ability "to move from one unstable setting to the next without the loss of humor (refusal to suffer) and composure (collectiveness of mind)" (Thompson 1974:xiv).

Officiants

As we have seen, the pillar of the Haitian cosmos is the poteau-mitan in the hounfor. The pillar of the Haitian community and community-making is the houngan (Davis 1988). As the spiritual

leader of the community, the houngan interprets the complex belief system which prescribes a way of life. Because Voudoun society encompasses art, music, and education based upon the transmission of song and folklore, medical treatment, and a legal system, the houngan is "at once psychologist, physician, diviner, musician, and healer" (Davis 1988:47). The houngan balances the supernatural while ensuring physical well being, standing and conducting business at the crossroads of the cosmic, the community, and individual axis.

Houngans possess the strength of the understanding of the world in order to cure illness, to control the possession of others, and to counteract evil. In Haiti, magic and religion are two parts to a whole; a sorcerer, or bokor, creates dark magic essential to a balanced worldview. Davis (1988) explains: "to ask why there is sorcery in Haiti is to ask why there is evil in the world, and the answer, if there is one, is the same as that provided by all the great religions: evil is the mirror of good, the necessary complement that completes the whole of creations" (p. 54).

Whereas the houngan is the spiritual leader of the community, Ti Jean Petro is the community's leader of the pantheon of Petro spirits. The spirit Ti Jean is mitigating: he is one-footed, therefore handicapped; crippled, he founders, he falls. The impish dwarf is believed to be able to appear in both the world of the real and the world of the unreal. According to Deren (1953:118), the character's behavior symbolizes a snake able to slither into the trees, or an agile figure able to effect an escape. Alfred Metraux (1959:39) writes that "Dom Pedre" is a powerful god in Voudoun who is normally greeted with the firing of gunpowder. Dom Pedre is explained by Thompson (1983:179) as a messianic figure or ancestor who comes

back from the grave to renew his usefulness to the living in the body of a person or charm.

Gestures of this Petro spirit, Thompson continues, "filling the body of a possession priest or priestess", are tense, the "incandescent forces reflecting a notion of salvation through extremity and intimidation" (p. 181). Ti Jean Petro, as founder of the ritual and father of the Petro tribe of loa, has been called by Deren (1953:114-119) the earthly Damballah (p. 114-119). As the good serpent of the sky, Thompson (1983) believes that Damballah is a metaphor for the primary sign of order. According to Thompson, "coiling a resplendent bichromatic body about the earth, Da shaped its globelike form and sustained its balance and existence". Its iridescence, Thompson believes, becomes a perfect metaphor for the mind's own ordering motion (p. 175-176).

In Petro, the mind, emotions, and behavior are patterned and enacted in chaos, utilizing the activity in a cultural tradition. The esoterica, ritual items, and officiants carry the meaning of a process which orders belief into everyday reality. Participants, captured in a state of possession, make sense of a nonsensical world by drawing from both the past and the present, uniting their world at a crossing point in ritual proceedings. Belief in this chaotic ritual process enables Haitians' ideas to live as action; repeating the act enables Haitians to become free to live through a symbolic death.

CHAPTER III

THE ORDERING OF PERCEPTION

Introduction

This chapter follows a review of Petro ritual which has implied that the historical process establishing an African's fate in the New World is a process which is reenacted in a frenzied ritual. In a ritualistic manner Haitians continue to make sense of their world. In a similar way, chaotically behaving nervous systems act out a communication process within neural networks. In this chapter, the process conducted in neural networks consisting of a transmittance of a motor command, the issuance by the limbic system of a reafference message, and the response of neurons in a collective burst, is described as a processual structure similar to the process found in the history and ritual of Petro. The human neurological processes of perception have been explained as chaotic ordering process by Christine Skarda and William Freeman (1987;1991). Chaotic ordering has been explained in physics theory by Ilya Prigogine and Isabelle Stengers (1984). A description of the theory of chaotic ordering precedes a description of the process of ordering in neural networks during perception.

Order in Chaos

Within the physical universe, Ilya Prigogine, with Isabelle Stengers (1984), contends there are naturally occurring systems which operate openly, exchanging energy, matter, and information with the environment. Prigogine and Stengers' studies indicate that complex systems contain subsystems which are continually "fluctuating." At

times, perturbation from a single fluctuation or combination of fluctuations may become so powerful that it shatters the preexisting organization. Prigogine and Stenger call the revolutionary moment a "bifurcation point". Named dissipative structures, this particular system's ordering process identifies how new states of matter may originate, ones which reflect the interaction of a given system with its surroundings. Prigogine and Stenger believe that order and organization arise out of disorder and chaos through a process of self-organization. The emergence of self-organization occurs at a point of perturbation which is beyond a threshold of equilibrium or near-equilibrium. When systems are pushed, Prigogine and Stenger say, they reach a far-from-equilibrium condition, becoming sensitive to external influences. In such cases, small inputs yield huge effects.

Biological systems are necessarily highly sensitive to influx, remaining close to a state of chaos because the systems require flexibility and creativity. The systems are highly sensitive near those places of past bifurcations. In some cases external fields, perceived by the system, create a system's new state. Feedback also acts as perturbation. Within a far-from-equilibrium system, coherence is inherent (Prigogine and Stengers 1984:13). In fact, coherence, as a mechanism of "communication" among molecules, arises only in far-from-equilibrium conditions (p. 148). Conversely, equilibrium is "blind". But in far-from-equilibrium conditions a system is able to perceive, to "take into account", differences in the external world such as weak gravitational or electrical fields (p. 14). The nonequilibrium states, however, are attracted to equilibrium.

Prigogine (1984) explains: "Evolution toward an attractor state, an irreversible increase in entropy, describes a system's approach to a state which 'attracts' it. From this state the system will not move of its own 'free will'. All nonequilibrium situations evolve toward the same kind of equilibrium state. As long as the attractor state is defined by the minimum of a potential, its stability is guaranteed. If a fluctuation shifts the system away from this minimum, the system imposes the return toward the attractor.

According to Prigogine's theory of change implied in dissipative structures, when fluctuations force an existing system into a far-from-equilibrium condition and threaten its structure, the system approaches a critical moment at which point it is impossible to determine the next state of the system. Chance nudges what remains of the system down a new path of development (p. xxiii). At the bifurcation point, a system may take off in a new direction, stabilizing a new behavior through a series of feedback loops that couple the new change either to its environment, or toward chaos in which the system fragments. In actuality, at the bifurcation point, the system is being offered a "choice" of orders, the order of the choice so high that it is chaos (p. 161). Once stabilized, a system that has passed through a bifurcation may resist further changes until some critical new perturbation amplifies the feedback and creates a new bifurcation point.

The interaction of a system with the outside world, embedded in nonequilibrium conditions, is the starting point for the formation of new dynamic states of matter (Prigogine and Stengers 1984:4). Systems maintain their identity by remaining continually open to the flux and flow of the environment.

Neural Ordering

Perceptions, according to Walter Freeman (1991:78), like complex systems, depend on a chaotic cooperative activity of millions of interacting neurons spread throughout expanses of the cortex. Freeman envisions perception as "a step in a trajectory by which brains grow, reorganize themselves, and reach into their environment to change it to their own advantage" (p. 85). Together, Christine Skarda and Freeman (1987) propose that chaos constitutes the basic form of this self-organizing procedure which begins with a search command to the motor systems. According to Skarda and Freeman, the brain seeks information by directing an individual to capture experience by looking, listening, touching, tasting and smelling. As a motor command is transmitted, the limbic system also issues what is called a refferance message which takes the sensory systems into full alert to prepare a response to new information. Finally, by combining sensory messages with past experience and with expectation, the brain identifies the stimulus and comes up with a meaning.

Skarda and Freeman's research scientifically explains the chaotic collective neural activity for perceptual processes which functions as a means to ensure continual access to previously learned sensory patterns, and as the means for learning new sensory patterns. When a person catches a glimpse of home, picks up the smell of smoke, or when the sound of a friend's voice enters one's ears, recognition is instant. One knows the object is familiar, dangerous, or desirable within a fraction of a second after the eyes, the nose, or the ears are stimulated. The skin and tongue are equally as sensitive, the unknown equally as unrecognizable (Freeman 1991:78).

Earlier psychological research with biological and neurological underpinnings recognized that some patterns of behavior are the same in all humans. John Bowlby (1969) considered these patterns expressions of "some common plan" with obvious survival value (p. 40). Bowlby's belief finds similarity in Carl Jung's (1953) description of unconscious patterns, or archetypes, which seek their own actualization in behavior and personality. According to Jung, when archetypes in the central nervous system match configurations in the environment, behavior is activated. Biological and Jungian psychological approaches both assert, as Anthony Stevens (1983:54) explains, that the way humans receive knowledge of the world through perceptual processes is programmed by evolutionary pressures, selecting stimuli that are most relevant to survival, activating many patterns of social behavior. In related ethological research, Niko Tinbergen (1951) called the processes "innate releasing mechanisms". These mechanisms, according to Konrad Lorenz (1977), explain how motor responses are "known" to follow certain stimuli (p. 51).

Further insight into the manner in which humans receive and process knowledge of their environment has been derived in part from Skarda and Freeman's (1987) studies of olfactory systems. Skarda and Freeman's conclusions are not without implications of similarity to findings in analytical psychology. Skarda and Freeman's work deals with the activity of neurons within the cells of the cortex of the brain, measured as levels of excitation. Cells receive pulses from other neurons at projections known as dendrites. The pulses are conveyed at specialized junctions called synapses. Certain incoming pulses generate excitatory waves of electric current in the recipients; others generate inhibitory waves. When currents cross

the cell membrane, the cell calculates the overall strength of the currents by adding excitatory currents and subtracting inhibitory ones. If the sum is above a threshold level of excitation, the neuron fires. When an animal or person sniffs an odorant, molecules carrying the scent are captured by a few of the immense number of receptor neurons in the nasal passages. The specialized receptors respond to particular kinds of odorants. When excited, receptors fire action potentials, or pulses, which propagate through projections called axons to the olfactory bulb. Each scent is expressed by a spatial pattern of receptor activity. Each pattern is a message.

Continuing with an explanation of Skarda and Freeman's work, their conclusions show that, as important as the nerve cell assembly is to the capture and transport of the messages which enable perception, the assembly does not by itself generate the bulbwide bursts of collective activity. For a burst to occur in response to some odorant, the neurons of the assembly and the bulb as a whole must first be "primed" to respond strongly to input. General arousal, that is, hunger, thirst, sexual arousal, or threat acts as primers. When cortical neurons are excited, their output increases. Consequently, if the odorant is not only familiar, but the bulb has also been primed by arousal, Freeman (1991) explains, the information spreads like a flash fire through the nerve cell assembly (p. 83).

Additionally, the olfactory bulb brings experience to bear on perception. Freeman explains that at the synapse, the sensitivity of the postsynaptic cells to excitatory input, a property known as gain, is increased. Consequently, a "trained" input, so to speak, generates a greater dendritic current than it would have generated in the absence of "training".

As described by Freeman, a nerve cell assembly is not only a crucial repository of past associations but also an essential participant in the formation of the collective bulbar burst. In other words, bursts represent cooperative, interactive activity; the assembly consists of neurons that have been simultaneously excited by other neurons during learning. Freeman explains that synapses which fire together become stronger, as long as the synchronous firing is accompanied by a reward (p. 81).

Once transmitted to the bulb, receptor activity is analyzed and synthesized, transmitted to the olfactory cortex and on to many parts of the brain, including the entorhinal cortex where the signals are combined with those from other sensory systems. The result of the message transport, Freeman says, is a meaning-laden perception, a gestalt, unique to each individual (p. 85). In other words, a fox may carry the memory of food for a dog, whereas, for a rabbit, the same scent may arouse memories of a chase and attack (p. 78).

In neural processes, when the system is held under the influence of a particular input, the system settles into an attractor. Consequently, Freeman (1991) calls an act of perception "an explosive leap of the system from the 'basin' of one chaotic attractor to another. The basin is the set of initial conditions from which the system goes into a particular behavior" (1991:84).

Therefore, Skarda and Freeman (1987) conclude that chaos sets up a deterministic "I don't know" state, a state within which new activity patterns can be generated, as shown by what happens when the system encounters a previously unknown odor. If the odor is novel, the system does not already have a global activity pattern corresponding to the odor; the system falls into a high-level chaotic state. This

"chaotic well" enables the system to avoid all of its previously learned activity patterns and to produce a new one (p. 171). The introduction of a new pattern denotes the change from the non-oscillating state (p. 167).

Skarda and Freeman postulate that "the process of state change leading to the unstructured chaotic domain is essential for preventing convergence to previously learned patterns, and hence for the emergence of new patterned activity in the bulb and the corresponding state of the animal for instance to recognize new odors" (p. 171). The chaotic activity enables the system to remain open-ended and ready to respond to new and familiar input, without an exhaustive memory search.

Skarda and Freeman's work is testimony to the dynamics of the brain being the control of body movement for the self-promoting purposes of search, attack, escape, ingestion, and reproduction (p. 173). Referring to neural activity research conducted by Ermentrout, Campbell, and Oster (1986), Skarda and Freeman (1987:172) maintain that convergence to a patterned activity state marks the end state of the process of perception, externally manifested in some physical state or in some anatomical structure. In other words, the activity pattern of perception recorded in Skarda and Freeman's work explains perceptual processes which interact with environment via motor functions. According to their research, "convergence to an attractor in one system (olfactory system) in turn destabilizes other systems (motor systems) leading to further state changes and ultimately to manipulation of and action within the environment" (p. 172).

On the basis of their research, Freeman and Skarda maintain that an adequate explanation of brain function considers sensation in

conjunction with physical behavior. Their conclusions reconfirm Bowlby's (1969) belief in patterns of "common plan" with survival value, the "innate releasing mechanisms" defined by Tinbergen (1951). Accordingly, Skarda and Freeman (1987:173) believe, that since self-preservation plays a central role in biological self-organized systems, these are the neural processes which may be selected for during evolution.

Skarda and Freeman's work has application to an explanation of actualization-seeking archetypes defined by Carl Jung (1953). The human neurosensory organization of perceptual processes which utilizes "innate releasing mechanisms" to activate behavior is a self-ordering activity of the neural cells. The argument being made is one outlined by Anthony Stevens (1982), that is, an objective reality of a phylogenetic psyche which links the objective psyche, the objective world, and the consequent reality of human percepts. In this case, the survival value is in the consciousness of the nature of archetypes by means of an experience of the archetype's objective nature.

CHAPTER IV

CONCLUSIONS

Hypothesis

The neurological processes of perceiving, which combine intuition and sensation in a process to organize meaning, enable humans to make associations in order to interact with the environment and formulate strategies for self-preservation. The processes are chaotic, yet self-organizing, occurring naturally within complex systems which operate openly in communication with the environment. The hypothesis informing this thesis is that the history and mechanics of Petro ritual replicate the ordering of the neurological processes as an adaptation for survival.

Perceiving enables humans to respond and adapt to an environment. Consequently, by sanctioning the enactment of a replication of the perceiving process, Haitian culture sanctions its members' adaptation process. Neuroscientific research demonstrates that input to neural systems of animals continually destabilizes the stable state of that system and necessitates convergence to a new form of behavior. Likewise a frenzied ritual enables Haitians to draw from their past and their present with the potential of ordering and making sense of their world. For Haitian practitioners of Voudoun, belief and need, abstract and living meet at the crossroads to become an act. Repeating the ritual has enabled Haitians to acquire their freedom, and to continue to live. In this thesis, the perception processes and Petro ritual, including its history, are construed as a procedure of capture, transport, association, and release.

I have discussed neural systems which fall into "chaotic wells". As complex systems, they resort to the basins of point attractors in order to self-organize. Captive slaves and their descendants, as practitioners of Petro ritual, fall into possession states, becoming "mounted and ridden" by loa spirits. More specifically, in Petro, the disorienting state is brought on by physical activity: dancing in circular movements, counterclockwise spinning and falling, while proceeding around a centerpost. Symbolically the ritual is a journey out of oneself and into the sacred Center, a place of new reality. In actuality, Petro ritual incorporates a mental regression, enabling captive slaves to return to the "roots" of their psycho-physiological behavior. Carl Jung has named the reservoir for these roots a "collective unconscious". Ultimately, the ritual itself became captivating, reaching mythological proportions.

I have remarked that a two-month transport of Africans during the Middle Passage reminds one of the transport of neural messages carried via receptors, synapses, dendrites, and axons to the olfactory bulb, the olfactory cortex, and other parts of the brain including the entorhinal cortex. Nerve cell assemblies rely upon past associations in order to participate in an essential formation of a collective bulbar burst. In the case of African Americans, humiliation, disease, cruelty and death, experienced as part of their introduction into the New World, shifted African's focus to the only aspect of their homeland they were able to carry with them, their beliefs. Subsequently, the traditional African practices, together with native American and European practices and beliefs, were amassed, then incorporated into religious conduct from which developed Petro ritual.

I have explained that any complex system pushed to the threshold of stability by fluctuations, reaches a point of "bifurcation", a point where the system is sensitive and open, perceiving differences that would be insignificant at equilibrium. The far-from-equilibrium state leads to "adaptation" to outside conditions. In Petro ritual, increased prolonged physical and mental stress, syncopated drum rhythm, and sensual dancing are set-ups which direct participants, led by a lithe spirit symbolizing a snake, to what is believed to be the soul of the cosmos. The ritual process is a symbolic death and rebirth experience. In reality the participants are directed to a point of action symbolized as a crossroads.

Yet I have indicated that the ritual proceedings, as lived symbols, are no more than, yet no less than, a metasymbol of the reflective realm of Haitian conscious and unconscious living. The houngan, as pillar of the community, brings together song, folklore, medicine and law to articulate traditional belief. Helped by the houngan and drummer, individual participants move as one. Joined together in the sinuous antics of the agile spirit leader, Ti Jean Petro, participants wreath a community. History confirms that abused, afraid, hungry, and sick Africans succeeded in carving out of the Americas an existence; this thesis posits survival, in part, through the utilization of a ritual process. Disorienting motions, trance-inducing rhythm, fear, sleep deprivation, and erotic behavior are still used as stimulants to excite participants in Petro ritual. Reiteration of belief, coupled with need, bring the abstract and living together as an act in the ritual's proceedings.

Ultimately, when African Americans realized the heinous reality of their existence, they freed themselves in the angry behavior of a

revolution. Petro ritualizes the creation of that response. Comparatively, when neural messages reach the entorhinal cortex, they meet up, in part, with signals from other sensory systems in order to form a motor function which interacts with the environment. Neural messages also meet up with an "unknown", perhaps in the form of unconscious memories. Nonetheless, the resulting self-preserving body movement, necessarily constrained to incorporate the immediate consequences in relationship to well-being, optimizes the long-term chances for survival. Complex systems self-organize in revolution, or bifurcation, at the moment when the system "decides" whether it will leap into a more organized state or disintegrate into greater chaos.

Petro ritual symbolizes and reenacts the crossroads where worshippers confront what they believe to be the soul of the cosmos, which is the source of their life force, memory, and collective wisdom. In daily life, Haitians are in constant communication with their memory, intelligence, imagination, and inventiveness. The crossroads in Petro ritual becomes, then, the juncture of the cosmic world and the individual world, of nonreality and reality, where a communication between the two worlds is conducted. The communication is in the form of a movement from one world to the other, a process similar to the process of perceiving, a skill exemplified by balanced dancers executing daring "leaps" into the air during the ritual proceedings.

Implications

This study elaborates upon the understanding that perceiving is a self-organizing process by which humans obtain the knowledge of their existence in order to survive in a given environment. In

particular, this thesis describes Haitians practicing Petro ritual in order to make sense of their oppressed lives, positing a cultural sanctioning of the process of perceiving by which members of the traditional community regulate their well-being.

If Petro ritual is a process by which Haitian culture sanctions perceiving, the same process might well be exemplified not only in other culture's traditional activities, but in many aspects of social organization and individual behavior. The model of this thesis affords a manner in which to study cross-culturally the process of the neurological act of perceiving, as it might be staged in a social environment by the group or the individual.

Victor Turner has identified the separation and reassociation process described in this thesis as a liminal process, found in numerous ritual situations. Social migration and resettlement, as well, which are the legendary basis of the founding of all major religions of the world, are also a separation and reassociation process, a process described in this thesis as one of capture, transport, association, and release. Native American Creation Myths relate similar processes in explanations of their cultural beginnings.

Sidney Mintz (1962) has named the ordering process in Haitian peasant market systems as a chaotic procedure. Western legal and educational systems are structured to carry out a similar process. War also moves through these structural proceedings.

Carl Jung proposed unconscious archetypes, grounded in a biological-psychological-cultural relationship. In particular, Jung (1953) believed that the human psyche has an "irresistible urge to assimilate all outer sense experiences into inner, psychic happening, all mythologized processes into symbolic expressions of the inner,

unconscious drama of the psyche which becomes accessible to consciousness by way of projection, mirrored in the events of nature" (p. 6). For example, the actual experience of a "fall" may precede the spiritual transformation of an individual, called "egocide" by David Rosen (1975). Yet the process is the mainstay of the innate process of self-actualization, one Jung (1953) calls "individuation" (p. 173). The process is utilized therapeutically in recovery from alcoholism and drug addiction, treating depression and post-traumatic stress (Gill 1988; Groff 1988; Lifton 1973). The processual experience is the storyline in religious conversion accounts (Zaleski 1987) and Near Death Experiences (Sabom 1982); narratives of the sightings of Unidentified Flying Objects, I believe, follow along the same lines. The procedure is familiar to the language of love; the act of falling in love is the experiencing of the process. Finally, for the artists and creative thinkers, the process is an act of creative genius, or "brainstorm"; for everyone of us, for new generation's sake, the process is re-creation.

I have meant to imply that if Haitians sanction perception by means of Petro ritual, in the same way much of all traditional folklore instructs the folk, passing along the knowledge of the process of insuring life, transmitting that knowledge from generation to generation in oral narrative, in myths, legends, and taletelling; in festivals and celebrations; in games and play, jokes and riddles. "Trickster" in myths, legends, and tales is an enabler to the process described in this thesis, a process enacted by everyone of us in our ordinary, everyday lives.

These implications are based upon survival of the individual and cultural group being dependent upon an experiencing of the process

of perceiving. The "ordering mechanism" enables one to interact with the environment in order to sustain life. I suggest that human survival is dependent upon a conscious experiencing of the unconscious pattern's objective nature. Obviously, an enactment of the neurological process of perception, if found in the preceding situations, is both beneficial and detrimental to the welfare of the group and the individual. By using the model set forth in this thesis, the processes of perceiving, an adaptive interaction with the environment which enables survival, may be able to be explained as it is "played out" in families, communities, and global scenes.

Prigogine and Stengers (1984:312) believe that the coming together of insights about the world around and the world inside is a feature of the recent evolution in science. Their empirical theory of order-out-of-chaos includes the same suppositions upon which Carl Jung based his years of research, that "in some of the most beautiful manifestations of sculpture, be it in the dancing Shiva or in the miniature temples of Guerrero, there appears the search for a junction between stillness and motion, time arrested and time passing" (1984:23).

The everyday lives of Haitians, the practice of Voudoun, according to the editors of Maya Deren's film footage (1985), is a consummative act, a process of putting together a future which stems from the past, history being the experience from which the living learn. Curiously, Voudoun means "introspection into the unknown" (Rigaud 1985:8). The rituals, Rigaud continues, form the sum total of this introspection. If Petro ritual is ordered into introspection by chaos for the purpose of calling upon the experience of the past, if following that process enables lives to become lived, then Nietzsche

has already summarized the findings of the researchers noted in this thesis:

Yea, verily I say to you,
A man must have chaos yet within him,
To birth a dancing star.

Further research can perhaps define much of cultural tradition and everyday life as enacted processes of the neuropsychological system which are requirements for survival. It must be taken into consideration whether the behavioral enactment of these processes also endangers survival.

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