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# *The Neurophenomenology of Shamanism*

## *An Essay Review*

Michael Winkelman, who is a senior lecturer in the department of anthropology, Arizona State University, and director of its ethnographic field school, has provided a rich overview of the neurophenomenology of shamanism in his book, *Shamanism: The Neural Ecology of Consciousness*.[1] Written in the tradition of Laughlin, McManus, and d'Aquili's 1992 classic, *Brain, Symbol, and Experience: Toward a Neurophenomenology of Consciousness*, Winkelman considers shamanism in many of its facets. He explores shamanism's social and symbolic content, and the implications of its neurological underpinnings both for shamanic practitioners and for their clients.

Winkelman asserts that shamanism played a fundamental role in both cultural and personal human evolution, especially in cognitive integration, healing practice, and self-transformation. In particular, the 'hardwired' basis of hallucinatory experiences and their perceptual constants provides an iconographic system extended metaphorically in rock art representations (p. 5). To Winkelman, rock painting represents neuropsychologically-based metaphors for visionary experience (e.g., death/rebirth, descent/ascent, light, flight, sex, drowning). At the core of shamanic practice is the belief in a cosmos populated by spirit entities that affect all aspects of nature and human life in particular (p. 58). This worldview is said to be based on the operation of neurognostic structures.

Following Laughlin *et al.* (1992), Winkelman uses the term 'neurognostic structures', i.e., 'innate knowledge modules of consciousness' (p. 27), that also can be thought of as reflecting what Jung called 'archetypes' (p. 28). Shamans are described as 'technicians of consciousness' who utilize these 'neurognostic' potentials for individual and community healing and for personal and social

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[1] **Michael Winkelman**, *Shamanism: The Neural Ecology of Consciousness and Healing*, Westport, CT: Bergin & Garvey/Greenwood, 2000, 336 pp., $65, ISBN: 0897897048 (hbk).
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survival. The neurognostic perspective can explain the worldwide distribution of specific constellations of shamanic characteristics and the 'fundamental role' played by altered states of consciousness in shamanic practice (p. 75). Shamanic integration of diverse representational systems produced the basis for animism, totemism, and 'guardian spirit' beliefs (p. 58). Winkelman's 'neurophenomenological framework' (p. 27) links biology and experience; he feels such an approach is necessary for understanding shamanic states of consciousness and the resulting behaviours. The first form of labour specialization was the performance of shamanic rituals, and shamans were the first people who learned how to operate within an 'integrative mode of consciousness' (p. 7). This process brought together the elements of what Mithen (1996) referred to as 'specialized brain modules' and what Donald (2001) called the 'hybrid mind'.

Because human consciousness is fundamentally concerned with 'knowing systems', different forms of consciousness can be characterized as 'epistemic'. Based on neurognostic structures that reflect their biological bases, these basic modular functions have been integrated and utilized in shamanism, forming the basis for shamanic epistemology. Shamanic thought is reflected in mythic rituals, the concept of a 'spirit world', the role of 'animal spirits', and similar constructs. For Winkelman, the ubiquitous nature of these constructs reflects their biological bases (p. 27). This approach to the nature of consciousness requires a systems perspective, because consciousness reflects systemic properties of organismic functioning involving an ability to maintain an adaptive interaction between the external and internal environments (p. 13).

Winkelman makes the case that conscious awareness is produced by the neurognostic structures that mediate interactions between such polarities as 'knower and known', 'self and other', and 'outer and inner'. He therefore concludes that an epistemological approach to consciousness is essential. This approach infers that the contents of consciousness are fundamentally symbolic; hence, it is no surprise that dream reports contain symbols. Bateson (1972) suggests that dreams provide a context in which early mimetic representation can persist throughout the life span. Winkelman cites Bateson's position in his description of the various ways that mimesis, mimetic skills, and role playing operate in shamanic thought and practice. Mimetic activity — and dreams themselves — are utilized in shamanic rituals, especially reciprocal mimetic enactments. Winkelman believes that mimesis is 'inborn', along with the capacity to organize knowledge about animal behaviour, and the recognition of differences between animate and inanimate objects (p. 47). Shamanic practices provided the mechanism by which these distinct modules for human thought were coordinated, sometimes with plant substances he terms 'psychointegrators', and at other times with ritual music, chant and dance. However, as societies grew in structural and economic complexity, plant hallucinogens were eliminated from widespread use and were usurped by elite groups.

Winkelman proposes that shamanism is a worldwide phenomenon of nomadic hunting-gathering societies. Turning to agriculture and urban societies, Winkelman applies the term 'shamanic healer' to an expanded group of healing

professionals who utilize altered states of consciousness in their work (p. 58). But unlike other practitioners who access altered states (e.g., 'diviners', 'mediums'), shamans were not 'possessed' by spirits, but remained in control of their spirit allies, and sometimes of demonic entities as well (Winkelman, 1990). This control enabled shamans to heal, to interpret dreams, recover lost souls, and divine the future.

Despite the similarity of some shamanic states of consciousness to certain pathological states, Winkelman cites evidence (e.g., Noll, 1983) that these experiences are not pathological from either their own culture's point of view or that of Western psychiatry. To the contrary, shamans are generally among the healthiest and best-adjusted members of their society. This quality is needed to maintain their ability to discriminate between the experiences of everyday life and those of the shamanic world (p. 58). And in contrast to the schizophrenic's emotional flattening, shamanic behaviour is characterized by the expression of positive affect and an intensification of emotion. The initiatory crisis, often described as a 'temporary form of psychosis' (e.g., Walsh, 1990) is not a universal feature of shamanism, and when it does occur, it can be thought of as a 'psychological deconstruction' and a 'growth experience' (p. 81) . For Winkelman, the allegedly universal experience of some form of 'magical flight' symbolizes transformation, a 'restructuring process of the ego' produced by symbolic models and 'the holistic imperative toward psychointegration' (p. 83). Mental imagery cultivation is the deliberate development of visionary experience — a natural phenomenon of the central nervous system resulting from disinhibition of the visual cortex. Shamanic healing ability derives, in part, from the use of visionary abilities to operate in tandem with their neurognostic structures. Healing rituals evoke the use of symbols to access the mythology that provides interpretation and shapes experience (p. 58). In fact, 'myth serves as a bridge between the iconic and the verbal and rational levels by including elements of both domains' (p. 88).

Winkelman makes the case that shamanism played a focal part in social evolution over the millennia. For example, shamanic rituals involve dramatizations of social roles, the enactment and resolution of threats and conflicts, and the depiction of social life and the natural environment. As a result, the community orientation of shamanic practice is related to the evolution of sociability, which was essential to human survival (p. 98). Further, the integrative potentials of shamanism help explain the rapid rise of culture. Cognitive fluidity enabled knowledge produced by the different modules to be integrated through forms of meta-representation — the ability to combine knowledge produced by each of these specialized modules. Hunter-gatherers thought of their world in highly integrated ways; there is a single environment that encompasses humans, animals, and plants in a living Nature. Specialized intelligences combined into an ability to map across domains, producing creative thought. Human survival depended on the capability to integrate social intelligence and natural history intelligence. Shamanic practices enhanced integration of these different cognitive modules because shamanism accessed biologically based modes of consciousness, producing a variety of integrative brain conditions (p. 107).

The neurophenomenological approach identifies four major modes of consciousness: deep sleep, dreaming, wakefulness, and integrative (i.e., transpersonal) consciousness. These modes reflect the cyclic systemic operations of adaptive brain structures. Most societies have institutionalized altered states of consciousness, often for the purpose of pushing psychological functions beyond their ordinary limits by disrupting subsystems of consciousness by sensory overload or deprivation, manipulating the autonomic nervous system's equilibrium, and/or focusing or withdrawing attention. Repeated destructuralization, combined with patterning forces that redirect psychological functioning toward culturally desired patterns of experience, leads to new, stable, discrete altered states of consciousness. There is no single functional or anatomical basis of the brain that is solely responsible for the elicitation and maintenance of these four different modes. States of consciousness operate within these modes, and each state's operations are determined by their social, cultural, and psychological functions rather than by their strictly biological nature (p. 124).

Sometimes, extraordinary dreams reflect a special type of processing, integrating the dream and waking modes of consciousness. Shamanism uses dreams to enhance information transfer to the waking mode, applying this material in healing and other shamanic practices. Human potentials manifested in other altered states were often institutionalized to meet human needs. For example, the central role of community relations in shamanic healing reflects the shaman's role in evoking endogenous opioid mechanisms and psychoneuroimmunological resources (p. 98). In addition, the therapeutic effects of what we might call 'shamanic states of consciousness' (Krippner, 2000) reflect a number of mechanisms ranging from the general psychophysiological effects of altered states to the specific effects of particular therapeutic modalities, e.g., meditation, 'psychointegrators'. The general therapeutic uses of altered states reflect the activation of recuperative and integrative processes and the symbolic powers of the human mind and its interface with human biology in a variety of forms of ritual healing (p. 229).

Winkelman's book is a tour de force, pulling together diverse material from the neurosciences and the social sciences, citing such diverse writers as Piaget and Tart, Levi-Strauss and Grof. However, much of this book rests on the broad theoretical shoulders of a relatively small number of theorists of brain function and consciousness. Most prominent among these are MacLean (1973; 1990), with his model of the triune brain, Hunt's (1995) and Wilber's (1977; 1979; 1990) models of consciousness, and the groundbreaking work of Laughlin, McManus, and d'Aquili (1992). It is also deeply influenced by Mandel's (1980) creative speculations on the neuropsychology of altered states of consciousness, and of transcendent experience in particular.

The central thrust of the book is that virtually all shamanic practices involve shamanic states of consciousness, and usually lead to similar states in clients as well. Winkelman musters considerable evidence that a wide variety of these altered states, ranging from deep meditative states to the 'trance' states associated with shamanism, share certain fundamental patterns of brain activity. He

characterizes these patterns as *integrative* of the cognitive, emotional, social, and spiritual aspects of the person that experiences them. At first nod this seems somewhat over-stretched, but Winkelman does a valiant job of defending it. Drawing on a divergent literature, he demonstrates that virtually all these altered states seem to involve a shift toward increased slow wave activity across the frontal lobes, coupled with increased dominance of limbic system activity (especially in the hippocampus, septum, and amygdala), and a shift toward parasympathetic dominance in the autonomic nervous system. Other common aspects of these states are said to include the synchronization of left and right frontal lobe EEG activity, along with a general shift toward right brain dominance. As the state deepens, there is a gradual decrease in frontal lobe activity followed by a similar decrease in limbic involvement, both of which seem to be associated with transcendent states of consciousness. Other neurological changes involve increases in certain neurochemicals, such as endogenous opiates, as well as a blocking of the inhibitory effects of serotonin in the frontal lobes. The overall effect of this complex set of alterations is a broad integration of the various brain modules mentioned above. Winkelman cogently argues that this integrative organismic state is healthy for the client, and for widening circles of the community as well.

A close inspection of Winkelman's citations, however, finds them to be relatively old, most dated to 1992 or earlier. Even the references to Wilber stop at this point. Although a rich literature is cited in relation to particular effects of shamanic rituals on the brain (the release of opiates, temporal lobe involvement, etc.), the general overview of the brain and how it works seems limited in scope. It depends heavily on MacLean's work — which is valuable but dated — and a single speculative article by Mandell (1980). Winkelman also draws heavily on Hunt (1995), a very creative psychologist but not a neuroscientist. It seems that though Winkelman's contributions are innovative and valuable, they are not complemented by recent work in brain biology and chemistry (e.g., Deacon, 1997; Edelman, 1987; Freeman, 1995; Kandel *et al*., 1995; Siegel, 1999).

Again, while the book is rich with citations, it is seriously lacking when it comes to many details about them. Again and again the reader is told that this or that series of publications (often by Winkelman himself) establish some fact or principle about the brain and consciousness, but we are virtually never treated to the facts or findings on which such conclusions are based. This is frustrating and seriously limits the utility of the book for other scholars, especially in view of Winkelman's strong claims of the role played by shamanism in human evolution.

For the purposes of this review, we have used the plural term, 'shamanic states of consciousness', even though it does not appear in Winkelman's book. He finds many commonalties between those altered states that contribute to 'psychointegration', a concept that is central to his argument. But it seems to the present writers that integration can occur in a number of ways and in a variety of conscious states. The absence of attention to the many differences in the physiology of types and levels of 'trance', dissociation, meditation, hypnosis, relaxation, etc., seems a serious limitation of this work. Other writers have also described a wide range of shamanic states of consciousness (e.g., Peters &

Price-Williams, 1980), while others have noted that some shamans operate more in a state of 'heightened awareness' than in an 'altered state' (e.g., Berman, 2000).

The text is characterized by long, ponderous, jargon-laden sentences that sometimes pile abstraction upon abstraction. For example, Winkelman often refers to the 'psychodymanic transformation' (p. 7), resulting from shamanic healing without presenting an example (despite his extensive field research with shamanic healers and their societies). The book honours the observed phenomena of shamanism — ranging from healing and ritual to out-of-body experience and telepathy — but makes little room for those that can not be explained by brain processes, symbolic cognitive events, and social context. Nevertheless, the book is quite an impressive and successful amalgamation of a range of disciplines — neurobiology, sociology, psychology, and anthropology — all brought to bear in a modern and multidisciplinary approach. Winkelman's *Shamanism* is a seminal book in the same sense that Eliade's *Shamanism* held that position for several decades. Winkelman does not repeat Eliade's (1951/1964) insistence that the use of mind-altering plants represented a 'degeneration' of shamanism; Winkelman makes other claims, propelling shamanism into new territory. Winkelman may inspire his readers to explore that territory, mapping it with greater precision, but holding his vision in their debt.

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