

Hallucinogens and Redemption

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Abstract—This article examines drug substitution with regard to hallucinogens (ayahuasca, ibogaine, peyote and LSD) set within the concept of redemption. The model examines both religious and secular approaches to the contemporary use of hallucinogens in drug substitution, both by scientists and in religious settings worldwide. The redemptive model posits that the proper use of one psychoactive substance within a spiritual or clinical context helps to free an individual from the adverse effects of their addiction to another substance and thus restores them as functioning members of their community or group. Data is drawn from the U.S., Brazil, Peru, and West Africa. Two principle mechanisms for this are proposed: the psychological mechanism of suggestibility is examined in terms of the individual reaching abstinence goals from addictive substances such as alcohol and opiates. Neurophysiological and neurochemical mechanisms to understand the efficacy of such substitution are highlighted from ongoing research on hallucinogens. Research by two of the authors with the Uñaio do Vegetal (UDV) Church in Brazil is examined in terms of the model.

Keywords—ayahuasca, drug addiction, drug substitution, hallucinogens, ibogaine, peyote, redemption

Amazing grace, how sweet the sound, that saved a wretch like me,
I once was lost but now am found, was blind but now I see.
It's grace that taught my heart to fear and grace my fears relieved,
How precious did that grace appear, the hour I first believed."

from *Amazing Grace* by John Newton

The practice of drug substitution refers to the use of one substance to obviate and negate the cravings for and withdrawal effects of a second. Methadone is perhaps the best known example. Today, a variety of both natural and synthetic substances are used to these ends throughout the world. Of particular interest are the hallucinogens (which themselves do not cause physical dependence); recent decades have seen the use of these substances to substitute for addictive drugs like heroin, alcohol, methamphetamines,

etc. The hallucinogens that are most frequently used for these purposes include ayahuasca, (a drink usually made from *Banisteriopsis caapi* and *Psychotria viridis*, often together with other plant admixture), ibogaine (obtained from *Tabernanthe iboga*), LSD (a semisynthetic derivative of the fungus *Claviceps purpurea*), and peyote (*Lophophora williamsii*).

Methadone is effective as a substitute because it functions as a pure mu receptor agonist, i.e., it binds to the same receptor sites as heroin (and morphine and codeine), thereby blocking the cell's ability to respond to these opiates (Julien 1998: 294-5). In contrast, other types of drugs that may be substituted for drugs that are damaging to the individual are efficacious because they produce changes in more global psychosocial functioning, thereby aiding individuals in assessing and altering their destructive patterns of behavior and avoiding using those substances which have caused them harm in the first place. To the authors' knowledge, an overall review of the role of hallucinogens in this context has not been done. Moreover, in our estimation, although seldom made explicit, the treatment modalities that underlie most of these efforts utilizing hallucinogens are

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redemptive in both religious and secular ways. The redemptive approach, often not explicitly stated, posits that the proper use of one substance can help to free a person from the adverse effects of their addiction to another substance, thereby restoring them as a functioning member of their community or group.

This article evaluates and documents this phenomenon and highlights current avenues of research as to the possible biochemical mechanisms of drug substitution within religious contexts in the U.S., Brazil, Peru, and elsewhere. The concept of redemption will consider both the Judaic/Christian and cross-cultural perspectives. Additionally, psychological variables such as suggestibility, discussed by Dobkin de Rios and Grob (1994) and Grob and Dobkin de Rios (1992), will be examined in terms of the interpersonal interactions enhanced by the drug effects.

HALLUCINOGENS

The hallucinogens are psychoactive substances capable of inducing shifts in perception, thought and feeling without a concomitant lapse of memory or loss of consciousness. Ruck and colleagues (1979) proposed the term "entheogen," literally meaning "becoming the god that is within," for these substances (see however Dobkin de Rios 1995 for a critique of this term). Historically, many of these substances have been used in formal religious contexts. Studies of both the historical and contemporary use of hallucinogens (e.g., Wasson, Hoffman & Ruck 1998; Stolaroff 1994; Pahnke & Richards 1966) have suggested that the states they induce can have profoundly positive, even life-changing effects upon individuals, often because they provide insights into meaning and psychological dilemmas (see Baker 1994). Since these substances can produce an awesome range of experiences that compare to those of diverse religious traditions, it is only natural that their effects have often been interpreted in religious terms. One of the most important concepts that has been developed to explain the process by which a troubled individual can be (re)integrated into his/her community is redemption. The use of the term in this article focuses on the metaphoric and not the specific religious and historical use of the term.

REDEMPTION

The concept of redemption is central to the Judaic/Christian tradition. Although many people today understand the concept as referring solely to the restoration of a person to a community of believers and the fellowship of God (cf. McBrien 1995: 1090), the original meanings in the Judaic tradition were more mundane. The principle meanings were expressed in two Hebrew roots, *pdh* and *g'l*. *Pdh* pertained to commercial transactions and referred to a payment which was made to secure the release of something, typically an animal or a human. *G'l* was related to family law, and

referred to actions which served to maintain or restore the integrity of the clan. Thus, a *go'el* ("redeemer") was a member of a kin group who acted to prevent damage to or restore the group by, for example, ransoming a relative from slavery, avenging a relative's death, or simply acquiring the property and possessions of a relative which would have otherwise been lost to an outsider (Graetz et al. 1971: 4).

In the Jewish view, God's purpose is to liberate human beings from their woes. Kaplan (Graetz et al. 1971) uses the term salvation instead of redemption to refer to this activity of God. He links redemption with the concept of the other world and writes that until modern times, the Jewish concept of salvation was otherworldly. Salvation in its personal aspect represents faith in the possibility of achieving a personality that is integrated both in itself and within the community. Salvation means deliverance from those evils, external and internal, which prevent man from realizing his maximum potentialities. It is deliverance from frustration. Kaplan argues that redemption is a function of man's control over himself. A redeemed life is a disciplined life. Redemption occurs when man is overpowered by the creator of nature, and it is discovered in the depth of crisis and failure.

As a theological category, the word redemption refers to the saving of Israel from disaster here and now and from its political condition at the end of time. Redemption was thus collective and concerned an entire people. Redemption addresses human hope through reward and punishment; it is the most extraordinary granting of reward and most encompassing rebuke to the triumph of evil in a thoughtful universe. God's care for his creatures is concrete in that the turning of being toward God (the reformation that is at the core of repentance) is ontological. Redemption is thus the ontological bestowal of a divinity grateful that his creatures turn toward him and seek His promise. The beseeching person knows only of existential suffering and despair, but God knows being and the situation of being. What is for the human race the search for redemption out of trial and despair is for God the repositioning of Himself in the direction of being; repentance and turning is in God's ordering of things a revaluation of the human condition of being in the world (see Smith 1995; Cohen 1987).

The English word, redemption, is derived etymologically from the Latin, *redimere*, which means "to take, buy back" (Agnes 2000: 968). This term is also used to refer to transactions designed to reacquire something or someone that was previously owned, but it acquired a deeper significance within the Christian tradition. There it was related to the concept of original sin and used to describe the restoration to God's kingdom that is entailed in the acceptance of the Gospels. Thus, the Christian concept refers not to a commercial transaction but to a religious act which frees a person from the burden of original sin, thereby restoring

him to the fellowship of God. The Christian concept includes divine compassion leading to active succor on behalf of those oppressed and unable to help themselves (see Richardson & Bowden 1983).

The Christian notion, then, is that mankind requires redemption owing to the guilt of original sin, which is incurred by every person as a consequence of Adam's disobedience in Eden. For Christians, man's need for redemption arises from the realization of his solidarity with the progenitor of the human race and humankind's rejection of God, and his own personal ratification of this spiritual alienation from God by personal sin. The deliverance from sin and the recovery of man's lost relationship of community with God and his fellow men are two aspects of the one redemptive experience of mankind. In Catholic thinking, such redemption can only be attained through the reconciliation to God that can only be effected by Christ (McBrien 1995: 1090). While Catholics and Protestants may disagree about the relative values of grace, good works or predestination, both are in agreement about the central role which Christ plays in the redemption of humanity (Murray 1979).

Such concepts, of course, are foreign to Jewish thinkers (see Graetz et al. 1971). Nevertheless, both the Jewish and Christian traditions recognize that humans will, at least occasionally, require outside help to (re)acquire full status within their community (however construed). Because of the manifold ways in which humans have felt themselves to be confined, oppressed, threatened, or doomed, the prospect of redemption has captured the human imagination and has been defined with respect to a wide variety of negative conditions and positive outcomes.

Thus, redemption has never been solely a religious concept and it is still used in connection with commercial transactions. Webster's (Agnes 2000) current definitions include "to free from a lien by payment of an amount secured thereby," to remove the obligation of by payment" and to "convert into something of value." Other definitions more pertinent to the present discussion include "to free from what distresses or harms," "to extricate from or help to overcome something detrimental," and "to change for the better."

Eliade (1987), speaking from the perspective of comparative religion, argues that it is redemption which makes it possible to regain paradise lost, the primordial blissful state. In Judaism the concept of redemption is closely associated with repentance; in Christianity, with the idea of asking God for forgiveness. In mystical religions, there are three main ways of redemption: through illumination, as in Zen Buddhism; through a dispelling of ignorance of the Gnostic type as in Islam; or through membership and participation in the community as in the Bwiti cult. In more secular types of religiosity, humans can redirect the libido and reorder the soul's powers towards a more harmonious use of the personality, which may mean either a widening

or narrowing of consciousness. In African traditional religions, the need for redemption is expressed in myths of ransoming the individual from deadly misfortunes caused by the spirits of the departed. Redemption is more directed toward the reintegration of the cosmic, social and political order in the present moment of the community than toward the afterlife, in spite of the general belief in immortality.

Viewed from a broader cross-cultural perspective, redemption can thus be seen as a process which entails freeing someone or something from a less than desirable state and bringing or restoring them to a desired state. Religious and nonreligious interpretations of the concept may differ in terms of what these nondesirable and desirable states are, but they are in essential agreement to the extent that they refer to a change of status that is in the best interests of the person or persons involved. Although the specific cases that will be examined differ with respect to how they define and evaluate these states, the commonalities in these approaches reflect the more general understanding of the concept of redemption that underlies the thesis of this article.

SUGGESTIBILITY AND HALLUCINOGENS

Grob and Dobkin de Rios have published two papers on hallucinogens, suggestibility and adolescence in cross-cultural perspective (Dobkin de Rios & Grob 1994; Grob & Dobkin de Rios 1992). They show that plant drugs like *pituri*, *Tabernanthe iboga*, and *Datura* create altered states of consciousness in which factors of suggestibility either explicitly or implicitly provoke cultural dramas for many tribal societies to help them socialize and orient their youth. The use of hypersuggestibility as a cultural technique to normalize and enculturate youth in certain tribal societies is important to understanding what the authors have called "managed altered states of consciousness." Elders explicitly inculcate cultural values and norms in adolescents by managing the plants' drug-inducing properties. In doing so, they provide youth with a fast-paced educational experience which serves to teach values, beliefs and religious tenets, as well as a reinforced sense of cultural identity.

There is a large psychological literature on suggestibility as a normal psychological mechanism. Simon's (1990) concept of bounded rationality is also useful here. He examines the selective advantage of docility from a cultural evolutionary perspective. Simon sees suggestibility as an adaptive device that affords the individual the capacity for denial, illusion and false or overly optimistic beliefs, thereby enabling that person to cope with stress and situational conflicts. In this way, an overall psychological and biological homeostasis can be maintained which confers crucial survival advantages. Schumaker (1991) also argues that humans have evolved as suggestible animals because of their survival needs. Suggestible states allow one to transcend reality, to create social cohesion, and to

permit social control, emotional discharge, and a flight from the self which is useful as an escape from trauma and irreconcilable conflict. At a cultural level, suggestibility and altered states of consciousness contribute to psychological well-being and identity as well as cohesion and unity (see Bourguignon 1973). Insofar as hallucinogens enhance suggestibility, and insofar as religious or therapeutic interventions provide a moral path for the individual, then the hallucinogenic experience can play a major role in a redemptive explanation for such culturally based use.

Examples of redemption through the use of hallucinogens will now be examined in four areas of the world: among Navajo Indians (members of the peyote cult); in Brazil (with the ayahuasca church, União do Vegetal); in West Africa (with the Bwiti Cult and iboga); and in North America (with the use of LSD to treat alcoholism until the early 1960s). It is important to note that in anthropology, the term "cult" (which is used to characterize the Bwiti and Navajo religions) is defined as an institution that comprises a set of rituals that all have the same general goal, that are all explicitly rationalized by a set of similar or related beliefs, and are all supported by the same social group (Wallace 1966). The term cult in anthropology does not carry the same pejorative usage as it does in contemporary Euro-American religious groups.

THE NATIVE AMERICAN CHURCH, PEYOTISM, AND THE TREATMENT OF ALCOHOLISM

The use of peyote, an hallucinogenic cactus, originated in Central Mexico and spread to south Texas by the 1800s. The Native American Church is currently the largest pan-Native American religion in North America. It focuses on holistic health and harmony with nature, and the sacrament of peyote ingestion is seen as a powerful treatment for alcoholism. As Halpern argues (1996:177), there is a need for more rigorous adherence to a double-blind, placebo-controlled design in the study of Native-American peyote use. Nonetheless, much has been written about this Church and the role of peyote in the treatment of alcoholism.

Native Americans believe that their medicine will allow them to see the truth about their lives, and the peyote spirit will give them guidance and direction. Winkelman (2000, 1996) called these substances psychointegrator plants—those which integrate mind, body, spirit and emotion in a safe, socially sanctioned religious setting.

Peyote makes individuals more susceptible to suggestion and cathartic expression, and breaks down the denial system. Studies have shown the positive effects of peyote on mental, physical and social well-being (Bergman 1971). Even Karl Menninger (1971: 55) wrote that peyote was not harmful to Native Americans, but was "beneficial, comforting, inspiring and spiritually nourishing." Based on his review of numerous studies, Menninger commented that "it [peyote] was a better antidote to alcohol than anything

the missionaries, the White man, the American Medical Association and the Public Health Services have come up with" (Menninger 1971). The severity of alcoholism within the Native American population is shown by the fact that deaths related to alcoholism are four times higher than the national average. Suggestibility may be at work in the context of Native American Church ritual using peyote, and may support accounts of positive effects that have been observed. Early reports as well as recent studies document this observation of the possibility of suggestibility being used (Calabrese 1997; Halpern 1996; Pascaro & Futterman 1976; Albaugh & Anderson 1974).

Peyote meetings are powerful rituals that promote introspection and group interaction via three elements: (1) the presence of a powerful leader or guide; (2) the actual ritual or group marathon session; and (3) the psychotropic substance that is used as a nonspecific facilitator. Subjects report altered states of consciousness which provide a fast-paced educational experience and assist youths in learning community values, beliefs and religion. Peyotism is a spiritual approach to facilitating a sense of identity, groundedness, connection and belongingness. During peyote rituals, it is common to hear testimonial accounts of various physical and emotional maladies being lifted by the healing powers of the ceremony. Meetings are organized for those in need of healing from drug and alcohol addiction, with great success reported. The search for redemption is frequently the personal motivation for change. There is a support group of fellow participants. Self worth is retrieved. A new "family" whose lives become intertwined is established.

AYAHUASCA AND THE UNIÃO DO VEGETAL

Since prehistoric times, ayahuasca has been used in South America to ascertain the causes of illness, locate lost or stolen objects, as a healing tool to communicate with the spirits of animals and plants, to allow the shaman to travel into realms normally invisible, and to initiate people into their tribal cultures. Thus, it has always served socially integrative and world-sustaining functions.

The ayahuasca drink is made by boiling the stems of the *Banisteriopsis caapi* vine together with leaves of *Psychotria viridis*. Other admixture plants are often included. The *Banisteriopsis* stems contain the β -carboline harmine, harmaline, and tetrahydroharmine while the *Psychotria* contains N,N-dimethyltryptamine. The β -carboline serves to inhibit the production of the gastric enzyme monoamine oxidase, which is normally able to break down and inactivate the tryptamines while still in the gut. In this way, the tryptamines are able to enter the circulatory system and penetrate the blood-brain barrier, thereby producing the vision-inducing effects. Widely used in the Amazon, ayahuasca was taken up by mestizos living near tribal peoples. They adapted it for their own needs,

frequently mixing native contexts of use with nonnative elements (Dobkin de Rios 1972). This has resulted in a number of different movements that have incorporated ayahuasca into their doctrines and activities. Today there are several ayahuasca churches which combine traditional, African and Christian elements in their patterns of use.

One of these new churches, the Brazilian União do Vegetal (UDV) was founded in 1961 by Jose Gabriel Costa. It was primarily responsible for the legalization and continuing legal status of ayahuasca for use in religious contexts in Brazil. Members ingest in the range of 100 ml. of a tea made from *Banisteriopsis caapi* and *Psychotria viridis* (with no other admixtures) twice a month. Today the UDV numbers more than 7,000 members in 60 *nucleos* or churches. Members care for the Church's sick and elderly, provide food and shelter for women and children and are actively involved in many ecological projects. Since 1987, the Brazilian government has allowed this substance's use within the context of a religious ritual.

UDV adherents call ayahuasca by its Portuguese name, *hoasca*. In a pilot study conducted by an international multidisciplinary team of investigators in the early 1990s (Callaway 1999; McKenna, Callaway & Grob 1998; Dobkin de Rios 1996; Callaway et al. 1994), a group of ayahuasca-using subjects were studied in comparison with a nondrug-using matched group. Many of the subjects reported a variety of pervasive dysfunctional behaviors prior to their entry into the church. Eleven subjects reported having a history of moderate to severe alcohol use prior to entering the Church, and five of them reported episodes of binge drinking associated with violent behavior. Two had been jailed because of their violence. Four subjects also reported having abused other drugs, including cocaine and amphetamines. Eight of the 11 subjects with prior histories of alcohol and other drug use and misuse were also addicted to nicotine at the time of their first encounter with the UDV and ritual *hoasca* use. Additional self-descriptors used for the period prior to entry included impulsive, disrespectful, angry, aggressive, oppositional, rebellious, irresponsible, alienated and unsuccessful.

Semistructured life story interviews revealed that 11 of the 15 subjects felt that the ritual use of *hoasca* had a profound impact on the course of their lives. Many reported the common theme that while in the induced altered states of consciousness, they saw themselves on a self-destructive path that would lead to their ruin and even demise unless they radically changed their personal conduct and orientation. Many reported that while they were in the throes of a nightmarish visionary experience they would encounter the founder of the UDV, Gabriel da Costa, who would then deliver them from their terrors. The subjects reported that their lives had gone through profound changes since entering the UDV. In addition to discontinuing alcohol, cigarettes and other drugs, they emphatically stated that their daily conduct and orientation to the world around them had

undergone radical restructuring. They practiced good deeds, watched their words, and had developed a respect for nature. Overall, the subjects reported that they had gained a profound sense of meaning and coherence in their lives.

Investigators found that an appreciable percentage of the long-term *hoasca*-using subjects had alcohol disorders prior to their initiation into the *hoasca* church. All alcohol disorders had remitted without recurrence after entry into the church. All 11 of the group of 15 ayahuasca-using subjects with prior involvement with alcohol achieved complete abstinence shortly after their affiliation with the UDV. De Rios, in an unpublished interview with 12 *mestres* (religious leaders/elders of the church) in Manaus, Brazil in 1997, found this pattern to hold among most of the religious functionaries in the UDV Church according to their self-reports.

Since the era of the 1930s in Brazil when Vargas was president, the traditional rural agrarian economy has been replaced by a technologically-oriented, urban industrial one, causing massive dislocations and the migrations of large numbers of unemployed rural persons to urban centers in search of jobs. Urban life has severely weakened large extended family systems (Freyre 1959). In the midst of this sociocultural transformation, socio-psychological stress became widespread as individuals attempted to cope with new and disruptive problems in their environment. Drug abuse, for example, has become rampant in large Brazilian cities like Manaus, Sao Paulo, Rio de Janeiro and elsewhere. This same period also witnessed a rise in new religions or sects such as the UDV and the growth and proliferation of older ones, such as Umbanda and Candomble, to help individuals solve their personal difficulties. These syncretic religions began to emerge during the early period of modernization in the 1920s, while newer religions like that of the UDV date to the late 1960s. The UDV may thus be seen as one attempt to restore personal, family and social stability in a rapidly changing world (see Grob 1999).

Of course, these profound social changes have not been limited to Brazil alone, but are occurring throughout the world. As a result, ayahuasca has also been adapted into other contexts of use not associated with any particular religion. One example of such secular ayahuasca use comes from Takiwasi, a therapeutic community in Tarapoto, Peru. Here, a group of French and Peruvian psychiatrists, psychologists and anthropologists use ayahuasca to treat drug addicts, particularly those addicted to cocaine paste (an intermediary product between coca leaf and synthetic cocaine). Addiction to this preparation has become rampant among the poorer river-edge and urban poor populations of the region. In the Upper Huallaga River region, an area of high cocaine production, the number of addicts has been growing. In recent decades, ayahuasca healers have been called upon to treat these addicts with ayahuasca (see Mabit, Campos & Arce 1992; Mabit 1988). Takiwasi is an experimental center devoted to treating drug addicts using

Amazonian medicines. The local healers explain that psychoactive plants are not only a mixture of chemical substances but are living entities with a spirit that can cure if respected or kill if abused. Takiwasi professionals argue that their program helps patients overcome their addiction and enables them to modify their state of consciousness without damaging themselves, in order to gain a more spiritual outlook on their life and to gain strength and faith. In contrast to generally accepted principles of Western-oriented psychotherapy (but entirely within the shamanic tradition of ayahuasca use), both therapists and patients take the drug. The Center treats 15 to 20 patients at a time, and they try to motivate their patients to abstain from drugs of abuse. They utilize purges to induce vomiting as a form of detoxification for their clients from drugs to which they are addicted and other toxic compounds they may have ingested. These include a group of plants such as Camalonga (*Strychnos* spp.).

IBOGA

Another important drug with redemptive overtones is ibogaine, used by the Fang peoples of West Africa as part of a syncretic ancestor-worship religion (see Dobkin de Rios 1984). Ibogaine is an indole alkaloid occurring in the root bark of the *Tabernanthe iboga* plant. The root bark containing a dozen or more alkaloids is consumed in huge quantities (60 times the threshold dose) during Bwiti ceremonies in Gabon and the Cameroons. Some fatalities following extremely high dosages have been reported by anthropologists and in local terms, the use of the drug is symbolically described as "cracking the skull." In puberty initiation rites, the initiate is fed iboga until he either has a vision of his ancestors or dies, whichever comes first (see Dobkin de Rios 1984).

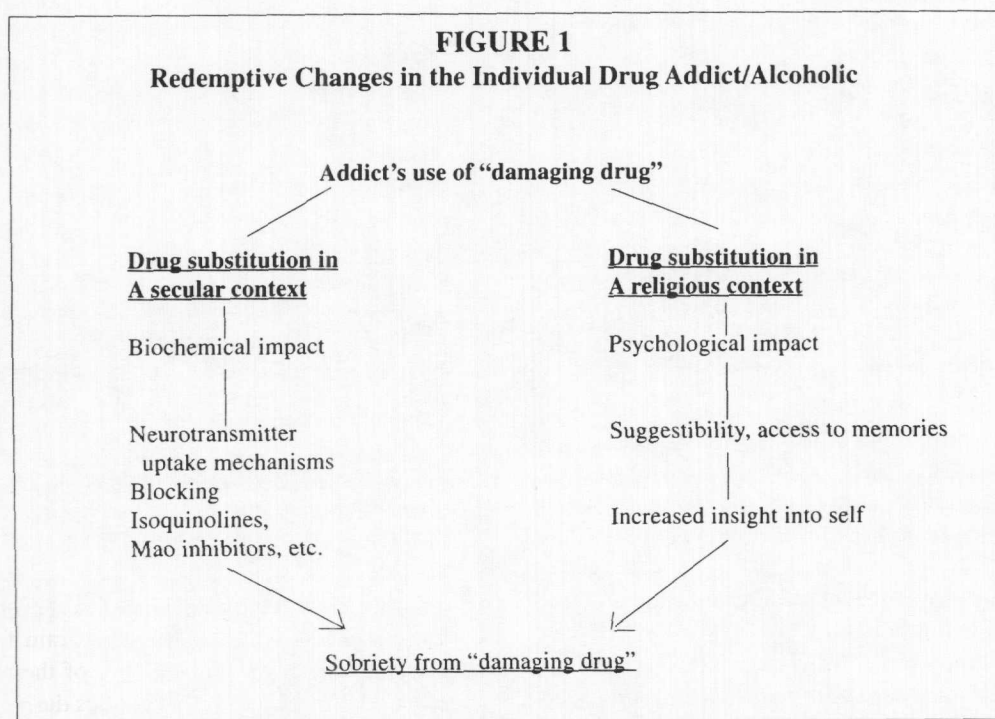
When used in Western clinics with drug-addicted participants, these huge doses give rise to lucid visions and the emergence of repressed memories. Clinical reports on essential loss of opiate craving and the absence of withdrawal are found in the drug-substitution literature (Luciano 1998; Mash 1996, 1995; Sheppard 1994). The ibogaine treatment (where low doses of ibogaine are given to subjects and where physiological responses are measured) visibly alleviates morbidity and appears to remove addicted individuals' desire to seek and use narcotics.

Mash (1996, 1995), a major proponent of ibogaine drug substitution for opiate addiction, suggests a mechanism for the substitution effect, which is a placebo effect enhanced by suggestibility. From a religious/metaphysical perspective, the hallucinogenic experience causes a sense of death and subsequent rebirth, allowing the user to return to a new beginning. The physical effects of vomiting also provide a sense of cleanliness and renewal to the individual (see also Popik 1996).

In Western societies, ibogaine has been primarily used to induce a temporary interruption in drug abuse which gives the individual the opportunity for reflection and self appraisal. This is most helpful for those who have lost control of their addiction. Mash's University of Miami ibogaine research team (1996, 1995) worked with this drug for three years in preclinical and clinical studies and showed diminution of cravings for opiates by addicted subjects. Anecdotal reports (De Rienzo & Beal N.D.) concerning an international coalition of addict self-help groups stated that the drug decreases signs of opiate withdrawal and reduces drug cravings for cocaine and heroin. However, Mash points out that there are some important questions about the safe dosage range for ibogaine as well as possibilities of gender differences in the way the drug is metabolized.

LSD AND PSYCHOTHERAPY FOR ALCOHOLISM

LSD, a semisynthetic compound developed by Albert Hofmann in 1938, derives from a grain fungus; it is included in this discussion because of the redemptive role which it played for many alcoholics during early research in the 1950s and 1960s. The history of LSD research makes it clear that in spite of attempts to use alternative theoretical hypotheses, a redemptive explanation ultimately became the operating paradigm. Initially LSD was thought to produce a "model psychosis," and many physicians and nurses experimented with the drug in order to gain a better understanding of their schizophrenic patients. It soon became clear, however, that the experiences elicited by LSD were quite varied, ranging from the terrifying to the extraordinarily positive and profound (see Baker 1994). Attempts to compare the effects of LSD to those of such alcohol-induced psychotic states as delirium tremens demonstrated a strong distinction in the subjective experiences of each. Delirium tremens subjects reported predominantly negative effects such as anxiety, horror, depression, and paranoid thoughts, while LSD subjects tended more to describe their experiences as euphoric, humorous, relaxed, mystical and wondrous (Ditman & Whittlesey 1959). Two approaches to therapy with LSD developed. European researchers utilized the psycholytic approach which was designed to loosen or dissolve tensions and conflicts within the psyche. Many hundreds of patients were given a series of relatively low dose LSD sessions (between 100 and 500 mcg.; Grof 1976). Grof argued that these psycholytic ("mind-loosening") sessions made it possible for patients to more rapidly work through and resolve the material responsible for the person's alcoholism. In contrast, North American researchers and therapists developed what became known as "psychedelic therapy," which typically consisted of a singular high-dose session. Its basis was the realization that many people who ingested LSD, whether in clinical or nonclinical settings, had experiences of a



mystical/religious nature that led to long-term improvements in their attitudes and functioning. The psychedelic approach was thus designed to bypass entirely the psychic conflicts that had produced a patient's clinical problems and elicit an exalted state. This therapy typically consisted of a single LSD session together with pre- and post-session discussions with the therapist. The actual drug session, during which an overwhelming dose (between 400 and 2000 mcg.) was administered, was explicitly intended to produce a type of religious experience. Patients were encouraged to reassess their beliefs, the ways in which they interacted with others, and their value systems.

A number of researchers worked with alcoholics using these two paradigms. Reviewing this work, Albaugh and Anderson (1974) found that the numbers of improved patients varied considerably, depending upon the investigators, the research design and the patients involved (see also Smart and Storm 1964). There were different definitions of improved, with some researchers accepting only complete abstinence and others moderation. Grof (1973:44) working in Czechoslovakia, found that psychedelic (rather than psycholytic) therapy was more useful for treating alcoholics and drug addicts, although he admitted that the reasons for this were not understood. Grof, however, did argue that compared to the states they experienced with alcohol and other drugs of abuse, the addicts who had a transcendent response to LSD were far more likely to demonstrate a sustained improvement in their overall condition and to remain abstinent.

In spite of the equivocal nature of the findings, many researchers found the results promising, especially when

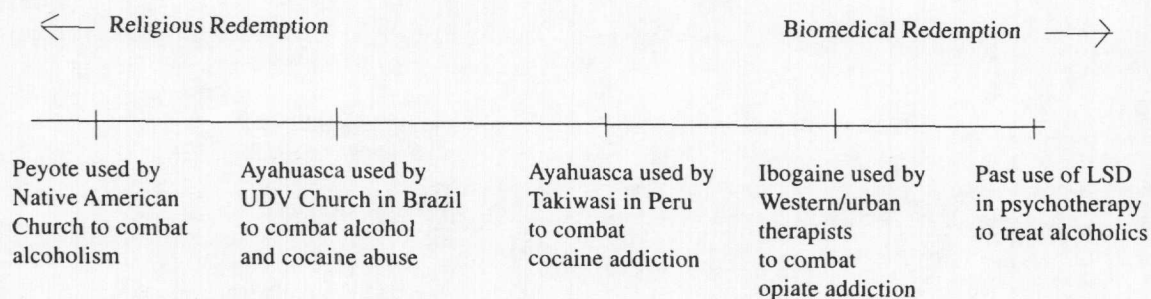
compared to the outcomes of other treatments for alcoholism. However, the classification of LSD as a Schedule I drug in the U.S. in 1965 effectively curtailed all research with human subjects until small-scale research was once again permitted in the 1990s.

REDEMPTIVE PATHWAYS

Having reviewed some examples of hallucinogens and redemption, we would like to examine these redemptive changes in the individual drug addict/alcoholic. Figure 1 outlines two redemptive pathways, one of drug substitution in a secular or scientific context, and the other of drug substitution in a religious context.

Figure 1 shows that with drug substitution in a secular context of analysis, the bio- and neurochemical dynamics are much more central than the psychological effects of suggestibility, access to early memories within a psychodynamic framework, and increased insights as stressed in the religious context. While the secular hypothesis is reductionist and argues, for example, that the effects are due to the blockage of neurotransmitter uptake mechanisms, the religious/psychological hypothesis tends to stress either humanistic achievements or divine guidance as mechanisms of change. In both cases, however, sobriety from the addictive drug which has caused disequilibrium to the individual in his/her social context is the ultimate goal. Figure 2 shows these redemptive pathways in a continuum, from a purely religious to strictly biomedical approaches.

FIGURE 2
Redemption and Hallucinogens: Contemporary Examples*



*This is shown as a continuum of redemptive pathways. Depending on the context, some redemptive processes will tend to emphasize psychosocial factors, and others biochemical factors. However, both are important for understanding any type of redemptive process that utilizes hallucinogens.

Possible Bio- and Neurochemical Explanations for Drug Substitution

Kenneth Blum, in a 1977 article in *Clinical Toxicology*, lays out a possible rationale for the addiction blocking qualities of the hallucinogen, peyote (Blum, Futterman & Pascarosa 1977). He speaks of isoquinolines, which are metabolites of peyote that are identical to the metabolites produced by heroin and alcohol. Blum believes there is a connection between peyote and its use as an addictive blocking treatment for alcoholism (see Blum et al. 1978). Isoquinolines and endorphins are two main substances studied in the past 20 years that may shed light on the interruption of addiction with such substances as alcohol, opiates, stimulants, nicotine, etc.

Grob, McKenna and Callaway (1999) have speculated that findings from their study indicate ayahuasca use may lead to serotonin up-regulation which may result in an antidepressant efficacy.

As mentioned earlier, Winkelman (1996: 210) has argued for the role of hallucinogens as psychointegrator plants that have therapeutic benefit. He points out common chemical similarities between these plants such as blocking serotonin reuptake, disinhibiting mesolimbic temporal lobe structures and permitting the emergence of synchronous brain discharge. These substances inhibit the regulation of visual centers by the raphe cells and produce visual hyperactivity or visions. A parasympathetic dominant state is induced. For Winkelman, the substances have sensory, behavioral, emotional, and cognitive effects. He argues for the psychological integration not only of the mind, but the soul and spirit. Certainly, as LaBarre (1972) pointed out, there has been a role for these substances as progenitors of religion. From a cross-cultural perspective, the hallucinogens alter experience by shifting awareness to an experiential domain often interpreted as sacred. What still remains to be studied are the interactive effects of these nonaddictive, prosocial substances as they substitute for the

addictive ones. The conceptual framework of redemption which this article introduces offers a powerful tool for approaching these questions.

The Absolute Unity of Being

A concept proposed by Laughlin, McManus and d'Aquili (1992) called the "Absolute Unity of Being," (AUB) refers to a psychological state during which all perception of multiplicity of being is eradicated. Reality is perceived directly as one. This is accompanied by a profound and intrinsic sense of underlying unity, beauty and goodness. In this state, there is a direct apprehension of absolute unity (Newberg, D'Aquili & Rause 2001). Such states are often achieved under the effects of hallucinogens. The person subsequently reflecting on this state does not perceive it as an illusion, hallucination, or delusion, but rather as a fundamental reality which underlies all other reality. The universe is perceived as a whole, with a sense of wholeness, goodness and purpose to it. After the experience, this state is most often interpreted as God or union with God. In the Buddhist context it is seen as a void.

A major factor that D'Aquili (1982) discusses in his article on senses of reality in science and religion is that death is no longer to be feared. Even if only a few members of the group experienced the freedom from fear of death, this factor may have been adaptive for large groups in minimizing clinical depression when famine and lack of hunting success prevailed in particular ecological contexts of early hunter/gatherers (see Dobkin de Rios 1999). Laughlin, McManus and D'Aquili (1992) also argue that there is an emotionally integrative consciousness side by side with our rational and analytic selves and this has implications for religious intuition. The authors even suggest that the right hemisphere produces a rush of emotion and communicates a powerful sense of the validity of the pattern perception without being broken down via a left-hemispheric analytic process that distorts the original

message. These experiences are frequently interpreted as absolutely transcendent, or in some sense ultimate or beyond ordinary experience. The concept of redemption as provoked by an hallucinogenic experience easily fits at this point of analysis. If the culturally valued psychological experience occurs with the goal of redemption and within the effects delineated by these authors, then there is a kind of selection at work that helps individuals adjust to their reality by means of the sacramental experience.

Senses of reality in science and religion differ. Science as a subset of general human problem solving arises from a baseline sense of reality, the sense of multiple discrete beings with regular relationships and neutral affect. Religion arises from other primary states. The most fundamental of these states focuses on the faith of believers and their testimony of witnessing the absolute unitary being. This affirms to most people that their lives are purposeful, the world is purposeful and there is no reason to fear death. The world's great religions arise from this premise (Weinberg et al. 2001). In this article, the authors argue that such experiences often lead to the extinction of self-destructive life style patterns, and they can be produced by endogenous agents for just this purpose.

Laughlin, McManus and D'Aquili (1992) are neuro-anthropological in their approach to their concept of the Absolute Unity of Being. They argue for a holistic operator which they locate in the parieto-occipital region of the brain and which creates an increasing sense of wholeness that becomes progressively more dominant over the sense of multiplicity characteristic of baseline reality. Cultures differ in the way they seek out and reinforce the activation of the holistic operator and the attainment by their constituents of ecstatic and blissful states. Such states are often referred to as "trance states." An admittedly vague term, trance states are commonly employed in traditional societies of the world where they are coded as religious-spiritual experiences that involve a sense of the unity of reality. They can be provoked by hallucinogens, dance, olfactory stimulation, extreme fasting, electrolyte imbalance, meditation, etc., but the final outcome, according to these authors, is the stimulation of the holistic operator and the subjective experience of increased unity over multiplicity. When a person is in the AUB state, he or she loses all sense of discrete being and the difference between the self and other is obliterated. There is no sense of the passing of time, and all that remains is a perfect timeless undifferentiated

consciousness. When there are positive emotional feelings, this experience is often described as personal union with God. When the experience is accompanied by neutral emotion, it tends to be described after the fact as impersonal, as a void, or the nirvana of Buddhism. Sometimes the experience is interpreted personally as God or impersonally as the Absolute. It possesses a quality of transcendent wholeness which creates a balance between analytic and synthetic or gestalt perception. According to D'Aquili (1982), in this increased perception, the universe is seen as essentially unitive and purposeful, despite the perception of evil in the world. In trance states, the increased sense of unity obliterates the boundaries between the perceived entities in the external environment and between self and other. Trance states, which exist in varying degrees of intensity from a mild blurring of boundaries at one end to merging towards wholeness, depending on their intensity, can be experienced as beauty, numinosity, religious awe or religious exaltation which merges into the state of absolute unitary being. There is nothing but a timeless and perfect sense of meaning and wholeness without any perception of discrete entities.

CONCLUSION

This article has looked at the contemporary use of plant hallucinogens as vehicles of personal redemption. It appears that one drug, through a combination of both neurophysiological and psychocultural factors, can effect the distancing of an individual from the use of another more distressing substance. This, in turn, can lead the individual to readopt attitudes and behaviors which are more acceptable to his/her social group, leading to a reintegration or redemption within that individual's social milieu.

It has also presented examples of the substitution of certain plant or synthetic hallucinogens to obviate the noxious and addictive effects of other substances, and (particularly in modern times) to motivate individuals to forego the "damaging drug" as well as to give meaning and direction to enhance their lives. The search for meaning is an important variable in human affairs. It is interesting to see the direction drug substitution is taking today. As research in this area continues, it is important to note how different cultures, both modern and traditional, have recognized the universal importance of the hallucinogenic-aided redemptive process in bringing wayward individuals into harmony with their fellows.

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