

PHYSIOLOGICAL AND THERAPEUTIC ASPECTS OF SHAMANISTIC HEALING

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ABSTRACT

This paper addresses the psychophysiological and therapeutic bases of some universal aspects of shamanistic healing practices. Shamanistic healing is universal because of the interrelated physiological, experiential and therapeutic bases in the use of altered states of consciousness (ASC). Case studies of cross-cultural therapeutic use of ASC illustrate cultural effectiveness. The scientific bases for therapeutic effectiveness are addressed through an examination of the psychophysiology of ASC. Clinical and physiological evidence for the therapeutic effectiveness of ASC in general and hallucinogens in particular is reviewed. Possession and the temporal lobe syndrome are briefly examined in the context of the psychophysiology of ASC.

KEYWORDS: Shamanism, healing, physiological, therapeutic, psychocultural, physiology, consciousness.

INTRODUCTION

The universal aspects of healing practices associated with shaman and other magico-religious healing practitioners are derived from the interrelated bases involving the induction of altered states of consciousness (ASC) in the context of community ceremonial/ritual relations and the invocation of spirit beliefs¹⁻⁶ (see 7 for data). The universal and fundamental use of ASC in training of and treatments by shamanistic healers reflects the basis in human biology. The common psychophysiology of ASC involves induction of a parasympathetic dominant state characterized by synchronized high voltage slowwave discharges from the limbic system and related brain areas. This discharge pattern results in interhemispheric synchronization and coherence, and limbic-cortex integration.^{2,8,9} The psychobiological changes of ASC alter human functioning from neurophysiological to cognitive levels in ways which permit the emergence of therapeutic human potentials. This paper presents a psychophysiological model of ASC and reviews cross-cultural, physiological and clinical evidence which illustrates the functional aspects of these therapeutic techniques.

Previous cross-cultural studies^{1,3,4} have established that institutionalization and use of ASC in community rituals is universal. Shamanism is an ecological adaptation of this biologically based ASC potential in hunting and gathering societies. Agriculture and the process of political integration of local communities into state level societies transform the shaman into other types of magico-religious healing practitioners—shaman/healers, healers and mediums.^{3,4} “Shamanistic healers” is used to refer to those practitioners who use ASC as a fundamental aspect of training and healing. Shamanistic healing represents such an essential feature of human sociobiology that when shamanistic practices are not institutionalized in special roles, the collective ASC activities are undertaken by the community at large.

The importance of these practices lies in the functional effects of the ASC^{1,2,5,10-12} which indicate that the physiological conditions and procedures associated with ASC have specific adaptive characteristics. These physiological changes associated with ASC facilitate the typical shamanic tasks of healing and divination, and improve psychological and physiological well-being through: physiological relaxation; facilitating self-regulation of physiological processes; reducing tension, anxiety and phobic reactions; inducing and eliminating psychosomatic effects; facilitating extrasensory perception and psychokinesis; bypassing normal cognitive processes in accessing

unconscious information; interhemispheric fusion and synchronized coherence; cognitive-emotional integration; and social bonding and affiliation.^{2,4,5,6}

The following sections: (1) provide case studies of ASC therapies; (2) overview the psychophysiological effects of shamanistic ASC induction procedures; (3) examine physiological and clinical evidence for the therapeutic efficacy of ASC; and (4) examine the interrelationship of ASC, possession and temporal lobe syndromes.

TRADITIONAL ASC THERAPIES

The use of ASC as therapies in non-western societies, particularly hallucinogen use, has been long recognized. However, the basis for the effectiveness as therapeutic agents has not been assessed. The following examples illustrate the traditional use ASC in therapy.

The !Kung Bushman of southwest Africa and their medicine dance have been the topic of numerous articles,^{13,14} a book¹⁵ and documented on film. The N/um master and the characteristics of selection, training and healing activities correspond to the classic phenomena of shamanism.^{1,3,4} Their communal healing activities involve all night sessions, in which the men as healers dance to the incessant singing and clapping accompaniment provided by women. The extensive dancing is thought to activate an energy source which is then transferred to patients. Spirits are pleaded with or commanded in an effort to obtain their assistance in the cure of illness.

These ceremonies occur on an irregular weekly basis. Although the more recent reports of the healing ceremony¹⁵ suggest it does not involve drug ingestion, earlier observations^{13,14} show the use of psychoactive substances, particularly for healers in training. Recent assessment of the psychoactive properties of the !Kung Bushman medicine plants shows that the vast majority have evidence of being psychoactive—toxic or hallucinogenic.¹⁶

Wasson's work with Maria Sabina¹⁷⁻¹⁹ revealed and popularized knowledge about the ancient pre-Colombian Mesoamerican psilocybin mushroom healing ceremonies. Mushrooms are ingested in a ceremony which also involves singing, whistling, humming, chanting, percussive artistry, ventriloquistic effects and dancing. Other ritual activities may include sacrifice, incense and flowers as a way of “cleansing” the body,

as well as the application of herbs and massage. The healer's ventriloquistic performances and patient's emotional responses suggest the elicitation and catharsis of feelings and indicate the healer's role in bringing about cathartic experiences in patients. The chants also have a content which suggests that they play a therapeutic role in establishing belief in Maria Sabina's power,¹⁹ in stating and establishing attitudinal postures, and in encouraging positive motivation and expectation.

Andritzky²⁰ shows that *Banisteriopsis (ayahuasca)* use involves both individual psychodynamic and psychotherapeutic functions, as well as collective therapies of the group and community, facilitating social integration. In the Amazon, *Banisteriopsis* is used to help people deal with the problems of acculturation by mediating the Euro-American and indigenous worlds, creating a synthesis of the traditional and new through the use of emotionally relevant images of culture change from the indigenous point of view. The treatment and practices provide a symbolic confrontation which serves psycho- and sociotherapeutic mechanisms. *Banisteriopsis* apparently gives the user conscious access to the process of symbolization. The effects of hallucinogens are shaped by other elements, particularly the songs which serve to structure visions and evoke culture specific patterns of experience. The hour long stories about the mythological worlds prepare the patients for the experiences which they will have in the ASC. This enables the individual to experience the collective motifs rather than being flooded with unconscious personal material. The use of stories and their interpretations allow the healer to control the level of anxiety and the depth of regression of the individual.

Aberle's²¹ work on the modern Navajo involvement in the Peyote Religion illustrates it serves many different purposes-- religious, miraculous curing, transcendence, knowledge, incentive to work, release from guilt, and other reasons. The majority of cases have initial recourse to peyote to be cured or when a family member is sick. They stay or return later for healing, for maintaining good health and mind, for relief from feelings of aimlessness and helplessness, to overcome misfortunes, for future guidance and future good fortune, to access knowledge about causes of illness or misfortune, to foretell future occurrences, and to provide security against witches and ghosts. "Peyotism appeals to the [sick], disorganized and unhappy, to the alienated and marginal, to the philosopher, to the mystic, and to the person who seeks guidance and a sense of purpose and sustaining motive in the situation that faces Navahos today."²¹

People continue with the Peyote Church because of both the personal and social aspects of the experiences. The personal experiences involve the “revelations of the utmost importance for the individual. . . a feeling of personal significance of internal and external stimuli. . . [O]ne’s self, one’s aims, one’s relationships, and one’s ethics have become matters for reflection and have somehow taken on a new dimension of meaning.”²¹ “[M]any Navahos who have felt unhappy and lost have gained a feeling of purpose in life and a remarkable serenity through their membership in the Native American Church, their participation in its meetings, and their use of peyote.”²¹ Aberle²¹ suggests that peyotism provides a reference group with close relations which meet needs for approval and esteem and provides an ethical code which fosters adjustment between Indian values of collectivism and the individualism of the broader society. Peyotism offers status to those who do not have it in the outside society, providing an assertion of worth and countering prejudice. It provides validation of their partial separation and identity and compensations for their deprivations. “It is an effort at personal integration, achieved through a ritual and symbol system which is self-consciously not that of the dominant culture, and not that of the peyotist’s native culture.”²¹

Shamanistic healing through ASC provides an alternative to the current personal state of consciousness, producing changes in the individual’s perception of self, the world, and their social relationships. In the context of visionary experiences, the shamanistic ASC involves the re-experience of powerful memories and symbols which represent emotionally important material for abreaction, insight, catharsis and release. The transcendental and unitive experiences associated with these ASC reflect the individual overcoming dualistic perceptions of self and conscious ego/unconscious self separation, thereby achieving psychological integration and growth.²²

The shamanistic healer utilizes set and setting factors as an integral part of the therapeutic system.²³ ASC and hallucinogenic assisted therapies are usually employed by individuals who are knowledgeable of the client’s personal situation. The therapeutic session may be preceded by meetings between the healer and the patient, patient family or community. Various ritual procedures may precede the therapeutic interaction, and a variety of factors will serve to guide the patient’s expectations of the therapeutic outcome. The treatment session itself is usually formalized in the context of a traditional ritual procedure. Not only is the therapy implemented in a carefully protected setting, but the ritual procedures continually guide and shape

the patient's experience, particularly through singing and chanting. Mythological and symbolic elements are present in the ritual and used as a means of eliciting and shaping the patient's emotions and personal experiences. The shamanistic healer not only guides the immediate context of the therapeutic experience, but also frequently follows the patient through subsequent days in order to assure a successful therapeutic outcome by integrating the experiences of the treatment session with the continuing life context of the patient.^{23,24}

THE PSYCHOPHYSIOLOGY OF ASC

A wide variety of ASC share common psychophysiological features, including right hemisphere dominance, cortical synchronization, and a parasympathetic dominant state.^{2,8,25} Mandell⁸ suggests ASC or "transcendent states" are based in a common underlying neurobiochemical pathway involving a biogenic amine-temporal lobe interaction. This is manifested in high voltage slow wave EEG activity which originates in the hippocampal-septal area and imposes a synchronous slow wave pattern on the frontal lobes. This results in increased interhemispheric integration, synchronization and coherence, a synthesis of thought and emotion.⁹

Many agents and procedures and psychophysiological conditions produce this pattern, including: hallucinogens, opiates, and other drugs; activities producing endogenous opiates; extensive running or other motor behavior; fasting, thirst, and sleep loss; auditory stimulation and other forms of intense sensory stimulation such as physical torture or temperature extremes; sensory deprivation, sleep states and meditation; a variety of psychophysiological imbalances or sensitivities resulting from hereditarily transmitted nervous system liabilities; epileptic-like states resulting from injury, disease, or other trauma to the central nervous system like extreme temperatures; or other sensitive conditions of the temporal lobe and the associated structures of the hippocampal-septal system and amygdala.^{2,8}

A wide variety of procedures are used by shamanistic healers in the context of healing rituals which induce ASC, including singing, chanting and percussion; dancing and other extensive motor behavior; physical austerities, temperature extremes and other stressors; fasting; sensory deprivation and overload; internal meditative states; and community rituals. The following material outlines the psychophysiological similarity in the brain states induced by diverse ASC induction procedures; more detail is provided elsewhere.²

Singing, chanting, music, drums, rattles and similar percussive activity which constitute "auditory driving" cause visual sensations of color, pattern, and movement, as well as organized visions/hallucinations, seizures, and general emotional and abstract experiences.^{26,27} Auditory driving also creates EEG coordination and a high index of common activity in theta and low alpha range.²⁸

Dancing and repetitive extensive motor behavior, as well as exertion, fatigue, and other stressors cause the production of rhythmic slow wave EEG and hallucinatory experience, especially when coupled with hypoglycemia and over breathing.²⁹⁻³¹ Many shamanic ASC induction procedures such as night time activities, extensive running and dancing, austerities, physical torture, and temperature extremes cause the production of endogenous opiates or endorphins, which directly affect the hypothalamus, producing slow wave delta/theta activity.³²⁻³⁸ Exposure to temperature extremes, particularly alternating hot and cold, can result in a variety of temporal lobe symptoms, including generalized seizures.³⁹⁻⁴¹

Fasting and water restrictions increase susceptibility to driving influences upon the EEG,³⁰ directly affecting the pituitary and adrenal glands, and indirectly affecting the hypothalamus and hippocampal-septal systems. Fasting and nutritional deficiencies lead to physiological imbalances and predispose individuals to emotional and cognitive disorganization and disturbances, convulsions and seizures, and ASC states.⁴²⁻⁴⁴

Sensory manipulations, both overload as well as deprivation, lead to the emergence of alpha and delta waves, a greater sensitivity to parasympathetic stimulation, and an increase in cortical synchronization.^{45,46} Reduction of sensory stimuli can alter endogenous opioid functioning and lead to a loss of serotonin inhibition similar to the interference of hallucinogens in the serotonin synthesis and release⁸ and induce hallucinatory experience.^{47,48}

Many meditative and internal states of attention, as well as deliberately induced sleep states, result in a parasympathetic dominant state. Meditative states tend to decrease the frequency of the brain wave pattern to alpha and theta ranges, and increase alpha and theta amplitude and regularity in the frontal and central regions of the brain.^{48, 46,25} Many psychophysiological changes resulting from meditative states are also produced by relaxation or sleep,^{46, 25} which also evokes an EEG pattern very similar to hallucinogens, including visual imagery and the pattern of hippocampal-septal slow wave discharges.⁸

A wide variety of hallucinogens are used in magico-religious therapies in non-western societies.^{22,24} A variety of different hallucinogenic compounds (e.g., indoleamines psilocybin and LSD, phenethylamines mescaline and methoxyamphetamines, and tetrahydrocannabinols) are virtually identical in their clinical effects, with the major differences being in the potency,^{50,5} their chemical structure, and specific modes of action.⁵² They all inhibit the firing of the brain's serotonergic systems^{9,51} and produce an ASC as a result of the loss the inhibitory effect upon the mesolimbic temporal lobe structures. The hallucinogens inhibit the raphe cells regulation of the visual centers of the cortex, causing hyperactivity of the visual regions experienced as an ongoing visual panorama. The hallucinogens produce a state of hippocampal-septal slow wave dominance and high voltage synchronous activity in the hippocampus, synchronous discharges in the temporal lobe limbic structures,⁸ and cause synchronization of the cortex.⁵²

Communal activities and the reestablishment of positive community relations are another fundamental aspect of shamanistic healing which are directly tied to the ASC activities. Frecska and Kulcsar⁵³ argue that shamanic healing practices are “neurobiologically mediated, complex forms of attachment. . . which result in deep psychobiological synchrony between adults.”⁵³ Healing is partially derived from fulfillment of social expectations which facilitate ASC through identification with the community and social attachments. Community ASC rituals promote psychobiological synchrony between individuals which is essential for integrated social functioning, and reinforces identification and internalization of social relations.

Healing rituals also release endogenous opiates through a variety of stressors, which reduce emotional and somatic complaints and improve immune system functioning. Frecska and Kulcsar⁵³ review research which illustrates that brain opioid systems provide neurochemical mediation of social bonding. “[T]he social connotations and activation of the endogenous opioid system become cross-conditioned during early ontogenesis, so that later in life whenever the opioid system is activated by stress and pain, social connotations could arise together. . . [R]egression promotes endogenous opioid mediation while endogenous opioids mediate affiliation, and help depersonalization by loss of ego boundaries. . . [R]itually induced endogenous opioid activity supports social activity” and vice versa.⁵³ Expressions of this innate drive for affiliation related to opioid levels have been shown to: control social processes; affect mother-infant attachment; alleviate, mediate and moderate separation distress; help elaborate the positive affective state of social comfort; and mediate

the pleasurable qualities of social interaction. Ceremonial opioid release emotionally charges cultural symbols, cross-conditioning cognitive and endocrine systems, and links the mind and body.

THE PHYSIOLOGICAL BASIS OF THERAPEUTIC EFFICACY

The therapeutic role of ASC derives in part from the common physiological changes underlying ASC which are inherently therapeutic. Further evidence of therapeutic effectiveness is found in clinical research on meditation's effectiveness as a therapeutic modality and laboratory and clinical studies of the effects of hallucinogens as therapeutic agents.

The general physiological aspects of ASC—parasympathetic dominance, inter-hemispheric integration and limbic-frontal synchronization can be seen as having inherent therapeutic effects. The predominance of slow wave discharges in the frontal cortex emanating from the limbic system and the hippocampal-septal area, and the synchronization of the hemispheres of the frontal cortex result in a parasympathetic dominant state. The parasympathetic dominant state is the basic relaxation response, and has inherent benefits for the functioning of the human system. The parasympathetic collapse induces relaxation with therapeutic effectiveness against a range of stress induced and exacerbated maladies. ASC can lead to erasure of previously conditioned responses, changes of beliefs, loss of memories, and increased suggestibility,⁵⁴ which would have therapeutic benefits in facilitating reprogramming via chants, songs, myths, psychodrama and direct suggestion, as well as placebo or other psychosomatic effects. ASC can be expected to have beneficial effects in treatment of psychosomatic tension states, anxiety and phobic reactions, given the parasympathetic dominant state.¹⁰

ASC affect the brain/mind interface, permitting conscious control and regulation of what are typically unconscious organic bodily processes. ASC involve conscious-unconscious integration through activation of unconscious material which permits abreaction and the resolution of conflicts. Traditional healing practices suggest that recovering and giving expression to repressed aspects of the self and conflicts is achieved through ritual ASC activities. Budzynski⁵⁵ suggests that repressed material is released by reducing critical screening by the left hemisphere through ASC pro-

cedures which move cortical arousal outside of the normal range, releasing control to the right hemisphere. This then permits expression of the normally repressed side of the brain, as well as reprogramming at these unconscious non-verbal levels. The ritual interactions elicit the emotional events, resolve contradictions and present a new message.

ASC may also have a functional relationship to healing and divination through facilitation of psi effects. This is supported by a wide range of experimental laboratory studies indicating ASC facilitate ESP (extra sensory perception) and psychokinesis.^{56,57,12} This suggests that magico-religious healing practices are universally associated with ASC induction procedures because they are effective in facilitating extrasensory diagnosis and healing. Laboratory studies demonstrate that humans do have the ability to affect and heal a variety of biological systems through psychokinesis,^{58,59} suggesting that such procedures may also function in shamanistic healing ceremonies. The use of ASC in diagnosis is functional, providing access to normally unconscious information by circumventing the normal states of consciousness and cognitive processes and seeking novel solutions to problems by accessing information revealed in dreams, visions, or other manifestations of primary process cognition.^{1,11,12}

Many shamanistic healers use mystical or meditative type ASC,² involving fasting, sensory deprivation, sexual restrictions, and internal attention, instead of the classic soul journey. Meditation practices improve individual psychological and physiological well-being,⁶⁰⁻⁶³ providing practitioners with the ability to alter and control a wide variety of physiological activities of their bodies. Meditation serves as a self-regulation strategy and produces a number of beneficial effects.⁶⁰ Shapiro suggests that meditation is a promising clinical intervention technique for several stress related dependent variables, including fears, phobias, personal integration and control, tension management, and blood pressure.⁶⁰ Meditation's therapeutic effects may in part derive from the general effects of the relaxation produced by parasympathetic dominance.

Hallucinogens affect humans systemically from the levels of neuronal transmission and physiological integration to the highest levels of emotional and cognitive functioning. While a thorough consideration of their physiological and therapeutic effects are beyond the scope of this paper,^{50-52,64} a few major points will be summarized to illustrate some of the probable mechanisms of effectiveness of shamanistic

healing. Hallucinogens affect perceptual habits, reducing the stability of habitual perceptions and response patterns, and increase arousal and responsivity to the environment. The disinhibition creates an increase of coherence of brain discharges and the oscillatory rate between the hemispheres, improving the connection of feeling and thoughts, and creating greater balance, integration and insight.

The biomedical use of hallucinogens as therapeutic agents includes psycholytic and psychedelic applications.^{23,65} The psycholytic approach sees hallucinogens as “mind dissolving,” altering the relationship between the conscious and unconscious in a way which facilitates psychoanalytic psychology. This facilitates psychoanalytic therapy through making the repressed feelings and memories more accessible by weakening psychological defenses, heightening emotional responsiveness, releasing unconscious material and promoting catharsis, thereby shortening the course of therapy.^{66,23}

The psychedelic approach recognized that hallucinogen induced peak, transcendent or mystical experiences were likely to produce long-term benefits. These powerful experiences led to a dissolution of self into a mystical union, a feeling of being “at one with the universe,” an experience similar to a regression. The peak or mystical experiences bring about major personality changes, suggesting that the mystical insights were responsible for the therapeutic outcomes by providing a profound sense of interconnectedness, unity and meaningfulness. Outcomes included a feeling of well-being, changes in values, increased spirituality, and a greater appreciation of life's possibilities. The dramatic effect of LSD in psychotherapy lies in that it provokes a resolution of psychosocial conflicts, giving the patient a greater sense of self-control, and the opportunity to make use of these insights for life changes.⁶⁷

Mandell's⁹ article on “Interhemispheric Fusion” provides some generalizations about neurophysiological links to macrolevel phenomena, specifically in the interrelationship of psychopathology and ASC. Mandell suggests that psychoactive drugs and other ASC induction procedures alter hemispheric dominance through differential changes in biogenic amine inhibition and influencing the amount of coupling (bilateral coherence) that exists in hemispheric oscillations. Interhemispheric relations serve as a biological matrix for interpersonal style and are reflected in neurochemical and neurophysiological processes. LSD affects the time oscillations of catalysts in serotonin biosynthesis, making the frequencies more coherent. This creates an equilibrium state resistant to both disturbance and emergent order, allowing a more intimate intermixing (a oneness) of all component parts.⁹

This allows a more thorough integration of the two hemispheres, which Mandell argues are specialized in cognition and affect (thought and emotion). LSD's increase of coherence and the oscillatory rate would improve the connection of feeling and thoughts, a greater degree of balance which would then lead to insight.

In summary, hallucinogens and other ASC change ordinary experience, breaking up the habitual experiences of the world, dissolving ego-centric fixations, and altering the relationship between the conscious and unconscious. This makes the patient more open to therapeutic intervention through stimulation of memories and bringing them to consciousness. Hallucinogens also have a depatterning influence, creating an extraordinary state of emotional lability, and increasing the individual's suggestibility and susceptibility to reprogramming. The physiological effects include limbic-frontal and interhemispheric brain integration and synchronization, and a concomitant integration of conscious and unconscious, as well as thought and emotion.

POSSESSION, ASC AND THE TEMPORAL LOBE SYNDROME

Possession is a phenomena frequently associated with shamanistic healing. While possession is not associated with the classic shaman of hunting and gathering societies, it is associated with the shamanistic healers of more complex societies, such as mediums. The term "possession" has been used to mean different things; it will be employed here consistent with the definition of Bourguignon.⁶⁸⁻⁷⁰ Possession is defined as a situation in which an individual's personality is taken over or replaced by a foreign spiritual entity which then dominates and directs the individuals behavior. Possession is associated with a number of indices of greater social complexity,⁷⁰ but political integration is the best predictor.² This association likely reflects the changes in the psychosocial dynamic as a result of the repression associated with these social conditions.

Pathophysiological characteristics have been frequently attributed to shamanistic activities and possession. This is in part due to the fact that temporal lobe discharges and related central nervous system conditions such as epilepsy and seizure and disinhibition conditions involve some of the same basic psychophysiological changes as the ASC states and facilitate their induction.^{2,8,71} Temporal lobe discharges and

related epileptic-like seizures are characterized by the dominance of a slow wave pattern in the EEG. Some temporal lobe seizures are primarily subjective experiences such as visual, auditory, tactile, or olfactory hallucinations, a distorted sense of time, or feelings of intense emotion such as fear or ecstasy, while others are associated with sensory experiences and personality changes.⁷²⁻⁷⁹ Temporal lobe discharges may be: a result of genetic factors; acquired as a result of injury, disease, or toxic reactions; caused by fevers and diseases; produced by electrical or chemical means; acquired as a result of hypoxia at birth; result from fevers in infancy associated with a wide range of diseases or injuries; result from metabolic imbalances such as hypocalcemia and hypoglycemia, endocrine disorders and many other diseases and central nervous system traumas; or result from exposure to or ingestion of toxins.^{72,80,81}

The importance of temporal lobe discharges with respect to ASC lies in “kindling,” a reduced threshold for neural excitability as a result of previous excitation.⁸ Once the seizures, convulsions, or other major excitation has occurred there is a change in central nervous system “tuning” which makes the individual more susceptible to re-establishment of the central nervous system discharge conditions.⁴⁵

A number of conditions associated with the temporal lobe syndrome are also associated with possession.^{2,71} Possession is significantly associated with: spontaneous illness and seizures; amnesia; tremors and convulsions; and compulsive motor behavior involving excessive, violent and uncontrolled movements. This suggests that the beliefs and phenomena of possession may result from temporal lobe syndromes or other biologically based seizure phenomena. However, both a Temporal Lobe measure and the Political Integration measures independently and significantly correlate with the incidence of possession. This suggests that both social and physiological conditions contribute to possession experiences. However, the Temporal Lobe conditions are significantly predicted by social stratification, and both Temporal Lobe conditions and possession are negatively associated with traditions of deliberately sought ASC and hallucinogen use.⁶ This shows that social conditions and shamanistic healing traditions may affect the incidence of possession through the deliberately induced ASC in that the induction of ASC may inhibit or prevent the incidence of possession.

The psychodynamics of possession clearly indicate repression. Ward and Brinbaum⁸² suggest that possession provides positive advantages for the victim by allowing an escape from conflict and a diminution of guilt by projecting responsibility onto the

spirits.⁸³ Several interrelated findings indicate that more complex societies repress the deliberate induction of ASC. Individual and/or societal use of ASC decline with increasing political centralization and integration.^{84,85,6} This suggests that there are important therapeutic utilizations of ASC which are ignored by contemporary societies, but which perhaps would be very useful. Krippner's⁸⁶ examination of the treatment of Multiple Personality Disorder by Brazilian Espiritistas exemplifies this kind of therapeutic application of ASC, spirit beliefs and community relations, as does Jilek's⁸⁷ examination of the Coast Salish spirit dance.

CONCLUSIONS

The traditional biologically based therapeutic modalities associated with ASC find their modern survivals in psychoanalytic and other therapies. However, adequate utilization of the therapeutic potentials of ASC has not yet been achieved. In fact, utilization of these potentials appears to be negatively evaluated by many sectors of our society. The veritable universal presence of ASC therapies, combined with their general absence in our society, suggest that we examine the personal and societal consequences of the lack of this psychobiologically based therapeutic modality and determine what roles ASC based therapies might play in contemporary treatments and society.

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