

Ayahuasca, shamanism, and curanderismo in the Andes

- by Steve Mizrach

Introduction

The term *ayahuasca* comes from the Quechua, meaning literally "the vine of souls," although it is also called "the visionary vine" or the "vine of death." The folk term refers to the botanical species of liana known as *Banisteriopsis Caapi*, which is also known as *Yage* among the Indians of Brazil. For simple ease of writing, I will generally refer to it as Yage throughout the paper. Yage is used in conjunction with several other psychoactive compounds in Andean ceremony, including tobacco, *epena* or *yopo* snuff (made from *psychotria viridis*), and coca. It contains several neurally active alkaloids, of which perhaps the most significant are the beta-carbolines (MAO inhibitors), and the most important of those being harmine and harmaline. When the caapi vine is used (as it often is) in conjunction with another subspecies of banisteriopsis, whose active compound is *dimethyltryptamine* (DMT), the synergistic effect creates a powerful psychedelic experience in the user. (Villoldo 1990.)

Due to the activity of Western ethnobotanists, chemists, and anthropologists in the late 20th century, the Western world has become quite interested in yage. **William Burroughs** and Allen Ginsberg were convinced it might hold the cure "junkie" addiction to "hard drugs" like heroin. (Burroughs 1963.) Research scientists were so impressed with the plant's ability to heighten mental sensitivity that they were sure it conferred extrasensory perceptions, and dubbed it *telepathine*. The experience that the Yage plant confers on Western users is so similar to accounts of the *Near-Death Experience* (NDE) (as noted by would-be shamans such as Alberto Villoldo, Michael Harner, and Terrence McKenna) that some are sure it's practically a gateway to the spirit world. Many psychotherapists (like Claudio Naranjo) still working on the somewhat *verboten* practice of using psychedelics in therapy still experiment with Yage, claiming that it produces the catharsis necessary for some dramatic cures of alcoholism and neurosis. (Naranjo 1974.)

Yage is used throughout the Amazon, particularly in Brazil and Colombia, in addition to Peru. In this paper, I am of course focusing primarily on its usage among indigenous Andean tribes such as the *Cashinahua*, and particularly on its use in healing and divination rituals. Much has already been written about the use of Yage in Peruvian *curanderismo*, especially the sort of pseudo-New Age-spiritual tourist cults that seem to have grown around its use in urban areas. In this paper, I am trying to argue three significant points that have not been paid much attention to in the study of Peruvian shamanism. One, that ayahuasca trance is often accompanied by a critical **acoustic** component involving the use of rattles and whistles. Two, that the shamanic trance may make use of the peculiar **lines** that line the Peruvian sierra (the *ceques*) which link together its many sacred places (*huacas*.) Third, that yage use is part of an important **cosmological** culture-complex involving a fascinating ethnoastronomy on the part of its users. And also that the way in which Yage healing is performed has been changing in urban areas.

Shamanism, one of the perennial fascinations of anthropology, may represent one of the most archaic forms of religious consciousness on the planet. Mircea Eliade calls it an "archaic technique of ecstasy" and suggests that in most cultures, the shaman serves multiple roles, the most important perhaps

being his mediation between the temporal and spiritual realms. (Eliade 1964.) R. Gordon Wasson thinks that American shamanism, and perhaps other forms, derives from a Siberian-Altaic circumpolar culture-complex that developed around *Amanita muscaria* (Fly Agaric/Soma) mushroom use some 100,000 years ago, and which spread with Asiatic migrants across the Bering strait. (Wasson 1986.) In almost every culture, the shaman is thought to be able in his visionary state to climb the 'world pillar' of the 'world navel' (*omphalos*) which links the underworld, middle world, and the heavenly realm of the Polestar. To some, the shaman is merely a schizophrenic, psychotic individual indulged by other members of his tribe; to New Age romantics, he is the figure of the "wounded healer," a mystical guru par excellence.

In Peru, I would argue, shamanism primarily revolves around healing (*curanderismo*) and that today, it has Indian and *mestizo* practitioners (one of the most famous in the latter category being Eduardo Calderon.) Much, though not all, of the ceremony involves the use of Yage, and today such rituals can be found in urban, montane, and jungle areas. Not surprisingly, the content of Yage visions in the Andean context is strongly influenced by the cultural set and setting. Users of Yage frequently report hallucinations of jaguars, the souls of the ancestors, and out-of-body type experiences. It is important to realize that the particular kind of *Altered State of Consciousness* (ASC) created by Yage use is affected by other concomitants, and thus researchers may not fully understand the Peruvian shamanic experience without taking those into account. However, we also need to look, to some degree, at what is happening with Yage at a basic neurological level.

Background: preparation, physiology, context, cross-cultural effects

While many Andeans are familiar with the preparation of Yage, it is commonly utilized in ritual settings by *vegetalistas*, shamans who are known for their specialization in ethnobotanical knowledge. (Luna 1986.) The typical procedure is to scrape the bark from the woody vine and boil it in water, creating an intoxicating tea. Other plant materials will then be added, resulting in a unusually bitter concoction. Users drinking this tea typically have extreme feelings of nausea and intestinal discomfort, resulting in diarrhea and vomiting. For this reason, yage is frequently known as the *purgate* (purge), and users are strongly counselled to undergo a period of severe fasting and abstinence prior to using the substance. The plant contains a number of physiologically active chemicals in addition to harmine, harmaline, and DMT, and these can create other symptoms of physical discomfort, which makes some people feel like they are dying - slowing of the pulse, chills, numbness, and the blurring or fading of sensory stimuli from the external world. (Lamb 1985.)

I emphasize this fact, because in many of the cross-cultural studies of "Yage," harmine extract has been used without many of the allied compounds found in the plant. Naranjo and other therapists claim they do this for the benefit of patients, and rightfully so, but it should be emphasized that for shamans who take the "heroic dose" of Yage for their initiations, this deathlike crisis is part and parcel of the experience. The purgate is thought to remove toxic substances from the body, and the crisis is thought to liberate the shaman's soul to allow for "spirit flight," and to be an important trial preparing him for his work with the spiritual world. "Bad trips" with Yage do occur, where the shaman is tormented by demonic beings, attacked by serpents, or imprisoned underground, but these are culturally rationalized

and understood as part of the experience. It is the shaman confronting what is thought to be sorcery and freeing himself from attachments to his previous life. Thus, when harmine is used in a Western context, not only is the cultural rationale not present, but the "total package" physiological experience is not there either.

In the native context, Yage is commonly used to divine the causes of illness and effect cures. Anthropologists believe it is most commonly used in the case of *culture-bound syndromes* (CBSes) (what are sometimes clumsily called "psychosomatic illnesses" by Western medicine), such as the condition of *susto* or soul loss. However, sorcerers are also known to employ it in witchcraft for the causing of illness as well, by summoning "spirit darts" that will attack their enemies. It is also used for divining the future and the whereabouts of missing persons and things; for contacting and controlling spirit beings; for the "spirit flight" of the shaman; and for facilitating intergroup harmony and sociability. Ethnographers report that the most common elements of Yage visions are: 1) the feeling of separation of the soul from the body, and taking flight 2) visions of **jaguars** (interpreted as positive), and **snakes** and other predatory animals (usually thought to be negative) 3) a sense of contact with supernatural agencies (Andean demons and divinities) 4) visions of distant cities and landscapes (thought to be clairvoyance) and 5) detailed reenactments of previous events (thought to be retrocognition.) (Villoldo 1990.)

Visual elements of the Yage trance in the native context inevitably involve: brightly colored, large snakes; jaguars, ocelots, and other jungle cats; spirits of ancestors and others; large, falling trees; lakes, often filled with alligators or other predators; and villages and gardens of other Indians. These visions are usually preceded initially by swirling, moving geometric patterns, bright visual flashes (*phosphenes*), sensations and sounds of rushing water, and sudden, descending darkness that seems to swallow the individual. (Harner 1980.) These share some commonalities with the hallucinogenic experiences of shamans using psychedelics in other Native American cultures. But in order to understand the "bottom line" neurological effect of Yage, it's worthwhile to look at the effects it causes in Westerners. Naranjo reports that urban, elite Chileans using harmaline in a clinical, experimental setting reported the following experiences: feelings of being transformed into a "ball of energy" and rushing rapidly through the sky; becoming a winged being and flying; visions of Negroes or black people; religious (Catholic) imagery; sensations of turning or swirling violently; and malicious dwarves. (Naranjo 1974.)

Like the Indians, his Chilean subjects reported seeing ferocious cats (usually tigers or panthers), reptiles (not always snakes; usually, lizards or dragons), predatory animals, deep lakes and abysses, and previous events which had happened either to themselves or close personal friends. Naranjo insists that any possible "contamination" from suggestions or guidance on the part of he and his aides was carefully controlled, so perhaps we do have with Yage a certain cross-cultural "rock bottom" experience involving disembodiment/soul flight and visionary patterns. It's hard to tell; the Chileans may have been familiar with Indian legends and stories. Various researchers suggest the effects of harmaline may be due to the presence of an indole ring which is chemically very similar to *serotonin*, a naturally produced neurotransmitter in the brain. The alkaloids in Yage are isotropically close to those found in mescaline, psilocybin, and lysergic acid diethylamide (LSD), and may interact with the neurotransmitter inhibition system in the brain. There is much evidence to believe that the "locks" for psychedelic "keys" such as harmaline

are "built" into the brain, by close coevolution... as Wasson suggests, mushroom use may be millennia old. (McKenna 1993.)

I consider it somewhat significant that cross-culturally, Yage appears to cause the sensations of near-death experience and 'soul flight.' There are researchers who feel this is a particularly powerful hallucination common to the use of many psychedelic compounds, and it may be the basis for many cross-cultural ideas and complexes in humanity's religious imagination, such as the belief in a transcendent soul. This may be the case; however, those who use the drug do not always report heavenly palaces or hellish abysses. Many claim their "soul flight" takes them to *familiar* locations which are close-by, and that they navigate among landscapes using recognizable landmarks. I am not here suggesting that this constitutes a "real" or "objective" *Out-of-Body-Experience* (OOBE), in any scientific, verifiable sense. But the Indians certainly do believe that during this "soul flight" they can view distant places and find missing objects. Further, I will argue that even if this is purely a symbolic, *imaginal* journey, shamans at least use imagined elements of the Andean landscape and cosmos to navigate on their "journeys." And that it is *thought* to allow for interactions with the dead and the spiritual realm that coexist with us. (For the Jivaro Indians, indeed, these interactions are *more* real than our earthly ones.)

Curanderismo: Urban ayahuasquero healing

In her work with urban healers in Iquitos, Dobkin de Rios discovered that the majority of them were *cholos* or mestizos who used Yage in their curing sessions, usually with patients who were mestizos that dwelled in urban slums. (De Rios 1972.) Usually, the healer would take a circle of clients into the forests outside Iquitos, and there administer the Yage to both himself and the patient (he would work with each one individually.) A careful pre-screening process would select out people the healer thought were suffering from severe organic illness (they would unashamedly refer such patients to biomedical physicians in Iquitos) or psychosis. Usually, the healer would choose to work with patients believed to be suffering from what might be called Culture-Bound Syndromes - illnesses understandable and 'treatable' within an Andean cultural context. These included:

- *Susto*: The condition of "soul loss," whose symptoms often include alteration of metabolism, nervous disorders, feelings of fear, and a loss of appetite and energy. Yage is thought to help the healer discover the whereabouts of the missing soul.
- *Dan~o*: Dano is thought to occur when someone harbors feelings of envy or vengeance toward a person. The symptoms of Dano include hemorrhaging, muscular pain, fatigue, suffocation, tumors, and consistent bad luck (known as *saladera*.) It is a magical illness, which may have been caused by a Yage-using sorcerer who has slipped the person a noxious potion, or has thrown a *chonta* or evil magic thorn. Thus it requires magical treatment.
- *Pulsario*: Pulsario is sometimes described as a ball at the top of the stomach which blocks ordinary digestion. Mainly diagnosed in women, pulsario's symptoms include restlessness, hyperactivity, anxiety, and irritability. The healer often proclaims this ball to be crystallized (repressed) pain, sorrow, or anger, thus requiring Yage divination to find the proximate emotional cause.
- *Mal de Ojo*: The symptoms of the "evil eye" were varied, but included such manifestations as nausea, vomiting, diarrhea, fever, weight loss,

insomnia, and depression. It can result from an improper glance from a person, which is not always maliciously intended. Mothers often seek to protect their children from the evil eye through amulets or tobacco smoke. A healer is thought to be able to discover who cast the glance.

As a form of magical healing, the action of a *ayahuasquero* is thought traditionally not only to discover the sorcerer, spirit, or other being of ill will who caused the illness, but also to expel the bad sorcery and return it to that person. The shaman attempts to locate the sorcerer's *tsentsak* or spirit darts within the body of the victim (these are then removed in the form of needles or other objects "sucked" out of the patient) and return them to their conjuror. What has happened is that in the urban setting these beliefs have been moralized (Christianized) and naturalized. (Chaumeil 1992.) The mestizo healer usually tries to locate the source of the suffering of the patient in some kind of *moral* or interpersonal transgression on the part of the urban dweller, and thus in divination discloses to the client what acts of prayer, penitence, restitution, and apology are necessary for a complete cure. This will often also be accompanied by some type of physical regimen, including recommended changes in diet; hydrotherapy, herbalism, or similar naturopathic 'treatments'; and even recourse to Western biomedicine. (Joralemon 1993.)

The curandero's clients often consult him because they either do not trust, cannot afford, or have had no successes with Western medicine. This may be due to the presence of such culture-bound illnesses. Thus, it can be seen that the urban healer works as a sort of psychotherapist and social worker as well. Urban dwellers in Iquitos often face severe stresses in their lives (prominently, annual flooding of their homes, nonexistent sanitation, and lack of steady employment) which often leads to sharp intra-familial conflict. In locating the sources of their illnesses in conflicts that they must resolve, de Rios suggests the healer is not all that different from a psychoanalyst 'uncovering' repressed memories and trauma. However, unlike Western psychoanalysis, transference occurs from the healer to the client, as the client must recover through internalizing the healer's vision of what steps are necessary for recovering spiritual 'balance' and health. This may be a novel use of Yage, different from its original usages in aboriginal Andean shamanism; but it is not altogether dissimilar from the way Western therapists are using harmaline and other psychoactive substances in treating their patients today.

The acoustic component: the "Whistling Bottles"

In a short article published in 1971, "Hallucinogenic Music," Marlene Dobkin de Rios and Fred Katz attempt to argue that there is an important *acoustical* component to the Yage ceremony. (Katz and de Rios 1971.) Certainly, others had noted the shaman's use of a *schacapa* or rattle to mark important points in the ceremony. And other ethnographers have noted that in other cultures, the use of drums or other percussive instruments is part and parcel of the ceremony, creating conditions of "sonic driving" which may help entrain brainwaves. But de Rios points out that one of the most important parts of the Yage folk music performed by the shaman was **whistling** - the use of certain precise tones at different parts of the ceremony. What significance did this have? She mentions the ancient Pythagorean belief of musical effects on consciousness, with musical progressions linked to states of mind, and the synaesthetic experience that some hallucinogen users report between musical tones and color perceptions or emotional experiences. And admits that even

today, knowledge of psychoacoustics (the neurological effects of music on the brain) is in its infancy.

So while it could purely be a cultural component - i.e. the melody creates certain folk associations on the part of the listener, providing content for the visionary experience - she questions whether a more direct effect might not be involved. The shaman would whistle, she noted, to help bring a 'client' out of a 'bad trip' or negative experience, or to assist the person with some transitional point in the psychedelic visions. Certain tonic progressions would coincide precisely with these transitions. She suggests, "...the preponderance of the tone G could be viewed as the dominant tone away from the tonic C. Perhaps this contrastive situation potentiates the activation of the ayahuasca alkaloids..." De Rios seems to suggest that mostly oral (i.e. non-instrumentally augmented) whistling was involved in the ceremonies she saw, but this may not be universally the case. And this musical component of the ceremony (the need to generate specific whistling tones) may provide the clue to some mysterious Moche artefacts - the so-called "whistling bottles."

These ceramics were made by pre-Columbian peoples living along the coast of Peru between 500 BCE and up until the Spanish Conquest. They were made primarily by the Moche craftsmen, but can also be found in Chimu and other cultures. The vessels are generally dual-chambered: one chamber is the "inside" of some type of effigy figure, and the other chamber contains a spout. The two chambers are linked on the exterior by a bridge handle which contains a whistling cavity, and an inner cavity. Most archaeologists assume they are drinking vessels, with their whistle being used as "an amusing vent to facilitate the passage of air when pouring and filling with liquid." However, there is some reason to believe that these curious artefacts were used for more than just imbibing beverages. Daniel Statnekov, an amateur collector, reported that when he blew into one of these whistling vessels, it generated an eerie, high-pitched tone, and he had a sudden feeling of perceiving himself as a moving luminescence rushing rapidly through space, before he confronted an inky black cloud that chilled him "like death" and suddenly forced him to snap out of his vision. He had not used any drug prior to this experience - but it was extraordinarily similar to that reported by yage users! (Statnekov 1987.)

Statnekov set out to prove scientifically that these "whistling bottles" were not used primarily for drinking. He and acoustic physicist Steven Garrett tested about seventy of the bottles, from different cultures and time periods, using the following analysis: pressurized air was sent through the bottles in an anechoic chamber, and the resulting sound passed through a spectrum analyzer. Often as many as seven partials, harmonics of the fundamental frequency, could be detected. They found that the average frequency of the Moche/Huari bottles was around 1320 Hz, whereas the Chimu/Chancay bottles averaged a tone of about 2670 Hz. The earlier cultures tended to produce "enclosed-type," dual-tone low-frequency whistles, where the second tone could be achieved by halving the blowing pressure, creating a tone about 0.65 of the original frequency. They concluded, "The frequencies of a bottle produced by a specific set of cultures tend on average to be within +/- 14% of the average frequency. On the basis of the small octave range... we are reasonably sure they were not used as musical instruments... however, the clustering of frequencies... in the range of the ear's greatest sensitivity... and the high sound levels produced by the whistles when blown orally... suggest they were produced as whistles..." (Garrett and Statnekov 1987.)

So, they're not used as musical instruments, and people very likely didn't hear very much when drinking from them, so they probably weren't useful as ritual beverage containers either. What were they? I suspect Statnekov's experience holds the key. The whistling bottles may have peculiar psychoacoustic effects on their own when blown orally. But more likely, as Dobkin de Rios suggested, such whistles may have been used to potentiate and synergistically amplify the Yage experience. They may have been used by Moche shamans to generate the specific tonal sequences thought to be necessary for guiding the Yage 'trip.' After the conquest, shamans may have resorted to purely oral, non-amplified or instrumentalized whistling as an alternative, which is why de Rios didn't find such things in use among her subjects. However, the manufacture of such vessels may not have stopped with the Spanish Conquest; I suspect careful examination by ethnographers may turn up their continued use in Yage ceremonies in the Andes today. Their effects on consciousness require some more psychophysical study.

The Mystery Lines: shamanism and ceques

For a long time, anthropologists have pondered the mysteries of the *ceques* or lines which cross the Andean sierra. Many originally thought them to be paths or roads for trade and travel. This seems unlikely, however, as many of them are extremely narrow (about 2 cm in width), and they tend to terminate in rather undesirable destinations, such as cliffs and chasms, rather than other villages. The ceques which surround Cuzco are thought to radiate out from the capital, symbolizing the extent of the Inca "Sun King's" power. Ethnographers have found that other ceques are used to demarcate the boundaries of different *ayllus* ' territory, representing the extent of their authority as well. It is quite apparent that the ceques definitely link the many *huacas* (sacred spots) of the countryside, where pilgrims will often leave stones and other offerings for the resident divinities. And that some ceques have an ethnoastronomical significance, terminating at a point on the horizon where the setting or rising of a particular celestial body can be observed on a specific day of the year. (Hadingham 1988.)

But what about that other mystery of the Andes, the Nazca markings? While much ink has been spilt over discussion of the enormous landscape figures found on the Nazca plain, representing flora and fauna that are visible only from high above the ground, few have mentioned the network of lines that cross the figures. These lines cross them somewhat haphazardly, almost as if to suggest they preceded the figures. In any case, they are definitely too narrow to be spaceship runways, so what are they? Maria Reiche and Paul Kosok provided an initial suggestion when they claimed to have found significant lunar, solar, and stellar alignments. However, when Gerald S. Hawkins rechecked their work, he found little of verifiable significance. (Hawkins 1973.) I suspect that Anthony Aveni may provide a better idea when he suggests that the lines may be "a ritual writ large." Many of the lines originated from Cahuachi, a prominent Nazca ceremonial centre. (Aveni and Silverman, 1991.)

Aveni found that many of the Nazca lines paralleled water courses, and that they terminated on the promontories of mountaintops from which water would flow following seasonal downpours. However, they are not irrigation channels. Rather, they serve a ceremonial and symbolic function. Aveni found that even today many people perform ceremonies at endpoints of the lines for the purposes of summoning water. And he found a link with the ceques; Aveni also observed that many *ayllus* would place sacred offerings in streams

that bent alongside ceques in order to maintain the flow of the water. Aveni points out, "...the ceques were more than mundane property boundaries, since water was a gift of ancestors residing in the underworld... the geometric connection we found between the lines and water, together with the analogy of the ceques, suggests the lines may have played some part in ceremonies designed to summon water from its sources underground or high in the mountains." But Aveni doesn't suggest what kind of ceremonies these were. And what does this all have to do with Yage and shamanism?

Two authors, Paul Devereux and Tony Morrison, may hold the key. Devereux originally studied a similar system of lines (he called them *leys*) crisscrossing the British countryside. He found the leys would often connect sacred spots such as stone crosses, megaliths, churches built atop earlier Celtic holy places, holy wells, and landscape figures. Further, the leys (called the "old straight track" by Alfred Watkins) would often parallel underground streams and end at points where one could find blind springs. Devereux was fascinated by myths which told of Druids who would fly following the leys in stone chariots. British legends tell of spirits that walk the lines on saints' days, and how dowsers use them to find underground water. He became convinced that these stories of aerial travel were not *literally* true, but might have been describing the use of the ley lines for the sort of 'spirit flight' found in indigenous American shamanism. Devereux travelled to South America, and discovered that there were stories there also of how shamans would use the ceques to navigate using their 'spirit body.' (Devereux 1994.)

Morrison observes that in the Andes, the dead are also thought to walk on the ceques during certain days. (Morrison 1978.) It hit me like a thunderbolt. Two of the functions that the Andean shaman uses Yage, "the vine of souls," for are to contact the dead and to divine the location of water. The ancestors' spirits residing within the huacas are thought to guard underground water. Perhaps one of the "ceremonial" uses of the lines are for the shaman to travel during his "spirit journey," guiding him like a magnet to the places of the dead where he can bargain for water. Indeed, during their "soul flights," shamans typically report that they are "guided" on their journey by "spirit paths" that lead them to the appropriate destination. One of the ayllus' main responsibilities are water rights, and they maintain this role through their link to the ancestors who guard the water for their descendants. (Lamadrid 1993.) This may not be a (meta)physical journey, per se, but the shaman at least uses the lines as a *symbolic*, imaginal path for the journey to the places of the dead.

Certainly this does not solve all the riddles of the ceques. On the Nazca pampa, the Indians still quite physically travel the lines from huaca to huaca, leaving offerings on a "round" or circuit of visits which seems to be timed coincidentally with important seasonal periods (esp. climactic changes, such as the onset of heavy rainfall.) While Morrison at first argues that Reiche and Kosok were wrong about their "Stonehenge-type clock/computer" hypothesis for the Nazca markings, he later admits weakly that the Great Rectangle's eastern extremity apparently *did* align with the setting of the Pleiades around 525 AD, during the Nazca period, and that some other lunar alignments may be present. (Ibid., 1978.) He leaves the possibility open that the timing of the visits to places along the ceques may have been based on important points during the year marked by the setting or rising of the sun, moon, or other stellar bodies, now culturally remembered as saints' days or the mortuary dates of key ancestors. Which of course leads us on our next 'journey,' if you will, into ethnoastronomy.

The cosmological component: the Milky Way as road of souls

Morrison admits that Aymara star-lore was "extensive," and that they worshipped the moon, noting its complex 18-year cycle. The *quipus*, he notes, might have been used to record astronomical data. The Indians' words for "east" and "west" were derived from positions of the sun, they were able to fix the solstices through watching the sun over key geographic points, and east was a key ceremonial direction toward which many monuments were faced. The evening star (Venus, *Ururi* in Aymara and Quechua) was thought to be particularly important. While Andean ethnoastronomy might not have been sophisticated as that of the Maya, they still had made significant calendrical and other achievements. He suggests that Aymara and Quechua people had similar beliefs concerning constellations and asterisms such as the Pleiades and the Magellanic Clouds. Perhaps most importantly, they both referred to the Milky Way as the "way of Santiago" (St. James), a Christianization which covered up its earlier names - the "river of stars," "the road of souls," or the "way to infinity..." (Ibid., 1978.)

As I suggested earlier, in many cultures' shamanic traditions of tripartite cosmology, one place the shaman journeys during 'spirit flight' is into the underworld (the *nagual* in the Andes) to commune with spirits, find water, and locate lost souls. However, he is also thought to be able to climb the "world tree" into the sky. In many societies in the northern hemisphere, the "world tree" (also often thought to be a mountain or mill) is believed to stretch from the "world navel" to the Pole Star, the one body in the heavens around which all the others spin in deference. Santillana feels that many ancient peoples were aware of the precession of the equinoxes, which causes the Earth's axis to point toward a different pole star every two millennia or so. They would represent the "falling" of the pole star below the horizon (and its eventual replacement by another star - even faithful Polaris will give up his throne eventually) as a cosmic flood or cataclysm. Their shamans would need to find new routes to climb up into the heavens. (Santillana 1969.)

However, in the southern hemisphere, the Pole Star is hardly that prominent, and hangs in a somewhat low position on the horizon - hardly as spectacular as it might be for someone living in, say, the Arctic. Indeed, in the native ethnoastronomy, it's hardly mentioned at all. However, the Milky Way is quite visible, and it arcs brilliantly across the vault of the southern sky. We might expect the Milky Way to be an alternate route for the shaman seeking to climb the sky. And indeed it is - to reach the celestial spirits (as opposed to those that live in the underworld), Jivaro and other South American shamans claim that they climb the Milky Way. They are explicit about the use of yage in doing so. In their visions, the "vine of souls" stretches out to become a milky serpent, becoming the Milky Way, "the road of souls" which they use as a rope to climb into the heavens. But are such beliefs found among the indigenous peoples of the Andes?

Schultes reports that indigenous shamans using Yage in the Andes claim to feel a "rushing wind" pushing upwards which then they realizes is the torrent of "water" forcing them up the Milky Way. (Schultes 1992.) After ascending the Milky Way, they are then able to talk with those ancestors who were also able to ascend to the "celestial Paradise." As a mortal, however, the shaman cannot remain, but while in his 'spirit body' he may ask questions of the heavenly beings, who may know antidotes for sorcery he has not otherwise been able to counteract. There seems to be the mythic belief that rainbows and the Milky Way are diurnally related phenomena. A shaman trapped in the

underworld may not be able to return unless he can find the "rope" of the Milky Way. So it seems somewhat clear that this ethnoastronomical understanding is an important component of the visionary experience of using Yage in the Andes.

Conclusion

It is clear that Yage works cross-culturally because it has evident biochemical effects on the brain. It does effect healing for indigenous and mestizo people in the Andes, and may be useful in this way for Westerners as well. However, anthropologists wishing to study Yage or even recommend it as a panacea for ills in their own societies have perhaps once again been suffering from one of *their* common delusional maladies: failure to note complete context. Yage may work for people in the West, and it may well lead to positive experiences. However, Westerners using Yage not only fail to create the Andean "set and setting" in which Yage is used; they also lack the important concomitants for the experience of the drug - consensual understandings of the nature of health and illness; acoustic accompaniments; symbolic connections to alignments in the natural landscape; and cultural conceptions of the cosmos. Perhaps only the second variable can easily be remedied; certainly the technology for generating precise sonic tones exists today, and is even used already in so-called "mind machines."

And, as I noted earlier, the problem is further compounded by Western insistence on using chemical extracts rather than natural plants. This may reduce side-effects, but also results in different physiological results. It is like the difference between coca and cocaine. This is not to say that therapists like Naranjo might not be able to obtain beneficial results. But certainly administering one isolate compound, harmaline, from the plant, in a clinical medical setting, is likely to produce ones radically different from those seen in a "native" Andean context. The fact that there are similarities at all raises interesting questions, for which we have no answers. Why should Westerners *also* see cats and reptiles? It might be the Jungian archetypes, or the fact that these were predators with which the early hallucinogenic-discovering Cro-Magnons had to deal with. Who knows? I would repeat that the facts that both "control groups" make reference to sensations of dying and 'soul flight' are significant.

The fact that harmaline and DMT create such powerful religious feelings in people cross-culturally is likely not to be coincidental. In dealing with these substances, we may be on the verge of obtaining fundamental insights about the biological-chemical nature of consciousness. It is clear that they and other hallucinogens do not merely cause temporary 'psychoses' in people or 'mere hallucinations' (in the traditional unreflective sense of "things that aren't there and should be ignored") but instead work with existing, adaptive, well-evolved mechanisms in the brain for generating ASCs. The Andean shaman is not a maladjusted, indulged individual, but instead one who uses Yage to allow him to fulfill the multiple responsibilities to the community that his role requires. We will not understand fully how Yage is used in the Andes, or what human potentialities it might unlock in other contexts, unless researchers are allowed to experiment with the drug in their own laboratories and cultural settings. Due to the abuse of hallucinogens in most Western countries, mainly stemming from the lack of a cultural/ritual tradition of controlled use, overreaching legal structures prevent such experimentation. But progress will not be made unless such barriers to researchers are removed.

Bibliography

1. Aveni, Anthony, and Silverman, Helaine, "Between the Lines: reading the Nazca markings as rituals writ large," in *The Sciences* , July-August 1991, vol. 31, no. 4, pp. 36-43.
2. Browman, David L., and Schwarz, Ronald, eds., *Spirits, Shamans, and Stars: Perspectives from South America*, Mouton Publishers, New York, 1979.
3. Burroughs, William S., and Ginsberg, Allen, *The Yage Letters*, City Lights Books, San Francisco, 1963.
4. Chaumeil, Jean-Pierre, "Varieties of Amazonian Shamanism," in *Diogenes* , No. 158, Summer 1992, pp. 101-112.
5. Demarest, Arthur A., *Viracocha: The Nature and Antiquity of an Andean Solar Divinity*, Harvard University Press, Cambridge, 1981.
6. Devereux, Paul, *Shamanism and the Mystery Lines*, Quantum Books, London, 1994.
7. Dobkin de Rios, Marlene, *Visionary Vine: Psychedelic Healing in the Peruvian Amazon*, Chandler Publishing, Toronto, 1972.
8. Eliade, Mircea, *Shamanism: an archaic technique of ecstasy*, Princeton University Press, Princeton, 1964.
9. Garrett, Steven, and Stat, Daniel K., "Peruvian Whistling Bottles," in *The Journal of the Acoustical Society of America* , Vol. 62, no.2, August 1977, pp. 449-455.
10. Hadingham, Evan, *Lines to the Mountain Gods: Nazca and the Mysteries of Peru*, University of Oklahoma Press, London, 1988.
11. Harner, Michael, ed., *Hallucinogens and Shamanism*, Oxford University Press, New York, 1973.
12. Harner, Michael, *The Way of the Shaman*, Bantam Books, New York, 1980.
13. Hawkins, Gerald S., *Beyond Stonehenge*, Harper & Row, New York, 1973.
14. Joralemon, Donald, *Sorcery and Shamanism: curanderos and clients in northern Peru*, University of Utah Press, Salt Lake City, 1993.
15. Katz, Fred, and De Rios, Marlene Dobkin, "Hallucinogenic Music: an analysis of the role of whistling in Peruvian ayahuasca healing sessions," in *The Journal of American Folklore* , 1971, vol. 84, pp. 333-336.
16. Lamadrid, Enrique R., *Treasures of the Mama Huaca: oral tradition and ecological consciousness in Chinchaysuyu*, Latin American Institute, Albuquerque, 1993.
17. Lamb, Frank Bruce, *Rio Tigre and Beyond: the Amazon jungle medicine of Manuel Cordova*, North Atlantic Books, Berkeley, 1985.
18. Luna, Luis Eduardo, *Vegetalismo: shamanism among the mestizo population of the Peruvian Amazon*, Almquist & Wiksell International, Stockholm, 1986.
19. McKenna, Terence, *True Hallucinations: being an account of the author's extraordinary adventures in the Devil's paradise*, HarperCollins, San Francisco, 1993.
20. Morrison, Tony, and Hawkins, Gerald S., *Pathways to the Gods: the Mystery of the Andes Lines*, Academy Publishers, Chicago, 1978.
21. Naranjo, Claudio, *The Healing Journey: new approaches to consciousness*, Pantheon Books, New York, 1974.
22. Santillana, Giorgio de, and Dechend, Hertha von, *Hamlet's Mill: an essay on myth and the frame of time/an essay investigating the origins of human knowledge and its transmission through myth*, Godine Publishers, Boston, 1969.

23. Schultes, Richard Evans, and Raffauf, Robert F., *Vine of the Soul: Medicine Men, their Plants and Rituals in Amazonia*, Synergetic Press and Conservation International, Tucson, 1992.
24. Statnekov, Daniel K., *Animated Earth*, North Atlantic Books, Berkeley, 1987.
25. Villoldo, Alberto, and Jendresen, Erik, *The Four Winds: a Shaman's Odyssey into the Amazon*, Harper & Row, San Francisco, 1990.
26. Wasson, Robert Gordon, *Persephone's Quest: entheogens and the origins of religions*, Yale University Press, New Haven, 1989.
27. Weil, Andrew M., M.D., *Health and Healing*, Houghton Mifflin, Boston, 1983.