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Shamanism and Early Human Technology: The Technology of Transcendence

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Shamans were humankind's earliest mystics, according to numerous students of comparative religion, including Mircaea Eliade (1964) and Ken Wilber (1981). Of course, both *shaman* and *mystic* can be defined in various ways, and scholars have debated both terms for years. Here I will assume a definition of mystics as people who access transcendental knowledge through direct intuition.

Shamanism I would define as a family of traditions whose practitioners focus on voluntarily entering altered states of consciousness in which they experience themselves or their spirits traveling to other realms at will and interacting with other entities in order to serve their community (Walsh 1989). Shamans are "cosmic travelers" who experience themselves having controlled out-of-body experiences in which they, or their spirits, traverse the cosmos at will in order to learn, acquire power, help, and heal.

This focus on cosmic travels, which are also known as soul flights or journeys, is what distinguishes shamans from other magico-religious healers. For example, priests may lead rituals and medicine men may heal, but they rarely enter altered states; mediums may enter altered states but do not journey; Tibetan Buddhists may sometimes journey, but this is not a central focus of their practice; those suffering mental illness may enter altered states, but they do so as helpless victims rather than as choiceful creators of these states.

To travel the cosmos, the shaman must be able to enter specific states of consciousness, and much of shamanism centers on ways of inducing these states. Of course, shamans are not the only ones who have developed means for altering consciousness. Fully 90 percent of the world's cultures have one or more institutionalized altered states of consciousness, and in traditional societies these are almost without exception sacred states. This is, to say the least, "a striking finding and suggests that we are, indeed, dealing with a matter of major importance" (Bourguignon 1973, 11). Clearly, humankind has devoted enormous energy and ingenuity to altering consciousness. Indeed, it may be that the "desire to alter consciousness periodically is an innate normal drive analogous to hunger or the sexual drive" (Weil 1972, 17).

So shamans are hardly alone in seeking alternate states of consciousness. Mystics of numerous other traditions also seek them and claim that it is in these states that their deepest realizations are born. In fact, mystical traditions the world over have developed families of techniques for altering consciousness in systematic ways. These techniques constitute the so-called technology of the sacred, or technology of transcendence, and mystical traditions serve as road maps for using this technology to attain transcendent states. From this perspective, we might say that mystical traditions and religions are created and sustained by people who reach transcendent states of consciousness and then provide instructions whereby others can also reach them, thereby recreating the founder's insights. Ideally, mystical traditions serve to preserve and transmit these insights and instructions; the first such tradition was shamanism.

At its best, the shamanic tradition transmits a body of information and techniques that allows novices to recreate the altered states, experiences, and abilities of their predecessors. Each generation, thereby, can perpetuate and refresh a living and continuously recreated tradition and even add to its accumulated treasure of wisdom and technique. It is this direct personal experience of the sacred that defines the mystic and that properly allows shamanism to be called humankind's first mystical tradition.

However, transmission can fail. When this occurs, a tradition no longer focuses on or even appreciates direct experience of the transcendent. Then what is left is an institution largely devoid of direct experience of the sacred, without firsthand understanding of transcendental experiences and the altered states by which they are reached. Altered-state-inducing techniques give way to symbolic rituals, experience is replaced by belief, and "live doctrine fossils into dogmatism" (Steindl-Rast 1989).

Examples are not hard to find in any of the world's religions, and, in Japan, shamanism itself provides an example.

> Today this trance occurs only rarely. Capacity for this kind of dissociation, and for the visionary journey which goes with it, seems to have diminished in recent centuries and today the magic journey is most commonly accomplished by symbolic action in full waking consciousness. (Blacker 1986, 23).

Thus, the survival of mystical traditions may depend on succeeding generations' being able to again reach those transcendent states and experiences from which the tradition was first born. Shamanism seems to have been remarkably successful in this. It appears to have survived, perhaps for tens of thousands of years, as a living tradition of mystics who successfully preserved and transmitted what was perhaps the world's first technology, a technology for inducing altered states of consciousness.

INDUCING ALTERED STATES: CONTEMPORARY UNDERSTANDING

This technology can now be partly understood in psychological terms. For the first time in history, we have some psychological understanding of altered states of consciousness, the means for inducing them, and their role in religious traditions.

This present understanding stands in dramatic contrast to previous centuries of misunderstanding and dismissal. It has taken hundreds of years for certain states to be recognized and appreciated. Even hypnosis—now a well-known and widely researched state—was once dismissed as a sham. During the nineteenth century, a British physician named James Esdaile discovered that hypnosis could be used with surgery patients to reduce pain and increase survival. At a time when there was no anesthesia available and even the most brutal operations were performed without pain relief, this was obviously a momentous discovery. However, the medical journals refused to publish Esdaile's claims. He therefore put on a demonstration for the British College of Physicians and Surgeons. Charles Tart (1986, 80) describes it this way:

> After hypnotizing a man with a gangrenous leg, he amputated it in front of them while the man lay there calmly smiling. The conclusion of his skeptical colleagues? Esdaile was fooling them. He had hired a hardened rogue for a gold piece to lie there and pretend that he was feeling no pain. They must have had very hard rogues in those days.

This example is valuable because it demonstrates the extent to which skeptics can deny and dismiss even powerful altered states with enormous healing potentials. In our own time, hypnosis is widely accepted, but similar skeptical attitudes persist toward many mystical states and the techniques that induce them. For example, many people, including psychiatrists and researchers, still dismiss meditation and the states it induces, even though over a thousand research reports attest to its psychological, biochemical, and psychological effects (Murphy and Donovan 1989; Shapiro 1980; Walsh and Shapiro 1984).

Despite persistent skepticism, however, acceptance and understanding are growing. Much research has been done, and recently Charles Tart, one of the field's leading researchers, put forward a theory describing the stages by which altered states are induced. This theory will be helpful in understanding the induction of shamanic states.

Tart describes three stages of induction. In the first, the usual state is destabilized by one or more destabilizing forces. These are forces *that disrupt the usual brain-mind function.* They could be anything from sensory input such as intense music or drumming to physiological disruptions such as hunger or sleep deprivation to chemical disrupters such as psychedelics.

When these destabilizing forces are sufficiently intense, the usual state of consciousness is disturbed and transition to another state begins. The nature of this new state will depend largely on the nature of the "patterning forces" that mould it. These forces are such things as the specific beliefs, drug, or environmental setting that tend to direct the newly unpatterned mind toward specific states. When this movement toward a new pattern or state has occurred, then, during the third and final stage, consciousness restabilizes into a new state (Tart 1983).

The ability to access altered states appears to be a *learnable skill.* Entering a *specific state for* the first time may be hard but, with practice, can become easier and easier. For example, the person who smokes marijuana for the first time may experience little or no effect. Further attempts, however, may meet with increasingly dramatic success. The result is a phenomenon known as reverse tolerance in which the drug's effects become not less but more powerful with repeated use. Pharmacologists find this phenomenon curious and surprising, but it becomes easily understandable once we realize that the ability to enter specific altered states is

a learned skill (Tart 1983). The development of this skill is a common aim of mystical traditions. For shamanism, "all this long and tiring ceremony has as its object transforming the apprentice magician's initial and momentary ecstatic experience . . . into a permanent condition" (Eliade 1964, 80).

The fact that this ability can be developed and refined has several implications. The first is that practitioners may eventually be able to enter desired states rapidly and easily. This means that they may eventually no longer need prolonged preparation or external aids such as drums or drugs. Another effect of practice is that some of the qualities and abilities of the alternate state may become available in the usual state. For example, the Buddhist meditator who masters the states of extreme calm and concentration known as the jhanas will eventually become more calm and concentrated in the usual state. Likewise, the shaman's spirit vision may become more accessible and sensitive in an ordinary state. The net result is that an altered state of consciousness becomes an altered trait of consciousness, and, to paraphrase Huston Smith's eloquent phrase, "flashes of illumination become abiding light."

SHAMANIC TECHNIQUES

Shamanic techniques for inducing altered states include psychological, social, and physiological approaches. The psychological techniques include exercises undertaken both prior to and during the ritual. Common preparatory techniques include periods of solitude, contemplation and prayer, and creation of the appropriate mind set and environmental setting.

Set and setting are well recognized by contemporary psychedelic users as extremely important in determining the quality of the psychedelic experience. Skillful users therefore go to great lengths to arrange the appropriate expectation and environment in order to elicit the appropriate state and experience (Grof 1980, 1988). Shamans do likewise. The elements of their set and setting may include donning the shamanic mask and clothing and gathering the family or tribe. The group provides support and encouragement and, by its presence and dependency, reinforces belief in the shamans' power and importance.

Timing is also regarded as important. Journeying is usually done at night so that the spirits and geography of the other worlds can be better seen. In psychological terms, we might understand this as an example of perceptual release. Perceptual release is the process by which subtle objects become recognized when stronger stimuli are withdrawn. For example, the fact that the house lights have been left on may only become recognizable when night falls. Likewise, the subtle experiences encountered by the shaman during the journey may also be more easily observable at night.

Physiological techniques, mostly of an ascetic kind, are also commonly used beforehand. Shamans may go for a day or more without food, sleep, sex, or even water. They may also expose themselves to temperature extremes such as the icy cold of winter streams or the searing heat of the sweat lodge. During a seance, shamans may subject themselves to intense rhythmic stimulation such as dancing and drumming and may also ingest one or more drugs. Any or all of these techniques may disrupt normal physiological functioning sufficiently to destabilize the ordinary state of consciousness.

PSYCHEDELICS AND MYSTICAL STATES

At the present time, it is hard to have an intelligent discussion about psychedelics, so great is the misunderstanding, misinformation, and emotion that surrounds them. As a culture, we are remarkably ambivalent about drugs. Each year in the United States, we consume billions of dollars worth of tranquilizers, watch three hundred thousand people die from nicotine consumption, and lose almost another one hundred thousand to alcohol. Yet, we provide billions of dollars' worth of subsidies to tobacco growers while we imprison marijuana growers, and we make no distinction between socially destructive and sacred drug use.

It is clear that psychedelics have played a crucial role in religions and cultures throughout history. Some of the most ancient of human writings, the Indian Vedas, which are at least twenty-five hundred years old, refer to the food of the gods, soma, which may have been the psychedelic mushroom *Amanita muscaria*.

Psychedelics may also have played a crucial role in shaping Western philosophy and culture. A reasonable, though not conclusive, argument has been made that Plato was a member of one of the Greek mystery schools, that these schools used psychedelics in their sacred rites, and that these experiences may have inspired parts of Plato's philosophy (Dodds 1972; Wasson 1978). As Plato's philosophy became the foundation for Western philosophy ("Plato is philosophy and philosophy Plato," said Emerson), it is obvious that

Western philosophy and culture may have been, quite unknowingly, significantly influenced by psychedelic experiences.

Of course, there is enormous controversy over the nature and genuineness of psychedelically induced mystical states (Stace [1960] 1987; Grof 1980). It is clear that, at the very least, they have played an important role in many religions and cultures and have been central to some shamanic traditions. Even here, however, their central importance has often been overlooked by anthropologists, possibly because of lack of personal experience with the drugs and the states they induce. Such was certainly the case with Michael Harner. Only after he had ingested the psychedelic yage did he begin to appreciate its impact on the natives' view of reality.

> For several hours after drinking the brew, I found myself, although awake, in a world literally beyond my wildest dreams. . . . Transported into a trance where the supernatural seemed natural, I realized that anthropologists including myself, had profoundly underestimated the importance of the drug in affecting native ideology. (Harner 1973, 16–7)

The range of drugs employed by shamans across the world is quite remarkable, and up to one hundred different plant hallucinogens have been identified (Furst 1987). Archeological records suggest shamanic drug use may extend back over three thousand years.

It is the Siberian and Latin American shamans who have most often employed psychedelics as booster rockets to launch their cosmic travels. In Siberia, the preferred substance has been the mushroom known as *A. muscaria*, or agaric, which is perhaps one of the drugs referred to in diverse European legends. Of its use by shamans there can be no doubt. If, in addition, further research supports the idea that *A. muscaria* was the basis for various Asian and European legendary drugs, then its religious, cultural, and historical impact has been profound.

Among the many drugs used in Latin America, two of the most powerful and popular psychedelics are peyote and yage. Peyote is an unspectacular-looking, vile-tasting cactus. Many users feel nauseous after taking it, and Indians describe it as "a hard road." The great American philosopher-psychologist William James, who had some profoundly meaningful experiences with nitrous oxide that significantly affected his philosophical views, was sick for twenty-four hours after eating a single piece. He concluded that he would take the peyote visions on faith rather than experience them personally. For those able to keep it down, the effects are much like those of its major active component, mescaline.

Yage, or ayahausca as it is also known, is an equally vile-tasting and nausea-producing psychedelic made from an Amazonian "visionary vine" called Banasteriopsis (Dobkin de Rios 1972). Yage is chemically complex, but the most important psychoactive ingredient may be harmaline (Stafford 1983). Shamans, of course, attribute the effects not to chemicals but to the spirit that dwells within the plant.

Yage appears to elicit strong visual experiences. Users describe long sequences of dreamlike visions that appear in a spiritually significant progression. Yage is famous for provoking specific images, particularly jungle scenes of tigers, snakes, and naked women (Stafford 1983). Several Westerners have described their amazement, on ingesting yage, at the power of the imagery and its consistency with native reports (Harner 1973; Naranjo 1975; Stafford 1983). On the other hand, I have had the opportunity of interviewing three Western psychologists who took it in an urban setting well away from a jungle and reported no jungle imagery whatsoever.

Yage is particularly interesting with regard to shamanism because of claims for its healing and telepathic effects. In South America, it is known as "the great medicine," which, through its intercession with the spirits, can either reveal remedies or produce healing. In dramatic contrast to Western notions of medicine, yage is believed to be curative whether the patient *or* the healer swallows it (Stafford 1983).

Yage is also famous because of repeated claims for the clairvoyant powers it imparts. Native reports abound of yage-empowered journeys, flying, and extrasensory perception. The anthropologist Kensinger reported that "on the day following one Ahayuasca party, six of nine men informed me of seeing the death of my chai, my mother's father. This occurred a few days before I was informed by radio of his death" (Stafford 1983, 353). Needless to say, the interpretation and significance of such reports is hotly debated.

While these are the traditional drugs, the sad fact is that to a large extent they are now being replaced by tobacco and alcohol. Unfortunately, "traditional peoples do not automatically form good relations with psychoactive plants. Today, alcoholism is replacing the ceremonial use of sacred drugs" (Weil 1981).

One question remains, however: Can drugs indeed induce genuine mystical experiences? In the West, there is currently a strong tendency to dismiss the validity and religious significance of any drug experience. Consequently, the fact that shamans may use drugs causes some people to dismiss the experiences completely. Even some firm supporters of shamanism, such as Eliade, have regarded drug use as a degenerative form of the tradition.

Five major arguments are advanced to suggest that drug experiences can never be truly mystical. The first is that some drug experiences are, clearly, anything but mystical and beneficial. The second is the claim that the experiences actually induced by drugs are, when closely examined, different from those of genuine mystics. The third point is a theological one that argues that mystical rapture is a gift of God that can never be brought under human control. The fourth is that drug-induced experiences are too quick and easy and could hardly be expected to be identical to those hard won by years of contemplative discipline. Finally, it has been argued that the aftereffects of drug-induced experiences are different, less beneficial, and less long lasting than the mystical experiences of contemplatives. Several responses to these concerns have been proposed as follows.

There is no doubt whatsoever that some, in fact many, drug experiences are anything but mystical. As the religious scholar Huston Smith pointed out:

> There are, of course, numerable experiences that have no religious features; they can be sensual as readily as spiritual, trivial as readily as transforming, capricious as readily as sacramental. If there is one point about which every student agrees, it is that there is no such thing as the drug experience per se. . . . This of course proves that not all drug experiences are religious; it does not prove that no drug experiences are religious. (Smith 1964, 520 and 523)

The next question concerns whether drug and natural mystical states are experientially the same. Research suggests that "descriptively, drug experiences cannot be distinguished from their natural religious counterparts" (Smith 1964, 523). In philosophical terms, drug and natural mystical experiences are phenomenologically (experientially or descriptively) identical.

The most dramatic experiment affirming this was the "Harvard Good Friday study," also known as "the miracle of Marsh Chapel." In this study, ten divinity students and professors were given psilosibin on Good Friday in Harvard University's Marsh Chapel. Researchers were unable to distinguish the reports of their drug-induced "mystical experiences" from those of mystics throughout the centuries (Smith 1964). Perhaps the people best equipped to say whether drug and contemplatively induced mystical experiences can be the same are those who have had both. Such people are obviously few and far between, but a survey of spiritual teachers (Walsh 1982) located at least one such person who concluded that they could be. The theological claim that mystical rapture is a gift from God that can never be brought under human control is an argument that will only seem cogent to those believing in theistic religions and specific theological positions. It would, of course, not be regarded as a valid argument by, for example, nontheistic traditions, such as Buddhism, nor, presumably, by theists who believe in the power of good works more than grace.

The complaint that drug experiences are too quick and easy to be genuine is readily understandable. After all, it hardly seems fair that a contemplative should labor for decades for a sip of what the drug user may effortlessly swim in for hours. However, unfair or not, if the states are experientially identical, then the fact that they are due to different causes may be irrelevant. Technically, this has been called "the principal of causal indifference" (Stace [1960] 1987), which means that if the two experiences are identical then it matters not one whit how they are caused.

The final argument against the equivalence of drug and natural mystical states is that they may result in different long-term effects. Once again, Huston Smith has put the case eloquently. He noted that "drugs appear to induce religious experiences: it is less evident that they can produce religious lives" (Smith 1964, 529).

It seems clear that drug and natural mystical experiences can be similar or identical but may differ in their aftereffects. But still the debate continues over whether psychedelically induced mystical experiences are genuine. Stan Grof concluded that "at present, after thirty years of discussion, the question whether LSD and other psychedelics can induce genuine spiritual experiences is still open" (Grof 1980, 264).

One reason the debate continues unabated is that there has been no theory of mystical states that could resolve it. What is needed is a theory accounting for the induction of simi-

lar or identical states by such different means as LSD and meditation, followed by different aftereffects. It may now be possible to create such a theory in light of current understandings of the induction of altered states of consciousness.

Charles Tart's (1983) model of consciousness is helpful here. Tart suggests that any one state of consciousness is the result of the function and interaction of psychological and neural processes such as perception, attention, emotions, identity, and so forth. If the functioning of any one process is changed sufficiently, it may shift the entire system or state of consciousness. It therefore seems possible that a specific altered state may be reached in more than one way by altering different processes. For example, states of calm may be reached by either reducing muscle tension, visualizing restful scenery, or focusing attention on the breath. In each case, the brain-mind process used is different, but the resulting state is similar.

A similar phenomenon may also occur with mystical states. Different techniques might affect different brain-mind processes yet still result in the same mystical state of consciousness. A contemplative might finally taste the bliss of mystical unity after years of cultivating qualities such as concentration, love, and compassion. Yet it is also possible that a psychedelic might affect chemical and neuronal processes so powerfully as to temporarily induce a similar state.

So it seems that Tart's theory of consciousness may be extended to provide an explanation for the finding that "chemical mysticism" and natural mysticism may be experientially identical. But what of the fact that the long-term impact of the two may be quite different? These differences may also be compatible with the theory.

Both psychological and social factors may be involved. The psychedelic user may have a dramatic experience, perhaps the most dramatic of his or her entire life. However, a single experience, no matter how powerful, may be insufficient to permanently overcome mental and neural habits conditioned to mundane modes of function for decades. The contemplative, on the other hand, may spend decades deliberately working to retrain habits along more spiritual lines. Thus, when the breakthrough finally occurs, it visits a mind already prepared for it. In addition, the contemplative probably has in place a belief system that can make sense of the experience, a discipline that can reflect it, a social group that will support it, and an ethic that can guide its expression. One is reminded of Louis Pasteur's statement that "chance favors the prepared mind." The contemplative's mind is prepared, but there is no guarantee that the drug user's is.

These ideas suggest that some drugs can indeed induce genuine mystical experiences in some people on some occasions. However, they are more likely to do so, and more likely to produce enduring benefits, in prepared minds. Shamans were people whose minds were prepared, sometimes for years, and thus psychedelics may well have opened them to a variety of genuine mystical experiences.

RHYTHM AND THE ALTERED STATE

Rhythmic stimulation, whether by music, singing, or dancing, has long been known to induce altered states, and shamans have used all of these techniques. Nor are they the only ones, for as Evelyn Underhill, author of the classic text on mysticism, noted:

> Dancing, music and other exaggerations of natural rhythm have been pressed into the same service by the Greek initiates of Dionysus, by the gnostics, by numerous other mystic cults. That these proceedings do effect a remarkable change in the human consciousness is proved by experience: though how and why they do it is yet little understood. (Underhill 1955, 58)

Drums and rattles are the most widely used shamanic instruments. When a drum is played at a tempo of some 200 to 220 beats per minute, most Western novices usually report that they can journey successfully even on their first attempt. Indeed, the remarkable ease of induction of these states is obviously one reason for shamanism's recent popularity. This ease contrasts dramatically with the months of practice usually required by most meditative and yogic disciplines before significant altered states appear. (The drum is sometimes used even in these more recent traditions, for example, in Korean Zen.)

Drumming probably facilitates shamanic states and journeying in several ways. First, it acts as a concentration device that continuously reminds the shaman of her purpose and reduces the mind's incessant tendency to wander. It also drowns out other distracting stimuli and enables the shaman to focus attention inward. Heightened concentration seems to be a key element in effective spiritual disciplines (Goleman 1988; Walsh 1988), and shamans have found one of the quickest and easiest ways to develop it. Finally, drumming is

assumed to harmonize neural activity with the vibrational frequency of the sound. Two studies that appear to support this idea have been widely quoted (Neher 1961, 1962). In both, electroencephalograms (brain waves) of subjects listening to drumming seemed to show auditory driving responses. Auditory driving occurs when a repetitive sound provokes corresponding firing frequencies in the brain. These studies are certainly suggestive, and have been widely quoted as proof, of the neural effects of drumming. Unfortunately, the studies are flawed, and it is impossible to draw firm conclusions from them (Achterberg 1985). Whatever the neural mechanisms may be, however, anyone who has been entranced by music or dancing is well aware of rhythm's powerful potential for affecting states of mind.

With greater training and expertise, shamans may become less dependent on their external aids. They may then be able to enter and remain in altered states without the aid of drumming or other techniques (Arrien 1987). This is, of course, as would be expected if the ability to reach altered states is partly a learned skill.

OVERVIEW OF SHAMANIC TECHNIQUES

Whatever the precise neural and chemical mechanisms involved, it is clear that shamans have discovered a wide variety of psychological, physiological, and chemical aids to modify consciousness. The techniques are simple and were probably first discovered accidentally—perhaps when members of the tribe faced hunger, fatigue, and dehydration in their struggle for existence or accidentally ate psychedelic plants. Because of their pleasurable and valuable effects, the techniques were remembered and repeated. Shamanism was born when the techniques were collected and set within a tradition and cosmology. Thus was established humankind's first road map to transcendent states, the first technology of the sacred, through which would pour the visions of the sacred that have sustained and inspired humankind for thousands of years.

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