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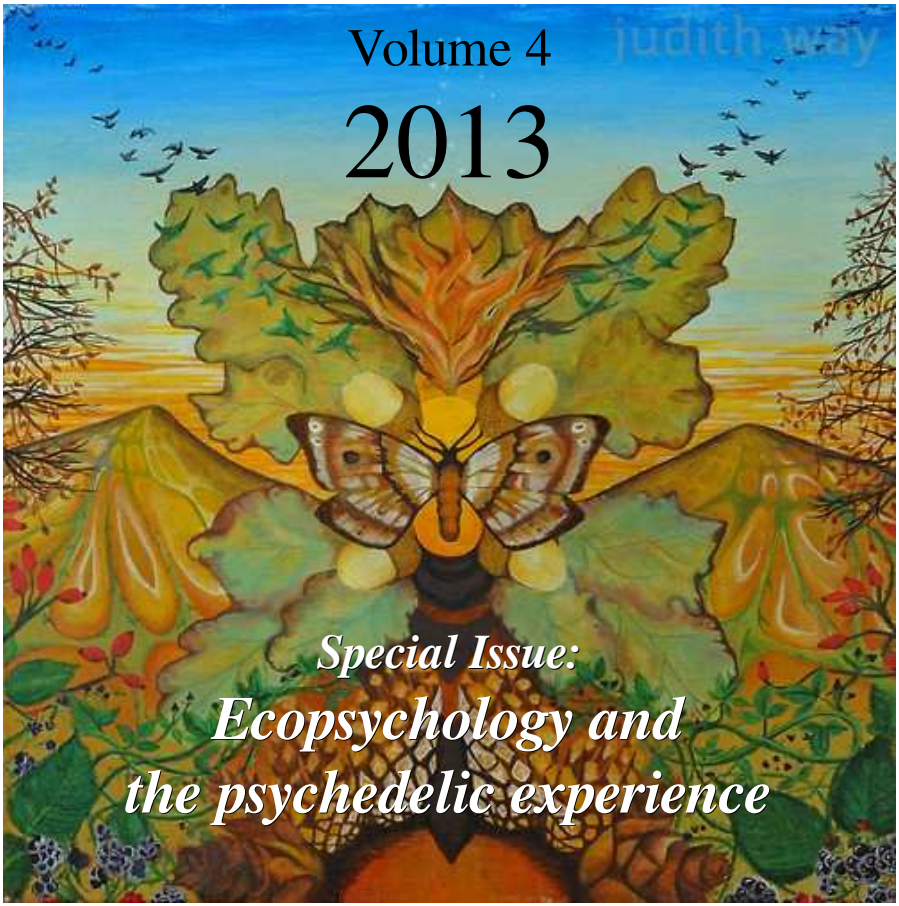

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EDITORIAL

Ecopsychology and the psychedelic experience

David Luke

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Turning topiary

On my travels in Mexico many years ago, last millennia in fact, I came across a psychoactive plant, known locally as 'the shepherdess', which was used by indigenous people for divination and healing. I was given the opportunity to try this foreign foliage and doing so had an incredible and entirely unexpected experience. Within moments of consuming the herb a strange sensation began seeping through my toes and fingertips and moved towards my core turning me rapidly into some kind of thorn bush. The metamorphosis spread quickly up my arms and legs, across my body and up to my head until I found myself completely transformed into a small spiky shrub. I was quite literally rooted to the spot and could not move.

Simultaneous to this, all the trees and all the plants, in fact every blade of grass across the large field within view, began laughing hysterically. Anything and everything before me that photosynthesised was in side-splitting fits and they were all cracking lines like "now you know what it's like to be a plant, ha, ha, ha", swaying back and forth, shrieking and howling with laughter. I didn't find this particularly funny though, because I was absolutely convinced of my transmutation, and furthermore believed it to be permanent. Oh how the plants laughed. Then a disembodied voice spoke. Loud, deep and stern. A woman's voice. She said something like, "you stupid humans think you run the show around here, you're so arrogant, but you haven't got a clue". And then she proceeded to lecture me on species-centrism and our lack of harmony with others on Earth. I was terrified and 'bewildered' – in the literal sense too – for although I had hypothetically reasoned that everything might be inherently conscious, I had never expected to be chastised by the spirit of Nature or publicly ridiculed by grass.

The experience, mercifully, only lasted ten minutes, and quickly subsided as the voice drifted away and I turned back into a slightly more aptly named *Homo sapiens*

than before. The immediate psychological effects had gone, but the ontological shock remained indefinitely. I would say that this was my first serious shamanic experience with plant (or fungal) psychedelics[1], and since then I have never considered ecology in quite the same way as before.

Ecodelicately

So, this is my personal starting point for editing this special issue, but why *Ecopsychology and the Psychedelic Experience* anyway? Elsewhere (Krippner & Luke, 2009), I have indicated two simple reasons: that psychedelics may enhance the experience of Nature or, given that these substances readily occur outside of the lab, the consumer is therefore compelled to go into the wild to obtain them. But of course, psychedelic experiences and the encounter with Nature usually run much deeper than this, and may even lead to a direct communication with other species. When it does so it is often the same message, which usually runs a little like those received from psychedelic mushrooms by the mycologist Paul Stamets, which are "… always that we are part of an 'ecology of consciousness', that the Earth is in peril, that time is short, and that we're part of a huge, universal bio-system" (Harrison, Straight, Pendell & Stamets, 2007: 138). So there is good reason to explore psychedelics and ecopsychology, if only for the ecologically orientated and apparent interspecies communication that ensues (Krippner & Luke, 2009), or what Doyle (2009: 21) calls the "grokking of Gaia".

Clearly there is also a certain degree of overlap between psychedelic research and ecopsychology: They share common origins in the counter-culture, human potential, and transpersonal psychology and psychotherapy camps. Indeed, psychedelics themselves were very much intrinsic to the genesis of all these movements in the 1950s and 60s, and even had influence on the evolution of ecology and deep ecology movements in the 1970s. Importantly though, the psychedelic cauldron is also the crucible in which we find many core ecopsycholgical themes bubbling up, be they archetypes, animism, shamanism, paganism, green spirituality, transpersonal psychology, or eco-activism. In short, the two fields are deeply entwined, like two old trees that have grown up trunk to trunk. And yet the literature of the fusion between these two areas is somewhat nascent, with the only prior collection of this kind

[1] A psychedelic has been defined as a substance "…which, without causing physical addiction, craving, major physiological disturbances, delirium, disorientation, or amnesia, more or less reliably produces thought, mood, and perceptual changes otherwise rarely experienced except in dreams, contemplative and religious exaltation, flashes of vivid involuntary memory, and acute psychoses" (Grinspoon & Bakalar, 1998: 9).

appearing as a special issue of the *Bulletin of the Multidisciplinary Association for Psychedelic Studies* (*MAPS*, 2009), edited by David Jay Brown. Nevertheless, that issue was on *Psychedelics and Ecology* more generally, rather than ecopsychology specifically so this may indeed be the first such collection.

Nevertheless, as with my predecessors editing the last issue of this journal, on *Queering Ecopsychology* (Heckert, Milton & Barker, 2012), it occurred to me that many of the submissions were somewhat thin on psychology per se, and I too wondered if they were "psychological enough". That said, when dealing with psychedelics in the context of ecology it is hard to avoid the interaction between 'mind' and 'nature', which Greenway (2009) reminds us is *the* core relationship of ecopsychology. Because, even if it is not explicit, psychedelics *de facto* imply psychology once you wade in and get your wellies dirty. For psychedelics are nothing if not 'mind manifesting', as indicated by the naming of them as such by Humphry Osmond in 1957. Somewhat more aptly these substances have also recently been dubbed *ecodelics* by Richard Doyle (2011) who suggested that the ecodelic insight arising from the ingestion of these plants and fungi is "the sudden and absolute conviction that the psychonaut is involved in a densely interconnected ecosystem for which contemporary tactics of human identity are insufficient" (p. 20).

So while there is a good dose of psychedelic ecopsychology in this special issue it is as much psychedelic eco-anthropology, eco-ethnobotany, eco-semiotics, eco-pharmacography, transpersonal ecology and ecosophy (as Schroll prefers), and even psychedelic ecology. But given that this is the *European Journal of Ecopsychology* I won't even mention the fact that all but one of the contributors reside in the Americas, as this merely suggests we have some catching up to do in this arena on this side of the pond.

The voices of the Earth

Taking the historical perspective, **Rob Dickins** guides us through the early psychedelic and very much psychiatric 'triplit' of the first decade of (what he calls) pharmacography, spanning 1954-1963. In doing so, it is surprising that those early texts he dissects do not have an inherently ecodelic predilection – seemingly due to the laboratorial set and setting favoured at that time – and yet these proto trips paved the way for what was to come with the engendering of an intrinsic interconnectedness between the user and Nature within the psychedelic experience. But this transition was very much a steady evolution, so eventually – after *The Doors of Perception* (1954) and *Heaven and Hell* (1956) – with the book I*sland* (1962), we

see that "Huxley implicitly recognizes that the natural world is under threat", although unfortunately "any ecological concern in the text is undermined by his pessimism; green awareness fades into the background of a pure white light of mystical experience and his darkly-coloured perception of the social world that threatens it". Yet, despite Huxley's gloom, there remained the interconnectedness that would later form the core of the psychedelic community's coming embrace of trans-speciesism.

Nowhere is this interconnectedness more apparent than with one of the planet's oldest surviving and most culturally intact indigenous psychedelic-plant using people, the Wixáritari (Huichol) of Mexico. A shamanic, animist and pagan people, the Wixáritari have a deeply ingrained relationship with, and reverence for Nature which weaves intimately around their use of the psychoactive peyote cactus, itself synonymous with the deer and the maize, forming their holy trinity of Nature on which they depend. For the Wixáritari, Nature is at the core of their culture: take away the maize, deer or peyote and the culture ceases to exist. Maintaining access to their sacramental cactus since leaving their homeland to avoid the Spanish conquistadors some 500 years ago, the Wixáritari embark, on foot, on a pilgrimage each year some 600 miles (as the crow flies) to collect the peyote from their sacred land. However, their fate as a culture is poised in the balance as Canadian mining interests seek to destroy the habitat in which their peyote grows (Luke, 2012). Exploring this intimate connection with the land **David Lawlor** explores the Wixáritari's unique sense of place, quoting the anthropologist and filmmaker Barbara Myerhoff (1974: 259-60):

> Ecologically, during the peyote hunt the Huichols achieve a spiritual relation to their physical environment – not a neutral setting, not a mere place to live or exploit for a living. The very landscape is sanctified – the caves, springs, mountains, rivers, cactus groves – and the features of the mythical world are elevated to cosmic significance. 'Plants' and 'animals' become only labels, conventions, mere human categories of thought. Distinctions between them are illusory. Man is nature.

As hinted at earlier, it's not much of an ontological leap from the feeling of interconnectedness to the experience of interspecies communication (ISC), in the following case this is brought about through the music of Western Amazonian shamanism. In particular, **Christina Callicot** not only highlights this interconnectedness but emphasises the importance of recognising our interdependence, ignored as it by modern culture or lambasted by critics:

> Anthropology has been long been criticized for its failure to characterize human interdependence with nature in a way that refrains from idealizing or essentializing indigenous peoples, or

> portraying them as passive objects of environmental determinism. Conversely, modern industrialized culture fails to recognize our interdependence altogether, with drastic results for all species.

Leaving aside for a moment what we are supposed not to do, besides music, what better way is there to actively engage the interspecies conversation than with poetry? Thankfully **Dale Pendell** is on hand with a feisty bird he encounters and his thoughtful dog to remind me that psychedelic ISC need not necessarily mean parapsychologists (like me) labcoating around trying to measure ecodelic ESP:

> …are we really thinking the same thoughts – are we really in telepathic communication – or is it merely seeming? Perhaps we could devise subtle experiments, with controls. Psychologists without enough to do could write a paper. Or we could continue, and let the continuing be the confirmation.

Using psychedelic plants, or indeed fungi, to join the interspecies conversation also forms part of Graham Harvey's *Animist Manifesto* because "Maybe sometimes the mushrooms just want to help us join in the big conversation that's going on all around us" (Harvey, 2005: 128). There's no denying either, that once you start talking with fungi you are very likely well on the road to the kind of animism we see at play in possibly every shamanic culture utilizing psychoactive flora, fauna (rarely) and fungi[2]. **Robert Tindall**'s story is no exception and he puts forward a fascinating discussion and account of the use of the psychedelically-informed animist worldview to heal human ailments, calling on what shamans call teacher plants, or even doctors:

> Both the medicines and the patient are sung over with icaros, the magical melodies that contain and transmit the healing virtue of the plants. As well, ayahuasca ceremonies are utilized to better enable the curandero to direct the spirits of the plants and other 'doctors', and for the patient to more thoroughly integrate the healing received.

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[2] Indeed, "a survey into people's exceptional experiences with psychedelics found that encountering the 'spirit' of the ingested plant or fungus was the most widely reported of a range of 17 'paranormal' and 'transpersonal' type experiences occurring with those taking psilocybin-containing mushrooms (Luke & Kittenis, 2005). According to the respondents this encounter also occurred quite frequently, and was the second most prevalent experience with any one substance, preceded only by experiences of 'unity consciousness' on LSD. Additionally, the encounter with 'plant consciousness' was the most widely reported transpersonal event for several other psychedelic substances too, such as ayahuasca, *Salvia divinorum*, and the *Amanita muscaria* mushroom" (Krippner & Luke, 2009: 13-4). Curiously, the experience of encountering the spirit or intelligence of the ingested substance for synthetic compounds or pure molecules (e.g., LSD or DMT) was much less commonly reported, as might be expected, though the fact it was reported at all throws up some interesting questions (not explored here) about the perceived sentience of plants/fungi versus molecules alone.

Such traditional shamanic practices that utilise psychedelic lifeforms are probably at their most vital and widespread among the prehispanic cultures of Latin America, and yet neo-shamanic practices which incorporate elements of these culturally-bound traditions can be found proliferating across much of the industrialised world. Fifty years since Leary, Metzner and Alpert (1964) published *The Psychedelic Experience* as a guide for fledgling psychonauts at the beginning of the popular era of psychedelics, pioneering ecopsychologist and psychedelic researcher **Ralph Metzner** here explores the activity and utility of these psychedelic neo-shamanic groups for ecopsychological means, particularly within the United States. Informing us that:

> The revival of shamanic ritual practices and an animistic worldview can be seen as part of a worldwide human response to the degradation of ecosystems and the biosphere. These groups and individuals are expressing a new awareness, as well as a revival of ancient awareness of the organic and spiritual interconnectedness of all life on this planet.

Nevertheless, in places like the United States – where there exists no continuous cultural use of psychedelic plants – if neo-shamanic groups intend to make use of such mind-blowing biota then they are likely to encounter the problem of natural local supply. Exploring the 100-mile diet and issues of bioregionalism **Eleanora Molnar** explores the practical ecological challenges of sourcing one's favoured flora, asking if:

> In trying to attain a level of elevated consciousness and understanding, are psychonauts actually acting in ways that are disrespectful of plant spirits, indigenous cultures, and the biosphere in general? Are psychonauts participating in yet another folly of an industrialized, materialistic, and consumer-based culture?

Re-framing the respect required for the negotiation between human mind and Nature at large, and moving from bioregionalism to biogenetic structuralism **Michael Winkelman** presents a co-evolution of psychonauts and psychedelics from our primate antecedents to their current *Homo* descendants. Furthermore, Winkleman looks to the future too to identify that the:

> common features of shamanism, psychedelic metaphysics and ecopsychology illustrate that they involve common origins. Their commonalities point to a biologically based ecopsychology, one that is the product of human evolution and evolutionary adaptations. These biological bases suggest that shamanic ecopsychology and psychedelic therapies still have relevance for humans today. Our very health and survival as a species may depend on our ability to re-establish these relations with nature.

Not only may our health as a species rely on a reconnection with Nature but maybe, as David Orr notes, by healing the planet we heal ourselves, and **Mark Schroll**,

taking an autobiographical approach to the issue, indicates that nothing less than a transformation of consciousness is required to solve our current ecocrisis. The catalyst for this conversion, Schroll tells us, resides within Nature's most potent plants, because the:

> psychedelic experience provides us direct access to universal archetypal truths that transcend the boundaries of culture and the limitations of spacetime. Psychedelic experience allows us to encounter visionary mystical insights about the human condition, Gaia consciousness, deep community and cosmic unity.

Drawing together this overview, if there is an overarching theme here in this special issue, it is that psychedelics – with the right set and setting – can give rise to a sense of deep connection with Nature, which may extend as far as interspecies communication or the formulation and maintenance of an animist worldview, subsequent healing, and ultimately ecocentric activism as opposed to egocentric action. Coming full circle then to my own animistic dialogue with Nature under the influence of a psychedelic plant all those years ago, if there is a metaphor in my own metamorphosis it's that we as a species must change or be changed if we and other species on this planet are to survive. The starting point for that transformation into becoming a part of, rather than apart from, our ecosystem is our own individual consciousness.

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Preparing the Gaia connection: An ecological exposition of psychedelic literature 1954-1963

Robert Dickins

Abstract

This paper investigates the extent to which psychiatrically-mediated drug texts, published in the mid-twentieth century, reveal an ecological awareness in their form and content. Primarily, this exposition extrapolates how the understanding of personal interconnectedness with wider systems – culture, nature, or the universe, for example – is provided by the ingestion of psychedelics under the auspices of psychiatry and psychoanalysis. It argues that this allowed a territory for the recognition of both the dangers that humanity pose to our ecological systems, and the understanding that one is very much a part of said system, and not an isolated or alienated unit.

Keywords: psychedelic, literature, psychiatry, psychoanalysis, ecology

Introduction

Broadly speaking, the intention of this article is to expose any ecological ideas, explicitly stated or otherwise, in pharmacographical texts published between 1954-1963, specifically medical monographs and texts that appeared as a direct result of psychiatric research with hallucinogens. Although various other contexts for hallucinogen use existed at the time – Native American use of peyote, for example – it was largely through the proliferation of psychiatric researches that the substances in question made the largest socio-cultural impact.

It has often been remarked that the use of certain hallucinogenic plants and chemicals, such as d-Lysergic acid diethylamide (LSD), Psilocybe mushrooms and mescaline, determine a state of 'ecological awareness' in those that use them. Ecological awareness is defined here as being a state-of-consciousness wherein an individual understands themselves to be merely one part of a wider environmental system — one in which the environment takes an ethical and ontological priority over the said individual. For example, recently, the writer and interviewer David Jay

Brown has written: "I suspect that psychedelic chemicals are messages from the plant world designed to help elevate our environmental awareness and sense of interconnectedness" (Brown, 2013: 17). Ecological awareness, therefore, is understood to be facilitated by psychedelics, which is achieved through the recognition and experience of the interconnectedness of life during the psychedelic experience.

In order to historically contextualize this connection, therefore, it is necessary to return to the socio-medical milieu that gave rise to the descriptive and conceptual term *psychedelic*, by way of examining its primary texts. For the purposes of this essay, I am defining *psychedelic literature* as a period of pharmacography that proliferated during the 1950s and early 1960s, which was directly related to a number of psychiatric research methods, concerned with the psychological action and efficacy of hallucinogens (largely semi-/synthetic drugs or isolated alkaloids such as LSD and mescaline) over the same period – namely, the *psychotomimetic*, *psycholytic* and *psychedelic* (Grof, 2010; Dickins, 2012). This is specifically due to the word psychedelic being originally termed within a psychiatric context, any discussion of the term psychedelic as a broadly cultural term is beyond the scope of this essay – especially in the case of the indigenous use of psychoactive sacraments.

The objective of this exposition is to determine the extent to which psychedelic literature reveals an essential ecological awareness within its discourse or, indeed, whether the formulations for such an awareness even existed in the psychiatric context. This will be done by examining the narrative content of the texts in regard to the idea of *interconnectedness*, so far as the psychedelic experience has been reported as endowing the user with a deepened or expanded awareness, and, moreover, examining the extent to which there is *ecological* and *naturalistic motif* in the content as evidence of ecological concern.

The exposition

The opening scene of Aldous Huxley's first mescaline experience, described in his seminal text *The Doors of Perception* (1954), is the vision of a flower arrangement; a full-blown Belle of Portugal rose, a carnation and an iris. However, for the author, this vision was neither "agreeable nor disagreeable […] It just is" (Huxley, 1994: 7). While he saw them as 'heightened beauty' and with 'deeper meaning', this was true of his vision generally, no matter what object he perceived. In other words, for Huxley on mescaline, his external sensual perception was imbued with a deeper ontological connection.

However, while Huxley begins with his exterior, visual perceptions, he quickly turns to the inner landscape of the mind; the visionary. In his follow-up text, *Heaven and Hell* (1956), he even describes a new landscape, one in which he uses geographical, nature-based metaphors, but which is only that, a metaphor for an immaterial, conscious landscape. This approach was perhaps necessitated by the theoretical rigours of his psychiatrically-facilitated experience. Moreover, Huxley's disdain for the exterior, 'ordinary' world, is explicit in his texts, and while it is the social world he is particularly finding a problem with, the natural world is conspicuous by its absence from his discourse. He wrote:

> Familiarity breeds contempt, and how to survive is a problem in urgency from the chronically tedious to the excruciating. The outer world is what we wake up to everyday of our lives, is the place where, willy-nilly, we must try to make our living. In the inner world there is neither work nor monotony (Huxley, 1994: 30)

Later, in his final novel *Island* (1962), Huxley exults the potential for personal, inner salvation, yet is pessimistic about the potential for society to achieve such values itself. Human society, and the environment that it inhabits, is limited, material, and ultimately biologically utilitarian. The living planet, Earth, appears to be cast out with the ordinary, everyday existence, in favour of the 'mind-at-large' simply because, as in *Island*, the oil-hungry world will simply destroy it. Therefore, while Huxley implicitly recognizes that the natural world is under threat, any ecological concern in the text is undermined by his pessimism; green awareness fades into the background of a pure white light of mystical experience and his darkly-coloured perception of the social world that threatens it.

Huxley's primary concern, then, is the failure of Western, human society, and the damage to the ecology of the planet is of secondary concern to him as a symptom of that failure – ecological awareness is not, in itself, the explicit realization of his experiences or literary discourse. However, he does embed an important feature: namely, *interconnectedness*. He does this, mainly, through the employment of Henri Bergson's brain-filter metaphor, by arguing that the distinction between himself and his environment, which is created through a perception governed by biological utility, is broken down by the use of mescaline. The result, according to this apprehension of the experience, is an interconnectedness between the self and the other, wherein the separation between an autonomous I and the environment becomes increasingly indistinct.

Huxley's belief, certainly by the time of writing *Island*, is that the distinction can be completely destroyed, leading to an immaterial, universal, mystical oneness that is

understood within the matrix of consciousness i.e. universal consciousness. The experience reaches higher than an ecological, or planetary, awareness, and although it may encompass this level, Huxley does not deal with this point of trajectory, instead jumping from the personal to the universal in a single bound (although in his earlier works he examines a 'visionary' level in regard of the aesthetic appreciation.) Interconnectedness, therefore, from isolated ego to universal being, is the element that Huxley introduces at this point in psychedelic literature.

Richard Heron Ward, writing in the medical monograph *A Drug-Taker's Notes* (1957), responds to Huxley's mystical and visionary discourse by claiming that LSD was unable to bring one to this level of experience. However, in terms of starting to apply interconnectedness to ecological awareness, he takes a very important step; he applies it more thoroughly to his surroundings, dwelling more on 'setting' rather than 'set'. He begins to experience a mutuality in effect between himself and his surroundings: a relationship between his self and his environment that breaks down the simple utilitarian perception:

> The wall moved continually – swaying, bulging, exaggerating its own bumps, scratches, blemishes – doing things with them. Part of the time I felt that I was the artist bringing all this into being. At other times it was something done to me (Ward, 1957: 86)

It is, perhaps, a shame, but also a feature of psychedelic literature, that Ward was largely kept cooped up in an office for his experiences. Had he been allowed to roam the wilderness, then perhaps an ecological awareness dependent on interconnectedness may have arisen at this point in the literature. Instead, understandably, by his final experience, he is simply bored of his surroundings – perhaps more in tune with Huxley's dislike of the 'ordinary' world than Ward would care to admit in his text. Regardless, setting (environment) and interconnectedness was described through particulars, not universals.

Furthermore, Ward argues that there are levels of consciousness and he uses the metaphor of a scale of musical notes to describe it. So with his *particular* identification of interconnectedness, he also postulates that this is also possible on numerous levels. Therefore, the possibility for levels of connection that exist between the personal and universal, are created within psychedelic literature.

Humphry Osmond (1917-2004), the psychiatrist who facilitated Huxley's experience, was examining the potential of hallucinogens as *psychotomimetics* (meaning 'to mimic psychosis'). However, as a result of their idea sharing, the term 'psychedelic' (meaning 'mind manifesting') was coined by Humphry, and later developed into a therapeutic method that centred on a high dose session with LSD. The therapy aimed

at providing the client/patient with a numinous, mystical, or otherwise ontologically-significant experience, as a form of therapy and furthered conscious experience.

The exemplar text of the psychedelic therapy genre is Malden Grange Bishop's *The Discovery of Love: A Psychedelic Experience with LSD-25* (1963). Bishop was a technical writer who, initially, believed he "didn't need" to undergo psychedelic therapy; he felt himself to be a seemingly content person. Yet the LSD experience, which he had facilitated, purportedly led to a realization that God and Love were the same thing. The result, after the event, is that he finds a more profound recognition of his love for his family; a topic initially given to him in the preparatory questionnaire. Nature, the natural world, is again conspicuously absent from his narrative and is instead rooted in his personal life and higher emotional states such as Love, which he equates with God. In one sense, he is simply reiterating Huxley's approach yet, in another, the spiritual awareness gives rise to feelings of love and connection. Emotional connection is relatively absent from Huxley's discourse.

Simultaneously to the development and research of the psychotomimetic and psychedelic approaches, was the development of *psycholytic therapy*. Dr Ronald Sandison, the first person to introduce LSD into Britain, coined the term 'psycholytic' (meaning 'soul dissolving'.) The term described his own therapeutic approach, which was based on Freudian and Jungian theory, and aimed at surfacing unconscious imagery in the visionary aspect of the LSD experience, with the intention of allowing the patient to recollect forgotten memories and integrate them (Sandison, 1997; Roberts, 2008; Grof, 2010).

Sandison's psycholytic therapy also became popular in the United States, and he wrote the introduction to Thelma Moss's *My Self and I: The intimate and completely frank record of one woman's courageous experiment with psychiatry's newest drug LSD-25* (1962). The monograph, published pseudonymously under the name Constance A. Newland, is notable for its segmentation of Freudian and Jungian spaces within the psyche/text. The vast majority of the book deals with Moss' personal, sexual neurosis and focuses largely on a series of interpreted images that bring a painful memory back to her consciousness. However, the much shorter, final section is concerned with the Jungian space, and which elicits archetypal imagery and the potential for a collective unconscious.

Although the book, like Bishop's, is almost totally free of ecological and naturalistic imagery, it does introduce the potential for such experiences, as Jungian theory understands sections of the psyche in terms of collectiveness. Thus, like Ward, the

potential space for an interconnected ecological awareness is posited, but not explored – remaining firmly fixed within the personal therapeutic sphere.

Published a year before *My Self and I*, Adelle Davis' *Exploring Inner Space: Personal experiences under LSD-25* (1961), which was also published pseudonymously under the name Jane Dunlap, is arguably the first book of psychedelic literature that begins to develop an ecological awareness within its narrative content. Davis underwent psychedelic therapy with Dr. Oscar Janiger who was investigating how LSD intersected the creative process by giving the drug to artists and writers (Dobkin de Rios & Janiger, 2003). Davis, a nutrition writer by trade, was one of these subjects. In her narrative, she describes the experience of going through the whole cosmological and biological evolutionary process. She becomes the millions of creatures, experiences the great extinctions, and the developing forms. More importantly, however, is her recognition of humanity's role on the planet, which is given terrifying treatment in the descriptions of her LSD experience:

> In a flash my mood changed from one of being stunned by awe and beauty to one of horror and helplessness. "They've blown up our planet!" I cried. "How unutterably dreadful!
>
> There's nothing dreadful about it," Pegasus replied calmly. "That silly little planet needed to be blown up. All they've ever thought about was war, war, war. They've been fighting wars for hundreds of years. They've tried to use their brains too much and failed to use their hearts. They forgot how to seek God. (Dunlap, 1961: 71)

The spiritual connection between God, in this case in a Christian sense, and the evolutionary process is demarcated by Davis as being fundamentally linked i.e. the evolutionary process is the work of God. The interconnectedness of life is ever-present in Davis' narrative, judged to be levelled by God as creator, and she begins to describe all life as a single process (God). However, like Huxley, she seems to be relatively pessimistic about humanity's ability to correct its ways of behaviour. Perhaps, in line with Christian traditions, this is the result of man's state of fallenness. Nevertheless, through metaphor and imagery, she describes a deep appreciation of the interconnectedness of biological life as a totalizing, ecological, force.

Aside from the simple metaphorical use of naturalistic imagery, it is possible to identify two reasons why evolution, ecology and the natural world begin to play a larger part in psychedelic literature generally when its enters the 1960s, and in *Exploring Inner Space* specifically. The first is Davis' use of the Jungian perspective on the psyche. Unlike Moss, who only utilized Jungian ideas of archetypes in order to describe a fusion, or integration of the self, Davis uses the 'collective' as a narrative perspective. As such, she is shown the damage and utility-based attitude humanity has wreaked on planet Earth, where Earth's destruction becomes the image

representing this scar. The perception is not linked to a personal pathology, but instead to a much wider, interconnected, perspective – a social pathology.

Secondly is the influence of R. Gordon Wasson, who Davis specifically cites in her text. Wasson discovered the use of psilocybin containing mushrooms within a religious context in Mexico, and wrote about it in a Life magazine article entitled *Seeking the Magic Mushroom* (1957). While it has been effectively argued (Letcher, 2006; Dickins, 2012) that Wasson deterritorialized the animistic construct of their use toward a Christian construct, the very fact that a naturally-occurring hallucinogen, used within a nature-based cosmology, must have had some influence over Davis' understanding. Moreover, in other works of literature and culture generally, knowledge of the indigenous use of psychoactives was becoming increasingly known in the West.

The philosopher and populariser of Eastern spiritual traditions, Alan Watts, was a friend of Huxley's and a number of psychiatrists working with hallucinogens. His work *The Joyous Cosmology* (1962) is his attempt, following and expanding on Huxley's mystical discourse, to explain the psychedelic experience. The main thrust of his text is a discussion of interconnectedness as his awareness expands beyond the limits of his 'skin-encapsulated ego' and he experiences his self as being part of the wider cosmos. Moreover, he wishes to move beyond the distinctions of inner and outer experience – beyond the simple 'set and setting' mantra and, unlike Huxley's dualistic approach, collapse them into one another. Unlike previously described works, then, Watts takes an interest in the natural world, and his appreciation of it moves beyond the abstract and metaphorical. Not only does he describe experiences set in gardens, as opposed clinical offices and social buildings, but his appreciation for nature becomes a concrete perception:

> A journey into this new mode of consciousness gives one a marvellously enhanced appreciation of patterning in nature, a fascination deeper than ever with the structure of ferns, the formation of crystals, the markings upon sea shells, the incredible jewelry [sic] of such unicellular creatures of the ocean as the radiolarian, the fairy architecture of seeds and pods, the engineering of bones and skeletons, the aerodynamics of feathers, and the astonishing profusion of eye-forms upon the wings of butterflies and birds (Watts, 2013: 55)

While the majority of other descriptions found in psychedelic literature set their discourse on the plain of consciousness, a plain that appears to be distinct from the material, natural world, Watts more aptly describes them as being two sides of the same coin. For him, the interconnected experience provided by psychedelics, on a certain level, gives one an appreciation for the natural form, and the objects that make it up. In other words, there resides an ecological awareness in the so-called

'expansion' of one's consciousness. Furthermore, it is interesting to note, that it is the setting of his experiences that seemingly allows this to be perceived, meaning ultimately such an awareness rested upon the move of psychedelics out from the psychiatrist's office and into the natural world.

Conclusion

What does psychedelic literature tell us about the capacity for psychedelic substances to endow one with an ecological awareness? Firstly, following Huxley and, moreover, his conflation of psychological and mystical discourse, there is a capacity for one to experience a new level of connectedness outside of one's individuated, or isolated, self. Subsequent literature explored this idea and increasingly identified other levels of awareness, such as the cultural and universal, and one of which was an increasingly ecologically-tempered level.

Secondly, the ecological awareness that did exist partially functioned by being a recognition of the human capacity to destroy our planet (Huxley and Dunlap,) but also one's ability to appreciate the beauty of the natural world (Watts.) However, to move beyond the intellectual and metaphorical experience of ecological awareness, clinically-facilitated psychedelic-users apparently needed to be undertaking their session in an outside setting – something not typically used by the ethically-minded psychiatric researcher. Studies on shamanic cultures, for example, which employed psychoactive substances outside urban settings, tended to reveal a more engrained ecological awareness and their influence, therefore, could arguably have been much greater. The psychiatric mode, however, provided the theoretical approach to the mind, which served as an important explanatory/descriptive model i.e. the expansion of consciousness.

It would seem, therefore, that ecological awareness is not inherent in the psychedelic experience, and although dependent on the old mantra of set and setting, it does appear to potentialize the experience. A number of other forces, I would argue, were also taking effect in the 1960s that created a cultural condition (or set) that would later allow writers, like Brown, to postulate speculative theories concerning the endowment of ecological awareness, certainly in regard to over-coming human devastation of their natural habitats, by psychedelics.

In terms of literary influence, the shamanic and animistic paradigms for contextualizing drug use were beginning to enter popular awareness. Not only through Davis, but with works such as *The Yage Letters* (1961) by William S Burroughs and Allen Ginsberg, and Carlos Castaneda's *Don Juan: A Yaqui Way of*

Knowledge (1968) for example. In a slightly earlier period, Beat poets, such as Gary Snyder and Michael McClure, were also popularizing ideas from both Eastern and Native American traditions that also incorporated stronger ecological ideas. And, moreover, popular works of science journalism like Margaret B. Kreig's *Green Medicine: The Search for Plants that Heal* (1964) also began demonstrating the importance of botany and plant life in the drug revolutions of the Twentieth century – all of which served to raise the popular cultural awareness of a connection between ecology and psychedelics.

In conclusion then, the conceptual framework was certainly there in psychedelic literature for the substances to be more thoroughly entwined with ecological awareness through the theoretical, and psychiatrically-contingent, model of an expanding and interconnected consciousness. But, as with so much to do with the psychedelic experience, it was the conditioning of other, no less important, socio-cultural factors that likely gave it an ecological flavour.

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Returning to Wirikuta: The Huichol and their sense of place

David Lawlor

Abstract

Sense of place literature has paid great attention to the ways in which people develop an understanding of and relationship with a place. These ways of building understanding and forming relationships with a place often center around Western societies' conceptions of place as tempered by the natural and built environment, the community at large, and the social structure. While many of these studies thus examine social capital, cohesion, and social construction models among Western societies, little attention has been paid to the sense of place developed by indigenous cultures with a long history of rootedness in a singular region.

This paper explores sense of place in the Huichol community, specifically highlighting the significance of peyote, the peyote journey, and the Huichol's deer-corn-peyote trinity. It will be argued that the Huichols' peyote use, journey, and related trinity, imbue the community with a rich sense of place that affords it resiliency, rootedness, and meaning. Through examination of the significance of peyote in forming the Huichols' sense of place, it will be made clear that peyote educates the community about the earth and about the Huichol themselves, allowing the people to form a unified vision of the world in which the community exists in harmony with the world's natural elements. Further, this paper offers an analysis of the Huichol sense of place and the peoples' relationship with peyote, suggesting models by which American culture might incorporate a psychedelic such as peyote and utilize it in developing a meaningful sense of place.

Keywords: Huichol, sense of place, peyote, psychedelic, pilgrimage, trinity

The Huichol People

The Huichol – who are known to themselves as the Wixáritari, although the term Huichol is more commonly known – number approximately 10,000 and live in small ranchos in the Sierra Madre Occidental of north-central Mexico. The Sierra Madre is a rugged and remote mountainous region that is, at places, difficult to access, which is perhaps one of the prime reasons why the Huichol have been able to retain their

culture and resist colonization and neoliberalism to a great extent. The first European contact with people in the Mexican states of Jalisco and Nayarit, where the Huichols reside, occurred in 1524 during the expedition of Francisco Cortes de San Buenaventura and again in 1530-1531 under the direction of Nuno de Guzman. (Myerhoff, 1974) While local populations were indeed affected by the initial conquests during the sixteenth century, it wasn't until 1722 that Spanish troops fully occupied and gained control of the area. The scene that followed the arrival of the Spanish troops is a familiar one.

> Before long, the Jesuits began concentrating the Cora Indians in large settlements in their present locale, and the Franciscans attempted to establish missions among the Huichols, a project which met with little success. In the early and middle nineteenth century the Coras and the Huichols scattered to the coast for a time to escape military action. These dispersions accelerated the Huichol tendency toward residence in ranchos removed from the centralized communities, a preference which has remained a marked characteristic of their present settlement pattern (Myerhoff, 1974: 53).

Huichol tradition states that the community migrated to its fixed abode in the Sierra Madre after previously living east or northeast of their present locale. This situating of the Huichol in the desert region matches with evidence that "suggests a prehispanic occupation of the valleys and mesas of the Sierra de los Huicholes and the Mesa del Nayar to the north" (Myerhoff, 1974: 55).

However, more intriguing than even the oral tradition of the Huichol's original location is the significance of peyote and the peyote hunt. As ethnographer and anthropologist Barbara Myerhoff notes:

> Their account of themselves as having originated from the desert region in the east is corroborated by the route taken on the annual peyote hunt, during which they journey out of the mountains through Jalisco, Zacatecas, and, finally, to the deserts of San Luis Potosi. If this historical reconstruction is correct, then in actuality and in myth they do retrace their route to the Ancient Ones. These First People are said to have left their homeland under duress, to have suffered and languished in the mountains until they were led back to Wirikuta [the land of the peyote and of the First People]…" (Myerhoff, 1974: 55-6).

Peyote plays an essential role in Huichol life – indeed the peyote hunt pilgrimage is referred to as a "search for one's life" (Benitez, 1968) – and this fact is reflected by its significance within the deer-corn-peyote trinity that is at the crux of the Huichol community and its sense of place. Fernando Benitez, a Mexican journalist and ethnographer, describes the trinity as directing the Huichol religion and way of life.

> "…among the Huicholes the deer is Elder Brother Deer Tail, who predates one of the most ancient deities known as the Old God of Fire and is even older than Father Sun. This priority fits well into the Middle American religious context where the creator gods, the Makers, man and

> woman, bear the calendrical names One Deer and One Deer… The deer was part of the natural world in America before corn; or rather, it was present before the beginning of the domestication of the corn plant, a process that lasted ten or twelve thousand years… Tamats Kauyumari, the Great Blue Deer, is Lord of the Deer… Tamats saved his brother Watemukame from death at the conclusion of the magical hunt; it is he who founded the religion and who made the peyote sprout from his brother's horns (Benitez, 1968: 119-21).

Myerhoff, whose study of the Huichol and peyote centered on an analysis of the deer-corn-peyote trinity, presents a cycle where the three elements interact in a symbiotic manner such that one element is essential for the functioning and maintenance of all involved. The trinity tells the Huichol people how to live in the proper manner and governs their relationship with the land, simultaneously informing their sense of place. This sense of place is not limited to the common meaning of the phrase understood in Western academia, but is a sense of place that speaks to the immediate relationship with the land and a sense of place and relationship in regard to the overall universe, world, and cosmos.

> The religion and indeed the entire culture of the Huichols are not comprehensible apart from the deer-maize-peyote complex. Ramon stated this explicitly: 'Now I will tell you of the maize and the peyote and the deer… These things are one. They are a unity. They are our life. They are ourselves.' The understanding of this unity, the identification of the referents of the symbols and relationship between them, the function of the identification of the symbols with each other so that they form a single complex – these matters constitute the most difficult and the inescapable challenge in the study of Huichol ideology (Myerhoff, 1974, p.189).

Understanding sense of place

Place is a human idea, a cultural creation. Places are not "places" until a person or people identify them as such. A "place" is a spatial setting that has been given meaning based on human experience, social relationships, emotions, and thoughts (Tuan, 1977).

Essentially, a sense of place is a way of knowing a particular location with some degree of intimacy. One may possess certain kinds of knowledge (cultural, empirical, etc.) about an area, have a history of experiences or develop a feeling of connection to a specific site through an ineffable, immediate affinity that informs their sense of place.

> Sense of place refers to the connections people have with the land, their perceptions of the relationships between themselves and a place, and is a concept that encompasses symbolic and emotional aspects. … The process of transforming spaces into places is influenced by one's culture as the shared meanings that form cultures provide the frameworks for constructing a sense of place (Eisenhauer, Krannich & Blahna, 2000: 422).

As Stedman et al note: "Common to most definitions of sense of place is a three component view that integrates the physical environment, human behaviors, and social and/or psychological processes" (Stedman, Beckley, Wallace & Ambard, 2004: 581).

It is commonly theorized that sense of place is a cultural construction and it seems undeniable that it could be anything but a cultural creation. However, it is essential to note that sense of place can also be viewed in a manner such that one's sense of place is subconsciously created and solidified by the elements of the natural environment that have thus informed culture, which has, in the end as in the beginning of the cycle, informed one's sense of place (A similar discourse exists in the field of linguistics concerning linguistic determinacy and the idea that either culture informs language, language informs culture, or both). In this scenario, the place informs the people and the culture that reflect the sense of a place bequeathed to them by the place itself through the human means of perceiving the information conveyed by the place. So while sense of place is inherently a cultural contrivance, it is also a contrivance informed by the empirical reality of a place itself.

> Places are embedding because they… have meanings and values associated with them that are passed along to the individual from, and shared with, the social group. Therefore, it is hypothesized that local community cultures influence sense of place because understandings of the environment are rooted in the cultural network of beliefs of an individual's social group (Eisenhauer et al, 2000: 422).

Such an embedding of sense of place within a social group is indeed the case for the Huichol who have significant meanings and values associated with specific places – such as Wirikuta, the land of the peyote and of the ancient First People – that allow them to develop a relationship with a place as constructed and experienced via their worldview and cosmology. It is their specific network of cultural beliefs that has brought them to an understanding of and intimate sense of their place. This idea of a culturally construed significance surrounding place seems apparent as the same location that might be very important for a Huichol, a place like Wirikuta, might mean nothing much at all to a non-Huichol Mexican or an American tourist.

> Experience in the setting drives evaluations such as attachment and descriptive meanings. All settings are imbued, to varying degrees, with multiple place meanings, based on mode of encounter. Some suggest that because meaning emerges through individual experience…place meanings are completely individualistic: a given setting will contain as many different meanings as there are people using the setting (Meinig, 1979; Relph, 1976). Others (Grieder & Garkovich, 1994) assert that meanings are based on social categories and therefore potentially shared by others within these categories because people construct and share the categories used to describe and understand the environment (Stedman et al, 2004: 582).

This paper adopts the position that while it is possible for each individual to harbor a sense of place that is unique to their singular personhood, people are also affected by social constructions and thus people with similar worldviews and cosmologies will tend to "share… categories used to describe and understand the environment". This position does not contradict the idea that a Huichol Indian will see Wirikuta as a sacred land of origin while an American tourist will see it as a barren desert. The Huichol will harbor a sense of place about Wirikuta as informed by cultural conventions, but this does not mean that one Huichol's sense of place concerning Wirikuta is exactly the same as the sense of place held by another Huichol. Although one might expect the tendency would be higher that two Huichols share a similar sense of place, there is no evidence to suggest that each individual's sense of place would be exactly the same as the other's and remain unaffected by individual ego and interpretation.

Place attachment is a byproduct of sense of place and is developed via one spending a significant amount of time in a certain area as to know it intimately. This knowing is often the realization that a location is the reflection and creation of the people residing there and the essential environment of which they are but one component along with many others. While Yi-Fi Tuan notes that "Attachment… is seldom acquired in passing", the specific amount of time one spends in a specific locale is not the sole determinate of sense of place or attachment to a place. As Tuan explains:

> …the philosopher James K. Feibleman noted: 'The importance of events in any life is more directly proportionate to their intensity than to their extensity'… A man can fall in love at first sight with a place as with a woman. The first glimpse of the desert through a mountain pass… can call forth not only joy but, inexplicably, a sense of recognition as of a pristine and primordial world one has always known. A brief but intense experience is capable of nullifying the past so that we are ready to abandon home for the promised land (Tuan, 1977: 184).

The intensity of experience Tuan speaks of is applicable to the Huichol. While the Huichol have fostered a sense of place for their everyday, immediate surroundings in the Sierra Madre, they have expanded beyond that and foster a significant sense of place concerning Wirikuta and the locations visited during the journey to Wirikuta; areas a Huichol may visit perhaps a few times in one's life or never at all. The intensity of the experience during the journey to Wirikuta and arrival at the place itself can trump the proportionately short amount of time the Huichol spend in such an environment. By undertaking the intense peyote pilgrimage and partaking in the equally intense peyote ceremonies, the Huichol have developed a sense of place concerning their own existence and their position or role in the grander scheme of

the cosmos and the universe. Through the development of a sense of place, constructed both culturally and organically, the Huichols have managed to bring meaning to their lives; to bring meaning to places they inhabit and visit; and to construct a worldview that is symbiotic and ecologically conscious.

Peyote, the peyote pilgrimage, and the Huichol sense of place

The peyote hunt pilgrimage is a journey that allows for the Huichols an embedding of place in the consciousness of individuals and the community alike. Observing rites and ceremonies related to sites associated with the peyote journey, consuming the peyote itself, and governing the community and individual's life via the deer-corn-peyote trinity has allotted the Huichols a distinctive sense of place that is strongly tied to the natural environment and to the realms of plants and animals.

> The peyote hunt is the central ceremony in the Huichol religious calendar and the pivotal event which unites the Huichols with one another, with their deities, and forges into a single complex the deer, the maize, and the peyote (Myerhoff, 1974: 112).

In the past, the journey from the Sierra Madre to Wirikuta was made exclusively on foot (nowadays pilgrims often take motorized transport) and took about "40 to 45 days, approximately 20 days of straight walking, with additional time spent in preparations and post-Wirikuta ceremonies at home". Located outside the defunct colonial mining town Real de Catorce, Wirikuta is about 300 miles from where the Huichol reside in the Sierra Madre. Along the way, the pilgrims who observe rites or partake in ceremonies marking their progress and stage in the journey make stops at various places. Purification is a major, recurring theme as is respect, admiration, thanks for the earth, thanks for the places stopped at, and thanks for the peyote that allows the Huichol to continue their life cycle. The central principle underlying the entire journey and the hunt for the peyote is the perpetuation of the Huichol as a people and their ability to achieve sacred communication with the gods via the divine cactus. This spirit of sacredness is invoked for the entirety of the pilgrimage and informs the Huichol of the type of relationship they have with the place where they reside in the Sierra Madre and their holy place, Wirikuta, in the San Luis Potosi desert.

At Tatei Matinieri, near the beginning of the journey, the pilgrims stop to drink the sacred water that is found there in order to transform themselves into sacred beings, able to enter the place of the gods to which they are travelling. This ceremony is formative in the Huichol sense of place.

"Common to most definitions of sense of place is a three component view that integrates the physical environment, human behaviors, and social and/or psychological processes" (Stedman et al, 2004: 581). The small ceremony at Tatei Matinieri articulates the relationship between the Huichol and the land, and describes the way a Huichol should behave in life and in Wirikuta. Additionally, the ceremony affords the pilgrims with a sense of place both physically rooted in the land and psychologically rooted in the cosmos and the history of their people.

> …the camper bumped to a stop at a place undistinguished to a non-Huichol but known, relevant, and obvious to the *peyoteros*. … then the group set out toward a series of tiny water holes about a quarter of a mile away…Tatei Matinieri consisted of about a dozen little dirty puddles, a series of permanent springs beside a small marsh … Ramon squatted beside the largest water hole and taking up some in his gourd bowl removed Carlos' hat and poured water into it. He then touched both of Carlos' eyes with his plumes, sprinkled water on his head, and had him drink that remaining in the bowl. The ritual varied somewhat for the *primeros* [those making their first pilgrimage]… After they had drunk the Sacred Water instead of sending them back to their places in line he removed their blindfolds and urged them to gaze up and behold the sacred place to which they had returned as gods. He pointed out the important features of the landscape, the places the gods had stopped and rested, eaten, sung, or talked with the animals while travelling back to their homeland (Myerhoff, 1974: 142-3).

Such a ceremony, as simple as it may seem, obviously holds great significance for the Huichol. Drinking the sacred water and transforming to sacred beings ready to encounter the land of the First People is meaningful in that it connects the Huichols to the ancient time when the First People could transform to gods, animals, and plants. Also, the ceremony serves as a testament to the idea that – for the Huichol – the sacred and the holy, that which is the spirit of all life and venerated as such, is found here on earth, in places accessible to the people who have been going there since time immemorial. Unlike Christianity, where the most sacred holy land is found in a realm beyond the earth after death, the Huichol live and interact with the sites where their people first came to being and encounter the most sacred holy land here on earth during their lifetime. By gazing upon a landscape and viewing the spots where the gods and First People lived and formed the Huichol world, a strong affinity is achieved between place, culture, and community. When a person or community is able to actually visit the site of their sacred, divine origination and partake in the rites therein, their connection to such a place, both individually and collectively, will be of a magnitude surpassing any such notions typically harbored by Western cultures.

After stopping at locations where the rabbit got tired during the journey and decided to stay put at the midway point, where heads are washed in purifying rituals that prepare the Huichols to enter Wirikuta as sacred beings, where sexual transgressions

are admitted and absolved, and where numerous other rites and ceremonies are observed (Anderson, 1996; Benitez, 1968; Myerhoff, 1974; Schaefer & Furst, 1996), the Huichols reach Wirikuta.

> As far as I could see, Wirikuta was not very much different from the desert we had crossed on our way to Catorce. It was the same bleached, gravelly soil, with the same coarse, ragged cover of cactus and microphyllic plants. … But where was the divine and luminous? … The pilgrims had spied it … Tatewari Mara'akame [the shaman] arrow in hand, gestured five times toward a spot on the mesa; then he moved forward and planted the arrow among some rocks. He had found the first peyote. … Soon the site took on the aspect of an altar. There were votive gourd bowls… another deer's head… a round stone carved with Tamat's [the sacred deer] image; a deer's tail; candles adorned with ribbons… a piece of dried deer meat pierced by an arrow… bottles of holy water; ears of corn and votive arrows (Benitez, 1968: 75-6).

Once the altar is erected and the peyote successfully hunted and slain, the Huichol enact ceremonies and prayers that thank the peyote-deer for its sacrifice and for allowing the Huichol people to survive in accordance with the land. As seen above in the account of Benitez, the discovery of peyote is a moment of supreme significance that informs the Huichol of their sense of place, the nature of their land, and the nature of their people.

> When the candles had been lighted, the mara'akame chanted: '…We have arrived at the holy land of Wirikuta; we have surrounded and killed our brother… Now we offer the gods their tribute, their water and their wine, their blood and their ears of corn, their bowls and their arrows. … We appeal to all of you, we implore all of you to guide us and give us luck in the hunt. O Elder Brother, who wept like a deer when we hunted you down, forgive us. The gods have spoken: if there is to be life for all of us, the deer must die' (Benitez, 1968: 76-7).

The hunting of the peyote as if it were a physical, four-legged deer and the offerings and prayers made to the peyote further illuminate the significance of peyote and the deer to the Huichol. The above scenario also informs the Huichol sense of place. The Huichol recognize they are in the ancient land of their ancestors, enacting the rituals and ceremonies necessary for the perpetuation of the Huichol people. This sense of place, realized via a rightful, ceremonial return to the sacred land of their birth, allows the Huichol to form an important bond with the land and an understanding of their greater place in the world and the cosmos. Myerhoff notes how the journey reconnects the Huichol to the sacred places of their culture.

> Ecologically, during the peyote hunt the Huichols achieve a spiritual relation to their physical environment – not a neutral setting, not a mere place to live or exploit for a living. The very landscape is sanctified – the caves, springs, mountains, rivers, cactus groves – and the features of the mythical world are elevated to cosmic significance. 'Plants' and 'animals' become only labels, conventions, mere human categories of thought. Distinctions between them are illusory. Man *is*

> nature, he is an extension of it (Myerhoff, 1974: 259-60).

This connection to the land and the worldview that humans are nature, an extension of nature, and that humans and nonhumans are one in unity, could easily be described as a specific deep ecology philosophy. Deep ecology, as formulated by the Norwegian philosopher Arne Naess in the early 1970s, recognizes the inherent value of all human and nonhuman entities and realizes their significance in the healthy operation of the unified whole. Further, Australian philosopher Warwick Fox interprets deep ecology as a transpersonal ecology requiring a realization and identification of self that extends beyond the personal ego and even beyond the realm of humans to include the entirety of the nonhuman world with which one is interconnected. In light of such a worldview, it is easy to understand the sense of place developed by the Huichol and how it prescribes their way of life and behavior. Such a worldview also lends insight into the Huichol's corn-deer-peyote trinity.

Today, the Huichol's connection to and sense of place associated with Wirikuta is threatened. A Canadian mining company, First Majestic Silver Corp, has purchased rights to mine for precious metals in the region where the Huichol hunt for peyote. The Wirikuta Natural and Cultural Ecological Reserve, where the company plans to mine, is an UNESCO-protected site noted for its cultural significance and its flora and fauna species. The peyote plant itself is under threat owing to the mining company's plans, and with it, the culture and sense of place of the Huichol is also in jeopardy. In July 2013, the Huichol filed for an injunction in federal court to halt exploratory drilling for gold and silver in Wirikuta.

The corn-deer-peyote trinity

The corn-deer-peyote trinity is at the nexus of the Huichol worldview and cosmology and subsequently informs their sense of place. The three elements play essential roles in the livelihood of the Huichol as they provide food, nourishment, spirituality, and communication with the divine and sacred. Nearly all scholars of the Huichol speculate that the group was originally a nomadic hunting community following the deer along its migratory path. The deer would have been the primary source of food for the Huichol, elevating the animal to a totemic status wherein prayers, rituals, and ceremonies – invoked to retain harmony and balance between humans and the nonhuman world – become a necessary part of the hunt for the deer. The eventual forming of a religion or spirituality surrounding the deer is similar to the relationships formed by other indigenous, nomadic, hunting cultures with the animal that served as the most essential for their survival (Anderson, 1996; Benitez, 1968;

Myerhoff, 1974; Schaefer & Furst, 1996).

> The deer is the sacred and magical animal of the Huichols. He gave them peyote on the First Hunt and reappears during all subsequent hunts, bringing peyote… The deer is the animal to which one is grateful. He gives the Huichol his blood as well as the peyote. … The deer blood makes the maize grow, and more important, makes the maize nourishing (Myerhoff, 1974: 199).

Thus, the Huichol are the people of the deer. Their recent past as deer hunters maintains their strong ties to the animal – despite its increasing scarcity in the 21st century – and the realm of the spiritual world. The deer serves as the teacher of humans and, specifically, as the teacher of the shaman. As Myerhoff notes:

> As such, he [the deer] served as the first and closest link between a mortal and a deity. … The deer… stands midway between the Huichol and the gods in his duties and in the hearts of men. He is an intermediary who bridges the mundane and the ideal, transcending the merely human but beyond human reach and comprehension. Such a figure would kindle more affection and gratitude than awe and fear (Myerhoff, 1974: 202-3).

The deer brings forth the peyote, the medium by which the Huichol communicate with the deities and the nonhuman world. Without the deer there is no peyote and thus no way to transmit the knowledge of the deer and the deities to the humans. Thus, the deer serves as the primary deity for the Huichol and the deer's message is communicated via the peyote. In such a manner do the deer and peyote work in tandem and are both required for the perpetuation of Huichol life. Without deer for sustenance the Huichol would not survive (this is perhaps less true today than a few hundred years ago) and without the peyote brought by the deer the Huichol would not know the proper way to live and interact with their place and all that is found therein.

As the Huichol view the deer and peyote as the same, they also see themselves and the corn as being the same. While corn is certainly the most recent addition to Huichol life among the trinity elements, it has nonetheless achieved a monumental significance for the community. Corn is the primary sustenance for the Huichol living today and has been an essential aspect of their culture and diet for approximately 10,000 years (Benitez, 1968; Myerhoff, 1974). Ramon, a Huichol interviewed by Myerhoff describes his people's attachment to the corn as follows:

> Those sorcerers, those evildoers, throw out the spirit of maize. So that there will be no life for us, because the spirit of the maize – what is it? It is its own essence. How does it take nourishment? How does it breathe? Well, it does so in the same manner as we. So the spirit of the maize thinks while it is upon this earth (Myerhoff, 1974: 205).

Ramon asserts that the corn is essentially irreducible and that its essence is itself, it cannot be deconstructed further. It is no different than human beings, he infers, in that it breathes, takes nourishment and thinks like humans do. In such a worldview, sense of place is reinforced through the people's relationship to that place via the sustenance offered by the corn and its unity with humans, the deer and the peyote.

> The maize cannot grow without the deer blood; the deer cannot be sacrificed to the Sun until after the peyote hunt; Parching the Maize, the ceremony which brings the rains needed to make the maize grow, cannot be held without peyote from Wirikuta; the peyote may not be hunted until the maize has been cleansed and sanctified and the children told the stories of the First Peyote Hunt. Every ceremony is dependent upon the presence of the three symbolic items, and their sequential procurement makes the entire religious calendar a closed circle. Thus on both the exegetical and operational levels… deer, maize, and peyote constitute a single symbol complex (Myerhoff, 1974: 221).

And it is this symbol complex of unity that informs the Huichol of who they are as a people and how they relate to the location where they reside and journey to. This circle of life and the tasks and ceremonies it initiates connect the Huichol to the landscape and allow them to formulate a sense of place based on meaningful, significant interchange with their environment of which they are a part.

The Huichol sense of place, psychedelics, and American culture

Ethnopharmacologist Terence McKenna sees the role of the plant as essential for the continuance of human life on the planet. In a manner similar to the Huichol and their relationship with peyote, McKenna suggests modeling human behavior after plant behavior and taking seriously the information contained within plants concerning the nature of the world.

> I propose that we should adopt the plant as the organizational model for life in the twenty-first century… This means reaching back in time to models that were successful fifteen thousand to twenty thousand years ago. When this is done it becomes possible to see plants as food, shelter, clothing, and sources of education and religion. The process begins by declaring legitimate what we have denied for so long. Let us declare nature to be legitimate. All plants should be declared legal, and all animals for that matter. The notion of illegal plants and animals is obnoxious and ridiculous. Reestablishing channels of direct communication with the planetary Other, the mind behind nature, through the use of hallucinogenic plants is the last best hope for dissolving the steep walls of cultural inflexibility that appear to be channeling us toward true ruin (McKenna, 1992: 218).

McKenna, an American who lived in the 20th century, recognizes a break in humans from the nonhuman world reaching back to at least Plato's account in the *Phaedrus* where Socrates, the father of Western philosophy, states that "…I am a lover of

learning, and trees and open country won't teach me anything, whereas men in town do". This disassociation of man from nature is often theorized to have developed fully in monotheistic religious cultures employing an alienated God operating beyond the realm of human affairs and indeed the earth itself. In animistic, polytheistic cultures connected to the land through earth-based spirituality, this disconnect is seen far less frequently if at all. It is this connection to the earth and the group's specific place therein – in the same manner that the Huichol are connected to the land and their group's specific places of importance – that provides humans with a meaningful sense of place in both the local, physical sense, and in the spiritual, cosmological sense.

> The plant-human relationship has always been the foundation of our individual and group existence in the world. … The closer a human group is to the gnosis of the vegetable mind – the Gaian collectivity of organic life – the closer their connection to the archetype of the Goddess and hence the partnership style of social organization. … My conclusion is that taking the next evolutionary step…the rebirth of the Goddess, and the ending of profane history will require an agenda that includes the notion of our re-involvement with and the emergence of the vegetable mind (McKenna, 1992: 219).

The relationship between plants and the Huichols is obviously an important one that maintains the life cycle of the people. Through accessing the knowledge contained within plants, namely the peyote, the Huichol have obtained the "gnosis of the vegetable mind" and have thus, as McKenna theorized, formed a social structure that is symbiotic rather than parasitic. That symbiosis is the primary natural element of survival and evolution is apparent throughout the course of the earth's history. The Huichol's symbiotic relationship with nature reflects a well established sense of physical and cosmological place that allows the Huichol to continue their way of life based on the model of the plant and its knowledge.

Could such a symbiotic accord with nature leading to a meaningful relationship between humans and the nonhuman world and humans and their physical/cosmological place operate in typical Western society and culture? While it is difficult to imagine a culture with little to no symbiotic relationship with plants suddenly adopting a worldview wherein plants are the model for developing a way of life and sense of place, it is apparent that anything short of such a conversion for Western culture will set the stage for further alienation of humans from nonhumans and the earth. Perhaps combining McKenna's idea of a plant-based culture with a manifest example of his idea in the Huichol culture can provide a framework.

> If there is movement in the consciousness of plants then it must be the movement of spirit and attention in the domain of the vegetal imagination. Perhaps this is what the reconnection to the

> vegetal Goddess through psychedelic plants, the Archaic Revival, points toward: that the life of the spirit is the life that gains access to the visionary realms resident in magical plant teachers. This is the truth that shamans have always known and practiced (McKenna, 1991: 220).

While any methods by which an archaic revival or psychedelic plant communion yielding the "gnosis of the vegetable mind" would operate in Western culture are speculative and somewhat dubious, such an approach is necessary. Using the Huichol as an example of a culture and people that have formed a meaningful sense of place that is both physical and cosmological, Western societies would do well to discover their sense of place and the vegetal knowledge of the world via psychedelic plants with proper ceremonies and rituals enabling a healthy, positive atmosphere where the plant can be elevated to its former status as an essential tool for humans in learning how to live in the world.

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Interspecies communication in the Western Amazon: Music as a form of conversation between plants and people

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Abstract

Among the indigenous peoples of the Western Amazon, where animistic cosmologies are the norm, relationships between human and other-than-human are mediated by various forms of communication. In this paper, I examine a type of shamanic song called "*icaro*", found in Western Amazonian indigenous and mestizo communities. Using examples from the ethnographic literature, I discuss the acquisition and use of these shamanic songs to communicate with spirits and to effect change in the material world. Then, using the theory of phytosemiotics in conjunction with new research into plant communication, I show how the process of shamanic apprenticeship and the acquisition of *icaros* is a form of inter-species communication in which the apprentice intercepts and interprets the phytochemical signals inherent in plant communicative processes.

Keywords: interspecies communication, shamanism, Amazon, icaros, shamanic apprenticeship, ayahuasca

Introduction

In the Western Amazon, many indigenous and mestizo communities practice a form of shamanism that, due to its use of the psychoactive brew ayahuasca, has captured the world's attention. However, the shamanism of the Western Amazon is a complex ritual and ethnomedical practice that uses not only psychoactive plants but also non-psychoactive plants, diet, and especially music as central elements of the shamanic process. In this paper I explore a type of shamanic music found in indigenous and mestizo communities of the Western Amazon, *icaros*. The acquisition of *icaros* through shamanic apprenticeship and their deployment in a ritual setting comprise a

form of interspecies communication, which in a broader sense is characteristic of the animistic cosmologies that have traditionally been the hallmark of indigenous Amazonian cultures. Here I review some of the ethnographic literature discussing the *icaros*, and I conclude by providing a theoretical framework in which this form of interspecies communication may be better understood by the Western scientific mind.

The ethnographic literature on the indigenous cultures of the Western Amazon recognizes the universal importance of music in shamanism. The musical form that is most often associated with Amazonian shamanism, usually glossed as "ayahuasca shamanism", are those songs known as *icaros*. Luis Eduardo Luna writes that the term "*icaro*" comes "from the Quichua verb '*ikaray*', which means 'to blow smoke' in order to heal" (Luna, 1992: 233). The ethnomusicologist Bernd Brabec de Mori (2011), however, writes that his Kukama (Cocama) advisers say that it is from the word *ikarutsu*, to sing, and that any song in Kukama is *ikara*. Among other groups, there are different kinds of music with various names and uses, but even among these groups, those songs associated with ayahuasca shamanism are still called *icaros* (Brabec de Mori, 2011).

Like other forms of music found in the Amazon (Brabec de Mori 2011; Riol, 2009; Rubenstein, 2012; Uzendowski, 2005), the singing of *icaros* is believed to have real effects in the material world. Many practitioners claim that *icaros* are the very embodiment of the healing properties of the plants with which they are associated (Luna & Amaringo, 1999), and that a shaman's power is directly correlated with his knowledge of *icaros* (Luna, 1992). Luna (1984: 127) gives some examples of how the *icaros* are acquired and used:

> The spirits of the plants will appear [to the initiate] in his dreams to teach him '*icaros*', magic songs, with the help of which he can perform different activities, such as curing specific diseases, reinforcing the action of medicinal plants, calling special guardian spirits to assist him, attracting game or fish, causing a rival shaman to fall asleep, or attracting the attention or love of a woman.

Stephan Beyer writes that the *icaros* have three purposes: "to call spirits, to 'cure' objects and endow them with magical power, and to modulate the visions induced by ayahuasca" (Beyer, 2009: 66). Similarly, Norm Whitten, describing a healing session among the Runa of Ecuador, notes the use of song to communicate directly with the sprits, with the shaman "keeping the words bottled up in his throat, so that only the *supais* [spirits] can hear it" (Whitten, 1976: 157).

Likewise, some indigenous groups of the Western Amazon have a class of songs called *anent*, which like the *icaros*, are believed to have efficacy in the world of

human, plant and animal relationships. Riol (2009) writes that these secretive songs, of mythical origin and passed down along family and gender lines, are used to solve practical problems of everyday life.

These supplications can be addressed to any entity possessing a *wakán* [soul], meaning it can be convinced, seduced or cajoled via the highly symbolic character of the songs. These enchantments can therefore be directed to human beings, supernatural entities, and even certain categories of animals or plants (Riol, 2009: 25).

While *anen* may be regarded as shamanic in nature, due to the singer's ability to create changes in their world (Uzendowski, 2005), they remain primarily a tool of human agency. The *icaros,* however, introduce a different element: the agency of other-than-human beings. Luna shows that the *icaros* are a product of the two-way communication between shaman and plant-spirit:

> It seems the preeminent mode of communication between the shaman and the spirits is through magic chants or melodies. The spirits often present themselves to the shaman while singing or whistling a particular *icaro*. When the shaman learns these *icaros*, he can use them to call on the spirits when he needs them. By singing or whistling the *icaro* of the plant teachers, the shaman invites the spirits to present themselves. Also, the guardian spirits, which may be anthropomorphic or theriomorphic, that all informants claim to possess are called through *icaros* (Luna, 1992: 240-1).

Luna's work highlights that aspect of the *icaros* that is of particular interest, namely, the mode of acquisition and transmission of these songs and accompanying information. Anthropologists report a widespread belief that these songs may be acquired directly from the spirits of certain plants, animals or other entities during dreams or in trance during the course of the shaman's apprenticeship and ongoing career (Beyer, 2009; Luna, 1992; Rittner, 2007). Jauregui (2011) found agreement on this subject among the participants in his study, which took place in the Ucayali Region near Pucallpa, Peru, and included healers of Shipibo-Conibo, Ashaninka, Matsiguenga and mestizo identity. "According to the participants' beliefs", he writes, "knowledge is not transmitted orally by healers but through the mothers, spirits or entities that inhabit the natural world. Therefore, the knowledge transmission is of a trans-verbal nature as it occurs via dreams, visions and *icaros*" (Jauregui, 2011: 750).

Direct communication with plants?

This question of direct communication with plants is of interest to a number of scholars of various persuasions. Tupper (2002), an education specialist, and Wright

(2009), a religionist, have both written on the subject of "teacher plants" among various groups, and Jauregui (2011) and Luna (1984, 1992) have both identified the concept of "teacher plants", also called "*plantas con madres*" (plants with mothers) or "*doctores*", as one of the central elements in the complex practice of ayahuasca shamanism.

The notion of "teacher plants" requires further explication, especially with regards to the *icaros*. The shaman's apprenticeship centers on the practice of the *dieta*, whereby he or she will spend periods of days, even weeks, isolated in a small shelter in the jungle, removed from human interaction except for the person bringing food or medicine. The food is very plain, and a number of proscriptions severely restrict the apprentice's activity. Each *dieta* is focused on a specific teacher plant, and the ingestion of this plant preparation may be alternated with or combined with the use of ayahuasca, which facilitates communication with other plants. The *dieta*, at its purest, is a process of physical and spiritual purification, rest and meditation. Stephan Beyer (2009: 60) explains, "The goal of the diet is to maintain an ongoing connection and dialogue with the plant; to allow the plant to interact with the body, often in subtle ways, and to wait for its spirit to appear, as the spirit wishes, to teach and give counsel". What exactly does the plant teach the apprentice? A song. "That is how the plants teach you – sitting quietly in the jungle, with no place to go, listening for their song", he writes (Beyer 2009: 56).

Indeed, among most groups of the Western Amazon, it is through the *dieta* that one learns how to heal, and the way to heal is through the *icaros*. Luna writes that during the *dieta*:

> The spirits, or *mothers,* of the plants present themselves to the initiated, either during the visions they elicit or during dreams, and teach the shamans how to diagnose and cure certain illnesses, how to dominate evil spirits of the earth, water or air domains, how to travel through time and space, and how to perform other shamanic tasks… These powers are acquired mainly through the memorization of magic melodies or songs, called *icaros*, which the future *vegetalistas* learn from the spirits of plants, animals, stones, lakes and so forth… the number and quality of his *icaros* are the best gauge of the knowledge and power of a shaman (Luna, 1992: 232-3).

Each plant has its own song, and if the apprentice has prepared him or herself well, the spirit of the plant, often conceptualized as its "mother", will present herself to the apprentice and teach him her *icaro*.

In his study on "*plantas con madres*", Jauregui finds that an important step in the shaman's apprenticeship focuses on improving the student's sensitivity and intuition, and particularly his or her ability to listen, to learn, and even to sing the *icaros* of the

plants with which he or she will be studying.

> During this phase, the initiates are also obliged to develop the capacity to "listen", a fundamental faculty that will help them learn one of the essential therapeutic resources within the healers' heritage, the *ikaros* or sacred shamanic melodies (Jauregui, 2011: 747).

One of the plants administered during this phase of the shaman's apprenticeship is *chiric sanango* (*Brunfelsia grandiflora*), said to aid in dreaming. A non-psychoactive *Chenopodium* species (related to common food grains such as quinoa and amaranth) is used specifically to improve the memory (Jauregui, 2011). Certain *Cyperus*, or sedge, species are used to improve singing, an application that Glenn Shepard also reports among the Matsigenka (Shepard, 2011). This phase of the apprenticeship is so important precisely because of the importance of *icaros* to the shaman's ability to heal:

> Due to the fundamental role of the aforementioned *ikaros* within the practice of traditional medicine, the apprentices must learn to be more receptive, listen with greater attention, and soften their voice in order to achieve the correct vibrations that permit them to sing the *ikaros* properly. They must also learn the art of seduction, a skill that healers use with exquisite skill due to their good command and knowledge of psychological and cultural parameters (Jauregui, 2011: 748).

While purgatives and purifiers, including a decoction of the *Banisteriopsis caapi* vine by itself, dominate the first phase of the shaman's apprenticeship, it is during this second phase, the improvement of the apprentice's sensory capacities and learning abilities, that the well-known form of ayahuasca, the *Banisteriopsis/Psychotria* mixture, becomes an integral part of the process. Tertiary admixtures, Jauregui's "*plantas con madres*", may be included in the ayahuasca tea as well, and the ayahuasca acts as a sort of mediator, allowing apprentices "to have clearer visions that will facilitate their communication with the plant 'mothers'" (Jauregui, 2011: 747).

Indeed, ayahuasca is often considered the master teacher, because its use facilitates knowledge of the healing effects of a range of other plants and substances. Whitten, in his ethnography of the Canelos Quichua, indicates that the role of ayahuasca is to facilitate communication with the spirits of other plants:

> Ayahuasca mama, the serpentine vine spirit, and the "orphan female" spirit Yaji allow shamans and powerful shamans to maneuver in the domain of spirits. Where datura allows any Runa to collapse space and time and see *all* the spirits, Ayahuasca mama, herself a spirit *of* the huanduj, provides the necessary linkage to sprits which have acquired human souls (Whitten, 1976: 153).

Highpine (2012) reiterates Whitten's and Jauregui's findings. "Among the Napo Runa", she writes, "one of Ayahuasca's vital roles is teaching humans about *other* plants besides herself… She taught people the practice of *sasina* [*dieta*] so that they could use it to learn to communicate with other plants, not only herself" (Highpine, 2012: 11).

Music and song

The use of music in magico-religious contexts in the Amazon has been well documented and analyzed throughout the Amazon, from some of the earliest researchers (Katz & Dobkin de Rios, 1971) to the most recent (Beyer, 2009). Hill (2009: 104) cites a number of authors to support his conclusion that the auditory capacity is a privileged sensory mode among the indigenous peoples of the Amazon:

> More generally, sound production and auditory perception are regarded as the main sense modes for mediating between humans, animals, and spirits throughout Lowland South America (Basso, 1985; Beaudet, 1997; Chaumeil, 1993; Gebhart-Sayer, 1985; Hill, 1993; Hill & Chaumeil, 2011; Menezes Bastos, 1995; Seeger, 1987).

Hill's notion of "materializing the occult" (2009: 103) leads toward Brabec de Mori's conclusion (2013) that the spirits themselves are "sonic beings", summoned into existence by the actions of the shaman during a curing ceremony. Uzendowski (2005), addressing women's music, asserts that the power of shamanic song is in mimesis and in the perspectival shifts that it enables. Dobkin de Rios and Katz (1975) provide a unique theory in which shamanic music provides a sort of metrical structure, a "jungle gym" for the consciousness, which shamans use to restructure their participants' mental states toward culturally appropriate ends.

Few authors, however, address the agency of the plants or the plant spirits in this process, as might be warranted by the wealth of ethnography that discusses teacher plants and the transmission of songs and knowledge experienced by shamans during the *dieta*. Swanson (2009) addresses the *perception* of plant agency by Runa, in which songs addressed to food and medicinal plants are meant to seduce, pacify, resist, or otherwise engage productively in exchange with a potentially dangerous plant *supai,* or spirit. Rubinstein suggests that song is the language of the spirits, but he dismisses the impenetrability of the language as an attempt by the Shuar to create "a space in the mundane world where the truth of the imagination may abide" (Rubenstein, 2012). Such explanations, relying as they do on subjectivity, symbolism and the solitary imagination, don't explain why one person's inner experience, as expressed in particular forms of song, should be so effective in producing change in

the material world, as both *anent* and *icaros* are believed to do.

Given the fact that human consciousness is so notoriously difficult to measure, it may not be possible to reconcile the Western Amazonian belief in plant agency and interspecies communication with a Western scientific point of view. However, I would like to provide a new way of looking at the subject, using emerging research about the nature of plant communication as a starting point.

Plant agency

Scientific studies have shown that plants do communicate with each other, recognize self and kin, and alter their growth form or physiology appropriately so as to ensure the greatest chance of success for themselves and their genetic relatives (Murphy & Dudley, 2009) or to defend themselves from predators (Karban & Shiojiri, 2009). Plants are capable of altering their environment, and influencing the behavior of both predators and allies, through the creation and release of secondary phytochemical compounds (Buhner, 2002). These secondary compounds, the products of the sophisticated processes of phytochemistry, are what generate the medicinal, toxic, and hallucinatory effects of plant medicines.

Emerging research such as this paints a new scientific picture of plants as agentive beings, perhaps even endowed with a form of consciousness, ideas which would have previously been unimaginable, at least to the scientifically minded. Nevertheless, the question remains how to characterize plant-human interaction beyond the human manipulation of a plant's phytochemical services. A growing body of linguistic theory known as biosemiosis, and in particular the branches known as phytosemiosis and ecosemiosis, provide new ways of thinking about these relationships that more fully incorporate the indigenous understanding of plant agency and plant-human communication.

Biosemiosis represents the attempts by linguists to integrate new findings in biological sciences, such as those referenced above, with Piercian notions of signification, interpretation and meaning (Brier, 2006). The field has its origin in a paper (Anderson et al, 1984) that posits the semiotic threshold at the boundary of life (Kull, 2000), meaning that all living beings and communities of beings, from unicellular organisms to human societies, possess or engage in semiotic processes. The field has been further subdivided to reflect domain-specific analyses such as zoosemiotics, phytosemiotics and ecosemiotics. While ecosemiotics concerns itself with the human relationship to plants, phytosemiotics interrogates the semiotic flows inherent in the physiological processes of the plant kingdom. Kalevi Kull, a pioneer

of this field, emphasizes that phytosemiotics does not include "the semiotics of botanical research, neither the existence of plants as signs in human communicative systems (the latter would still be a part of ecosemiotics…), neither we will argue for any psychic phenomena in plants… Our subject is confined to the question of the existence of (primitive) sign processes in plants" (Kull, 2000: 328).

At first glance it may seem that our discussion here would more appropriately fall into the realm of ecosemiotics, or the communicative relationship between humans and plants. Indeed, an excellent article by Alf Hornborg discusses ecosemiotics in the context of the indigenous ecocosmologies and historical ecology of the Amazon Basin (Hornborg, 2001). In characterizing ecosemiotics, Hornborg writes, "Ecosemiotics thus does not merely provide a vantage-point for understanding [Amazonian indigenous] cosmologies in theoretical terms, but actually also for *validating* them" (Hornborg, 2001: 125, emphasis his). However, as a study of the flows of human sign systems as they relate to ecology, ecosemiotics de-centers phytosemiotic processes, and it is with plant agency that we are here concerned.

In the techniques of shamanic apprenticeship, on the other hand, phytosemiosis takes center stage. The theory of phytosemiosis posits that plant-based forms of communication operate on an indexical level (Kull, 2000). Index is one of three types of signs, along with icon and symbol, that Charles Peirce (1894) outlines in his seminal paper, "What Is a Sign?". Icons, he writes, act on the basis of likeness (as a map is iconic of a landform); indexical signs or indices indicate something by virtue of physical connection (where there's smoke, there's fire); and symbols are disconnected from their referent, associated with their object only through habit or usage (the classic example being the written word). Unlike symbol, icons and indices may both be non-linguistic, but index has the added quality of direct experiential connection. (Peirce, 1894; Rubenstein, 2012) Thus, index remains the one semiotic realm that creates a space for both direct experience and extra-linguistic signification.

The ethnographic literature, in turn, paints a picture of shamanic apprenticeship as a process of inserting oneself into the phytosemiotic processes through the direct experience and interpretation of non-linguistic, phytochemical cues. Jauregui (2011) and Beyer (2009) both depict the apprenticeship process as a form of experiential learning in which the initiate's body and mind are purified and sensitized to the effects of secondary phytochemical compounds. By the very nature of their action upon the body, plants are able to indicate important information about their healing properties, and perhaps even the state of their own health and that of the local biosphere. The apprentice's job is to learn to interpret these signals through their effects upon the body and mind.

When the phytochemical cues under study include psychoactive substances or have been potentiated by psychoactive substances, dietary regimen and isolation in the jungle, it stands to reason that the messages thereby engendered may take a variety of interesting forms that both include and surpass corporeal sensations, forms such as visual or auditory hallucinations or ethnomedical insight. In the process of interpretation and reproduction, the initiate organizes and codifies these signals into culture-specific mimetic responses, in this case, *icaros*. In other words, a particular plant might produce a unique auditory effect in the apprentice. The apprentice then interprets this sound as the *icaro* of that plant, and strives to reproduce this sound through song. In this way, the shaman is able to reverse-engineer, so to speak, that same phytochemical cue through the reproduction of its characteristic sound, or its *icaro* – and the singing of the *icaro*, in turn, constitutes the reproduction of the plant spirit itself. Not only does this model explain various aspects of the ethnographic literature, but it also fits well with Brabec de Mori's assertion that the spirits are sonic beings (Brabec de Mori, 2013).

A recognition of the hallucinatory quality of this phytosemiotic process does not invalidate the information or techniques that emerge from it. Similarly, the engagement of human subjectivity and cultural parameters does not privilege human agency over that of the plants, nor does it relegate the product of their interaction to the sphere of the human imagination. To the contrary, what we are seeing is a process whereby the non-human material world manifests itself in human cultural forms, in a way that grants full agency to both parties. Seen in this way, the *icaros* become a flowering of the symbiosis between plant and human.

Interspecies communication

Anthropology has been long been criticized for its failure to characterize human interdependence with nature in a way that refrains from idealizing or essentializing indigenous peoples, or portraying them as passive objects of environmental determinism. Conversely, modern industrialized culture fails to recognize our interdependence altogether, with drastic results for all species. The model of interspecies communication discussed in this paper has a profound potential for shifting human cultural discourse to a more eco-centric one that recognizes the importance of non-human agency and the possibility for a mutually beneficial relationship between humans and the rest of nature. The renowned anthropologist Gerardo Reichel-Dolmatoff recognized the ecological implications of such a discourse:

> Plants and animals tell the visionary how they want to be treated and protected so they can better

> serve him; how they suffer from carelessness, overhunting, the cutting down of trees, the abuse of fish-poisons, the destructiveness of firearms. Seen from this perspective we must admit that a *Banisteriopsis* trance, manipulated by shamans, is a lesson in ecology, in the sense that it gives nature a chance to voice its complaints and demands in unmistakable terms (Reichel-Dolmatoff 1996: 166-8).

Similarly, the modern literature on psychedelic studies is full of reports of an increased awareness of nature, and some writers consider the phenomenology of the psychedelic experience to be eminently suited to fostering an ethos of communication with and empathy for non-human nature (Krippner & Luke, 2009). On the other hand, what Reichel-Dolmatoff knew, and what is important for us to remember, is that the phytochemical message of the plant, in and of itself, does not modify human behavior. Instead, it is the skillful interpretation, reproduction and application of that message that solves a problem, cures an illness or creates change in the material world. This, in fact, is the lesson of the *icaros*, and it behooves us, in our journey forward, to listen carefully to their song.

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Psychedelic top knots

Dale Pendell

http://dalependell.com/

We have scrub jays year round, but the stellars only come down in the winter. One landed on the railing. I'd been dreaming along with the cat, so when she jerked up her head and stared, so did I. Her eyes were huge. "Who the fuck is that?"

He was all top knot and attitude. There was no distinction between where the top knot ended and the attitude began, or vice-versa. Thought of Greek helmets, or wearing a Mohawk.

We could wonder, "are we really thinking the same thoughts – are we really in telepathic communication – or is it merely seeming?" Perhaps we could devise subtle experiments, with controls. Psychologists without enough to do could write a paper. Or we could continue, and let the continuing be the confirmation.

Later we went hunting. Or she went hunting – I just followed along, on all fours. I was out of my league. She could hear all kinds of stuff that I couldn't. I followed her ears. It was mostly about patience.

In the mountains at the headwaters of the Trinity River I had a dog with me. He'd thrown off his pack crossing the North Fork and I'd only been able to recover about half his dog food, so food was an issue. On the fourth or fifth day I dropped a double hit – 500 mcg – I'd measured it myself. I gave Black Dylan about 200. We were working our way up a creek. I was panning about every quarter mile, seeing how far the gold went up the canyon, figuring that when it stopped, that was the place to prospect up the sides of the canyon for a ledge – for "The Source".

Around noon we came to a long pool, with shallows over a gravelly bed on the downstream side. There was a trout in the pool. I picked up a branch to use as a club and looked at Black Dylan and signaled with my hand. Black Dylan climbed around through the brush to the far end of the pool and jumped in, chasing the trout down to the shallows where I clubbed it.

The trickle of gold dust in the pan never quite stopped – it just kept getting thinner. A few tiny pieces still had quartz clinging to them. I even took a pan load of gravel from the steep slopes way above where the stream gave out and carried it back down to where there was water to wash it out, and sure enough, there was still a bit of

color. There was no 'source', the whole mountain was the source.

I divided up the trout that night, but I wasn't fair. I took a bigger share, and the flanks. Black Dylan got the tail and the head. He was pissed. Not that he didn't like the head – it was rich and fatty – but the whole deal stank. We'd been partners.

When I came back to the tiny fire, rocks built up around it, Black Dylan was sitting in my spot. My spot. My spot because it was in front of the fire and that was where I always sat. I was still pretty high. "That's my spot", I said.

Black Dylan acted like he didn't hear me. He stared straight ahead and didn't move a muscle. I didn't know what to do and Black Dylan knew I didn't know. We sat like that for a while. I was trying to figure it out. I was a man and Black Dylan was a dog. It was my spot because that was where I always sat. Black Dylan was a big dog – German short-haired – pointer of some kind. What was I supposed to do, go curl up where Black Dylan usually slept? I could – it was one of the possibilities – but there were problems with that also. Was Black Dylan going to feed the fire? What would the people in town at the hardware store say? A minute must have passed. Then Black Dylan grumbled and walked off. He walked clear out of camp and crossed the stream and scratched out a place to curl up on the opposite bank.

Like, "All day we have been two beings. Two different beings, but equal beings. All day. Our deepest essences were unnamed and unranked. Now you bring up this 'me man, you dog' shit. Fuck you".

My very first LSD trip had been in Big Sur, up Lime Kiln Creek. I'd decided that I was going to be like Buddha and sit there until I figured it all out. Except it turned out there was nothing to figure out. I was sitting on a log by the stream, and there was about six inches of greenish glowing vibration on the ground all around me. Then some sticks in front of me started moving and a chipmunk of some kind poked his head up and looked at me. And we just sat there looking at each other, with this peaceful glowing energy settled all around us. Clear.

There was a bush with tiny blue flowers beside me. There were no spirits or entities existing anywhere in the universe – there was just this plant with its own energy and presence, and the chipmunk, and the water moving, and light and shadow, and myself, all one seamless totality from time a million years before the first thought of language. Top knot.

Has LSD lived up to its promise? Which promise? In tune with nature or the power to disable a whole city? The latter, please. What do you get when you mix nature worship, local spirits, solar cycles, blood and soil, and put them together? National

Socialism. What if they'd had LSD? Would an acid trip have changed those bastards? Unlikely. It took a bullet, or cyanide. Giving LSD to narcissists only seems to make them worse.

Like a friend with many psychedelic experiences who greeted me after I'd crossed Nevada and Utah to see him. "Sorry you had to cross the desert... I mean, nothing to see".

Tuning in. A sense of presence. Then this graffito on a concrete wall along Deer Creek: a cryptic LSD monogram. Like "Jesus Saves", but more up to date. The pagans didn't really do a better job than the Christians. Napoleon's soldiers carved their names onto the Sphinx over the names of Roman legionnaires.

On the other hand maybe the graffito was part of a memorial. Maybe he couldn't afford a cemetery headstone. He left this for his psychedelic friend. And that concrete wall, that itself is defacement. Maybe like Edward Abbey said, throwing a beer can out the window of his car in the desert: "It's not the beer can that is out of place, it's the highway".

Top knot.

Snake medicine: How animism heals

Robert Tindall

Abstract

Animistic perspectives, which hold the cosmos as "a being to whom prayers and offerings are made, who is endowed with understanding, agency and sentience, and responds to the actions of humans" (Apffel-Marglin, forthcoming) are often dismissed as primitive, even as "incompatible with an impersonal regard of objective reality" (González-Crussi, 2007). Yet this account of a healing of chronic inflammatory demyelinating polyneuropathy (the consequence of severe rattlesnake envenomation), within the shamanic traditions of the Native American Church and the vegetalistas of the Peruvian Amazon, reminds us of how profound healing can be when it arises from indigenous perception of a sentient, living cosmos. It also demonstrates the diagnostic and healing capacities of shamanic traditions utilizing psychoactive plants, sometimes beyond the reach of Western science.

Keywords: animism, vegetalismo, Native American Church, ayahuasca, peyote, shamanism, jergon sacha, Tolkien

Our native mind

> *A snake which gets wounded heals itself. If now this is done by the snake, do not be astonished for you are the snake's son. Your father does it, and you inherit his capacity, and therefore you are also a doctor.*
>
> – Paracelsus

"Animism" is a concept first introduced into anthropological circles by one of its founders, Edward Tylor, as the belief in the universal animation of nature, souls, and supernatural beings. In his *Primitive Culture* (1871), he wrote that animism is a perception held by "tribes very low in the scale of humanity", yet serving as the "groundwork of the Philosophy of Religion, from that of savages up to that of civilized men" (Tyler, 1871: 381).

Such paternalistic Victorian views towards animistic perception continue to hold sway in the popular mind, although a far more sophisticated understanding of

indigenous perception has since developed, such as expressed by prehistorian Jean Clottes:

> Traditional people, and I think the people of the Paleolithic had two concepts that change our vision of the world: the concept of fluidity and the concept of permeability. Permeability means the categories that we have, man, woman, horse, tree, etc., can shift. A tree may speak. A man can get transformed into an animal and the other way around, given certain circumstances. The concept of fluidity is that there are no barriers, so to speak, between the world where we are and the world of spirits. A shaman, for example, can send his or her spirit to the world of the supernatural or can receive the visit of supernatural spirits. When you put those two concepts together, you realize how different life must have been for those people from the way we live now (Herzog, 2010).

Scholars in recent decades have proposed different schemas to distinguish the nature of the modern and indigenous experience of the cosmos.

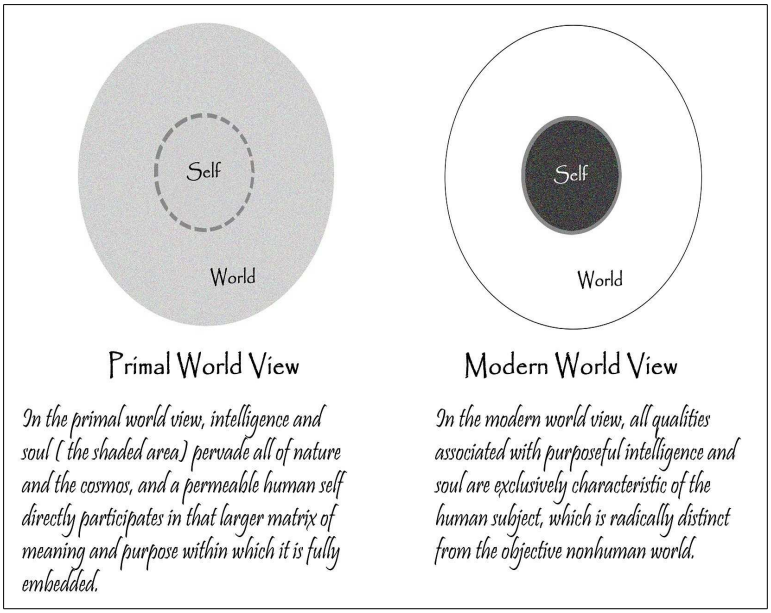

Figure 1. Richard Tarnas's primal and modern worldviews (Tarnas, 2006: 80)

Philosopher Louis Dupré depicts modern consciousness as a sudden, radical departure from tens of thousands of years of human culture, where "The divine became relegated to a supernatural sphere separate from nature", and it "fell upon the human mind to interpret the cosmos, the structure of which had ceased to be given

as intelligible" (Dupré, 1993: 3). Cultural historian Richard Tarnas, who likewise sees the modern mind as an arrogation of interpretive power by the individual self, gives this model in figure 1 above to delineate the two forms of human apprehension.

Medieval scholar and fantast J. R. R. Tolkien, (whose mytho*poeic* works are our great modern guides to the indigenous mind of Europe) clearly had such a distinction in mind when he explained to C. S. Lewis:

> You look at trees, he said, and called them 'trees', and probably you do not think twice about the word. You call a star a 'star', and think nothing more of it. But you must remember that these words, 'tree', 'star', were (in their original forms) names given to these objects by people with very different views from yours. To you, a tree is simply a vegetable organism, and a star simply a ball of inanimate matter moving along a mathematical course. But the first men to talk of 'trees' and 'stars' saw things very differently. To them, the world was alive with mythological beings. They saw the stars as living silver, bursting into flame in answer to the eternal music. They saw the sky as a jeweled tent, and the earth as the womb whence all living things have come. To them, the whole of creation was 'myth-woven and elf patterned' (Carpenter, 1979: 43).

For Tolkien, unlike Tyler, such an aboriginal worldview is neither prerational nor delusional. It is a form of human inquiry that satisfies a desire for sophisticated interaction with the cosmos, about which he stated "The magic of Faery[1] is not an end in itself, its virtue is in its operations: among these is the satisfaction of certain primordial human desires. One of these desires is to survey the depths of space and time. Another is to hold communion with other living beings" (Tolkien, 2002: 113).

We would add healing to Tolkien's list of primordial human desires satisfied by animistic experience. In my apprenticeship with my partner, Susana Bustos, Ph.D., in the *vegetalista* tradition of the Peruvian Amazon, we have repeatedly observed how in its shamanic practices (often facilitated by the psychoactive medicine ayahuasca), healing is achieved through animistic immersion in a vital cosmos. Our first documentation of such a healing occurred in 2005, when a young woman suffering from a brain tumor came to the jungle for a course of treatment with our *maestro*, the Ashaninkan curandero Juan Flores. In the three weeks of her immersion in the rainforest, where she drank medicinal plants and *agua icarada*, that is, water sung over by the shaman, as well as participating in ceremonies with ayahuasca, her tumor vanished, startling her doctors in Chile, who were poised to operate upon her[2].

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[1] "Faery" is the term Tolkien used throughout his career to describe animistic/indigenous apprehension of the cosmos.

[2] See chapter 7 of my *The Jaguar That Roams the Mind* (2008) for an in depth discussion of Carolina's healing/cure through indigenous methods of a brain tumor that eluded Western methodologies.

This process of unraveling disease through re-membering is key to the cosmovision of many indigenous peoples, who perceive disease as a consequence of unconsciousness. In fact, they believe the diseased soul can be sung back into harmony with the cosmos again.

The Kuna peoples of Panama, for example, see sickness as a manifestation of a lack of attunement to the story of the Cosmos, and heal by singing the song of the Earth and Universe back into the diseased member. Similarly, among the Tzutujil Maya:

> The world is a sacred building called the House of the World and our individual bodies are made like this House of the World and contain everything that exists in the outer world. The way the initiated shaman heals the person is to rebuild the World House of that person, remembering all its parts back to [the original flowering]. Welcoming all the parts back to life entails singing out a sacred map of ordered holy words and magical sounds. This is a microcosm of the macrocosmic Divine Order of the Original World Body. This sacred map re-creates all the sacred mountains, rivers, trees, springs, ancestral regions, and names of Gods and Goddesses and their abodes. When this song is sung properly, the individual song is harmonized with the Great Song of the Original World House and both the individual and the collective are made well again (Jenkins, 2012: 86-90).

Such elegant healing practices, predicated upon a non-Cartesian experience of the cosmos as vital and sentient, are routinely dismissed as "primitive" by Westerners, for whom its "mythicoreligious perspective" is "incompatible with an impersonal regard of objective reality" (González-Crussi, 2007: 4).

Yet intimate experience of the "mythicoreligious perspective" teaches otherwise, as this story about a healing revolving around the use of traditional psychoactive plants within an animistic worldview illustrates.

Snake medicine

Not so long ago, emerging from the Amazon rain forest, I found a message from home awaiting me. Could the Ashaninkan *curandero* Juan Flores, whom I had been visiting at his center for traditional medicine, Mayantuyacu, heal a rare case of snakebite? Turning to Juan, who was seated beside me in his noisy office in Pucallpa, I posed the question to him.

"Yes", he answered simply, with the traditional authority of a shaman to an apprentice.

Without pausing to ask for specifics, I relayed his response and a chain of events was set in motion that demonstrated the remarkable efficacy of indigenous, shamanic medicine. It was not, in fact, a mere snakebite that Juan was called on to heal, but a

severe case of chronic inflammatory demyelinating polyneuropathy, or CIDP, which had occurred as a consequence of rattlesnake envenomation.

Upon returning to the United States, I was introduced to Nick, the man seeking treatment within the *vegetalista* tradition. I recognized him as someone I had seen around the tipi meetings of the Native American Church, or NAC. Laconic, dressed in black, and constantly smoking, Nick walked in heavy boots with a Frankenstein monster gait that I had found puzzling. Whenever he spoke in meetings, his words commanded respect, and it was clear that his participation in the peyote way of the Plains Indians was longstanding.

Nick, it turned out, had been bitten by a rattlesnake at its height of venomousness, and years later he was suffering severely degenerative effects from the toxins. He lived with pain – constant, intense burning in his lower legs, which extended up to his hips; painful cramping in his feet and hands; constant twitching (fasciculation) throughout his limbs; nightly cold sweats; loss of motor control; and an "indescribable" feeling of electric current in his extremities. Heavy orthopedic boots encased his numbed feet.

His long ordeal to find a cure had even led him to contemplate a radical, very dangerous experimental treatment that would have knocked his immune system "into the Dark Ages" through chemotherapy, but in the end Western technological medicine simply had no solutions for him. In the process of embracing his disease as an initiatory path, rather than a mere stroke of terrible misfortune, Nick had been astonished to find his own medicine of the desert chaparral, peyote, sending him on a quest for a cure in the Amazon with the rain forest medicine ayahuasca.

Nick had already experienced healing in indigenous ways. As he told us, at age twenty-nine, while undergoing alcohol withdrawal, he had suffered a cardiac infarction that scarred his heart. After his heart attack, he developed an arrhythmia, a violent limp of the heart that was deeply unsettling: "My heart would beat one... two... da dung. It would then stop and pick up again. It was so loud you could hear it".

A friend suggested that Nick seek healing in the Native American Church, or NAC, since Western medicine had basically written him off as not long for this world. Nick had deep apprehensions, however: "As an addict, for me a medicine like peyote could be construed as a drug, and I had real concerns about risking my sobriety".

Peyote, however, has a venerable history of usage to heal alcoholism and other sicknesses. A cactus with psychoactive properties, peyote has been used in

ceremonial contexts for thousands of years by the native peoples of the Americas, both as a medicine to align the spirit with the cosmos and to heal the body of disease. Overcoming his trepidations, Nick chose to attend a meeting.

The roadman (or "one who shows the path" as the peyote shamans in the NAC are called) for the meeting, after listening to Nick's explanation of his heart condition, said to him, "Well, there's no reason you can't be healed, but it not going to be me healing you. It's really contingent on whether you've learned the lesson that you needed to learn by having your heart be that way".

Something in the roadman's words resonated with Nick. As Nick put it, "I was like: huh". Right around midnight, the roadman went and fed Nick four medicine balls of peyote. Nick, bewildered, tried to focus on what was happening around him as the roadman fanned him with an eagle fan. "Then he took the eagle bone whistle and blew it right into my heart and I felt the arrhythmia leave. It wasn't just me who saw it, either". In an instant of animate synchronicity with the healing ritual, the fire, which was stacked up blazing about three feet high, dramatically flattened all the way down to the ground as if some unseen foot had stomped on it.

"The heart condition was gone. Forever. Just like that". Nick laughed. "That's kind of what got me coming around the NAC, you know? I felt obligated, like I owed my life, to whatever it was that saved me".

The roadman for that particular meeting, Bob Boyll, gives an intriguing advisory to those who seek healing upon the medicine path: "Once you begin walking this sacred way, the stakes get raised and you get scheduled for a series of initiations. Your entire life becomes a test". Within the lore of the Native American Church, it is generally recognized that life may become more acutely challenging after healing than before.

A couple of years later, Nick and his partner, Lisa, made a journey to Loch Loman Reservoir in Santa Cruz. It was a morning marked by strange omens. On the way, a fleeting illness struck them both at the same moment, numbing their faces and cramping their insides; it then vanished as quickly as it had come.

Then, at the lake, an enigmatic exchange occurred. A golden eagle flew across the sky and Nick called out to it, "Please drop a feather for me. Please drop a feather". And as soon as the eagle flew above them, it did. Straight down. Nick hastily clambered into a rowboat and started out on the water to fetch it, but someone in an electric boat zoomed out of nowhere, picked up the feather, and stuck it in his hat. Nick, affronted, called out, "Hey, man, I asked for that feather. I asked that bird for

that feather and it's mine". The man in boat shrugged, said, "Too bad you don't have an electric rowboat", and took off.

"Ten minutes later, the snake bit me", Nick concluded.

It was only in Peru, while working with ayahuasca and the plant medicine jergon sacha, (a traditional antidote for snakebite: "jergon" signifying "serpent" and "sacha" signifying "wild", "from the forest"), that Nick understood what had actually transpired that day. "I asked that bird for what I wanted", Nick said, "but it directed me to what I needed. The eagle is a high energy creature, of the astral. The serpent is the energy of the Earth. At that point in my life I was freshly sober, like a little kid. My priorities were all out of whack. That feather belonged to that guy who got it. What happened to me was I got directed to that snake, because that's what I needed in my life – even though I didn't want it, even though it's taken a huge chunk of my life. That medicine down in Peru showed me the truth of the matter".

On that fateful day in Santa Cruz, like a naïve Persephone, Nick plucked a narcissus flower that abducted him into Hades.

"I've always fancied myself the amateur herpetologist. I've owned snakes my whole life. I've raised pythons, poisonous snakes. I see this rattlesnake sitting there, maybe ten years old, with black and white stripes. The kind they call coontails. I said to Lisa, 'Should I catch it?' She said, 'Nah. Leave it alone.' She already knew I knew how to handle reptiles, but my pride got the better of me and I reached out to grab it".

Just at that moment the snake shifted position and was able to swing around and get its fangs in his finger. Pulling it off, still holding it in his hand, Nick grimly announced to Lisa, "Uh, I just got bit".

Sometimes snakes will dry-bite, but Nick knew immediately that he'd been envenomated. "My hand was on fire. I felt like I weighed a million pounds". To add insult to injury, the rattlesnake was close to hibernation, a time when a snake's venom is most poisonous, containing both neurotoxins and hemotoxins, which attack nerve cells, burst capillaries, and destroy tissue and blood. As a result, the snake injected a more lingering poison into him than the reptile would have in another season.

Lisa managed to transport Nick back across the lake to the ranger station, where a helicopter was immediately called. On his way to the hospital, Nick felt his heart racing out of control as the venom liquefied his blood. "You know what?" he said to himself, "This feels like I could die". Then a voice said, "Don't worry, you're going to be fine".

At that moment, looking up, he could see his heart rate immediately slow on the monitor, and heard the paramedic reassure him, "Ah, that's good, you're going to make it".

At the hospital, Nick's hand still felt like it was stuck in fire. "Not only was my whole body shaking and quivering, like there were bees flying around under my skin, but I looked like I was the Michelin tire guy. They were sticking needles in my arm to check the pressure because they thought they might have to lance it. Fortunately, it never got that bad, but they did give me enough antivenom medicine for four people and four platelet transfusions". Finally, the toxicity of the venom began to wane, but Nick's system had been left devastated.

"Most people bitten by rattlesnakes are there for a day – three tops. I was there for fifteen days. Not only that, when I got out I went back to the doctor and they said, 'Holy shit, you have no platelets! Don't bump into anything!' I went back to the hospital for another four days. I could have hemorrhaged and bled to death".

According to Nick, in the Santa Cruz Sentinel, the headline read: *Man, 31, Bitten by Snake Trying to Impress Girlfriend.*[3]

"You know", Nick concluded, "ego is the number-one killer of men".

The doctors eventually gave Nick a clean bill of health, and he thought he'd left this episode of his life behind him.

Then, a couple of years later, as Nick was playing music the fingers of his right hand stopped working. "'Move', I said to them, but they wouldn't move". Within days this paralysis progressed, allowing him to squeeze but not extend his hand. Nick began to make the rounds of the local hospitals. "I get all these tests, visit three different neurologists, and I finally end up with one of the best-known doctors in Santa Cruz, who said he thought I had Lou Gehrig's disease". Nick knew what that was – "It's a death sentence. Ninety percent of the people who get it die within three years of diagnosis". Nick lived with that diagnosis for almost a year, but then he began to notice that it wasn't progressing the way he'd read about it. As he described his diagnosis of multifocal motorneuropathy, a form of the autoimmune disease called chronic inflammatory demyelinating polyneuropathy to me, I commented, "You learned a lot of heavy terminology during this time".

"Well, I'll tell you", he said, "there's a positive and negative to everything. The negative side to learning Western medicine is you get sucked in. If you suffer from an

[3] The original newspaper article text is at http://www.freerepublic.com/focus/news/724660/posts

ailment, you get sucked into the doctor's way of thinking about it, which is God-cold and no resolution".

"God-cold?" I asked.

"Yeah, Western medicine has no God in it, and there's no resolution for CIDP. They call it an incurable chronic disorder. They have medicines that can slow it down, but no cure. I spent over a million dollars for an ineffectual Band-Aid".

"During the course of all this", he continued, "I tried to be as hopeful as possible, but finally I shut down and went into a black depression. I was brainwashed – by my own intellect and what doctors had told me – into accepting a hopeless diagnosis. I had given up and didn't care if I died the next day".

Finally, Lisa, now Nick's wife, called for a sweatlodge for their family. For Nick, it turned into a kind of intervention. Nick ate "a ton" of medicine, but could not relinquish his argumentative, self-righteous mind-set. Finally, Boyll, who was running the sweat, said to him, "I love you, but you know what? We're tired. We're tired of how you're being".

Nick finally confessed, "You know what? I don't know what to do".

Boyll replied, "Nick, you've been here before. You remember when you were here last time?"

Then Nick put it together. "I was right at the same place where I'd been with my booze. Where I gave up all hope and there was no place to go. I hit bottom right in the middle of a medicine sweat. I experienced all kinds of revelations, was able to see with clarity what I'd been doing, how my behavior had affected my family. My life changed, and I picked up the fight again, but in a different way. I recognized that there was a definite reason why I was going through what I was. It wasn't just a bunch of random circumstances. There was a plan to it".

Nick still didn't know what to do, but his confidence was growing again. He said to himself, "I'll leave it up to Creator and something will come along". A few weeks later, something did indeed come along.

You are the snake's son

In the dry hills of Tuolumne County, as a tipi was being set up for an NAC meeting, a rattlesnake was discovered sitting beneath a tarp in the exact location where the chief, or roadman, sits for a ceremony. Nick was present, and watched as the snake was taken outside and set beneath a bush. Knowing he was at fault for messing with

that species of snake a few years earlier, he took the opportunity to make amends. “I gave it some tobacco and prayed for forgiveness for putting myself in a position to harm it and myself”.

That night, having ingested the psychoactive peyote plant in ritual context, Nick had a powerful experience of participation in an animate cosmos. Out of the clear blue sky the word *ayahuasca* came into his mind. “The peyote was saying, ‘You need to go South and work with this medicine’”, Nick realized.

“I had heard of ayahuasca” he said, “but I’d never had any desire to try it – at all. ‘That’s odd’, I thought. I doubted it immediately”.

That evening at home, Nick said to Lisa, “You know, I just got this overwhelming message about working with ayahuasca. What is that?” Lisa had no idea. Nick wandered into the living room and, turning on the television, was greeted by the word *ayahuasca* emblazoned across the screen. It was a National Geographic program on Santo Daime.

That clinched it for Nick. “When people tell me stories like this, I don’t normally believe them. With this one, though, I thought there’s got to be something to this”.

Through Boyll and his partner, Ann Rosencrantz, Nick got in contact with Susana and I.

Like peyote, ayahuasca has an ancient lineage in its own habitat, the Amazon rain forest. Its name arises from the joining of two words in Quechua: aya, which signifies “soul”, “ancestor”, or “spirit”, and huasca, meaning “vine” or “rope”. Ayahuasca, therefore, is the vine of the souls. Actually it is usually an admixture of the vine ayahuasca and (in Peru) the leaves of the chacruna tree, like peyote the ayahuasca brew is psychoactive, and has long been utilized for similar shamanic purposes.

Shamans in the *vegetalista* tradition who use this medicine, among whom Juan Flores numbers, are called *ayahuasqueros*, and consider it the master teacher among the many plants utilized within the native pharmacopoeia. In Nick’s case, ayahuasca was ancillary to his main treatment: the plant jergon sacha.

Upon arriving at Mayantuyacu, after many hours of air, land, and sea travel, Nick was immediately set at ease by the way Flores and his people began treating him as a patient, assuring him, “We’re going to get the venom out of you". He was also introduced to the jergon sacha plant, a powerful snake venom antidote from the native pharmacopoeia. Most likely originally identified by its “signature” – the mottling on its bark that closely resembles the patterning on the back of the

venomous pit viper known as the jergon – the large bulb, or "stool", at the base of the plant has been used for generations to prevent and treat snakebite. Natives have long taken plant baths and rubbed themselves with jergon sacha to protect themselves upon entering the jungle; sought it out and quickly applied it, with great efficacy, after snakebite; and used it to treat the lingering consequences of envenomation.

Flores told Nick that he was toxified – the venom was still in his body and needed to be released. Western doctors had told Nick the same thing. The enzymes of rattlesnake venom end up stored in locales with the highest concentration of fat—the myelin sheath that covers nerves. As a result, Juan and a visiting doctor from Lima, who has been using jergon sacha to treat HIV, explained that Nick's autoimmune system was attacking itself. Without removing the toxins that were at the source of the malfunctioning of his autoimmune system, no recuperation was possible.

Nick already knew this as well – Western science had no way to remove the toxins from his body, so he had taken immunosuppressants instead to reduce the symptoms. Juan was, in effect, informing Nick that the *vegetalista* tradition could do a lot better than that: it could actually cleanse his system of the venom.

Deeply encouraged, Nick began his *dieta*, the simple and direct method of Amazonian medicine where a patient drinks plant remedies that have been prepared by a *curandero*.

Both the medicines and the patient are sung over with *icaros*, the magical melodies that contain and transmit the healing virtue of the plants. As well, ayahuasca ceremonies are utilized to better enable the *curandero* to direct the spirits of the plants and other "doctors", and for the patient to more thoroughly integrate the healing received.

Jergon sacha had an immediate healing effect. In keeping with the plant's purgative power, upon drinking the preparation made by boiling its stool in water, Nick got quite ill: "It felt like I'd gotten bit by that snake again. I felt that same really heavy, heavy feeling, sweating, just sick as a dog. But they had said that might happen. I was drinking two liters of the plant medicine a day and the toxin was breaking up in my fatty cells and being rereleased into my bloodstream". After the initial nausea passed, however, Nick found he was recuperating rapidly. In short order, the burning sensation and spasmodic jumping in his legs, which had kept him awake all night for years, vanished.

While jergon sacha is very effective as an antivenom, Flores explained to Nick that it was not going to be a quick fix because he had already sustained long-term damage,

Figure 2. Juan Flores preparing ayahuasca (Photo by Robert Tindall)

Figure 3. Juan Flores with the jergon sacha plant at Mayantuyacu (Photo courtesy of Josh Nepon)

Figure 4. The "signature" on a jergon sacha plant, whose bark has markings resembling that of the jergon snake (Photo courtesy of Josh Nepon)

even skirted nerve death. Nick was therefore also given came renaco, a strangler vine of the Amazon rain forest whose muscular growth has led to its use to rebuild torn and degenerated muscle, ligaments, nerves, and bones.

Much as the rattlesnake had made an appearance at the tipi meeting where Nick was directed toward the medicine of the rain forest, the appearance of two venomous pit viper serpents heralded the successful conclusion of his treatment. On his last day at Mayantuyacu, within a single hour, a huge bushmaster – the largest poisonous snake in the Western Hemisphere – came racing down the slope toward the little village. Then an equally impressive jergon, the serpent that bestowed its name on Nick's medicine, was discovered while clearing brush. Both were killed in the ensuing melee and their bodies brought and laid before an astonished Nick.

Nick's totemic snakes suggest that his journey was an initiatory one. As he told us, having experienced the chthonic powers of the serpent, it has "opened up doors where I know I can help people. The most powerful messages you can bring people have to come from a place of experience. My work helping alcoholics and addicts, and now handicapped people, was completely revolutionized. I don't just have a theoretical understanding of what it means to return from the dead. I've lived it".

One morning after an ayahuasca ceremony at Mayantuyacu, an Argentine healer approached Nick and told him, "Last night I saw this Native American old man sitting next to you and he was talking to me. He was saying that with everything you're going through, you're reaching a place in yourself where you can help and heal people".

"You know what else he told me?" Nick asked me. "He said, 'You know, the best healers are the wounded ones'".

Nick's treatment was quite effective. Nerve conduction returned to Nick's feet: one foot is entirely restored, and the other, which had degenerated so far that it felt as if "there was nothing there", is now partially alive again. He has now resumed his career as a punk rock musician, and recently sent out an image on Facebook of his discarded orthopedic boots. He is hopeful that he can entirely rehabilitate.

Nick was received back into the NAC community with rejoicing and deep gratitude for the work of Juan Flores. Nick was visibly a new man after his treatment.

The paradox of shamanic healing

Indigenous medicine comes wrapped in paradox for Westerners. Among these paradoxes is the distinction between curing and healing of disease, concepts which,

as in Venn diagrams, overlap yet remain experientially distinct. The general thrust of modern, industrial Western medicine, psychiatry, and psychology is to "cure", from Latin cura, "to care, concern, trouble", by either suppressing symptoms (that is, managing disease) or excising it from the body. Treatment is usually considered satisfactory when symptoms abate or lessen so that the life of the sufferer is more tolerable. In many indigenous styles of medicine, which give equal importance to curing as the West, healing, from Old English hælan, "to make whole, sound and well", may also involve searching out the hidden origin of the disease in the body/mind. In other words, there is a teaching contained within disease that must be heard, understood, and heeded. The patient must, in short, remember her or his way back to health, to harmony with the cosmos (Tindall, 2010)[4].

In a healing quest through indigenous medicine, a cure may be found or it may not. Yet because of the experience of direct participation in the "larger matrix of meaning and purpose" within which the patient, and disease, is embedded, the valence of the disease will change. In such cases, it is the entire self that is engaged in unraveling a disease's enigma, and the entire organism is the laboratory wherein the cure and/or healing can be found. As a consequence, such healing is always idiosyncratic, because each body's laboratory is unique.

Additionally, if disease is cured shamanically, the methodology used (which in the *vegetalismo* shamanism of the Peruvian Amazon is a complex synergy of plants, the shaman's *icaros* – or sacred songs – and the ecology of the healing locale itself) will often elude scientific researchers in search of a "silver bullet" molecule. The medicine may be non-exportable: its efficacy may vanish as soon as it is separated from the culture that gave rise to the healing in the first place.

What Nick's rain forest quest indicates is that, unlike in Western, technological medicine, psychoactive native medicines are allies in a *psychomachia* – a battle of the soul. In a similar way, Nick's recovery from an "incurable" disease can be seen as

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[4] Richard Grossinger gives an example of such remembering in the career of a Western shaman, a woman who was "viciously raped and then discarded for dead in a garbage can by her attacker". Devoting herself to "becoming a warrior and a healer, not out of rage or self-protection but as the only way to healing herself", this woman restored herself through her capacity to "mutate what had been done to her" through shamanic practices. As Grossinger (2005) insightfully comments:

> The patient of a shaman no doubt also has an "inner child", but that child is experienced as a raven or a wild bear and thus liberated to transmute, finally, into something larger than the neurosis. The so called neurosis may have been no more than the unborn "shaman" within, careening toward its voice. No real growth can happen as long as the victim state requires either comforting or revenge. In fact the more deeply wounded the victim, the more powerful must be his or her potentiation in order to overcome the wound.

an initiatory path, one more akin to the Native American vision quest than a patient checking into a modern hospital to undergo treatment.

Far from being surpassed and rendered obsolete by our contemporary technological approaches, traditional, animistic medicine with its "mythicoreligious perspective" continues to flourish, and reminds us of how profound healing can be when it arises from indigenous perception of a sentient, living cosmos.

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Entheogenic rituals, shamanism and green psychology

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Abstract

Psychedelic or consciousness-expanding drugs have been studied by Western scientific researchers as adjuncts to psychotherapy while their plant-based equivalents are used in traditional ceremonial context for healing and spiritual practice. Plant extracts from tobacco, coca, coffee and cannabis, used as sacraments in indigenous cultures have become recreational drugs in contemporary society. Research with consciousness-expanding or entheogenic substances such as MDMA, LSD and psilocybin has focused on their value as adjuncts to psychotherapy. The worldwide underground culture has adopted the use of hallucinogenic plants and fungi, such as psilocybe mushrooms, ayahuasca, iboga and peyote, in small group hybrid therapeutic-shamanic ceremonies as well as large scale events such as raves. Core elements of such hybrid rituals are: the structure of a circle, a ritual space and altar of some kind, the presence of an experienced elder or guide, the use of eye-shades or semi-darkness and the cultivation of a respectful, spiritual attitude.

Keywords: Entheogens, psychedelics, hallucinogens, consciousness expansion, MDMA, psilocybe mushrooms, ayahuasca, LSD, hybrid rituals, shamanism

Introduction

My research interest in the potentials of psychedelic drugs for the transformation of consciousness began when I was a graduate student at Harvard University in the early 1960s, studying with Timothy Leary and Richard Alpert (who later became Ram Dass). Subsequently, I became interested in the role of altered states of consciousness (induced by plants and other methods) in three great traditional systems of transformation – shamanism, alchemy and yoga. I have now come to regard shamanic or neo-shamanic ritual use of such plants, along with herbal medicine and organic farming, as part of a worldwide movement toward a more balanced and conscious relationship with the plant realm. In this essay, I review the

role of psychoactive plant medicines and speculate on how they might be integrated into society in a healthy way.

There is a question that has troubled me, and no doubt others, since the earlier heyday of psychedelic research in the 1960s, when many groups and individuals were preoccupied with the problem of assimilating new and powerful mind-altering substances into Western society. The question, simply stated, was this: how did the American Indians succeed in integrating the use of peyote into their culture, including its legal use as a sacrament to this day, when those interested in pursuing consciousness research with drugs in the dominant white culture succeeded only in having the entire field made taboo to research, and any use of the substances a criminal offense punishable by imprisonment? The use of peyote spread from Mexico to the Northern Native American tribes in the latter half of the nineteenth century, and has found acceptance as a sacrament in the ceremonies of the Native American Church. It is recognized as one kind of religious ritual that some of the tribes practice; and it is acknowledged by sociologists for its role as an antidote for alcohol abuse.

This intriguing puzzle in ethnopsychology and social history was relevant to me personally, since I was one of the psychedelic researchers, who saw the enormous transformative potentials of "consciousness expanding" drugs, as we called them, and were eager to continue the research into their psychological significance. It would be fair to state that none of the early explorers in this field, in the fifties and early sixties, had any inkling of the social turmoil that was to come, nor the vehemence of the legal-political reaction. Certainly Albert Hofmann, the Swiss chemist who discovered LSD, an epitome of the cautious, conservative scientist, has testified to his dismay and concern over the proliferation of patterns of abuse of what he so poignantly called his "problem child" (*Sorgenkind*).

Thus resulted the strange paradox that the substances regarded as a social evil and a law-enforcement problem in the mainstream dominant culture are the sacrament of one particular sub-culture within that larger society. Since the surviving Native American cultures are older and in many ways ecologically more sophisticated than the cultures of the European invaders and settlers, the examination of the paradox posed above could lead to some highly interesting considerations.

The answer to the ethnopsychological puzzle became clear to me only after I started observing and participating in a number of other Native American ceremonies that did not involve the use of peyote – such as singing-healing circles, 'sweat lodge' and 'spirit dance' ceremonies. I noted what many ethnologists have reported: that these

ceremonies were simultaneously religious, medicinal, and psychotherapeutic. The sweat lodge, like the peyote ritual, is regarded as a sacred ceremony, as a form of worship of the Creator; they are also practiced as a form of physical healing; *and* they are used for solving personal and collective psychological problems. Thus it was natural, for those tribes that took up peyote, to add this medium to the others they were already familiar with, as a ceremony that expressed and reinforced the integration of body, mind and spirit.

In the dominant white society by contrast, medicine, psychology and religious spirituality are separated by seemingly insurmountable paradigm differences. The medical, psychological and religious professions and established groups, each separately, were much too frightened by the unpredictable transformations of perception and worldview that psychedelic drugs seemed to trigger. Thus, the dominant society's reaction was fear, followed by prohibition, even of further research. None of the three established professions wanted these consciousness-expanding instruments, and neither did they want anyone else to be able to use them of their own free choice. The implicit assumption was (and is) that people are too ignorant and gullible to be able to make reasoned, informed choices as to how to treat their illnesses, solve their psychological problems, or practice their religion. The fragmented condition of our society is mirrored back to us through these reactions.

For most Native Americans and in indigenous societies in all parts of the world, healing, worship and problem-solving are all subsumed in the one way, which is the way of the Great Spirit, the way of Mother Earth, the traditional way. The integrative understanding given in the peyote visions, or in experiences with plant extracts like *ayahuasca* in South America or *iboga* in Central Africa, is not feared, but accepted and respected. Here the implicit assumption is that everyone has the capability, indeed the responsibility, to attune themselves to higher spiritual sources of knowledge and take responsibility for their own health-maintaining and spiritual practices. The purpose of ceremony, with or without medicinal substances, is regarded as a facilitating of such attunement. Indeed, the word "medicine" is used in Native American circles to refer to any substance, practice, even words, or persons – with a kind of integrative spiritual power.

The revival of interest in shamanic practices of healing and divination can be seen as expressions of a worldwide seeking for the renewal of a spiritual relationship with the natural world. Over the past two millennia Western civilization has increasingly developed patterns of domination and exploitation based on arrogant assumptions of human superiority. This dominator pattern has involved the gradual dis-enchantment and enormous destruction of non-human nature. By contrast, many indigenous

people with shamanic practices have maintained beliefs and values that honor and respect the integrity, indeed the sacredness, of all of nature, in its infinite variety of manifestations. Their life-style includes rituals of remembrance of the living intelligences, called "spirits", inherent in the natural world.

In the modern worldview, such a recognition of "spirits" in nature, is considered beyond the pale of reason. 'Spiritual' and 'natural' are virtually considered opposites. However, those seekers who are again practicing the shamanic methods of earlier times and cultures are rediscovering that these methods are not at all incompatible with the curiosity and respectful knowledge-seeking of a scientific explorer or researcher. The revival of shamanic ritual practices and an animistic worldview can be seen as part of a worldwide human response to the degradation of ecosystems and the biosphere. These groups and individuals are expressing a new awareness, as well as a revival of ancient awareness of the organic and spiritual interconnectedness of all life on this planet.

Psychedelics as sacrament or recreation

Several observers, including Andrew Weil among others, have pointed out the historical pattern that as Western colonial society adopted psychoactive plant or food substances from native cultures, the pattern of use of such psychoactive materials *devolved* from sacramental to recreational. *Tobacco* was historically regarded as a sacred or power plant by Indians of North, Central and South America and is still so regarded by Native Americans. However, in the white Western culture, and in countries influenced by this dominant culture, cigarette smoking is obviously recreational, and tobacco addiction become a major public health problem. The *coca* plant, as grown and used by the Andean Indian tribes, was treated as a divinity, *Mama Coca*, and valued for its health- and energy-maintaining properties. The concentrated extract *cocaine* on the other hand is purely a recreational drug and its indiscriminate use as such has led to serious public health problems. In this, and other instances, desacralization of the plant-drug has been accompanied by criminalization. Even our most popular stimulant *coffee* is an example of this trend: Apparently first discovered and used by Islamic Sufis, who valued its stimulant properties for long nights of prayer and meditation, it became a fashionable recreational drink in European society in the 17th century, and was even banned for a while as being too dangerous. And *cannabis*, used by some sects of Hindu Tantrism as an amplifier of visualization and meditation and by manual laborers as a relaxant, has become the epitome of the recreational "high", associated with jail terms for simple possession.

Since sacramental healing plants were so rapidly and completely desacralized upon being adopted by the West's increasingly materialistic culture, it is not surprising that newly discovered synthetic psychactive drugs have generally been very quickly categorized as either recreational or narcotic – even those, like the psychedelics, whose effects are the opposite of "sleep-inducing". Concomitantly, as the indiscriminate and non-sacramental use of psychoactive plants and newly synthesized analogs spread, so did patterns of abuse and dependence. Predictably, established society reacted with prohibitions, which in turn furthered organized crime activities. This is so in spite of the fact that many of the original discoverers of the new synthetic psychedelics, people such as Albert Hofmann and Alexander Shulgin, are individuals of deep spiritual integrity. Neither they, nor the efforts of philosophers such as Aldous Huxley, Alan Watts and Huston Smith, or psychologists such as Leary, Alpert and many others, to advocate a sacred and respectful attitude towards these substances, were able to prevent the same profanation from taking place.

The later discovered phenethylamine psychedelic (also called *empathogenic*) MDMA provides an instructive example of this phenomenon. Two patterns of use seem to have become established during the 1970s: some psychotherapists and spiritually inclined individuals began to explore its possible applications as a therapeutic adjuvant and as an amplifier of spiritual practice. Another, much larger group of individuals began using it for recreational purposes, as a social "high" comparable in some respects to cocaine. The irresponsible and widespread use in this second category by increasing numbers of people understandably made the medical and law-enforcement authorities nervous. The predictable reaction occurred: MDMA was classified as a Schedule I drug in the United States, which puts it in the same group as heroin, cannabis and LSD, making it a criminal offense to make, use or sell, and sending a clearly understood taboo signal to pharmaceutical and medical researchers.

After Albert Hofmann had identified psilocybin as the psychoactive ingredient in the Mexican 'magic mushroom' (*Psilocybe mexicana*), he brought some of the synthesized psilocybin to the Mazatec shamaness Maria Sabina, in order to obtain her assessment of how close the synthesized ingredient was to the natural product. In doing so, he was following the appropriate path of acknowledging the primacy of the botanical over the synthetic. It has been suggested that for everyone of the important synthetic psychedelics, there is some natural plant that has the same ingredients, and that perhaps it should be our research strategy – to find the botanical "host" for the psychedelics emerging from the laboratory. Research on the shamanic use of the hallucinogenic morning glory seeds called *ololiuhqui* in ancient Mexico, which contain LSD analogs, has enabled a deeper understanding of the possibilities of this

substance.

If Wasson, Hofmann and Ruck are correct in their proposal that an LSD-like ergot-derived beverage was used as the initiatory sacrament in Eleusis, the implications are profound. According to Rupert Sheldrake's theory of morphogenetic fields, rituals, like any patterned activity, gain their power through precise repetition of all the elements. One could suppose that by re-growing or re-hybridizing this particular plant, as it was used in ancient times, we could “tune in” to and re-activate the morphogenetic field of the Eleusinian Mysteries, the ancient world's most awe-inspiring mystical ritual.

There is no inherent reason why sacramental use and recreational use of a substance in moderation cannot co-exist. In fact, among Native Americans, tobacco often does play this dual role: after a sacred pipe ritual with tobacco and other herbs, participants may smoke cigarettes to relax. We know the sacramental use of wine, in the Catholic communion rite, and we certainly know the recreational use of wine. We are able to keep the two contexts separate, and we are also able to recognize when recreational use becomes dependence and abuse. One could envision similar sophistication developing with regard to psychoactive plant products. There could be recognized sacramental and therapeutic applications; and certain patterns of use might develop that were more playful, exploratory and hedonistic – and yet could be contained within a reasonable and acceptable social framework that minimizes harm.

The abuse of a drug in such a rational and sensible system would not be a function of who uses it, or where it originated, or its chemical classification – but rather the behavioral consequences in the drug user. Someone becomes recognized as an alcoholic, that is an abuser of alcohol, when their interpersonal and social relationships are noticeably impaired. There should be no difficulty in establishing similar abuse criteria for other psychoactive drugs.

Consciousness research with entheogens

In the field of consciousness research, the “set-and-setting hypothesis”, which was first formulated by Timothy Leary in the early sixties, helps us to understand psychoactive drugs and plants as one class of triggers within a whole range of possible catalysts of altered states. The theory states that *the content of a psychedelic experience is a function of the set (intention, attitude, personality, mood) and the setting (interpersonal, social and environmental);* and that the drug functions as a kind of trigger, or catalyst, or non-specific amplifier (To a lesser extent, the determining role of set-and-setting also applies to other psychoactive drugs such as the stimulants

and tranquilizers). The hypothesis can also be applied to the understanding of any altered state of consciousness, when we recognize that other kinds of stimuli can be triggers – for example hypnotic induction, meditation technique, *mantra,* sound or music, breathing, sensory isolation, movement, sex, natural landscapes, a near-death experience, and the like.

An important clarification results from keeping in mind the distinction between a state (of consciousness) and a psychological trait; between state changes and trait changes. For example, psychologists distinguish between state-anxiety and trait-anxiety. William James, in his classic *Varieties of Religious Experience,* discussed this question in terms of whether a religious or conversion experience would necessarily lead to more "saintliness", more enlightened traits. This distinction is crucial to the assessment of the value or significance of drug-induced altered states. Only by attending to both the state-changes (visions, insights, feelings), *and* the longer-term behavioral or trait changes, can a comprehensive understanding of these phenomena be attained.

Having an insight is not the same as being able to apply that insight. There is no inherent connection between a mystical experience of oneness and the expression or manifestation of that oneness in the affairs of everyday life. This point is perhaps obvious, yet it is frequently overlooked by those who argue that, on principle, a drug could not induce a genuine mystical experience, or play any role in spiritual life. The internal factors, including preparation, expectation and intention, are the determinants of whether a given experience is authentically religious. Equally, intention is crucial to the question of whether an altered state results in any lasting personality changes. Intention is like a kind of bridge from the ordinary or consensus reality state to the state of heightened consciousness; and it also can provide a bridge from that heightened state back to ordinary reality.

This model allows us to understand why the same drug(s) could be claimed by some to lead to *nirvana* or religious vision, and in others could lead to perversion, violence and criminality. The drug is only a tool, or a catalyst, to attain certain altered states – which altered states being dependent on the intention. Further, even where the drug-induced state is benign and expansive, whether or not it leads to long-lasting positive changes is also a matter of intention or mind-set, as well as on-going practice.

The potential of psychedelic drugs to act as catalysts to a transformation into *gnosis*, or direct, ongoing awareness of divine reality, even if only in a small number of people, would seem to be of the utmost significance. Traditionally, the number of individuals who had mystical experiences has been very small; the number of those

who have been able to make practical applications of such experiences has probably been even smaller. Thus the discovery of psychedelics, in facilitating such experiences and processes, could be regarded as one very important factor in a general spiritual awakening of collective human consciousness. Other factors that could be mentioned in this connection are the revolutionary paradigm shifts in the physical and biological sciences, the burgeoning of interest in Eastern philosophies and spiritual disciplines, and the growing awareness of the multi-cultural oneness of the human family brought about by the global communications networks.

Entheogenic substances in shamanistic cultures

In earlier writings, I emphasized the newness of psychedelic drugs and the unimaginable potentials to be realized by their constructive application. I viewed them as first products of a technology oriented toward the human spirit. I still appreciate the potential role of the new synthetic psychedelics in consciousness research, and perhaps consciousness evolution. However, my views have changed somewhat under the influence of the discoveries and writings of cultural anthropologists and ethnobotanists, who have pointed to the role of mind-altering and visionary botanicals in traditional cultures across the world. In such a worldview, closer to that of aboriginal cultures, humanity is seen as being in a relationship of co-consciousness, communication and cooperation with the animal kingdom, the plant kingdom and the mineral world. In such cultures, the ingestion of hallucinogenic plant preparations in order to obtain knowledge – for healing, for prophecy, for communication with spirits, for anticipation of danger, and for understanding the universe, appears as one of the oldest and most highly treasured traditions.

One cannot read the works of R. Gordon Wasson on the Mesoamerican mushroom cults, or the work of Richard E. Schultes on the profusion of hallucinogens in the Amazon region, or the cross-cultural studies of such authors as Michael Harner, Joan Halifax, Peter Furst, Wade Davis and Luis Eduardo Luna, or the cross-culturally oriented medical and psychiatric researchers such as Andrew Weil, Claudio Naranjo and Stanislav Grof, or more personal accounts such as the writings of Carlos Castaneda, or the McKenna brothers, or Bruce Lamb's biography of Manuel Cordova, without getting a strong sense of the pervasiveness of the quest for visions, insights and non-ordinary states of consciousness in the worldwide shamanic traditions. These studies demonstrate that psychoactive plants and fungi are used in many, though by no means all of the shamanic cultures that pursue such states. In the shamanistic cultures of the Northern hemispere, in America, Europe and Asia, the use of the drumming-journey method appears more widespread – possibly because

there is a relative paucity of visionary hallucinogens in the temperate zones, as compared to the tropics.

Shamanic cultures all over the world know a wide variety of means for entering non-ordinary realities. Michael Harner has pointed out that "auditory driving" with prolonged drumming is perhaps as equally a widespread technology for entering shamanic states as the use of hallucinogens. In some cultures, the rhythmic hyperventilation produced through certain kinds of chanting may be another form of altered state trigger. Animal spirits become guides and allies in shamanic initiation. Plant spirits can become "helpers" also, even when the plant is not taken internally by either doctor or patient. Tobacco smoke used as a purifier, as well as a support to prayer, is actually the most widely used psychoactive plant substance in indigenous and mestizo South American societies. In some traditions crystals are also used in ceremonies, in addition to plants, to focus energy for seeing and healing. There is attunement, through prayer and meditation, with deities and spirits of the land, the four directions, the elements, the Creator Spirit. The knowledge obtained from other states and other worlds is used to improve the way we live in this world. The use of hallucinogenic plants, when it occurs, is usually part of an integrated complex of interrelationships between nature, spirit and human consciousness.

Thus it seems to me that the lessons we are to learn from these consciousness-expanding plants in shamanism have to do not only with the recognition of other dimensions of the human psyche, but with a radically different worldview – a world view that has been maintained in the beliefs, practices and rituals of many indigenous shamanic cultures, and almost totally forgotten or suppressed by the materialist culture of the modern age. There is of course a certain delightful irony in the fact that it has taken a material substance to awaken the sleeping consciousness of so many of our contemporaries to the reality of non-material energies, forms and beings.

The potentials of entheogens in healing ritual practices

If we compare how Western medicine and psychotherapy have, so far, incorporated psychedelics into healing practice (really only on a very limited research basis), with shamanic healing ceremonies involving entheogenic plant substances, a perception of the importance of ritual is inescapable. The traditional shamanic ceremonial form involving hallucinogenic plants is a carefully structured experience, in which a small group of people come together with respectful, spiritual attitude to share a profound inner journey of healing and transformation, facilitated by these powerful catalysts.

A "journey" is the preferred metaphor in shamanistic societies for what we call an "altered state of consciousness".

There are three significant differences between shamanic entheogenic ceremonies and the typical psychedelic psychotherapy. *One* is that the traditional shamanic rituals involve very little or no talking among the participants, except perhaps during a preparatory phase, or after the experience to clarify the teachings and visions received. The *second* is that singing, or the shaman's singing, is invariably considered essential to the success of the healing or divinatory process. Furthermore the singing typical in etheogenic rituals usually has a fairly rapid beat, similar to the rhythmic pulse in shamanic drumming journeys. Psychically, the rhythmic chanting, like the drum pulse, seems to give support for moving through the flow of visions, and minimize the likelihood of getting stuck in frightening or seductive experiences. The *third* distinctive feature of traditional ceremonies is that they are almost always done in darkness or low light, – which facilitates the emergence of visions. The exception is the peyote ceremony, done around a fire (though also at night); here participants may see visions as they stare into the fire.

I will briefly mention some of the variations on the traditional rituals involving hallucinogens. In the *peyote* ceremonies of the Native American Church, in North America, participants sit in a circle, in a tipi, on the ground, around a blazing central fire. The ceremony goes all night, and is conducted by a "roadman", with the assistance of a drummer, a firekeeper and a cedar-man (for purification). A staff and rattle are passed around and participants sing the peyote songs, which involve a rapid, rhythmic beat. The peyote ceremonies of the Huichol Indians of Northern Mexico also take place around a fire, with much singing and story-telling, after the long group pilgrimage to find the rare cactus.

The ceremonies of the *San Pedro* cactus, in the Andean regions, are sometimes also done around a fire, with singing; but sometimes the *curandero* sets up an altar, on which are placed different symbolic figurines and objects, representing the light and dark spirits which one is likely to encounter.

The mushroom ceremonies *(velada)* of the Mazatec Indians of Mexico, involve the participants sitting or lying in a very dark room, with only a small candle. The healer, who may be a woman or a man, sings almost uninterruptedly, throughout the night, weaving into her chants the names of Christian saints, her spirit allies and the spirits of the Earth, the elements, animals and plants, the sky, the waters and the fire.

Traditional Amazonian Indian or mestizo ceremonies with ayahuasca also involve a small group sitting in a circle, in semi-darkness, while the initiated healers sing the

songs *(icaros),* through which the healing and/or diagnosis takes place. These songs also have a fairly rapid rhythmic pulse, which keeps the flow of the experience moving along. Shamanic "sucking" methods of extracting toxic psychic residues or sorcerous implants are sometimes used.

The ceremonies involving the root of the African *iboga* plant, used by the Bwiti cult in Gabon amd Zaïre, involve an altar with ancestral and deity images, and people sitting on the floor with much chanting and some dancing. Often, there is a mirror in the assembly room, in which the initiates may "see" their ancestral spirits.

In comparing Western psychoactive-assisted psychotherapy with shamanic entheogenic healing rituals, we can see that the role of an experienced guide or therapist is equally central in both, and the importance of set (intention) and setting is implicitly recognized and articulated into the forms of the ritual. The underlying intention in both practices is healing and problem resolution. Therapeutic results can occur with both approaches, though the underlying paradigms of illness and treatment are completely different. The two elements in the shamanic traditions that pose the most direct and radical challenge to the accepted Western worldview are the existence of multiple worlds and of spirit beings – such conceptions are considered completely beyond the pale of both reason and science, though they are taken for granted in the worldview of traditional shamanistic societies.

It is worth mentioning that in the case of *ayahuasca*, there have grown in Brazil three distinct syncretic religious movements or churches, that incorporate the taking of ayahuasca into their religious ceremonies as the central sacrament. Here the intention of the ritual is not so much healing or therapeutic insight, as it is strengthening moral values and community bonds. The ceremonial forms here resemble much more the rituals of worship in a church, than they resemble either a psychotherapist's office, or a shamanic healing session.

There are also several different kinds of set-and-setting rituals using hallucinogens in the modern West, ranging from the casual, recreational "tripping" of a few friends to "rave" events of hundreds or even thousands, combining Ecstasy (MDMA) with the continuous rhythmic pulse of techno music. My own research has focussed on what might be called neo-shamanic medicine circles, which represent a kind of hybrid of the psychotherapeutic and traditional shamanic approaches. In the past forty years or so I have been a participant and observer in hundreds of such circle rituals, in both Europe and North America. Plant entheogens used in these circle rituals have included psilocybe mushrooms, ayahuasca, san pedro cactus, iboga and others. My interest has focussed on the nature of the psychospiritual transformation undergone

by participants in such circle rituals.

In these hybrid therapeutic-shamanic circle rituals certain basic elements from traditional shamanic healing ceremonies are usually, though not always, kept intact:

- the structure of a circle, with participants either sitting or lying;
- an altar in the center of the circle, or a fire in the center if outside;
- presence of an experienced elder or guide, sometimes with assistants;
- preference for low light, or semi-darkness; sometimes eye-shades are used;
- use of music: drumming, rattling, singing or evocative recorded music;
- dedication of ritual space through invocation of spirits of four directions;
- cultivation of a respectful, spiritual attitude.

Experienced entheogenic explorers understand the importance of set and therefore devote considerable attention to clarifying their intentions with respect to healing and divination. They also understand the importance of setting and therefore devote considerable care to arranging a peaceful place and time, filled with natural beauty and free from outside distractions or interruptions.

Most of the participants in circles of this kind that I have observed were experienced in one or more psychospiritual practices, including shamanic drum journeying, Buddhist *vipassana* meditation, tantra yoga and holotropic breathwork and most have experienced and/or practiced various forms of psychotherapy and body-oriented therapy. The insights and learnings from these practices are woven by the participants into their work with the entheogenic medicines. Participants tend to confirm that the entheogenic plant medicines, when combined with meditative or therapeutic insight processes, function to amplify awareness and sensitize perception, particularly amplifying somatic, emotional and instinctual awareness.

Some variation of the *talking staff* or *singing staff* is often used in such ceremonies: with this practice, which seems to have originated among the Indians of the Pacific Northwest, and is also more generally now referred to as “council”, only the person who has the circulating staff sings or speaks, and there is no discussion, questioning or interpretation (as there might be in the usual group psychotherapy formats). Some group sessions however involve minimal or no interaction between the participants during the time of the expanded state of consciousness.

In preparation for the circle ritual there is usually a sharing of intentions and purposes among the participants, as well as the practice of meditation, or sometimes solo time in nature, or expressive arts modalities, such as drawing, painting or

journal work. After the circle ritual, sometimes the morning after, there is usually an integration practice of some kind, which may involve participants sharing something of the lessons learned and to be applied in their lives.

Concluding reflections

It appears incontrovertible that plant (and fungal) hallucinogens played some role, of unknown extent, in the healing and transformative traditions of shamanism. If we regard psychotherapy as the modern descendant of these traditions, then a similar, if limited, application of hallucinogens could be made in various aspects of psychotherapy. And this has in fact already occurred, as the various studies of psychedelics in alcoholism, terminal cancer, obsessional neurosis, depression and other conditions testify. It seems likely that these kinds of applications of psychedelics, as adjuncts to psychotherapy, will continue, – if not with LSD and other Schedule I drugs, then with other, newer, perhaps safer psychedelics.

What appears unlikely to me is that this kind of controlled psychiatric application will ever be enough to satisfy the inclinations and needs of those individuals who wish to explore psychedelics in their most ancient role, as tools for seeking visionary states and hidden forms of knowledge. The fact that the serious use of hallucinogens, outside of a psychiatric framework, continues despite severe social and legal sanctions, suggests that this is a kind of individual freedom that is not easy to abolish. It also suggests that there is a strong need, in certain people, to re-establish their connections with ancient traditions of knowledge, in which visionary states of consciousness and exploration of other realities, with or without hallucinogens, were the central concern.

It may be that such a path will always be pursued by only a limited number of individuals – much as the shamanic, alchemical and yogic initiations and practices were pursued by only a few individuals in each society. I find it a hopeful sign that some, however few, are willing to explore how to re-connect with these lost sources of knowledge, because, like many others, I feel that our materialist-technological society, with its fragmented world-view, has largely lost its way, and can ill afford to ignore any potential aids to greater knowledge of the human mind. The ecologically balanced and integrative framework of understanding that the ancient traditions preserved surely has much to offer us.

Furthermore, it is clear that the visions and insights of the individuals who pursue these paths are visions and insights for the present and the future, and not just of historical or anthropological interest. This has always been the pattern: the individual

seeks a vision to understand his or her place, or destiny, as a member of the community. The knowledge derived from expanded states of consciousness has been, can be, and needs to be applied to the solution of the staggering problems that confront our species. This is why the discoveries of the mystical chemists and ethnobotanists have immense importance – for the understanding of our past, the awareness of our presence, and the safeguarding of our future.

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The responsible use of entheogens in the context of bioregionalism

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Abstract

The use of entheogens tends to particularly thrive in the western regions of North America, in places also characterized by a strong ecological ethos, sometimes expressed as *bioregionalism* (i.e., Vancouver, Portland, San Francisco). Although entheogens and bioregionalism coincide and arguably have some significant things in common, there has been, to date and in practice, very little explicit connection between these two phenomena. More precisely, there is little evidence that users of entheogens are guided or influenced much by bioregional thought, or by related ecological values and frameworks. The academic literature on this topic is virtually non-existent. Nevertheless, there are some relevant ethical considerations regarding the use of plant-based entheogens (including fungi) outside of the geographic areas in which they were grown. This article explores various ways in which this apparent disconnect may be problematic, and discusses possible connections which, if pursued, could foster more responsible use of entheogens from a global and ecological perspective. An overview of bioregionalism and related concepts is offered next. Following that, some of the issues and impacts raised by non-bioregional uses of entheogens are discussed, and the article concludes with some thoughts on approaches to reconciling these problems.

Keywords: entheogens, bioregionalism, ethics, animism, drug tourism

Introduction

The methodology used to gain knowledge on the variety of psychedelics used, the monetary costs, and the cultural and social milieu in which they are commonly used was ascertained through informal conversations with approximately 50 anonymous people who use psychedelics on the West Coast of North America. Primary locations that data were gathered included Vancouver and Roberts Creek, British Columbia, San Francisco, and Portland, Oregon. The data referred to in this paper were gathered from roughly 2010 to 2013, although the author has been informally

researching this area for 25 years, first and foremost in British Columbia.

Overview of bioregionalism and related concepts

A bioregion is an area that can be defined by ecological or geographic boundaries:

> Bioregionalism has a number of characteristics and these include a belief in natural, as opposed to political or administrative, regions as organizing units for human activity; an emphasis on a practical land ethic to be applied at a local and regional scale; and the favoring of locally and regionally diverse cultures as guarantors of environmental adaptation, in opposition to the trend towards global monoculture (Alexander, 1996).

Kirkpatrick Sale (1984), an originator and proponent of bioregionalism, says that we must become "dwellers in the land" and that we must "come to know the earth" in the places in which we live. He quotes E.F. Shumacher to define the quintessence of bioregionalism:

> In the question of how we treat the land, our entire way of life is involved. We must somehow live as close to it as possible, be in touch with its particular soils, it waters, its winds. We must learn its ways, its capacities, its limits. We must make its rhythms our patterns, its laws our guide, its fruits our bounty.

Bioregionalism can perhaps be best described as a philosophy or sensibility. Ralph Metzner (1995) writes:

> The primary values, from a bioregional perspective, are not 'property rights' and 'development' but the preservation of the integrity of the regional ecosystem, the viability of the biotic community, and maximizing economic self-sufficiency within the region.

Although bioregionalism has not crystallized in its full political vision (the re-drawing of political boundaries along ecological or bioregional lines), it remains a persistent alternative undercurrent, an important component of the broader environmental movement. Indeed, it can be argued that bioregionalism's focus on all things local and regional anticipated or at least exerted an important influence on debates that eventually unfolded more in the mainstream – in particular, free trade, globalization, local foods and ecological footprint. And in many ways the roots of bioregionalism, in eco-philosophical terms, extend deeper than those of other environmental frameworks. For these reasons, it is argued that bioregionalism provides an important framework within which to consider the ecological, social, cultural and spiritual dimensions of entheogen use, embedded in place or elsewhere.

Furthermore, Metzner clearly states the parallels between bioregionalism and

entheogens. In *Green Psychology*, he makes the assertion that the renewed ceremonial and ritual uses of entheogenic plants are a symptom of an emerging grassroots paradigm shift towards more holistic thinking in terms of ecological issues and values. He states:

> I would argue that at a time when global techno-industrial culture is leading to massive erosion of biodiversity, worldwide ecosystem destruction, and profound social and economic disintegration, there are a number of cultural movements that are cautiously and purposefully moving toward the articulation of an ecological worldview and a bioregional, sustainable lifestyle. Among movements with similar values and assumptions I would include the revival of interest in herbal, homeopathic, and natural medicine; shamanic practices; bioregionalism; deep ecology; ecofeminism; social ecology; environmental ethics; ecopsychology; ecotheology; green economics; and the neopagan revival (Metzner, 1999: 8).

While Metzner makes the explicit connection between sustainability, bioregionalism, and enthoegenic use, he seems to view them as mutually supporting practices. This paper makes the observation that current use of entheogens among psychonauts and seekers on the West Coast of North America is not always so and sometimes rather to the contrary.

Ecological footprint and the 100 mile diet

Environmentalism and, more particularly, bioregionalism, are umbrella terms that cover many related concepts and initiatives, two of which are ecological footprint and the 100 Mile Diet. Mathis Wackernagel and William Rees conceived the notion of an ecological footprint, defining it as:

> The total area of land required to sustain an urban region (its 'Ecological Footprint') is typically at least an order of magnitude greater than that contained within municipal boundaries or the associated built-up area. In effect, through trade and natural flow of ecological goods and services, all urban regions appropriate the carrying capacity of distant 'elsewheres', creating dependencies that may not be ecologically or geopolitically stable or secure. … Such macro-ecological realities are often invisible to conventional economic analysis yet have serious implications for world development and sustainability in an era of rapid urbanizations and increasing ecological uncertainty (Rees, 1992: 121).

More simply stated, the Ecological Footprint is a measure of the impact put on land and water in a very particular region by its population. Essentially this measurement is a means to help people and societies delve into notions of sustainability and develop the understanding that we must live within nature's limits and carrying capacity (Wackernagel & Rees, 1996).

Perhaps inspired to some extent by the concept of an Ecological Footprint, the 100

Mile Diet was conceptualized in order to increase food security and to reduce social, environmental, and economic costs associated with importing and consuming foods that cannot be locally grown in a particular region or season. Smith and MacKinnon (2007) established a 100-mile radius from their residence in which they were to source their food for one year (2005-2006) and this is an example of bioregionalism applied to food systems. Some Diet benefits include reducing one's carbon footprint, eating healthier by reducing intake of processed food, weight loss, awareness of food systems, stimulating the local economy, and creating jobs. Some Diet challenges include learning how to preserve local food in season, changing eating habits, and potentially adopting a plant-based diet in some locations where meat and dairy items are not produced.

Depending on the context, food-based movements such as the 100 Mile Diet (exemplary of bioregionalism) and environmental concepts such as the Environmental Footprint may be quite distinct or strongly interconnected, but in most instances they are highly complementary. For example, the concept of bioregionalism is being applied to all kinds of consumer activities and "buy local" campaigns are ubiquitous whether applied to locally sourced building materials, food, tourism, entertainment, and clothing.

Although it appears that the concepts of bioregionalism and the Ecological Footprint have been accepted most wholeheartedly in the sphere of food security, these concepts have not been equally accepted by psychonauts (entheogen users who seek self-knowledge). This is because many psychonauts are not often consuming entheogens grown in their bioregion and are inadvertently expanding their Environmental Footprint. Paradoxically, this is not reminiscent of the 100 Mile Diet nor the associated concepts of bioregionalism and sustainability that Metzner couples with entheogenic consumption and shamanic practices. As an aside, it is worthy of note that the 100 Mile Diet is not necessarily concerned with the spiritual implications of food while this is a relevant consideration that pertains to entheogens. This consideration will be discussed later in this article.

Issues, impacts and consequences of non-bioregional use of entheogens

Contemporary uses of plant-based non-indigenous entheogens leave sizeable footprints that involve ecological, social, cultural, and spiritual considerations that may contradict the intentions of psychonauts and the paradigm of moving towards more sustainable communities. Some key considerations involve the inordinate amount of resources used in transportation, cultural appropriation, the commodification of plant medicines and altered states of consciousness,

overharvesting and the possible displacement of traditional plants and their spirits. It is argued that at least some of these undesirable impacts and consequences could be avoided or minimized if users ingested only locally grown plant-based entheogens, plant-based analogues or synthetic versions of plants that are not available locally. The extent to which psychonauts are aware of the implications of their use is unclear, as there is very little discussion of this topic in the entheogenic discourse.

It can be generally observed that here is a recent surge of entheogenic ceremonies in North America, in particular with considerable activity in the western coastal regions. In many instances, sacred indigenous plant-based entheogens, primarily ayahuasca (and also including iboga, peyote and psilocybin), are imported from distant geographic locations to serve the needs of those seeking cognitive enhancement and spiritual (healing) experiences. The frequency and high participation rates of non-psychonauts in these kinds of ceremonies are a relatively new phenomena, as are the ceremonies themselves. It is possible that these neo-traditional ceremonies have been taking place for some time yet it appears that these once lesser known practices have entered the cultural mainstream and the number of ceremonies and people partaking in them have increased significantly (personal communications with 50 anonymous interviewees). Information about ayahuasca ceremonies is ever-present in the mainstream media and climate as evidenced by an article in *Vanity Fair* in 2011 entitled "Letters from the Amazon" by Ted Mann. The article makes reference to an ayahuasca ceremony in a northern Los Angeles house, to ceremonies in the Amazon, and to the author's personal experience in a ceremony. The article certainly delves into the realms of ayahuasca culture and tourism, giving the sense that these experiences are commonly shared amongst everyday people, as opposed to the rather select realm of psychonauts.

Based on the author's anecdotal understanding of these ceremonies, and particularly those in British Columbia, they include the use of ayahuasca, iboga, peyote and psilocybin (personal communications with 50 anonymous interviewees). Some of the neo-traditional ceremonies involving peyote and ayahuasca are structured on traditional indigenous practices (i.e., the Native American Church) and others have been adapted to the sets and settings of North American culture (cross-cultural Vegetalismo) (Tupper, 2009). These ceremonies are referred to as neo-traditional because they are being held outside of their traditional geographic boundaries and are often presided over by neo-shamans (Tupper, 2009).

Psychonauts and seekers alike are to a great extent ingesting entheogens from a global market, rather than ingesting locally grown plant-based entheogens. For example, it is now possible to procure ayahuasca from Peru, peyote from Mexico,

and psilocybin mushrooms from Canada all in the same day. While ingesting these psychoactive plants (and fungi) all at once is not likely or advisable, it is possible, and raises some questions about the local use of non-indigenous entheogens. This conundrum is common but is almost ironic in the sphere of entheogen use. Ostensibly, one result of ingesting entheogens in a ceremonial or therapeutic context is that people may ultimately be more aware of the interconnectivity and the sacredness of life, sometimes referred to the internal and external reality of mystical experience (Griffiths, Richards, McCann & Jesse, 2006). As a result of this awareness, psychonauts may try to lead more balanced lives that have fewer negative impacts on others and the planet. "The worldview of shamanism is that health equals balanced relationships with all living things" (Gray, 1995: 173). Yet the considerations of Ecological Footprint so far appear to be rarely, if ever, applied to the use of entheogens in neo shamanic and neo traditional practices.

One of the most obvious impacts is the inordinate amount of resources used in harvesting and transporting entheogens. Our globalized transportation systems require various inputs such as fuel, labour, and vehicles and the result is often a large Ecological Footprint. While these transportation systems are already in place to serve other means, it does not diminish the amount of total resources used to transport entheogens globally. Also implicit in the discussion of imported plant resources is the problem of overharvesting. Some ethnobotanists assert that the answer to overharvesting in indigenous habitats is the propagation of non-indigenous plant-based entheogens in native habitats; yet this scenario can also be problematic. Although propagation may appear to be a more benign scenario, there is the risk that foreign plants may become invasive when introduced into native landscapes. In many instances, long-term time frames are needed to assess how well introduced species are adapting to native habitats. Conversely, others might advocate for non-native plants to be grown in controlled environments to lessen the chance of proliferation or accidental cross pollination. However, if entheogens are being grown in controlled and artificial environments such as greenhouses or in cultured tissue, they require large amounts of resources for successful propagation and harvest; inputs may outweigh outputs and Ecological Footprints are being expanded.

Another justification for cultivation and use of plant based entheogens in non-indigenous habitats is that humans are indeed part of nature and like animals are spreading the spores and seeds of entheogenic plants globally. This assertion does hold some possibility if it were not for the fact that animals tend to habituate in certain bioregion(s) (based on seasonal migrations and other natural processes). Unlike humans, animals do not have a global habitat. Due to modern advancements

in transportation networks, one can travel the globe and create multiple waste streams while attaining a seemingly vital worldly education. It is arguable that if one needs to consume a plant-based entheogen that cannot be sourced locally, a synthetic version or indigenous plant-based analogue might present a more ecologically sound alternative.

Some have asserted that plant-based entheogens such as ayahuasca "want" to be spread all over the earth to multiply their reach and "wake up" earth's inhabitants to the message of honoring her, each other, and ultimately the unity consciousness woven between us (McKenna, 2005). In response to this message, ayahuasca is being bred in non-indigenous places such as Hawaii and Costa Rica. Not only is this being done to spread the spiritual message of the plants, it is also being done to save the dwindling plant resources in their indigenous locales (partially as a result of increasing drug tourism).

In addition to the ecological issues raised previously, there are a number of social and cultural implications to ingesting non-indigenous plant based entheogens, such as ayahuasca. Stresses such as drug tourism and the global marketing of plant-based entheogens are putting considerable strain on indigenous communities. (Dobkin de Rios, 2009). In her 2008 book with Roger Rumrill, Marlene Dobkin de Rios discusses the issue of drug tourism:

> [Drug Tourism] has been around for more than 40 years and has been getting worse each year. Westerners take tours throughout areas of the Amazon and experience 'borrowed mysticism'. The drink ayahuasca is given to them by new, often false shamans – so called 'technicians of ecstasy' – charlatans who are on the lookout to profit from altering their clients' consciousness (p. 2).

They elaborate that drug tourism is taking place as a result of social alienation and Western cultural norms:

> …the urban tourist is on a never-ending search for self-actualization and growth. In this postmoderm period where people no longer produce their own food, where the family has broken down, where there is a significant absence of community tradition and shared meanings, individuals are wracked with feelings of low self-esteem and confusion about values. They are compelled to fill the emptiness with the experience of receiving something from the world. Why not a mystical experience with divinity (pp. 69-70) ?

They further go on to quantify the monetary exchange that vastly differs in value between the West and in the traditional cultures of the Amazon:

> Modernization and cultural change over the last century have destroyed the material base of many Amazonian traditional cultures. Commercial shamanism in Peru has become a system, where foreigners are given a powerful plant psychedelic at a cost of $1,000-$1,500 per week during a

> visit, compared to the $20-$30 cost for local people (p. 71).

Drug tourism is a global phenomenon, particularly in the Amazon Basin where tourists are looking for a "genuine" ayahuasca experience. While Dobkin de Rios primarily speaks of ayahuasca, she clearly illustrates some of the impacts of drug tourism that include con "neo shaman" and the exorbitant commoditization of culturally sacred ceremonies.

Cultural appropriation is implicit in the discussion regarding drug tourism and bioregionalism; this is yet another consideration. Cultural appropriation "assumes the existence of power differentials between the source culture and the privileged authoritative position of the borrower culture" (Tupper, 2009: 123). It could be argued, for example, that neo-traditional ayahuasca, iboga, peyote, and psilocybin ceremonies practiced in British Columbia are forms of cultural appropriation. These ceremonies are sacred in indigenous cultures and arguably cannot be easily transferred to North American culture with the same reverence and meaning by neo-traditional shamans and psychonauts. Tupper (2009) speaks to the ways that cultural appropriation can manifest itself:

> (cultural appropriation) undermines the integrity of the community whose culture is appropriated; and it has an impact on the cultural object itself (for example profanation of a sacred practice). It also permits inappropriate distribution of material rewards (namely financial gain) to the individuals doing the appropriating; and it fails to acknowledge the legal sovereignty over a kind of intellectual property (p. 124).

While this article cannot do justice to the ways in which drug tourism and cultural appropriation is taking place in neo-traditional ceremonies, ingesting locally harvested or synthesized entheogens that do not require the guidance of a shaman or the sacred ritual of a traditional indigenous ceremony may avoid issues of cultural appropriation (and drug tourism).

Animism and animaphany

With respect to the cultural and spiritual considerations regarding non-indigenous plant entheogens, one could pose the question: "What do the plants themselves have to say?". While this may seem a ridiculous question to some, it may be a tangible area of inquiry to those who have taken entheogens, those who revel in nature, and those who believe in animism.

J.E. Lovelock wrote G*aia: A new look at life on Earth* in 1979 and suggested that perhaps the Earth has agency. He speaks of this hypothesis, "in which Earth's living

matter, air, oceans, and land surfaces form a complex system which can be seen as a single organism and which has the capacity to keep our planet a fit place for life" (p. x). Lovelock follows up by stating "occasionally it has been difficult, without excessive circumlocution, to avoid talking of Gaia as if she were known to be sentient" (p. xii).

Furthermore, Lovelock also speaks of the inherent knowledge contained within Gaia that is ineffable:

> Among several difficult concepts embodied in the Gaia hypothesis is that of intelligence. Like life itself, we can at present only categorize and cannot completely define it. Intelligence is a property of living systems and is concerned with the ability to answer questions correctly. We might add, especially questions about those responses to the environment, which affect the system's survival, and the survival of the association of systems to which it belongs (p. 146).

Andy Letcher, likely influenced by Lovelock, calls meetings with the spirits or souls inherent in entheogens – magic mushrooms in particular – "animaphany" (2007: 87). This kind of animistic thinking fundamentally challenges the cultural ontology of experience. The animistic discourse contends that all natural objects, such as plants and stones, have spirits or essences that exist outside of our ordinary awareness. Letcher states that to some people psilocybin mushrooms "facilitate the perception that of plants as being in some sense conscious, aware, and inspirited" (2007: 90). What is it that happens to these spirits when they are transported and consumed outside of the geographical areas in which they originated?

What can be said about the displacement of plant spirits and could there indeed be such a thing? In the shamanistic tradition and animistic discourse, it is not the shamans that do the healing, it is the spirits of the plants (Letcher, 2007). Could it be that entheogenic plants used outside of their indigenous habitat are displaced? Would this change their effectiveness or fundamental structure? Does the physical travel that they endure affect their healing potential?

To add some context to these questions, it might be useful to refer to the unrest of souls or spirits whose previous physical bodies are kept in places that are geographically unfamiliar or were disposed of in ways that are disrespectful. The repatriation of ancestral remains by indigenous peoples, such as the Haida, is one such example. One of the reasons for the repatriation of ancestral remains is that by doing so, displaced spirits can finally be at rest.

> The main goal… is to bring home and rebury our ancestors with honour and respect. As long as the remains of our ancestors are stored in museums and other unnatural locations, we believe that the souls of these people are wandering and unhappy. Once they are returned to their homeland

> of Haida Gwaii, and laid to rest with respect and honour, their spirits can rest, and our communities heal a bit more (Collison & Collison, 2002: 8).

Does this kind of spiritual displacement also occur when entheogenic plants and fungi are consumed in geographic areas in which they are not grown? While these questions can not be decisively answered, they are examples of deliberations about the spiritual considerations of ingesting entheogenic plants outside of the geographic locations in which they were grown and in which traditional and neotraditional ceremonies take place.

Concluding thoughts

Clearly, traditional entheogenic uses and practices are evolving into new forms. A recently published paper argues that the International Narcotics Control Board may criminalize "legitimate cultural practices outside their alleged 'original socio-economic context'" (Tupper & Labate, 2012). To be clear, the present critique of contemporary uses of plant-based entheogens in no way suggests that only bioregional approaches to entheogenic uses should be legal. Rather, it merely argues that perhaps there are less ecological, social, cultural, and spiritual impacts when only indigenous plant-based entheogens are ingested.

We live in a time of continual fast-paced change and development devoid of shared values, including the worth of self-knowledge. As a result, people are dislocated and are feeling as though they need a respite from the bombardment of industrial values such as materialism and consumerism (Alexander, 2000). It may be that the proliferation and popularization of neo-traditional ceremonies is a response to the spiritual and cultural longing for shared values, self-knowledge, and a sense of unity in the times that we live in (Dobkin de Rios & Rumrill, 2008). In trying to attain a level of elevated consciousness and understanding, are psychonauts actually acting in ways that are disrespectful of plant spirits, indigenous cultures, and the biosphere in general? Are psychonauts participating in yet another folly of an industrialized, materialistic, and consumer-based culture?

The question "Is it ethically responsible to use only locally grown plant-based entheogens?" is not a not simple one. It may be possible that the ingestion of entheogenic plants, outside of their geographic areas of origin, are both dishonoring and nurturing to the planet and to Western culture at the same time (through the impacts outlined in this paper and through the benefits of experiencing self-knowledge and unity consciousness inherent in most entheogenic experiences respectively). Furthermore, in the future a bifurcation point could make it more

apparent as to what the "ethical" path is. While this assertion may be simplistic, it acknowledges the unknown, especially with respect to the spiritual dimensions of bioregionalism. With this acknowledgement it is sensible to adopt a precautionary principle approach because we inhabit a fragile interconnected web of life and need to consider the long-term consequences of transporting, propagating, and consuming sacred plants and fungi from around the world.

Even though the concept of eating locally is well supported by many, it is acted on by too few. Comparatively, only a small fraction of the population chooses to explore non-ordinary states of consciousness and the deliberation regarding entheogens and bioregionalism may seem peculiar. Nevertheless, this consideration will be timelier as psychonauts' forays into cognitive enhancement become a more accepted and diverse practice, both for therapeutic and medical uses (Fadimann, 2011; Roberts & Hruby, 2002).

A bioregional approach to using entheogens provides a way to address the issues raised in this paper and it is worthy of note that psilocybin mushrooms grow in almost all parts of the world. Does this fact suggest a message the plant (fungi) spirits may be trying to convey? It is indeed if one seriously considers the truth of animaphany and the assertions made about the earth having its own agency (Letcher, 2007; Lovelock, 1979; McKenna, 2005).

In conclusion, this article has sought to explore the ethical way forward with respect to ingesting local plant-based entheogens or synthetic analogues given the potential impacts previously discussed. Perhaps a further deliberation of what is ethical requires more listening to what the plant spirits are trying to teach us (and how we can learn from respectful dialogue with one another):

> …it is surely safe to say that the path of sanity, perhaps survival, is to regain the spirit of the ancient Greeks, to once again comprehend the earth as a living creature… we must listen again to the two great teachers, one 'the marvelous system of living nature' and the other 'the traditional wisdom of mankind', teachers we have 'rejected and replaced by some extraordinary structure we call objective science'… (Sale, 1984).

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Shamanism and psychedelics: A biogenetic structuralist paradigm of ecopsychology

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Abstract

Shamanism and psychedelics are central to understanding the evolutionary roots of ecopsychology and its basic principles. The ancient ritual roots of shamanism constituted the context within which psychedelic experiences contributed selective influences to the evolution of human neuropsychology. Both shamanic psychology and ecopsychology involve a neuroepistemology that reflects the neurotransmitter effects of psychedelics on cognition. Shamanism contributed to the development of our ecopsychology through influences on psychological, social and cognitive evolution. Shamanism embodies the concept of animism, the notion of the spiritual essence of all nature which is recognized as the core of the oldest of humanity's religious beliefs. Shamanism provided the context within which this animistic attitude and the sense of the sentience of the many entities of the world were developed, especially in the relationship to animals. Animal species and their variant qualities provided a natural metaphoric system to structure psychological development and the evolution of social organization. Within the context of shamanism, the worlds of animal species and spirits intertwined in the creation of symbolic potentials for the differentiation of self – embodied in animal spirit powers – and the collective identity of society – embodied in totemic animals. This incorporation of the elements of nature into personal powers and social identity made shamanic ecopsychology a basic feature of human nature and culture.

Keywords: shaman, ecopsychology, animism, psychedelic, evolution, totemism

Introduction

The natural or evolved psychology of human consciousness, including its natural and social ecopsychology – is founded on principles intrinsic to shamanism. Shamanic ideology, psychology and manifestations of consciousness are based in biological structuring of humanity's evolved psychology and its consciousness of nature. Key

biological contributions to both shamanic psychology and ecopsychology are the effects of substances called psychedelics, hallucinogens, entheogens, and other terms, including psychointegrators (Winkelman, 2007). These substances have key effects on the world view and principles of shamanic consciousness and ecopsychology because their effects on neural transmission produce a neuroepistemology and worldview that reflects neurophenomenological principles related to integration, connection, identity and unity with nature.

The ancient ritual capacities of the hominids, the common ancestors of humans and the great apes, share commonalities that provide a baseline from which we can infer and assess the evolution of the ritual practices of hominins (our uniquely human lineage) (Winkelman, 2009, 2010c). These commonalities reveal the ancient ritual roots of shamanism and the social context within which psychedelic experiences contributed selective influences to the evolution of human ecopsychology. Evidence for their influences on human evolution is found in the greater sensitivity of psychedelics for bonding with the human serotonergic system than is the case of other hominids (Pregenzer et al, 2007). This indicates that advantages conferred by the ability to benefit from these experiences were selective forces shaping the evolution of uniquely human cognitive capacities. The effects exerted by psychedelics on cognitive evolution are reflected in the common world view found in psychedelic traditions worldwide and their similarities to the basic ideologies of shamanism – such as the roles of plant and animal spirit powers and their healing potentials.

Shamanic ritual was a context for the development of our ecopsychology because of the fundamental contribution of shamanic neuropsychology to human relations with nature in general and human psychological, social and cognitive evolution in particular (Winkelman 2002, 2010a). Shamanism embodies the concept of animism, the notion of the spiritual essence of all nature which is recognized as the core of the oldest of humanity's religious beliefs. This ancient animistic awareness of some sentience and purpose of nature was developed in the context of a more ancient ritual core revealed in the direct similarities of shamanism with rituals of the great apes. Shamanic ritual practice, experiences and ideology were the foundations from which humanity's ancestors and early societies developed their understandings of nature and its relationship to self and other.

Shamanism provided the context within which this general expression of an animistic attitude, the sense of the sentience of the natural world, underwent a special development in relationship to animals. Animal species and their variant qualities were the natural tapestry within which human psychological development occurred and contributed to the emergence of more complex social evolution. Animal features

and relations were the framework used to conceptualize our individual qualities and potentials and the collective identities that produce society. Within the context of shamanism, the world of real animal species was used as symbolic tools for the differentiation of self – embodied in animal spirit powers – and the formation of collective identities of society – embodied in totemic animals. These practices were cognitive adaptations that extended human cognitive capacities through metaphoric modeling, an extension of innate capacities for representing significant variations in nature to produce the symbolic. In this sense, a shamanic biopsychology was involved in the origins of the symbolic, producing a differentiation of human individual identities and human social collectivities which constituted the social other, the most basic reference for consciousness.

These arguments are supported in the following sections of this article which demonstrate:

- The basic nature of shamanism found in pre-modern foraging societies worldwide;
- Evidence for the antiquity of shamanism as a psychological, social and ecological adaptation derived from hominid ritual capacities;
- The role of psychedelics in human evolution and in stimulation of our ancient "animal brains";
- The rationale for a necessary relationship of shamanism to psychedelics and ecopsychology in the homologies of shamanic ideology and practices with the effects reported for psychedelics;
- A neurophenomenological model of psychedelics as producing the psychointegration that exemplifies ecopsychological assumptions; and
- The roles of nature relations in the fundamental principles of shamanism, exemplified in animal spirit powers and totemism.

Shamanic universals and their evolutionary origins

The existence of remarkably similar spiritual healing practices world-wide was noted long before the modern comparative research of Eliade (1964) who popularized the notion of the shaman. There was a widespread recognition in comparative religion and deep in human history and prehistory of shamanism as a common spiritual heritage of humanity found in pre-modern societies worldwide. These intuitions about strikingly similar spiritual healers was supported by cross-cultural research

(Winkelman, 1986, 1990, 1992) which empirically established the cross-cultural presence of shamanism in the pre-modern world by showing these common patterns of behavior and belief were virtually universal in foraging societies.

These features associated with shamanism in pre-modern societies worldwide include:

- The shaman as the preeminent social, political and spiritual leader and healer of the group.
- The shaman's nighttime charismatic performance with all of the community in attendance.
- Alterations of consciousness produced though physical austerities, fasting and sexual abstinence and ritual activities involving prolonged dancing, chanting and singing, extensive drumming, and frequently psychedelics.
- A period of physical collapse while experiencing an alteration of consciousness conceptualized as magical flight, soul flight, or in modern terms as astral projection.
- Activities of healing and of protecting from spirits and malevolent shamans focused on the recovery of lost souls, extraction of sorcery-causing objects and removal of the negative influences of spirits.
- Selection of the neophyte shaman involving premonitory illness and dreams.
- Shamanic training though a vision quest that involved prolonged periods of solitude in the wilderness.
- A formative initiatory experience involving the experience of death by animals and rebirth in which the animals reconstructed a new person, incorporating themselves into the shaman.
- Special relations with animals, including power relations with animal spirits, the ability to control animals and to transform into an animal.
- The belief the shaman can harm and kill magically.
- Special abilities, including the reputed ability to control weather, to physically fly, and to have immunity to fire.

Shamans and shamanistic healers

Two different concepts of shamanism were offered by Eliade, contributing to confusion regarding just what ought to be considered a shaman. The most general

characterizations of the shaman were someone who entered into ecstatic states in order to interact with the spirits on behalf of the community. This conceptualization is true of shamans, but insufficiently specific because such practices constitute a cultural universal-- all societies have practices involving the alteration of consciousness to engage spirits in rituals for healing and divination (Winkelman, 1992). In order to distinguish this broader group of spiritual healers from the shamans of hunter-gatherer societies, the term *shamanistic healers* was proposed (Winkelman, 1990, 1992) to refer those healers which share features with shamans, but which are distinguished from shamans, who have the additional features specified above. Eliade included many of these additional features of shamans, such as death and rebirth experiences, soul travel and animal familiars.

The worldwide distribution of shamanic healers in the pre-modern world establishes that shamanism is based in an innate biopsychology, a neurological foundation for an ancient natural religion. This ethnological analogy provides a shamanic paradigm, a biogenetic structuralist framework that helps to identify evidence of the central presence of shamanic activities at the origins of the Homo genus (Winkelman, 2010b) and at the dawn of culturally modern humans during the Upper/Middle Paleolithic revolution more than 40,000 years ago (Clottes & Lewis-Williams, 1998; Whitley, 2009; Winkelman, 2002).

Shamanism provided ritual technologies for integrating a variety of capacities – biological, social, and cognitive – that contributed to human evolution, adaptation, and survival. These features included the differentiation of personal identity, the integration of social identities, the enhancement of extrapersonal cognition and production of symbolic thought (Winkelman, 2009, 2010a). Shamanism arguably constitute the most ancient of all human neurotheologies (Winkelman, 2004a), a biological structuring of perception, cognition and action that involved intimate relations with nature for understanding the qualities of humans. The origins of the underlying principles of shamanic psychology as well as ecopsychology are derived from basic aspects of the human mind and ancient adaptations to nature. Shamanism is indispensable to ecopsychology because shamanic practices and world view provided the context for the evolution of modern humans and human consciousness (Winkelman, 2010a). A wide range of shamanic features involve fundamental ecopsychological relations, such as perceptions of the sentience of nature, isolation in nature as part of shamanic development, and the roles of animals in the formation of self-concept and society. Shamanism contributed to cognitive, social and psychological evolution through symbolic exploitation of innate aspect of relations with nature. Elements of nature provided a natural metaphoric system for the

extension of meaning in developing understandings of our individual qualities and the collectivities that produce society. These symbolic referents are typified in animals which express aspects of shamanic power and in tribal totems where animal species and their relations provide a conceptual system for social organization.

Nonetheless the concept of shamanism remains contentious for some, with the view that it is merely a modern creation or myth often used to discount any need for serious investigation. Empirical studies (Winkelman, 1990, 1992), however, show that there is a cross-cultural phenomenon that closely corresponds to the classic notions regarding shamanism. These cross-cultural similarities in shamanic practices provide the basis for establishing an ethnological analogy (Winkelman, 2010a & b), a shamanic paradigm derived from the empirical features associated with shamanism worldwide. These features provide a basis for inferring evidence of shamanic practices in the deep past and establishing a central role of shamanic ritual in human cognitive evolution. The inference of shamanism in the past is as reliable as inferring the presence of families, foraging lifestyles and other features of hunter-gatherers derived from analogies based on near-modern groups.

Furthermore, the basic dynamics of shamanism revealed by this cross-cultural research shares substantial similarities with the rituals of our closest extant primate cousins, the chimpanzees, pointing to a deep biological basis for shamanic rituals. Homologies of chimpanzee rituals with shamanism include features such as: the most significant community ritual, community-wide participation, night-time activities, performance by alpha male, use of drumming, presence of bipedal displays ("dance"), community integration activities, etc. (Winkelman, 2009, 2010a, 2010c). These similarities further substantiate the inference of shamanism in the human past and provide a bridge for inference regarding the nature of ritual activities over the course of human evolution.

The ritual antecedents of shamanism

The ritual capacities that Davis (1998) proposes as basic to ecopsychology have their foundations in ancient evolutionary adaptations that gave rise to shamanism. Shamanism must be considered to have a central role in humanity's ritual origins because of the evidence for the universality of shamanism in hunter-gatherer societies worldwide. This universality implies shamanism's intrinsic relation to humanity's ritual origins. Shamanic ritual and world views not only provided the most significant spiritual traditions of the foragers of the pre-modern world but also a bridge from pre-modern hominid ancestors to the ancient modern humans as well.

Animal displays, often called rituals, point to a deeply embedded ancient phylogenetic system of social communication which provided the biogenetic structural foundations of shamanic ritual (Winkelman, 2010a: Chapter 6). The biological bases and adaptive functions of shamanic rituals are illustrated by the nature of animal ritual (e.g., see Winkelman & Baker, 2008), and their homologies with human behaviors. Ritual provides the most evolved mechanisms for communication and social coordination in the animal world (d'Aquili, Laughlin & McManus, 1979; Laughlin & d'Aquili, 1974). Animal rituals use behaviors, particularly the initial steps of behavioral sequences, to signal a disposition for social behaviors, providing social communication that functions to facilitate interactions and coordination among members of a group. (For example a bird might raise its wings in response to perception of a threat, signaling a readiness to fly). Ritual behaviors make internal dispositions publicly available, providing information that helps produce socially coordinated responses.

Converging evidence indicates that shamanic rituals have deep evolutionary origins that predate the evolution of modern humans (*Homo sapiens*). The similarities in hominid rituals, revealed in the commonalities across great apes, and the homologies of these with basic aspects of shamanic rituals, attest to the latter's ancient roots in behaviors shared more widely with primates (Winkelman, 2009; 2010a: Chapter 6). The commonalities involve: the most dramatic of rituals, an inclusive community ritual dominated by aggressive alpha male displays; a focus on night-time activities; the use of drumming, including use of hands and sticks; emotional vocalizations; and bipedal displays, or "dancing". The similarities of shamanic rituals with the rituals of community integration used by the great apes illustrate the *a priori* role of shamanism in the evolution of human ecopsychology. These ancient hominid roots of shamanism were the ritual context within which psychedelic and animistic experiences were interpreted. Subsequently, the evolution of capacities for dancing, rhythm and enactment, which derive from a common mimetic core, provided the foundations for uniquely human culture (Donald, 1991). These communicative systems were expanded by the evolution of the musical capacity, as well as vocalizations involving chanting and singing, which extended the ritual core of shamanic practices derived from our hominid heritage.

Psychedelics and shamanic ecopsychology: drugs and human evolution

Central ecological influences on the evolution of shamanic consciousness involve psychedelics, also called "entheogens" – meaning that they elicit the divine within the self. These plants known by names such as the food of the gods and sacred

medicines are recorded in the cosmologies of societies worldwide as inspiring the origins of culture, religion and spirituality (e.g., see Rätsch, 2005; Schultes, Hofmann & Rätsch, 1992) before becoming degraded as "hallucinogens" in the modern world. The use of psychedelics in shamanistic practices around the world illustrates these substances and their biological effects are central to understanding the nature of shamanism.

The essential role of psychedelics in humans' evolved psychology and ecopsychology is established by Prezenger et al's (2007) findings of significantly higher binding of psychedelics to human versus chimpanzee serotonergic receptor sites. This difference illustrates that selection for an enhanced capacity for use of these substances as neurotransmitter analogues was a part of human evolution. Humanity's evolved psychology must be understood in light of the specific effects caused by these substances, exemplified in the effects of psilocybin-containing mushrooms. There is a range of specific cognitive, social and emotional experiences caused by these substances, independent of expectation, which illustrates that they have an intrinsic neuropsychology and neurophenomenology which has direct implications for understanding features of ecopsychology.

The role of psilocybin-containing mushrooms in the evolution of neural capacities that are central to the perspectives of shamanism and ecopsychology reflects their ancient role as environmental mechanisms exerting a selective influence on members of our ancestral species who were able to utilize these exogenous neurotransmitter sources of neurotransmitter substances and their adaptive effects. Species containing psilocybin have been found around the world, providing an exposure to humans for millions of years. Guzman, Allen and Gartz (1998) illustrate the worldwide distribution of indigenous (local) species of neurotropic fungi across most ecozones, not only the psilocybin-containing species, but also others used as sacraments. Adaptation to the fungi in their environment was a significant feature affecting hominid and hominin evolution. Many mushroom species have toxic effects; some are useful food sources; and still others produce mystical experiences.

The role of psychedelics in human's evolved ecopsychology has deep evolutionary roots in the relationship of our nervous system to environmental chemicals. Sullivan, Hagen, and Hammerstein (2008) provide evidence of ancient environmental exposures to these substance that stimulated human evolution in order to make use of these exogenous substances as sources of neurotransmitters analogues. The long-term evolutionary relationship between psychotropic plant substances and humans' cognitive capacities reflects selective benefits of substance use (Sullivan & Hagen, 2002). In contrast to the debilitating cognitive effects often attributed to drugs, Smith

(1999) illustrates a variety of fitness consequences associated with the use of substances often disparaged as drugs. Across the diverse classes of plant drugs there are effects of enhanced vigilance, the ability to ignore pain in the interest of survival activities, increased access to mating opportunities, reduction of apprehension and stress, feelings of euphoria, increased endurance and self-confidence, enhanced sensory and mental acuity, reduction of defensiveness, and reduction of depression and self-defeating activities. Evolutionary paradigms suggest that fitness benefits accrued to our ancestors as a consequence of their ability to utilize psychoactive substances to enhance operation of neurotransmitter systems. The effects of these environmental sources of neural transmitters display hallmark features of natural adaptations (Smith & Tasnadi, 2007).

Psychedelics and shamanic phenomenology

Our very psychology as human beings was shaped by the experiences induced by the psychedelics and their intrinsically religious effects, as well as a range of other cognitive, social and personal dispositions they produced (Roberts & Winkelman, 2013). Shamanic practices in general and the healing traditions in particular were centrally shaped by these experiences and the powers released within the person by the pharmacological effects of the active ingredients of these plants. A review of literature from around the world illustrate that the effects of psychedelics, and psilocybin-containing mushrooms in particular, produce a range of experiences that are directly related to shamanism, including (Winkelman 2010; see also de Rios, 1984; Hoffman, Carl & Ruck, 2004):

- providing access to a spiritual world, the supernatural, bringing the mythical world to life;
- producing an experience of the separation of one's soul or spirit from the body and its travel to the supernatural world;
- activating powers within and outside of the person, including the sense of the presence of spirits and their incorporation into one's body;
- establishing relationships with animals, particularly carnivores;
- inducing an experience of transformation into an animal;
- provoking a death of the ego and its transformation or rebirth, providing a source of self transformation;
- providing information through visions;
- providing healing, especially through the emotional experiences and release

(catharsis); and

- inducing an integration of the group and enhancement of social cohesion reflected in their use in community rituals.

The hypothesis that these psychedelic-induced experiences are intrinsic effects of these substances is supported by their objective ability to produce a variety of mystical experiences in contemporary people. Griffiths et al (2006) carefully-designed double blind study showed that psilocybin induces mystical experiences and has effects on participants' attitudes, moods, and their own experience of spirituality that persisted for months. The comparison with control periods showed psilocybin produced significantly higher ratings on the scales used to assess mysticism and altered states of consciousness, including introvertive mysticism, extrovertive mysticism, internal and external unity, sacredness, intuitive knowledge, transcendence of time and space, ineffability, positive mood, and experiences of oceanic boundlessness. Psilocybin sessions had significantly higher levels of peace, harmony, joy, and intense happiness. In addition, there were persisting effects noted for the psilocybin sessions, including an enhanced positive attitude about life accompanied by a positive mood changes and positive altruistic social behaviors confirmed by third-party observers.

While the emergence of the suite of practices associated with pre-modern shamanism involved other selective influences (e.g., dancing and music, Winkelman, 2010a), psychedelics were central selective influences on the evolution of the human nervous system for the kinds of experiences directly related to ecopsychology and shamanic ideologies. The extrovertive mystical experiences typical of psychedelics embrace the connection with the external world and nature in particular, but in a different way, with the perceiver transformed in such a way that the perception of the ordinary world of plants and rocks is transfigured into a consciousness of Unity with all of nature, rather than some sense of separateness.

These experiences are principally deistic experiences, as embodied in the concept entheogen – generating experiences of the god within one's self. A core aspect of the psychedelics experience is what Hoffman, Carl and Ruck (2004) characterized as the "entheogenic epiphany... commonly described as a state where all distinctions and boundaries between the individual and the metaphysical realm dissolve into a mystical and consubstantial communion with the Divine. This ecstatic experience is interpreted as a pure and primal Consciousness, which brings the individual into direct contact with the root of being..." (p. 112). These and other common effects resulting from ingestion of the entheogens must be understood in terms of

neurophenomenology (Laughlin, McManus & d'Aquili, 1992), where physiological actions on the neurological system are responsible for the phenomenological experiences.

Psychointegrators as a neurophenomenological paradigm

The psychedelics had central roles in the evolution of human cognitive capacities, particularly symbolism, abstract thought and reasoning and the religious and spiritual capacities which characterize the human species. These effects derive from the action of psychoactive plants on the serotonergic and dopaminergic nervous systems. Entheogenic substances primarily derive their effects from chemicals compounds known as indoleamines which have direct and indirect effects on the brain's neurotransmitter systems. The major classes of indoleamines are tryptamines (e.g., DMT, LSD, psilocin, and psilocybin) and phenylethylamines (e.g., mescaline, MDMA ['ecstacy'], 2C-B) and exert similar influences on serotonergic neurons (Nichols 2004; Nichols & Chemel, 2006; also see Fantegrossi, Mernane & Reissig, 2008) and produce similar experiential effects (for reviews see Passie et al, 2008; Hintzen & Passie, 2010). These effects on serotonion receptors are responsible for the overall changes in brain processes, which are reflected in high-voltage brain wave discharges of a slow wave frequency: typically theta, 3-6 cycles per second (cps).

These biochemically based physiological dynamics are primarily based in serotonin disinhibition and the consequent loss of its inhibitory effects on dopamine and the mesolimbic structures, enhancing the activity of lower brain structures, particularly the thalamic area that gates information ascending from the peripheral nervous system. Serotonin-like entheogens and many other substances have end-effects that alter consciousness through a common mechanism– production of high-voltage slow-wave (theta) brain wave activity (Mandell, 1980; Winkelman, 2010a). While there are many additional effects found within and across species, typical effects on serotonin receptors provide the basis for a neurophenomenological paradigm of psychedelics and shamanic altered states of consciousness as involving psychointegration produced by an enhanced integration of lower brain processes into the frontal cortex (Winkelman, 2001, 2007).

The neurognostic structuring produced by psychedelics reflects macro-level effects involving both the activation and selective deactivation of the serotonin system, which has multiple regulatory roles reflected in its special characterization as neuromodulator of many neurotransmitter systems. Psychointegration is derived from both stimulating the serotonergic system, as well as inhibitory effects on serotonin transmission (through resistance to reuptake), with consequences involving

disinhibition or release of the dopaminergic system (Passie et al, 2008; Nichols, 2004). Nichols concluded psychedelics amplify incoming stimuli, enhancing the sensitivity of the phylogenetic older brain structures and the excitability of limbic and cortical structures.

Serotonin as a modulator

Serotonin is a neurotransmitter that acts as a modulator across all levels of the brain, from the brain stem and limbic system to the frontal cortex. Serotonin has a wide range of functions in: sensory processing and perception, motor activity and behavior, hunger and feeding, thermoregulation and pain, release of growth hormones, sleep cycles, learning and memory, moods and modulating the sympathetic nervous system (see Kruk & Pycock, 1991: 122-3; Role & Kelly, 1991). Serotonin circuitry is primarily ascending, concentrated along the midline area and the raphe nuclei and projecting upward into the limbic system and frontal cortex, with widespread and diffuse influences over vast neuronal populations. Serotonin neurons innervate structures directly responsible for a range of human capabilities central to consciousness: attention, alertness, and maintenance of waking/sleep cycles; integration of emotional and motivational processes; synthesis of information from the entire brain; and visual conceptualization and representation.

Psychointegrators' primary neurophenomenological effects reflect activation of synchronized hyperactivity in serotonin circuitry across the neuraxis, the main nerve bundle linking the structural levels of the brain from the brain stem to the frontal cortex. This hyperactivity produces synchronization of theta (3-6 cps) brain waves across the levels of the brain and between the hemispheres (Mandell, 1980; see Winkelman, 2011 for review). The theta effects begin in the midbrain hippocampal region which activate serotonin circuitry in the lower levels of the brain (locus corelus and thalamus), which in turn stimulate the limbic structures and frontal cortex, especially the right hemisphere (Mandell, 1980). Mandell proposes this is the basis of the cognitive of transcendent states, increasing the ascending flow of information, improving integration of information exchange between the two hemispheres and their specialized functions in cognition and affect, producing interhemispheric coherence and fusion that results in insight. These synchronizing effects in the brain contribute neurological causes of the integrative experiences of connection and oneness produced by these substances, and the rationale for the concept of psychointegrators.

A central feature of serotonergic systemic functions includes inhibitory or repressing activity. Psychedelics' selective effects result in disinhibition of serotonergic

regulation of the thalamus and limbic areas which function as "gatekeepers" in the basic filtering of information from the environment and body. Psychointegrators disinhibit the mesolimbic temporal lobe structures, reversing the habitual effect of serotonin in depressing the action of target neurons in the forebrain. Disinhibition of mesolimbic temporal lobe structures produces key features of psychointegrator-induced changes in overall brain function – high voltage synchronous discharges in the hippocampus and other temporal lobe limbic structures manifested in theta (3-6 cps) brain wave patterns. This model of psychointegration is confirmed by research (Vollenweider & Geyer, 2001) which found the principal effects of psychedelics involve the cortico-striato-thalamocortical loops which reduce the sensory gating systems of the lower brain structures, leading to a flood of information on the higher levels of the brain.

The release of the dopamine system caused by the psychointegrator's blocking of the serotonin system produces characteristic features of altered consciousness and the ecophilic attitude of shamanism (Previc, 2009). Virtually all classes of drugs effect dopamine transmission in the limbic system, as well as on serotonergic transmission (Smith & Tasnadi, 2007) and result in increases in dopaminergic activity. Effects on dopamine receptors typically produce unconditioned pleasurable responses and elicit intrinsic feelings of well-being. While high levels of dopamine lead to emotional detachment, the human dopamine system is part of our mammalian heritage, with similar effects across mammalian species in social bonding, from mother-infant attachment to broader social groups. Psychointegrator's ecophilic effects must be seen as in part resulting from activation of our basic bonding neurochemistry, core functions in the mammalian brain's emotional, social and self systems. Previc (2009) reviews evidence that dopamine is also vital for all of the key functions of advanced intelligence and cognition and linked to the brain's ability to deal with objects and events distant in space and time. This provides context independent cognition, exemplified in the capacities for mental time travel, the ability to experience and think about things other than those in the here and now. Winkelman (2010a) shows how these abilities for extrapersonal projection are key to understanding central aspects of the shamanic soul flight or out-of-body experience, which exemplifies the ability to have a context-independent consciousness of people and places far removed from the physical body.

These combined stimulatory and inhibitory serotonergic effects of psychointegrators result in the increase in information from the environment, body and memory; the enhanced experience and recall of emotions; the stimulation of basic motivations and cognitive processes; and increases in awareness and internal attention. These produce

the neurophenomenological dynamic exemplified in the concept of psychointegration, reflecting the heightened integration of hierarchically-ordered brain functions. As Nichols (2004) concluded, psychedelics enhance the sensitivity of cortical processing of ancient phylogenetic brain structures.

Psychointegration as the general dynamic of alterations of consciousness

This psychointegrative model of consciousness derived from psychedelics is characteristics of shamanic alterations of consciousness in general (Winkelman, 2010a, 2011). The biological effects of the psychedelics are mimicked by a variety of other agents and behaviors, including other drugs, long-distance running, hunger, thirst, sleep loss, auditory stimuli such as drumming and chanting, sensory deprivation, dream states, meditation, and a variety of psychophysiological imbalances or sensitivities resulting from injury, trauma, disease, or hereditarily transmitted nervous system conditions (see Mandell, 1980; Winkelman, 2010a). Similar production of alterations of consciousness through disruption of the processes of the frontal cortex occurs from the effects of endurance running, dreaming, hypnosis, drug induced states, and meditation (Dietrich, 2003).

The all-night dancing of the shaman exploits another capacity which contributes to alterations of consciousness, mystical experiences and biophilia; the uniquely human capacity of endurance running (Bramble & Lieberman, 2004). Emerging a million years ago in *Homo erectus*, these capacities for running for hours to days provided a natural basis for inducing alterations of consciousness, which also has as a side effect of the induction of mystical experiences (Jones, 2005). This effect from endurance running goes beyond the widely noted “runner's high” and includes typical features of mystical experiences such as:

- positive emotions such as happiness, joy and elation;
- a sense of inner peacefulness and harmony;
- a sense of timelessness and cosmic unity; and
- a connection of oneself with nature and the Universe (Dietrich 2003).

Sands and Sands (2009) proposed that the selection for long-distance running in *Homo* subsequently selected for a form of spirituality, a “horizontal awareness” or *biophilia* that operated through existing neurobiological reward systems. The “high” associated with long distance running situated our ancestors within a dynamic environment within which they felt an intimate connection with nature. They review evidence showing that the neurochemicals released during endurance running are tied

into a variety of pre-existing reward pathways, including monoamines (serotonin, dopamine, and norepinephrine), endorphins, and endocannabinoids. Thus a side effect of the acquisition of the capacity for long distance running was a variety of mystical experiences, as well as the physical basis for dance. Dance and other shamanic practices of fasting, sexual abstinence, social isolation, drumming, chanting and austerities all contribute to this altered state characterized by theta wave synchronization. These entrainments may occur at a variety of frequencies, but two predominant patterns are synchronized slow wave theta bands (3-6 cps) and the high frequency gamma oscillations (40+ cps) (see Winkelman, 2010a for primary references).

Disruption of highly-integrated aspects of neural information processing and higher cognitive functions characteristic of the frontal lobes and prefrontal cortex allows for the manifestation of other brain structures usually repressed by frontal activities. The overall brain response to many different activities that alter conscious is characterized by brain synchronization with slow wave discharges that produces overall coherence and a linkage across the evolutionary strata of the brain, integrating information from the lower brain systems into the frontal cortex. Deregulation of the prefrontal cortex allows for the emergence of aspects of identity related to our more ancient brain functions.

The effects of psychedelics and the shamanic alterations of consciousness involve stimulating the linkages across the evolutionary strata of the brain. MacLean (1990, 1993) proposed that the brain involves three anatomically distinct yet interconnected systems– the reptilian brain, paleomammalian brain, and neo-mammalian brain. These three brain systems provide the basis for behavioral, emotional, and informational functions that MacLean (1993, p. 39) called “protomentation”, “emotiomentation”, and “ratiomentation” respectively. Interactions across levels of the brain are mediated through non-verbal communication forms that utilize behavioral, social, affective, and presentational (visual symbolic) information. Psychointegrators elevate these communication systems of the ancient strata of the brain. In the reptilian brain they release the activity of the raphe and reticular formations and thalamic structures of the brain stem area that normally restrict information received by the higher levels of the brain. And in the paleomammalian brain they stimulate limbic system functions that provide emotional information, a sense of personal relations and bonding.

The development of the serotonergic system across phylogenetic evolution illustrates how psychedelics can have such a central role in these integrative processes. The effects of psychointegrators on the serotonergic system and dopamine relate to

MacLean's model of the evolution of the brain, functioning as the most central and powerful system of integration and coordination among the three brain subsystems. In the reptilian part of the brain, serotonin functions as a regulator system within the R-complex. Serotonergic functions in the paleomammalian brain involve control over the R-complex, inhibiting limbic brain emotional functions, and distributing information through connections with the prefrontal and neocortex.

Global effects of psychointegrators on the serotonergic system enhance reptilian and paleomammalian brain activities. Psychointegrators produce systemic brain integration through liberating our ancient animal brains, imposing the reptilian brain's ritual systems of communication and the paleomammalian brain's analogical processes and material of an emotional, social, and personal nature into the self-conscious processes of the frontal cortex. Consequently our experience of connection with nature, the ecophilia associated with psychedelics, emerges as a neurophenomenological effect. These stimulations of our ancient brain systems must also been seen as central to the animistic features of psychedelics, shamanism and ecopsychology.

Nature and animal relations in shamanism: The origins of ecopsychology

The self-identifications with the broader universe, particularly personification of the sentient cosmos which is a hallmark of ecopsychology, is also a fundamental aspect of the shamanism. This cosmic identity with nature has many roots in shamanism, such as those experiences induced by entheogenic plants generally personified as gods. The out-of-body experiences associated with shamanism, psychedelics and long-distance running all reflect a capacity to dislocate personal identity from body, a capacity which likely facilitates an identity with nature, where personal identity is often relocated.

Davis (2006) notes that central aspects of ecopsychology involve a nature-oriented awareness practices which are basic tools of shamanic development, such as the vision quest alone in nature. Shamanic development focused on intensified contact with the natural world as a fundamental tool of personal growth. Novices spend months or even years isolated from community, largely alone in the wilderness, which was key for developing relations with power animals. These extraordinary experiences were provoked by prolonged and direct contact with nature, exemplified in visions of spirit beings, especially the animals.

The shaman was known for having special relations with animals and animal spirits, being able to control them and believed to personally transform into an animal to

accomplish feats. Relationships with actual animals also characterized shamans. Shamans often adopted a variety of wild animals that might live with them or visit them, especially when called by the shaman for some task. This personal relationship with animals must be seen as a precursor to domestication, a complex human relationship with transformed nature.

Shamans had special relationships to hunting animals as well, particularly leading hunts and making sacrifices to the spirits of the animals killed. Shamanism's relationships to the animals included calling them to the waiting hunters, campsites and the shore. The shaman made soul journeys to the spirit world to seek the release of the animal spirits for the hunters to kill. The killing of the animal was also accompanied by sacrifices to the animal's spirits to atone for their loss, giving thanks for the sustenance that they provided for the humans.

Shamanic ritual activities relating the group to the environment reflect a deep synchronization with ecological principles. Found within many shamanic traditions is the belief that certain animals have periods of taboo in which they may not be hunted or eaten. Winkelman and Baker (2008) discuss how the practices of hunting taboos among the pre-modern Tukano in the Amazonian region of Columbia illustrate the roles of shamans in ecoregulation. The shamanic ideology dictates what animals may be hunted and when. Beliefs about the relationship between human sexual energy and the fecundity of nature also regulate hunting and reproduction. Sexual activity is restricted before hunting and rituals performed to determine the cause of unsuccessful hunting; consequently, limited availability of game animals results in sexual restrictions and reduced human reproduction. The role of the shaman in deciding to taboo certain animals plays a direct role in regulating the community's environmental relations and the well-being of the local species, limiting exploitation so that local food species will not fall below reproduction levels.

Imitation of animals in shamanism: Hunting and human evolution

Relations with animals through hunting and imitation of them played a variety of roles in the evolution of a capacity for symbolic representation through behavior. Human evolution in relationship to nature involves enhanced skills for using culture to change from being prey into being a hunter. Key elements of hunting involve adoption of behaviors of animals and eventually involved imitation and disguise. Hunting activities became conceptualized in terms of the ability to acquire power over animals, based in knowledge of its habits, behaviors, and powers. This power was likely manifested through deception and imitation, mimicking of the vocal calls of animals to attract them or to cover one's own noise. This imitative practice of

hunters is another feature of shamanism, the master of the animals. This also provided a basis for representation through mimicry.

Donald (1991) proposes that a major cognitive evolution of humans involved mimesis, the ability to intentionally represent through enactment, and that among the first of human mimetic activities were ritual group dances performed with vocalizations to imitate the sounds of animals. He suggests the mimetic capability resulted in a form of body-based awareness, a physical self-consciousness that enhanced our awareness of self-in-environment. The use of bodily movements as symbolic communication embodied in mimesis made it possible to increase group coordination because it built upon one of the most basic types of animal ritual behavior – isopraxis – in which animals automatically imitate each other's behavior.

Hunting animals likely engaged and selected for the mimetic capacity because the ability to imitate would have directly enhanced hunting success through the ability to engage in deception through imitation. Imitation also played a role in teaching about hunting and animal behaviors. Imitation used for the purposes of hunting likely produced a greater sense of identification with the animal, a hallmark feature of shamanism. This enactment of the 'other as animal' likely played a role in the evolution of shamanic practices. Mime and dancing are central features of shamanic activities, for they are the basis of the ritual enactments of struggles with spirits combined with chanting, singing, and imitative vocalization. The shamanic roots of ecopsychology involve an impulse to understand the environment in human and animal terms, and conversely the self in terms of animals and their powers. Imitation of the behavior of some of the most significant features of the environment – animals – provided a template for broader representation skills.

Animism as ecopsychological identification

One of the most fundamental features of shamanism, religion, spirituality and the concept of entheogens is the notion of the spirit world. Animism refers to the notion that nature is in essence embodied with spirit entities, and encompasses the core of the oldest and most basic of humanity's religious beliefs. Shamanism has been characterized as an animistic practice, where animism constitutes a perception of nature not as inert matter but rather as a living entity. This humanized nature is exemplified in the shamanic relations with plant spirits embodied in the entheogenic practices so frequently associated with shamanism. Shamanism personified the influences experienced from these plants, exemplified in the intimate relations they maintained with these environmentally-based entities conceptualized as plant spirits. These relations with the plant spirit others were fundamental to concepts of self,

other and universe that are characteristic of ecopsychology – a perception of nature as a person, intelligent, spiritual and infinite.

Bird-David (1999) portrays animism not merely as a sense of spirits within nature, but moreover as powerful presences that must be understood as super-persons. The relationships established with the animistic super persons are reciprocal, in which one both receives benefits and privileges and to whom one has obligations met through ritual. Shamanic rituals are the primary mechanism through which these relationships are recognized and reciprocity engaged with these super-persons. Shamanic performances ritually enact these persons, bringing them to life in a heightened ecstatic state that enhances relatedness not only within community, but also in relationship to the spiritual kindred of nature. These relationships give rise to a greater sense of the interconnectivity among local community, the ecosystem and the cosmos.

One of the most fundamental shamanic relations with nature is in the conceptualization of the self and its powers, typified in the concept of animal powers that constitute basic aspects of the self. Nature itself becomes our template for society in the ancient practices of totemism where animal species and their natural relations became an innate template for conceptualizations of our lineages and tribes, the building blocks that take society into transfamilial dimensions. Shamanism provided the evolved psychological context – our neuro-psycho-social structuring as sentient beings in relationship to physical nature and its powers, animals and plants. Our natural ecopsychology is inextricably tied up in our relationships with the physical world – the animistic essence of nature as a sentient, aware spiritual power, of the animals as actors that can give us power and identity and affect our well-being.

These basic relations to the animistic principles of the universe and their manifestations in animals are deeply rooted in the structure of the human psyche, a neurophenomenological system in which the common brain structures we share with other animals (i.e., the reptilian complex and paleomammalian brain) produce an awareness of self in relationship to other animals. While this postulation of spirits which is fundamental to animism has been attributed to cognition regarding anomalous psychological phenomena (i.e., dreams, spontaneous out-of-body experiences), animism is best understood in terms of the consequence of innate processing modules. Animacy is a universal human tendency because it is an adaptive feature of human cognition based in “animacy detection”. Atran (2002) illustrates how animacy detection– being hyper-sensitive to the presence of an animate agent– has adaptive benefits.

The universal human tendency for animistic thinking is a consequence of the adaptive tendency to attribute human mental, personal and social qualities to the unknown and natural phenomena. This tendency to assume the presence of an agent is combined with other innate faculties for self and other representation to produce the broad range of features typically associated with concepts of spirits (Mithen, 1996; Winkelman, 2004b; Winkelman & Baker, 2008: chapter 7). The projection of humans' self qualities to the unseen, as well as nature, is an inevitable consequence of our psychological and social development; spirits are a natural epistemology involving the inevitable projection of human models of the self.

Hubbard (2002) characterized shamanic cognition as involving extension of special attributes of human consciousness to new domains, especially the natural world which is imbued with elements of meaning and intentionality derived from humans. This reflects an innate human tendency to attribute the causes of observed actions to an object's internal dispositional factors, extending the assumptions we make about humans to unknown dynamics, assuming that other things operate as do humans. The natural tendency of humans to attribute mind states, internal dispositions and rational purpose to others is unavoidably attributed to nature as well. The universality of spiritual beliefs reflects this adaptive tendency, which was expanded into population of nature with spirit beings who operated with the same features as humans.

Spirit assumptions are reinforced by humans' innate capacities for social intelligence, our ability to infer the mental states of other members of the species and to use that information as a basis to predict others' behavior. This intuitive "theory of mind" involves the attribution of mental states to others, modeling others' thoughts and behaviors through the use of one's own mental states and feelings. Such attributions are fundamental to animism and the world of spirits. Whatever qualities of cognition, personality, intentionality and other personified qualities that nature may have intrinsically, they are modeled on the perceptual templates of those same qualities that are found universally in humans and are intrinsic to our perceptions. Our self-knowledge is necessarily the template through which we experience the other in the social as well as natural world. Nature is inherently personified via human nature.

Nature as self: Animal powers and guardian spirits

Shamanism was the original context for the spiritual perceptions that Davis (1998) see as an essential component of ecopsychology, the perspective of "nature as self". This self-identification with the world and Gaia is one of the most basic metaphors which ecopsychology provides for representing the relationship between humans and nature. A prominent aspect of spirit relations in shamanism involves an engagement

of self-development processes by using symbolic representations derived from nature, and animals in particular. Animal species and their variant qualities are the natural tapestry within which human psychological and social development evolved.

The personification of nature embodied in animism facilitates the reciprocal process, the naturalization of the person. The projective processes underlying animism are used to reciprocally internalize the qualities found in nature into the person. Shamanic practices involving animal allies and guardian spirits reflect aspects of self-development and self-representation that involve the capacity to incorporate other's perceptions into the self, internalizing the qualities of others into our own self-identity. Shamanistic relations with nature engage humans' capacity for personal incorporation of others, using animals as the other.

Evolutionary psychologists recognize that humans have an innate natural history module, an intrinsic ability to recognize and categorize species of animals (see Mithen, 1996). Shamanic practices engage this specialized innate capacity for organizing knowledge about animal species and recognizing "species essence". Animal species – a highly important part of nature – provide a universal analogical system for creation of meaning. This ability to recognize intrinsic features of species and to transfer this knowledge to other domains is exemplified in the shamanic animal guardian spirit powers, which involve representations of self.

Animal powers incorporated as aspects of the self are exemplified in the guardian spirit complex typical of shamanism (Swanson, 1973). This involves ritual activities, generally prolonged isolation in nature, during which the person acquires a special relationship with a specific animal species that serves as a model for self-development. This self-development is based in the incorporation of animal properties within identity and personal powers. Swanson characterized the guardian spirit complex as a form of empowerment in which adult role development and personal and social choices are guided by the qualities of animal species. Animal spirits' characteristics provide ideals that structure individual psychodynamics and model social behavior through the natural symbols provided by animal attributes. These animals qualities provide diverse self-representations, different acquired selves that can mediate hierarchies of personal and social goals.

Animal spirits provide natural symbolic systems derived from relations with nature that serve vital functions in self and social representation within which the self is internally differentiated and socialized in relationships to others. These aspects of shamanism reflect an intrinsic neurophenomenological ecopsychology. Animal species and their qualities and behaviors provide a natural template for differentiating

self with respect to others. Animal species identities provide psychosocial functions in visual icons, making publically available forms of social self-representation that facilitate personal differentiation.

Totemism: Nature relations and group identity

Shamanism exemplifies the symbolic application of nature to group relations in the practice of totemism. These group-oriented religious practices use animal species for social representations, as manifested in ancestor worship where group deities are represented by an animal species referred to in anthropology as a totem. Totemism involves establishing a metaphoric relationship between the natural history domains of animals and domain of social groups, conceptualizing humans's social organization through models provided by the animal world.

This view of totemism derives from the work of French research Emile Durkheim, the father of sociology, and Claude Levi-Strauss, an anthropologist. Durkheim (1915) investigated the widespread practices in which an animal species was used to represent a clan, a descent-based kinship group. Central worship activities of the clan consisted in ceremonies aimed at promoting the growth and well-being of the totem. During these rites for enhancing the fecundity of the totem, normal prohibitions on the consumption of the totem are suspended. During the ritual the totem animal is ceremonially killed and consumed in a sacred meal that allows the individual to incorporate the power of the totem.

While noting a variety of different phenomena called "totemism", Levi-Strauss (1962) identified commonalities underlying the many different systems and beliefs in which human clans are associated with specific animal species. In totemism, humans are identified with an animal (or plant) species unique to their kinship groups. This animal identification, a "connection between *the relation of man to nature* and the *characterization of social group* ... postulates a homology ... between differential features existing, on the one hand, between species x and *y*, and on the other, between clan *a* and *b*" (Levi-Strauss, 1962: 13). Levi-Strauss characterized totemic thought as involving analogical processes, establishing a homology between animal species and human groups. Animal species represent the distinctive qualities and membership of different social groups, constituting natural symbols for representing less distinctly featured human groups. The group identity animal species identifies the clan, and by extension, its members.

Totemism and guardian spirit relations exemplify innate nature relations that function to distinguish among humans and their groups through the attribution of

characteristics derived from the natural world. Personal and group identity and intergroup differences are conceptualized through models provided by animal species. Totemism is a natural product of human thought, reflecting concepts of the natural world that are structured by the human brain, the innate intelligence for classifying the natural world. Our deeply rooted capacity to classify the animal world makes it a natural metaphoric system that can be extended to many other domains of human thought. The use of animals in social and cognitive modeling is one of the most fundamental aspects of metaphoric and analogical thought (Friedrich, 1991), a universal human system for expression of meaning and creation of social and personal identity through the use of the innate module for animal species categorization. The less perceptible differences among humans and groups are made visible with the representations derived from the more apparent differences in animal species.

Conclusions

Common features of shamanism, psychedelic metaphysics and ecopsychology illustrate that they involve common origins. Their commonalities point to a biologically based ecopsychology, one that is the product of human evolution and evolutionary adaptations. These biological bases suggest that shamanic ecopsychology and psychedelic therapies still have relevance for humans today. Our very health and survival as a species may depend on our ability to re-establish these relations with nature.

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From ecopsychology to transpersonal ecosophy: Shamanism, psychedelics and transpersonal psychology

An autobiographical reflection

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Abstract

This paper is an autobiographical overview of the variety of influences that continue to foster my ongoing transition from ecopsychology to transpersonal ecosophy. These influences (both personal and professional) are discussed throughout this paper; and include transpersonal psychology, shamanism, and psychedelics. This chronicle of influences and associated events serves to reclaim ecopsychology's history. In addition, a brief examination of the eco-dissociated limitations within Hinduism, Taoism, and Buddhism are discussed as a reminder of the fragmentation of theory and practice within traditions that are otherwise considered to be pathways to enlightenment.

Keywords: transpersonal, ecosophy

Prologue

On March 27, 2004, I chaired a symposium I organized on "Psychedelics: Their value and social responsibility" for the spring conference of the Society for the Anthropology of Consciousness, held at the University of California-Berkeley, Berkeley, California (UC-Berkeley). Participants included Ralph Metzner, Adele Getty, Stanley Krippner, Maura T. Lucas, and among the audience members was Mary Gomes. Gomes (along with Theodore Roszak and Allen Kanner) served as editor of *Ecopsychology*: *Restoring the Earth, healing the mind* (1995), yet her interest in my symposium stemmed from the fact Getty and Lucas were among the authors in a 2003 issue of *ReVision* that Gomes edited on "Women and Entheogens". Telling us, "It seems to me that a shadow of psychedelic exploration, at least as it has

unfolded in the West, is a fascination with strange and abstract experiences that expand the mind but fail to open the heart" (Gomes, 2003: 2). Getty (formerly married to Francis Huxley) agreed with Gomes, saying:

> ...over the years there have been large conferences that address in great detail various aspects of psychedelics ... . most of the speakers are what I call 'Molecule Men' ... They can rattle off long chemical alphabets and even longer polysyllabic terminology explaining neurotransmitters, MAO inhibitors, [etc.] ... Considering the times we live in, this is a wonderful accomplishment, and these scientists should be congratulated and supported. ... [But] the healing aspect of psychedelics is ancient and traces its roots back through our genetic memories, into indigenous tribal cultures, around the fire with the drum, rattle, and song of the shaman ... Shhh! Women have [been] burned at the stake for much less (Getty, 2003: 14-7).

In my online correspondence with Robert Greenway (from 2000 to 2010 – which was focused on history and theory), I learned it was Ilan Shapiro (a graduate student of Greenway) who, in 1989, formed a peace studies group at UC-Berkeley in protest of the first Gulf War. This group attracted Gomes, Greenway, Kanner, and eventually Roszak as participants. Among the insights that emerged from this group was that the conflict of war always produces widespread environmental destruction. In this way, "peace studies" and anti-war groups (which are always politically motivated) are directly connected to the conversation and interests that led Roszak to write his 1992 book, *The Voice of the Earth*.

Introduction

> Krippner has pointed out 'It is therefore time for transpersonal psychology, and transpersonal studies in general, to reassess and reclaim its history regarding ecopsychology so it can step forward and fill this void. I have to say that the psychedelic movement caught on to this long ago. I remember back in the 1960s, when people began doing informal work with psychedelics. One theme that came up time and time again was we are destroying the environment, and that taking psychedelics increased not only our appreciation of nature, but all forms of life. I think too the psychedelic movement has been given short shrift by historians in a number of other ways, because it also helped stimulate interest in the Peace Movement, the Civil Rights movement, et cetera (Schroll, et al, 2009: 47)[1].

Krippner's comments support my decision to write an overview and autobiographical reflection on my involvement in ecopsychology's historical development, and how the

[1] See Schroll, Krippner, Vich, Fadiman & Mojeiko (2009). Metzner (1999: 169-70) echoed this view. See also Krippner & Luke, 2009; Metzner, 2008, 2009; Schroll, 2009b.

ecopsychological perspective dovetails with studies of shamanism[2], psychedelics[3], transpersonal psychology[4], and the emergence of *transpersonal ecosophy*. My knowledge and understanding of transpersonal ecosophy emerged from a symposium I organized on "The History and Future of Ecopsychology" for the Society for the Anthropology of Consciousness 2009 conference on "Bridging Nature and Human Nature". It was during this symposium Alan Drengson pointed out, in response to Warwick Fox's *Toward a Transpersonal Ecology* (1990), that Arne Naess said a better title would have been "Toward a Transpersonal Ecosophy" (Schroll, 2011c: 4). Shortly after this conference Drengson sent me a copy of his book *The Ecology of*

[2] For a comprehensive inquiry of shamanism see Walsh (2007). My use of the word "shamanism" (which includes my use of the word "shaman" throughout this paper), is consistent with Peter N. Jones linguistic and phenomenological inquiry. Specifically:

> The term shamanism defines a phenomenon that occurs among only a select few individuals (the "shamans") at any given spatiotemporal moment, and that operational definitions of the phenomenon must be limited to those specific spatiotemporal moments; and... only a nominal definition is possible when discussing the phenomenon diachronically or cross-culturally, and this nominal definition is contingent upon ethically understood notions of the folk epistemology and folk ontology of the cultures compared... : shamanism is a phenomenon consisting of an individual who has voluntary access to, and control of, more aspects of their consciousness than other individuals, however the components of that consciousness are emically understood, and that this voluntary access is recognized by other members of the "shaman's" culture as an essential component of the culture (Jones, 2006: 21).

Understandably Jones' strict definition of shamans and shamanism is a response to the widespread phenomenon of neo-shamanism (Townsend, 1988, 1990) that we shall discuss later in this paper. Yet it is important to point out non-Native's and non-shamans have been shown to experience transpersonal states in sweat lodge ceremonies (Hibbard, 2007).

[3] Psychedelic has been defined, as Metzner (2004: 4) tells us, by "Humphrey Osmond, the English psychiatrist who pioneered the use of LSD in the treatment of alcoholism and who gave Aldous Huxley his first mescaline experience, coined the term *psychedelic* ('mind manifesting'). This term was adopted by the Harvard psilocybin research projects". David Luke further clarifies the use of this term, telling us: "A psychedelic substance, as opposed to other substances, has been defined as that 'which, without causing physical addiction, craving, major psychological disturbances, delirium, disorientation, or amnesia, more or less reliably produces thought, mood, and perceptual changes'" (Luke, 2011: 357-8).

[4] Lajoie and Shapiro have examined 202 original citations pertaining to transpersonal psychology (1992). Contemplating these lead to my own definition: "The transpersonal is equally present in states of ecstasy, sensuality, and somatic experiences that are capable of just shaking you to your roots and really waking you up: life encounters that make you come alive and experience the kinesthetic, the tactile, and the erotic. Each of these human drives (and their various nuances) is equally important toward the creation and maintenance of a healthy personality. Nevertheless, no definition of transpersonal psychology should be viewed as a description of some finished or final product of enlightenment. Rather, transpersonal psychology's emphasis is on the continuous process of transcendence and transformation within the realms of the personal, the planetary, and

Wisdom: *Writings by Arne Naess* (2008), edited with Bill Devall, which reiterated this point:

> Warwick Fox suggests that those, including Naess, whose ultimate premises call for an extended sense of identification with an ecological self be called transpersonal ecologists, but Naess would say that they have transpersonal ecosophies (p. 37).
>
> Ecosophies are not platforms for a political movement or policies [Drengson and Devall explain] but are personal philosophies of life in a worldview (p. 33).

Ecosophies therefore serve the same function as personal myths or our personal mythology, defined as "more than just intellectual constructs; they are ingrained models of reality that determine how you see your world and understand your place within it" (Feinstein & Krippner, 1988: 2). Moreover the term transpersonal ecosophy fosters an interdisciplinary perspective more so than the term ecopsychology, as well as helping to free us from the criticism put forth by Susan Clayton and Gene Myers:

> The relationship between ecopsychology and psychology however, is contested. Not all ecopsychologists are trained as psychologists, and writings on ecopsychology have been criticized for a lack of scientific objectivity, referencing concepts like spirituality and indigenous wisdom that are difficult to clearly define. Reser in a thoughtful critique [(1995)] concluded that the assumptions and methods of ecopsychology are too disparate from accepted psychological standards to be considered an area within psychology (Clayton & Myers, 2009: 10).

First, Clayton, Myers, and Reser are incorrect that spirituality is difficult to define – see Elkins et al (1988) and Lazar (2009) for definitions of spirituality. Whereas the difficulty associated with spirituality, according to my discussions with John Rowan, is not our inability to define it:

> It is because of the various meanings and [often conflicting] uses of the term spirituality that I [Rowan] prefer to use the term transpersonal. ... The main advantage of using the term transpersonal is ... [it places or refers us to states of awareness that follow] after the prepersonal and the personal in the process of psychospiritual development. ... Not so with spirituality, which roams all over the place (Schroll, Rowan & Robinson, 2011: 124-5).

Second, Jurgen W. Kremer has given precise definitions of "indigenous wisdom" or "indigenous science" in an issue of the journal *ReVision* (1997). See also Pamela Colorado's (1996) paper, "Indigenous Science". Third, confining ecopsychology to standards within psychology limits it to something that Roszak and Metzner agreed it was never intended to be (Metzner, 1993, 1999: 2). Roszak argued, "Saving the life of the planet is the biggest political cause humans have yet taken on; it requires a

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the cosmological" (Schroll et al, 2011: 125).

vision of the human personality that is just as big" (Metzner, 1999: x).

All this harks back to Krippner's observation about informal assessments with psychedelics in the 1960s, and supports the view, "that taking psychedelics increased not only our appreciation of nature, but all forms of life". This is supported by a frequently quoted passage from Albert Hofmann's book *LSD*: *My Problem Child* (1983: ix-x), recalling a peak-experience in nature at age nine, that provided him with the ability to recognize his accidental ingestion of LSD, in April 1943, was of similar psycho-spiritual origin. Metzner adds the observation that LSD's discovery "in 1943 at the height of WWII occurred within months of Enrico Fermi's first controlled nuclear chain reaction, which led directly to the building of the atomic bomb; as if it was a kind of psycho-spiritual antidote to the death weapon" (2008: 21). Unfortunately the wealth of knowledge that could help us support these claims about the connection between psychedelics and ecology came to an end in 1965, "when the government clamp-down occurred, [and] even clinical research was banned" (Smith et al, 2004: 123). Some recent exceptions have been made, such as MacLean, Johnson & Griffiths (2011), the significance of which we shall discuss later in this paper. Still, for most of us, the ban on any experimentation with psychedelics continues. Thus, on the one hand, this "makes the surviving early researchers a uniquely valuable group," and "because of their advancing age are clearly an endangered resource" (Smith et al, 2004: 123). On the other hand, the near total ban on psychedelic research eliminates most of us from replicating its influence on our relationship with nature and other species – with the exception of anthropologists of consciousness who investigate indigenous cultures (Beyer, 2009, 2012; Dickens & Tindall, 2013; Harrison, 2011; Webb, 2013).

Among these endangered resources is Stanislav Grof (a pioneer in psychedelic research and transpersonal psychology), who said, in response to the question, "Can you describe the circumstances and impact of your first psychedelic experience":

> I began to realize that, even after a long time, the results [of psychoanalysis] were not exactly breathtaking. My own analysis lasted seven years, and I loved every minute of it: playing with my dreams, and finding that there was some deep meaning in every slip of my tongue. But if you had asked, "Did it change you?" I would have hesitated. I would say that, while I changed during those seven years, there was no convincing causal relationship between the free-associating that I did on the couch and the changes that happened in my life. Whereas, *when I had my first LSD session, I was one kind of person in the morning and a whole different kind of person in the evening, and there was no question that this change was the result of the experience* (Grof et al, 2008: 156, italics added).

This raises the question, what kind of person did he become? Grof adds:

> Ultimately, we don't have a fixed identity. ... You can eventually experientially reach the cosmic creative Source and become that Source. When you have that experience [like I have,] you realize that this Source is no different from the overall field of cosmic energy" (Grof et al, 2008: 167)
>
> [Consequently] It becomes obvious that the universe is a unified web, of which we are all meaningful parts ... . [and,] that we are facing a problem of a collective nature that only a determined cooperative effort can solve. ... [Thus] a radical and lasting solution is inconceivable without inner transformation and a move toward global awareness (Grof, 1985: 39).

Therefore in an attempt to put all of these concerns into their proper perspective, this paper will proceed chronologically from past to future (and periodically flash forward and backward in time so that particular points can be addressed). Equally important for us to know before we enter the main body of this paper is portions of it have been published elsewhere, which also raises the question why is there a need to repeat this discussion again? The answer is that I have learned from the past mistakes of Naess and Roszak. Neither of them repeated themselves enough, nor referred back to their early work enough, nor clarified their basic concepts enough, nor explained well enough what it was that motivated them to pursue their respective areas of research. Consequently the task of creating a coherent statement summing up their respective contributions has been left to others. A summing up of Naess' legacy can be found in Drengson, 2005; Drengson and Devall, 2008, and Drengson, Devall, and Schroll, 2011; whereas a summing up from ecopsychology to transpersonal ecosophy is this paper's focus, and listening to the music of the lyrics quoted in this paper will deepen the readers experience.

Recognizing an internal pollution crisis in humankind

Mama nature said, it's murder what you've done,
I sent you forth my brightest world, now it's nearly gone.
Virgin bees been telling me, you can't see the forest for the trees,
Cover up your eyes with sympathies.
And I've got no solution, to your persecution,
I'm so disillusioned.

Mama nature said, you're guilty of this crime
Now it's not just a matter of fact, but a matter of time.
Cruel will be the vengeance, some say I don't believe that story,
And I've got no solutions to your own pollution.

– Phil Lynott/Thin Lizzy, 1973, Belfast, Ireland

As a teenager growing up in the 1970s, instead of listening to disco, I was contemplating the rock lyrics of songs such as *Mama Nature Said*. Likewise, this zeitgeist was shaped by a cultural background of films such as *Soylent Green* (1973), (based on Harry Harrison's 1967 book *Make Room! Make Room!*) vividly warning us about the forthcoming dangers of overpopulation,

> pollution, and food shortages, with ominous overtones of fear, guilt, and self-sacrifice as the only solutions to an otherwise impending apocalypse. At best there were TV commercials featuring Hollywood's version of indigenous tribal elders shedding a tear as garbage was thrown from cars desecrating the landscape, which concluded with a message pleading with us not to litter. But the idea of some kind of "internal pollution" contributing to the ecocrisis was absent in the environmental rhetoric that I was hearing from the adults shaping my adolescent development (Schroll, 2009: 29).

My search to understand this "internal pollution" is what led me to "ecopsychology" (which I suggested in the introduction can be more accurately described as "transpersonal ecosophy"; I will, however, continue to refer to both ecopsychology and transpersonal ecosophy throughout this paper). It was therefore an immediate flash to my memories of *Mama Nature Said* as I heard Ian Prattis tell us in *Failsafe*: *Saving the Earth From Ourselves* (2008): "I must be blunt from the outset about the context of [our] current ecological, social, and psychological crisis. There is an external environmental pollution crisis on the planet because there is an internal pollution crisis in humankind" (p. 38). Prattis identifies this internal pollution as symptoms (p. 27), which agrees with (yet fails to cite) the work of Roger Walsh who pointed this out in his 1984a article "World at Risk" (pp. 10-14), and elaborated on this point in Walsh, 1984b, 1985). This is an important point that Prattis and Walsh raise, and provides us with the starting point of transpersonal ecosophy: "how, and in what directions, can we move beyond simply treating the symptoms of the world's growing number of social and environmental crises?" (Schroll, 2007: 30). Pondering this question represented a real turning point in my thinking:

> It allowed me to realize that healing the world's social and environmental crises was not going to come about simply by creating new technologies and discontinuing the use of fossil fuels, nor by rejecting the development of new technologies and trying to live more simply. It is not a matter of philosophers envisioning a better environmental ethic to guide the practice of conservation biologists and urban planners, allowing us to serve as better stewards of the land. Nor would a concentrated effort of protest by eco-activists employing guilt, fear, and letter writing campaigns, urging politicians to enact stiffer environmental laws, create the kinds of changes needed in our behavior. Necessary as all these approaches might be, I believe that the real starting point toward healing the social and environmental crisis begins with self-confrontation and self-examination. We need to examine the worldview influencing our attitudes and our behavior (p. 30).

Some mainstream environmentalists may take offense with this turning point in my thinking, believing that I no longer support the work of environmental activists, or those involved in resource management, conservation biology, environmental psychology and conservation psychology. But this is not correct. I continue to support

these concerns[5], yet I stand in opposition to technocracy, that is, the social engineering of culture. Indeed it was the insights that Roszak gleaned from Mary Shelley's *Frankenstein* (1816/1983) with its critique of science and culture (Roszak, 1980), that motivated him to write *The Making of a Counter Culture*: *Reflections on the Technocratic Society and its Youthful Opposition* (1969). This particular point was overlooked in both Jonathan Coope's (2010), and Tristan L. Snell, et al's (2011) assessment of Roszak's contribution to ecopsychology. A preliminary effort to address this concern was attempted by Schroll and Greenwood, 2011, yet a more comprehensive inquiry is still needed. Non-fiction critiques of transforming scientific knowledge into technologized social policy include Batteau, 2010; Drengson, 1995, 2011; Fromm, 1968, Glendinning, 1994; and Roszak, 1973, 1999, and are echoed in several fictional critiques (Huxley, 1932/1969; Orwell, 1949; and Zamyatin, 1972). Revisiting these concerns 30 years later, Roszak wrote:

> Cultures keep secrets; they illuminate some things and suppress others. Every culture conceals as much as it reveals; that is its style and its distinctive contribution. Cultures survive as long as they can maintain that style, which means as long as they can hide from themselves. There is a sense in which every culture is a conspiracy, a coordinated effort to open a few doors of perception and to close others (Metzner, 1999: viii).

The difficult problem we face is this, freeing ourselves from the "technocratic paradigm's" grip (Roszak, 1969; Drengson, 2011) will not be easy, because our path to liberation cannot be achieved solely on the basis of logical arguments built on incremental bits of data. Roszak agrees:

> Ecology already hovers on the threshold of heresy. Will it be brave enough to step across and, in so doing, revolutionize the sciences as a whole? If that step is to be taken, it will not be a matter of further research, but a transformed consciousness (Roszak, 1973: 371).

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[5] Two examples of my support for conservation biology and resource management are: (i) On May 14-15, 1990, I served as a volunteer forester at Fort Robinson State Park, near Chadron, Nebraska, during which I planted 200 seedlings of *ponderosa* pine. Fort Robinson has the ominous legacy of being the place where the Native American tribal leader and shaman Crazy Horse was shot in the back while purportedly escaping, yet the door to his cell had conveniently been left open. (ii) In November of 1997, I attended an annual conference sponsored by Pheasants Forever in Grand Island, Nebraska. During a workshop facilitated by the Nebraska Game and Parks Commission that dealt with the concern of preserving habitat, I articulated the idea of treating the symptoms versus getting to the ecopsychological origins of these symptoms. Not only did the farmers and ranchers attending this workshop grasp the importance of this concept, this idea was published in the Nebraska Game and Parks Commission newsletter as a central concern toward guiding the considerations of future policy and planning of habitat restoration.

Asking himself similar questions, former Apollo astronaut and founder of the Noetic Institute Edgar D. Mitchell concluded that what we need to solve the ecocrisis "is a transformation of consciousness" (Roberts, 2011: 6). In other words we need a positive vision of the future based on a cultural (anthropological) and personal (existential) understanding of what it means to be human. Only the most skeptical continue to deny that we are now in the midst of the ecocrisis that Rachel Carson (1962) predicted nearly 50 years ago. Skeptics and believers arguing for and against the reality of the ecocrisis have nevertheless missed a more essential point – Carson warned against relying on a "technological fix" as a solution to the ecocrisis, yet this does not mean that technological innovation is not important; it is. I am right now using several kinds of innovative technologies in the completion of this paper, and rely on others in my daily life. What Carson meant was that by itself new technologies will not be enough to solve the ecocrisis, and these solutions are frequently thwarted by technocracy.

Likewise (as I have previously discussed in greater detail):

> in conversations I have had with ecopsychologists who support the hypothesis that a transformation of consciousness is needed, many have asked if it will take some serious apocalyptic environmental catastrophe to motivate most of us (Schroll & Hartelius, 2011: 84).

Ram Dass raised this same concern in his interview with John Seed (Ram Dass & Seed, 1991). Ram Dass asked: "Will it take incredible trauma to trigger a transformation of consciousness?" To which Seed replied (paraphrasing): "We have already had so much trauma this does not seem to be a sufficient means to trigger a change in our awareness. In fact trauma often has the opposite nullifying influence on us"[6]. Instead Seed suggested that what we needed was some sort of miracle that would allow us to "wake up one day different" (Schroll & Hartelius, 2011: 84).

Harking back to Hofmann's anecdotal recollection of the similarities between his experience in nature, and initial psychedelic experience, this raises the question, could ingesting a psychedelic plant such as psilocybin mushrooms influence personality traits and ultimately trigger a transformation of consciousness? Recent experimental evidence in a clinical setting (MacLean, Johnson & Griffiths, 2011) provided data to establish that increased openness did result from subjects ingesting psilocybin. They define openness as "a relatively broad range of intercorrelated traits

[6] I have referred to "this opposite nullifying influence of trauma as the reliance on the fear approach or the rhetoric of catastrophe, the guilt approach or the rhetoric of shame, and the self-sacrificing/voluntary simplicity approach or the rhetoric of redemption as negative motivating techniques" (Schroll et al 2009: 47).

covering aesthetic appreciation and sensitivity, fantasy and imagination, awareness of feelings in self and others, and intellectual engagement. People with high levels of Openness are 'permeable to new ideas and experiences' and 'motivated to enlarge their experience into novel territory'" (DeYoung et al, 2005: 1459). Hopefully additional research designed to test similar hypotheses will be approved, and help to shed more light on whether or not a transformation of consciousness could be triggered by psychedelic experience. MacLean et al (2011: 1459) cautiously agree, telling us:

> Although the findings are suggestive of personality changes that might be associated with hallucinogen[7] exposure, it is not possible to isolate the effects of hallucinogens per se because of the self-selection bias that may confound results of cross-sectional studies. Longitudinal studies will be required to replicate hallucinogen-related changes in personality, attitudes, and values.

Their initial research findings support Metzner's same echo of hope:

> The potential of psychedelic drugs to act as catalysts to a transformation into *gnosis*, or direct, ongoing awareness of divine reality, even if only in a small number of people, would seem to be of the utmost significance. ... the discovery of psychedelics, in facilitating such experiences and processes, could be regarded as one very important factor in a general spiritual awakening of collective human consciousness (p. 81). ... The knowledge derived from altered states has been, can be, and needs to be applied to the solution of the staggering problems that confront our species (Metzner, 1989: 88).

Beyond this introductory discussion, to make sense of the context within which MacLean et al's clinical research apply – as well as the concerns expressed by Mitchell, Prattis, Getty, Ram Dass, Seed, Roszak, Gomes, Grof, Krippner and Metzner – and gain a broader understanding of how the concept of "internal pollution" emerged, requires sorting out and framing the historical development out of which ecopsychology emerged.

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[7] Defining and sorting out the confusion associated with the word hallucinogen, Metzner tells us:

> The older term hallucinogenic ('hallucination inducing') was universally rejected by those investigators who had actually experienced these substances, since it was clear that they do not cause one to see hallucinations in the sense of illusions; rather one sees all the ordinary objects of the sense world plus another whole range of energies and phenomena normally not seen. However, etymology reveals that the original meaning of the Latin verb alucinare, from which 'hallucination' is derived, means to 'roam or wander in one's mind'. This is actually a fairly appropriate metaphor for the experience – a journey in the mind, in consciousness; a 'trip', as it became known colloquially (Metzner, 2004: 4).

Ecopsychology's roots in humanistic & transpersonal psychology

I see the resignation of nothingness
I hear the repercussions of pointlessness
I'm completely torn
My whole attitude bears my scorn.
I hear the silence of another day
While our existence gets wiped away,
You know the games that we all play.
I see you're playing with my tolerance,
Gotta rise above this consciousness.
–Tim Masters, Lincoln, Nebraska, 1997

When the confluence of events that eventually lead to the birth of both humanistic and transpersonal psychology (and eventually ecopsychology) were being sown, I was four years old. Greenway has generously contributed to my understanding of this early history, recalling (in one of our many email exchanges from 2001-2010) that one rainy afternoon in late fall 1962, Abraham Maslow was looking out the window, saying, "It's not enough, humanistic psychology is not enough". This initiated Maslow's thinking about the limits of humanistic psychology, and it was during this time that he became influenced by Sir Julian Huxley's view of transhumanism (1957). Another four years would pass until the next break-through would come, as Anthony Sutich (1969: 13) tells us: "In January, 1966, several members of the Board of Editors of [*Journal of Humanistic Psychology*] were invited to a seminar titled 'Humanistic Theology' with Father [Patrick] MacNamara". Maslow was among the participants in this seminar, who afterwards developed its inquiry through an exchange of letters with Sutich. Sutich adds (p. 13) that "Early in January 1967, the term 'Transhumanistic' ... became the key word for this force".

And yet further clarification was still needed, as Miles Vich (1988: 107) points out, that the name for this new frontier did not come without some initial floundering. Maslow was among the first to use the term "transpersonal" in a communication to Sutich in 1967, and again in 1968 in a letter referring to a meeting with Grof:

> The main reason I am writing is that in the course of our conversations we thought of using the word transpersonal instead of the clumsier word transhumanistic or trans-human. The more I think of it, the more this word says what we are all trying to say, that is, beyond individuality, beyond the development of the individual person into something which is more inclusive than the individual person, of which is bigger than he is (Sutich, 1967).

This reference to something bigger, more inclusive, or whole than the individual person, is the creative insight that motivated Maslow to investigate what he called

peak-experiences (Maslow, 1964), and harks back to Hofmann's nature experience at age nine that provided him with a way to integrate and internalize his first accidental LSD experience.

It would require a more careful analysis of humanistic and transpersonal psychology's early history (beyond the limited one provided here) to learn if any of its members, or MacNamara, was at this time influenced by the clarion call of Lynn White, Jr., who (the same year as MacNamara's pivotal seminar) boldly criticized the Western form of Christianity in 1967 as "the most anthropocentric religion the world has seen" (White, 1973: 25). Summing up his argument, White asserted: "Both our present science and our present technology are so tinctured with orthodox Christian arrogance toward nature that no solution for our ecological crisis can be expected from them alone. Since the roots of our trouble are so largely religious, the remedy must also be essentially religious, whether we call it that or not" (pp. 29-30). Metzner has criticized "the minor inelegance of [anthropocentrism,] a term of mixed Greek and Latin derivation" (Metzner, 1991: 148), suggesting instead the "diagnostic metaphor the *human (or humanist) superiority complex*" (Metzner, 1999: 84).

Additional memories of this early history were provided by Krippner, who recalled in his last conversation with Maslow that Abe spoke of founding a new psychology he was calling trans-human psychology: "We should therefore extend our concerns – go trans-human – and not make this a human-centered psychology" (Schroll et al, 2009: 40). Krippner added, "As we talked about it, in retrospect, I now realize he was talking about what we now call ecopsychology" (Schroll, 2008/2009: 16). "Unfortunately Maslow never had this dream realized" (Schroll et al, 2009: 40); summing up his views on this recollection, Krippner added the opinion "that ecopsychology is [now] absolutely critical" (p. 46).

To recreate in our awareness the turbulent social psychological context within which both humanistic and transpersonal psychology emerged, let's recall one of the most shocking images of our twenty-first century selves that came screaming into our lives: the stark vocals of the song *21st Century Schizoid Man*, whose lyrics explode with a rant characteristic of the 1960s revolution in sound, presentational style, and content:

Cats foot, iron claw,
Neurosurgeons scream for more
At paranoia's poison door
Twenty-first century schizoid man.
Blood rack, barbed wire,
Politicians' funeral pyre
Innocents raped with napalm fire

Twenty-first century schizoid man.
Death seed, blind man's greed,
Poets' starving children bleed,
Nothing he's got he really needs,
Twenty-first century schizoid man.

These are the words and poetic illuminations of Peter Sinfield, whose inspirations in 1969 flayed our skins, and burned these thoughts into our brains, assisted by the searing blast of controlled fusion known as the musical group *King Crimson*. Sinfield's chilling reference to the schizoid personality type continues to loom large on the horizon of humankind's future, warning us to wake up from our dissociation from self, society, and nature, because the schizoid person is no longer in touch with their feelings. Instead, the schizoid person lives in a state of psychological disconnection from other people and the world of nature. All of us are in danger of becoming this schizoid man (Schroll, 2008/2009: 16-7).

This schizoid man is what Metzner refers to in his book *Green Psychology* as "the collective psychopathology of the relationship between human beings and nature" or, in other words, "dissociation" (Metzner, 1999: 94-97). Psychology should therefore be on the front lines of the endeavor to examine our worldview, and ourselves, but mainstream psychology is currently dominated by technophiles. These technophiles, or perhaps more poignantly necrophiles, actively encourage technology's consumptive behavior and instrumental use of nature (the systematic transformation of nature into its use by humans)[8].

1969 witnessed the *Association for Transpersonal Psychology*'s birth, whose inception found inspiration in Maslow's 1968 vision that "without the transcendent and the transpersonal, we get sick, violent, and nihilistic, or else hopeless and apathetic" (Maslow, 1968: iv). Recognizing this, it is hard to say whether psychology was influencing pop culture or if pop culture was influencing psychology, because in 1969, Alan Watts was also describing the emotional autism of Seinfeld's 21st century schizoid man in *Does It Matter*?: *Essay's on Man's Relationship to Materiality*, telling us that:

> ... People, whether Western or Eastern, need to be liberated and dehypnotized from their visions of symbolism and, thereby, become more intensely aware of the living vibrations of the real world. For lack of such awareness our consciousness and consciences have become calloused to the daily atrocities of burning children with napalm, of saturation bombings of fertile earth with all its plants, wild animals, and insects (not to mention people), and of manufacturing nuclear and

[8] See Schroll and Greenwood (2011) for a discussion of the 'Night of the Living Dead' model, which is our critique of technocracy that builds on Roszak (1969, 1999) and Drengson (2011). Likewise this paper further illuminates this reference to technophiles as necrophiles.

> chemical weapons concerning which the real problem is not so much how to prevent their use as how to get them off the face of the earth. [If we can ever hope to survive this madness, we will] need to become vividly aware of our ecology, of our interdependence and [our] virtual identity with all other forms of life (Watts, 1969: xiv).

Watts could have written these words yesterday, and we owe it to his and Maslow's legacy to honor their vision and give birth to ecopsychology, and a transpersonal ecosophy. Equally poignant, as if it could be today's top news story, this prevailing sprit of dread, anxiety, and dissociation was eerily summarized in Roszak's *The Making of a Counter:*

> If the technocracy in its grand procession through history is indeed pursuing to the satisfaction of so many ... universally ratified values as The Quest for Truth, The Conquest of Nature, The Abundant Society, The Creative Leisure, The Well-Adjusted Life, why not settle back and enjoy the trip? The answer is, I guess, that I find myself unable to see anything at the end of the road we are following with such self-assured momentum but Samuel Beckett's two sad tramps forever waiting under that wilted tree for their lives to begin. Except that I think the tree isn't even going to be real, but a plastic counterfeit. In fact, even the tramps may turn out to be automatons ... though of course there will be great, programmed grins on their faces (Roszak, 1969: xiv).

Is "this discovery that we are nothing more than soulless creatures playing the starring role in some theater of the absurd really the image of the world and the future that we have all be waiting for? It is certainly not the vision of the future I have been waiting for, yet before any of us slips into some kind-of deep depression about this dismal prediction of the future – it is important we call to mind that "if" is the key word in Roszak's scenario of the future. That is, if the resistance of the counter culture fails, ... if we fail to transform our present crisis of perception into an opportunity for transformation... If we do not become active in the political process needed to create better communities, if we neglect the cultivation of our transpersonal growth" (Schroll, 2008/2009: 17), then yes our future looks bleak.

Flash forward 27 years to hear again how these concerns continue to impact our understanding of science, culture, our collective future, and those of transpersonal psychology in particular, as David Fontana and Ingrid Slack persuasively argued in their paper "The need for transpersonal psychology":

> In an increasingly shrinking and independent world, it therefore seems vital that Western scientific psychology [begin an active exploration of] the influence that transpersonal experiences and beliefs have upon human motivation and behaviour. Such exploration must also take in the extensive and culturally important formal psychologies generated by non-Western traditions, the majority of which have their basis in, or make reference to, alleged transpersonal experiences. ... The very future of mankind (a grand phrase, but not inappropriate in the circumstances) depends increasingly upon international understanding, and if Western scientific psychology is to play a

> role in this understanding ... it would therefore seem imperative that it make its presence felt in the areas concerned without delay (Fontana & Slack, 1996: 4).

Fontana and Slack's call to action led to the formation of a Transpersonal Psychology Section in the British Psychological Society, whose concerns parallel similar conversation taking place within the current paper, and ecopsychology as a whole. To foster further synthesis between these conversations it is therefore important to acknowledge limitations within our view of transpersonal psychology.

Recognizing the limitations of transpersonal psychology

Tried so hard, but I just can't relate
Is it mind control, or just a separate state?
I see millions of people moving to the right,
Afraid of one another, afraid of the light.
Yuppie vermin consumers, a generation lost,
When up pops another breathing their exhaust.
It's dawn of the dead, or zombie land,
While new abuses of power are seen throughout the land.

Our seas are filled with oil,
We worry about burned flags,
All these contradictions are really such a drag.
So keep those closed minds humming
Bolting down the screws,
These complicated questions
Are a new case for the blues.

– Jim Jacobi, Seattle, Washington, 1998

Much of the theoretical basis for transpersonal psychology has been constructed from the religions and psychologies of Asia: Hinduism, Taoism and Buddhism. Even though I spent five years studying Zen Buddhism and attempting to practice its meditative methods, the feeling of treading on (or infringing upon) foreign soil was always present. Despite this somewhat unnatural feeling that always crept into my experiential encounters with Zen, and my theoretical study of the religions and psychologies of Asia, Maslow's founding spirit of transpersonal psychology continues to hold a hope for me. I continue to find that the Hindu myth of the universe resonates in my own unconscious and my psilocybin inspired experiential cosmology (Schroll, 2004a). Taoism provides philosophical insight (Kasulis, 1981), and Zen koans unify my body/mind (Schroll, 2011b)[9].

[9] It is worth mentioning that Sufi stories provide invaluable pathways capable of reawakening our primordial ecological wholeness, in addition to serving as gateways into other ways of knowing

Nevertheless, the limitations of transpersonal psychology (especially the possibility of enlisting its help in expanding EuroAmerican ecopsychological awareness) became shockingly evident when I read Philip Novak's (1987) paper "Tao how? Asian religions and the problem of environmental degradation". These include: (i) The case of India; (ii) The case of China; and (iii) The case of Japan. Beginning with India, Novak reveals the discrepancy between Hinduism's theoretical teachings and the daily behavior of its practitioners:

> The Vedic literature repeatedly expresses a vivid appreciation of and deep reverence for Nature. [Yet n]othing illustrates more vividly the paradoxical nature of India's relationship to the environment than the condition of the Ganges. ... It is estimated that 'at least 10,000 half-burned bodies are tossed into the river every year either at Varanasi or towns upstream. Whole leprous corpses are often thrown into the river by ignorant townsmen who fear that burning would spread the leprosy bacilli in the air through the smoke. Benares alone dumps 20,000,000 gallons of raw sewage into the river every day. One huge sewer pipe empties into the river only 100 yards upstream from the city's main drinking water intake pipe' (Novak, 1987: 33-6).

Those of us familiar with Hinduism know that the Ganges is sacred to Hindus, who believe its waters are holy and purifying. Each year thousands of Hindus make pilgrimages to the Ganges to bath in and drink its sacred water. This certainly speaks to the power of ancestral wisdom; it also speaks to the power of denial.

Second, Novak proceeds to talk about China. Telling us that throughout China's history the behavior of the spiritual practitioners of Buddhism and Taoism has resulted in many devastating effects on the natural environment:

> Even Buddhist monks share the blame. [René] Dubos notes that they used enormous amounts of timber for the construction and constant reconstruction of their halls and temples, [resulting in widespread deforestation,] and that despite their supposed vegetarianism, kept livestock which overgrazed the surrounding lands. ... Dubos wryly suggests that the famed Chinese attitude toward Nature arose as a response to the environmental damage done in antiquity, and that we owe our romantic notions of Chinese reverence for Nature to the writings of retired bureaucrats who lived on estates where Nature was systematically submitted to the pruning shear (Novak, 1987: 36).

Novak goes on to add that the ink, with which the beautiful calligraphy of Buddhism and Taoism was traditionally drawn, came from the soot of trees. But cutting down a full grown tree is a labor intensive task, so monks eventually adopted the practice of using small saplings to obtain the ash for their ink. This practice of course added to the deforestation of China, while Buddhist and Taoist monks wrote beautiful

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(Schroll, 2011b; Schroll, Rowan & Robinson, 2011). See also Shah (1970). Sufism has some roots in Islam, as well as external influences, particularly from India.

calligraphy about nature with this ink: bringing to mind the colloquial phrase, *is there something wrong with this picture?*

Third, during the 1989 conference "Gaia Consciousness: The Re-Emergent Goddess and the Living Earth" (organized by James A. Swan), Novak followed up his 1987 criticisms of Asian religions; specifically the profound contradiction of Asian religions actual treatment of Nature with that of their professed worldview. Adding one more nail in the coffin, Novak writes:

> Up until 1970, when a number of stringently enforced environmental laws were passed there, Japan, largely because of its post war industrial push, had become the *Itchiban*, the number one industrial polluter in the world. Japan Scholar, Edwin Reischauer, said that the Japanese have done more than any other people to defile nature, though no people love it more (Novak, 1989: 51).

Meanwhile, as the people and corporations of Japan continue to clean-up their act at home, the Mitsubishi Corporation (and related groups) are contributing to an alarning rate of deforestation. According to the EcuadorExplorer.com (2013), this planet-wide rate of deforestation equals 86,000 hectares per day, an area equivalent to New York City. This breaks down to 1 hectare (2.4 hectares) per second, or two U.S. Football fields, 31 million hectares per year, an area larger than Poland. Novak reminds us that while the homeland of Japan is sacred to the Japanese, the rest of the world is perceived as a frontier that is wide-open for corporate development.

In summing up these examples of transpersonal psychology's limitations, I want to reiterate that I continue to believe the traditions of Hinduism, Taoism, and Buddhism are capable of providing us with valuable sources of wisdom that can assist us in re-establishing our lost connection with the nonhuman world. Nevertheless, these examples serve to illustrate the fact that just because we become a practitioner of these traditions does not automatically guarantee that our attitudes and behavior will be transformed regarding our relationship toward all natural systems. Moreover, these examples also serve to demonstrate that even if we become practitioners of Hinduism, Taoism, and Buddhism we may still find ourselves falling-victim to the effects of what Kremer and Donald Rothberg call our collective shadow:

> We can define the collective shadow as the unknown or little-known aspects of a society and culture [that continue to remain hidden in our unconscious because of voices emanating from] ... dominant discourses" (Kremer & Rothberg, 1999: 3).

Elaborating on this concern, Rothberg has begun the task of bringing these limitations of Asian psychologies and religions to the attention of the transpersonal

movement, telling us:

> ...it is important to ask critical questions about the extent to which the transpersonal field has given a selective reading of spiritual traditions and highlighted some kinds of spiritual expression rather than others. ... While the idea of a 'perennial philosophy' and an emphasis on contemplative and mystical traditions, particularly Asia, has broadened contemporary Western understandings in philosophy and psychology tremendously, it remains vital to ask whether certain aspects of human development are also brought to high levels in other kinds of traditions[?] (Rothberg, 1999: 46).

Rothberg goes on to point out that what has been missing from the transpersonal field is a consideration of the importance of "the indigenous traditions of all continents" (p. 46). He offers a brief mention of "African-Christian Voodoo in Haiti, which played a pivotal role in gaining Haitian political independence at the end of the eighteenth century" (p. 57), yet overlooked in his otherwise thorough assessment is Molefi Kete Asante's (1984) paper "The African American mode of Transcendence". Asante provides the insight that "*Samba* the Brazilian dance, *Sango* the Cuban folk religion, *Umbanda* the Brazilian folk religion, *Voodoo* the Haitian folk religion, or *Myal* a Jamaican religion" and the African idea of Sudicism all have the "same source of energy, the rhythm or polyrhythms that drive the spirit toward transcendence" (p. 168). It is an internalized resonance with the groove of percussion sound and movement that gives expression to the African American holistic personality, and can be accessed "in any good blues or jazz club [where] you can get the same soulful sound as you get in the church" (p. 176). This source of transpersonal wisdom is especially consistent with that of ecopsychology or transpersonal ecosophy, as Asante makes clear: "it does not depend upon icons of faith but the incessant collective drive of people for harmony with self, fellow earthlings, and nature" (p. 176). This view is consistent with, and supportive of, my own life-long inspiration through blues and rock music, including its storytelling capacity through powerful lyrics such as I have used in this paper.

Metzner too shares Rothberg's concern with other traditions missing from the transpersonal field, which led him to explore the indigenous roots of his Germanic ancestry in *The well of remembrance*: *Rediscovering the Earth wisdom myths of Northern Europe* (1994). In pursuing this inquiry, Metzner raised the question: "Those of us descended from European ancestors are naturally moved to ask whether anything in our own tradition is relevant to surviving the ecological crisis. This book explores the animistic-shamanistic worldview of the aboriginal inhabitants of Europe" (Metzner, 1994: 1-2). Through his thorough inquiry, he convincingly demonstrates that "shamanic otherworld journey practices [are] at the very heart of

the religious worldview of the ancient Germanic people" (p. 198). Therefore those of us who are descended from Germanic (including Anglo-Saxon) and Celtic peoples of Northern Europe who are often criticized for borrowing, intruding upon, or stealing the wisdom of indigenous peoples can now answer back that this is our tradition too.

This analysis of the Earth wisdom myths of northern Europe concludes in Metzner's final chapter with his discussion of the eschatological myth of the Ragnarok, which he explains "is usually translated as the 'twilight of the gods', but more precisely means 'final fate of the gods'" (Metzner, 1994: 244); and calls to mind for most of us an apocalyptic vision where the forces of evil destroy the world, leaving the Earth a barren and uninhabitable place – thereby necessitating a new kingdom of Heaven, which is sent down to earth by God. Yet, according to Metzner, this interpretation completely misses the point that the Ragnarok is trying to teach us; instead he draws our attention to the fact that this final battle does not involve all of the gods. Much to the contrary, it is only the warrior oriented Aesir sky gods that are involved in this cataclysmic earth transforming battle, which Metzner explains is followed by "a renewal of the Earth and a new beginning of life, with a new generation of gods and humans telling stories and remembering ancient knowledge. 'A new green earth arises again out of the flood'" (pp. 249-50).

Consequently the peace-loving Vanir nature gods and a new generation of humans who were absent from this battle are left to re-inherit the earth. In other words, the final fate of the gods calls to mind a vision of "worldviews in collision", symbolized by a battle between logos-oriented male heroes and the forces of nature they have sought to dominate and control. Today these groups are represented by technocracy and its oppression of both humankind and the non-human world. This is a good point on which to end this discussion from both a substantive perspective, and because we have gotten ahead of ourselves in this autobiographical chronology.

Shamanism and the neo-shamanic revival

In 1989 Walsh published a series of articles on shamanism in the *Journal of Transpersonal Psychology* and *ReVision* (Walsh, 1989a, 1989b, 1989c)[10]. Immersed in this literature, I was invited by Stephen Glazier to organize a symposium on shamanism for the 1990 *Society for the Scientific Study of Religion* (SSSR) conference, held in Virginia Beach, Virginia. I accepted this invitation, motivated by the theme of creating a symposium to deepen our commitment toward envisioning a technology of transcendence or a renaissance of mysticism with an ability to

[10] During this same time I became increasingly influenced by the work of Michael Harner. His paper "The Role of Hallucinogenic Plants in European Witchcraft" (1973) is particularly relevant to our discussion of psychedelics and ecology.

> produce the necessary transformation of consciousness to awaken a heart-felt response to the ecocrisis. Clarifying this idea in a marginal note in Larry Peters article 'Shamanism: Phenomenology of a Spiritual Discipline' (Peters, 1989), I wrote, it will [only] be through an authentic cultivation of *communitas* and the deep ecology movement that we will be able to transcend our presently destructive interaction with nature, and, thereby, transform our presuppositions about reality (Schroll, 2011a: 29).

This reflection reminded me that Joan Townsend had expressed a similar viewpoint:

> Periods of religious enthusiasm are not uncommon in the history of the Western World. This latest trend seems unusual, however, and distinct from earlier religious movements such as the Great Awakening of the 1740s and the Second Great Awakening after 1790 in the United States, because it combines a number of different systems of belief and is fostered by a network of individuals sharing a communication system that is unprecedented ... this new mystical movement owes its initial definition to the 'hippie' and related movements that began in the 1960s. ... Characterized by the search for a new meaning in life, ... a feeling of kinship among all people. ... and the valuing of simple, 'natural' lifestyles and conservationist concerns. Significantly, there were also a strong interest in nonorthodox theologies, especially spiritualist, mystical, and Eastern religious philosophies, as well as native American culture, including shamanism (Townsend, 1988: 74) (quoted in Schroll, 2011a: 30).

> Townsend referred to this movement as *neo-shamanism*, adding 'important to the development of neo-shamanism in the West were Michael Harner's work. ... [and] the publication in 1969 of Carlos Castaneda's doctoral dissertation in anthropology... Thus by the early 1970s the stage was set for the rise of neo-shamanism' (Townsend, 1988: 75).

Here I must interject: at this phrase of inquiry I had yet to organize the symposium "Castaneda's controversy: Examining consciousness studies' future", which took place April 3, 2003, at the 23rd Society for the *Anthropology of Consciousness* conference. This attempt to understand contemporary culture and provide some analysis is discussed in Schroll, 2010a, whose inquiry is deepened in Schroll, 2010b.

Flashback to 1990 – inspired by the shared sense of vision in this passage with my own, I telephoned Townsend on April 20, 1990, to discuss these ideas. Our conversation convinced me we were moving in the same direction, suggesting an elaboration on her work might be titled "Authenticity and Delusion: Shamanism and Neo-Shamanism" (Townsend, 1990). She agreed, accepting my invitation. Another important contribution "Personal Reflections on My Journey into Shamanism" emerged through my phone conversations with Michael Schneider. This was his first public discussion of a life-threatening illness and miraculous recovery that called Schneider to become both a Certified Shamanic Counselor and a close associate of Harner. Prior to his illness and recovery, Schneider had been a New York City ad man (Schroll, 1990). Schnider's personal story provided additional anecdotal

testimony of the influence transformations of consciousness have on the way we lead our lives.

The continuing resurgence of this interest in shamanism was raised again five years later, when in her chapter "Shamanic Counseling and Ecopsychology", Leslie Gray concluded: "It would be tragic to waste this accumulated [indigenous] knowledge, and it would be redundant for ecopsychology to generate models of a sustainable future without learning from the way of life of the more than 300 million indigenous people living in the world today" (Gray, 1995: 182). Krippner supports this view (2002).

Summing up shamanism's critical importance to our inquiry in ecopsychology and transpersonal ecosophy, and offering insights she and I developed through our correspondence following our meeting at the 2004 symposium I organized on "Psychedelics: Their Value and Social Responsibility" (Schroll, 2004b), Maura Lucas illuminates the concerns facing us:

> Cultural anthropology has long been in a difficult place, feeling the squeeze between postmodernism on the one hand, with its point that there can be no analysis of another culture that does not contain one's own culture and personal preconceptions, and biological anthropology on the other hand, claiming that if anthropology is subjective, then anthropologists should rely on hard, empirical data for the study of humanity. The point of [Jeremy] Narby's and [Francis] Huxley's edited book *Shamans Through Time* (2001) is that Western anthropologists have always seen shamanism through the lens of their own preconceptions. Anthropologists looking at shamans and interpreting their experience are not objectively describing shamans or shamanism, but coming to a kind of subjective middle ground between what they have observed, and their own culture's ideas at that point in history. If there can be no objective understanding of shamanism, then it makes sense for anthropologists to debate what constitutes appropriate expertise for writing about shamans and psychedelics (Lucas, 2005: 49-50).

Nevertheless, once again I am getting ahead of myself, as it was actually several months before I convened the 1990 symposium on shamanism that another significant break-through took place.

A breakthrough in 1990: Continuing to trace transpersonal ecosophy's many paths

There's colors on the street, red, white and blue
People shufflin' their feet, people sleepin' in their shoes
There's a warnin' sign on the road ahead
There's a lot of people sayin' we'd be better off dead
Don't feel like Satan, but I am to them
So I try to forget it any way I can.

We've got a thousand points of light for the homeless man
We got a kinder, gentler machine gun hand
We got department stores and toilet paper
Got styrofoam boxes for the ozone layer
Got a man of the people, says keep hope alive
Got fuel to burn, got roads to drive.

– Neil Young, 1989

In Spring 1990 two significant papers were published: Fox's paper, "Transpersonal ecology: 'Psychologizing' ecophilosophy" and Metzner's, "Germanic mythology and the fate of Europe". I began corresponding with Fox sometime in June of 1990. In August, I read in Harner's *Foundation for Shamanic Studies Newsletter* that Metzner was forming the Green Earth Foundation:

> Through its projects, the Green Earth Foundation aims to help bring about changes in attitudes, values, perceptions, and [our] worldview that are based on ecological balance and respect for the integrity of all life forms on Earth. Specifically, this involves re-thinking the relationships of humankind with the animal kingdom, the plant kingdom and the elemental realms of air, water and earth/land (Metzner, 1992).

Becoming a member of the Green Earth Foundation I soon began a correspondence with Metzner. Through our correspondence, Fox and Metzner agreed to serve as dissertation supervisors on my doctoral committee through The Union Institute. During this time, Jeremy Hayward, vice president of the Naropa Institute (now Naropa University) and editor of Shambhala's New Science Library, edited Fox's doctoral dissertation, which was published in the summer of 1990b. Eugene Hargrove, editor of *Environmental Ethics*, noted in a media blurb that Fox's "*Toward a Transpersonal Ecology* ought to be read not only by supporters of the deep ecology movement but also by its critics. It is destined to be a classic in the field".

I agree, Fox's book continues to be a classic in the field and a rich source of information to assist our understanding of the deep ecology movement's relationship with transpersonal psychology. Still, when Drengson informed me that Naess had suggested to Fox that "Toward a transpersonal ecosophy" would have been a better name for his book, I began to wonder why in the four years Fox served as one of my dissertation supervisors (2/9/91 – 1/29/95) that he never mentioned this to me? Perhaps one day this and other important questions about ecopsychology and its transition into transpersonal ecosophy will be answered. These and other questions will need to wait for future papers, even though (except for occasional references to my more recent work), this autobiography stopped short of discussing my present activities by more than ten years.

Conclusion

They can domesticate music, they can do most anything,
They can teach us how to dance, they can teach us how to sing,
But you can't tame a real wild thing.
– Jim Jacobi, Lincoln, Nebraska, 1999

The "they" in Jacobi's song refers to the technocratic paradigm, and its widespread influence on the humanities, natural and social sciences. It was Roszak's concern with technocracy, as I pointed out at the beginning of this paper, that motivated him to write his book *The Making of a Counter Culture* (1969), and this has been a recurring theme in all of Roszak's work. This paper, if successful, sought to provide an autobiographical overview of ecopsychology, and its transition to transpersonal ecosophy. Psychedelic experience (its historical influence on elders such as Krippner, Metzner and Grof), MacLean, et al's clinical investigation of psilocybin, as well as anthropologists of consciousness (Beyer, Harrison, Tindall, and Webb) are contributing to transpersonal ecosophy's emergence. Further inquiry is needed, and for better or worse, pro or con, this paper offers us a place to start. Here too I recall my memory of conversations with Hofmann at the "Worlds of Consciousness" conference (at the University of Heidelberg, Germany, on February 22 and February 25, 1996), and a group of German graduate students on February 24, 1996.

Pointing to the Necker river which was the predominant feature of nature that could be witnessed from the second floor window of Stadthalle (where the "Worlds of Consciousness" meeting was held), I explained that the resource preservationist might variously proclaim: Oh the river, it is so beautiful and inspiring! It must be preserved (the art gallery/cathedral argument). Oh the river, I love to sail my boat on it (the gymnasium or health club argument). The river, it has so many valuable forms of life that it sustains, it must be preserved (the silo argument). The river is my special friend, and is essential to my way of life, because I am a farmer and I use the river to sustain my crops in times of drought (the life support system argument). These were paraphrased statements based on my memory of Fox's examples in *Toward a Transpersonal Ecology* (1990b). Each of these arguments for preserving the river transforms it into an object for human use. Our cries of concern to preserve the river have the appearance of championing the concerns of the non-human world, and yet, the source of our alarm is our own self-interest. This is not a criticism of our actions, but merely an observation to raise into our awareness what our actual motivations are, and acknowledge them. Whereas to be aware of the river's essential nature allows us to realize, *the river simply is*. It does not exist for you or I, it exists

for its own sake. Raising this question, how can we meet our human-centred needs, and balance these with our co-evolution with nature and the cosmos? Developing this way of knowing is the concern of transpersonal ecosophy.

Finally, summing up my views on psychedelics (and as a way of referring to my more recent work), the view I have sought to convey in this paper is that:

> psychedelic experience provides us direct access to universal archetypal truths that transcend the boundaries of culture and the limitations of spacetime. Psychedelic experience allows us to encounter visionary mystical insights about the human condition, Gaia consciousness, and deep community and cosmic unity. Psychedelic experience is a fundamental awakening to self-realization (and Arne Naess talks about self-realization being an aspect of personal philosophy – which he called Ecosophy-T – within the deep ecology movement). Psychedelic experience is not the culmination of personal growth and transcendence; it is instead the beginning of the questioning process. Psychedelic experience is the root and ground from which our investigation of the big cosmological picture begins. Psychedelic experiences is the tree from which the fruit of myths and metaphors of consciousness grow. Eliminating psychedelic experience violates the open scientific inquiry of radical empiricism. Without psychedelic experience, religion ossifies into ritualistic symbolism without somatic significant understanding. Psychedelic experience is the very essence of transpersonal psychology, and [its source of wisdom] the primordial tradition. Recognizing this will require us to examine our personal and collective shadow and the reasons for why we are here (Schroll & Rothenberg, 2009: 43).

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