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Ethnobotanical Contributions to Medical Anthropology

Beiträge aus der Ethnobotanik zur Medizinethnologie

- Ayahuasca in Urban Circuit
- Peyote as Medicine
- Entheogens in Focus
- Ethnobotanical Title Pictures in *Curare*

- Die Ayahuasca-Liane
- Der Peyote-Kaktus
- Entheogene

WVB

Zum Titelbild/Front picture *Curare* 37(2014)3:
Nothofagus antarctica (G. Forst) Oerst [antarktische Scheinbuche]. Detail of a Herbal Specimen of the Georg Forster Collection, by courtesy of "Herbarium, Botanischer Garten und Botanisches Museum Berlin-Dahlem, Freie Universität Berlin" © see complete document and more p.179f.

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The famous wooden carved anthropomorphic Mandragora figures of "The grete herball" from Peter Treveris, London 1526, which were used frequently as logo in AGEM-publications.

Peyote as Medicine: an Examination of Therapeutic Factors that Contribute to Healing

Kevin Feeney

Abstract The therapeutic value of particular "hallucinogenic" plants is recognized by various cultures throughout the globe, with evidence suggesting that the medical and ritual use of these plants may date back several millennia in some instances. Peyote, a psychoactive cactus, is considered a medicine by many Native Americans, and has been hailed as a cure for alcoholism despite having no "scientifically" accepted medical use. The notion that hallucinogenic compounds may have therapeutic applications, however, is increasingly supported by scientific research. Despite the heavy focus of allopathic medicine on pharmacology, the therapeutic value of peyote must be understood in holistic terms. By uniting Gordon Claridge's work on the *Total Drug Effect* with the work of Daniel E. Moerman and Wayne B. Jonas on the *Meaning Response*, and with Toksoz Karasu's *Agents of Therapeutic Change*, a therapeutic model emerges that can explain how the symbolic, ritual, and community components of the peyote ceremony combine with peyote's distinctive pharmacological properties to produce a unique and efficacious healing experience.

Keywords peyote – placebo effect – meaning response – symbolic healing – set and setting

Peyote als Medizin – Eine Untersuchung therapeutischer Faktoren auf Heilprozesse

Zusammenfassung Der therapeutische Wert einiger „halluzinogener" Pflanzen ist bei verschiedenen Kulturen rund um den Globus bekannt. Wissenschaftliche Erkenntnisse deuten darauf hin, dass die medizinische und rituelle Verwendung solcher Pflanzen in einigen Fällen mehrere Jahrtausende zurück reicht. Peyote, eine psychoaktive Kaktusart, gilt unter vielen Indigenen in Mittelamerika als eine anerkannte Medizin, die Erfolge bei der Heilung von Alkoholismus verzeichnet, wobei diese von der Wissenschaft vielfach nicht anerkannt werden. Allerdings findet der Gedanke, dass sich halluzinogene Präparate therapeutisch anwenden lassen, zunehmend Eingang in die Forschung. Trotz des starken Fokus der Schulmedizin auf die Pharmakologie muss der therapeutische Wert von Peyote ganzheitlich betrachtet werden. Ergänzt man Gordon Glaridges ältere Schrift über den *Total Drug Effect* mit dem Werk von Daniel E. Moerman und Wayne B. Jonas zum Placeboeffekt und *Agents of Therapeutic Change* von Toksoz Karasu, so erhält man ein therapeutisches Model, das erklären kann, wie sich die symbolischen, rituellen und sozialen Komponenten des Peyote-Rituals mit den spezifischen Eigenschaften dieser Kaktusart kombinieren lassen, um einen einzigartigen und erfolgreichen Heilprozess zu erzielen.

Schlagwörter Peyote – Placebo-effekt – Meaning Response – symbolisches Heilen – Set und Setting

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Introduction

The therapeutic value of particular "hallucinogenic" plants is recognized by various cultures throughout the globe, with evidence suggesting that the medical and ritual use of these plants may date back several millennia in some instances (Schultes & Hofmann 1992). Peyote (*Lophophora williamsii* (Lem.) Coult.), a psychoactive cactus occurring only in the United States and Mexico, is just one example of such a plant. Archaeological evidence suggests that the unique properties of peyote have been recognized and revered by indigenous Americans for thousands of years (El-Seedi *et al*. 2005, Terry *et al*. 2006), and modern peoples continue to use the cactus as a religious sacrament, including the Huichol, Tarahumara, and members of the Native American Church (NAC). Among Native American peyotists (adherents of the peyote religion) peyote is considered a sacrament and a deity, and is highly regarded as both a physical and spiritual medicine.

Belief in peyote's healing properties is emphasized by the prevalence of terms used for peyote, found among the numerous different languages spoken by peyotists, which roughly translate as

"medicine."[1] Perhaps the most well-known therapeutic application of peyote is in the treatment of alcoholism (ALBAUGH & ANDERSON 1974, GARRITY 2000, HILL 2013, KUNITZ & LEVY 1994, PASCAROSA & FUTTERMAN 1976), for which it has developed a substantial reputation among Native Americans. Interestingly, use of peyote on the Navajo Reservation for the treatment of alcoholism is recognized and sanctioned by Indian Health Services, a division of the U.S. Department of Health and Human Services (KUNITZ & LEVY 1994: 202), despite being listed in the United States as a Schedule I controlled substance—a categorization signifying drugs with no medical value and a high potential for abuse (CONTROLLED SUBSTANCES ACT 1970).

The notion that hallucinogenic compounds may have therapeutic applications is a foreign concept for most in the West; however, it is a notion that is increasingly supported by current scientific research (GROB *et al*. 2011, HENDRICKS *et al*. 2014, MORENO & DELGADO 1997, MORRIS 2008, SEWELL *et al*. 2006, WINKELMAN & ROBERTS 2007). For peyotists, the health benefits of peyote when used in ceremony are above all psycho-spiritual and primarily used to address issues of an emotional, psychological, or behavioral nature (CALABRESE 2007, HILL 1990), though peyote may also be used to treat a variety of physical ailments, including: bruises, burns, snakebites, fever, pneumonia, tuberculosis, rheumatism, and venereal disease (LA BARRE 1947, SCHULTES 1938). While a precise understanding of the mechanisms that contribute to peyote's therapeutic efficacy has not been conclusively outlined,[2] studies so far support the purported benefits of peyote, when used within a traditional ceremonial context (ALBAUGH & ANDERSON 1974, CALABRESE 2013, GARRITY 2000, KUNITZ & LEVY 1994, PASCAROSA & FUTTERMAN 1976).

Despite the heavy focus of Western biomedicine on pharmacology, the therapeutic value of peyote must be understood in holistic terms; accounting not only for pharmacology, but also examining context and meaning in the healing process. It is my aim to outline a model of therapeutic action that accounts for both pharmacological and extra-pharmacological factors in order to explain the efficaciousness of peyote ceremonies in treating alcoholism, as well as other afflictions of both a physical and psycho-spiritual nature. Before delineating this model, however, it is necessary to provide a context for understanding health and wellness in a manner that goes beyond the narrow parameters typically employed by Western biomedical models.

Understanding Health & Wellness

Over the past century Western medicine has come to be dominated by an almost singular focus on drug treatment as a medical model. While there is still space for psychotherapy, medical conditions like depression, which have traditionally been relegated to the realm of talk therapy, are increasingly being treated with psychiatric medications. Although pharmacologically active substances can act as powerful medicines, the overwhelming import on drugs comes at great cost to relational interaction, emotional involvement, individual responsibility, and personal meaning in the healing process. Even though the biomedical model, with its Cartesian Dualism, is distinctive among the world's medical systems, it is one that is firmly entrenched in the West, and one that is also encroaching upon other, more holistic, ethnomedical models. With the increasing infringement and pressure on traditional ethnomedicines it is necessary to understand where the biomedical model falls short, and to understand how and why some ethnomedical models succeed in areas where the biomedical model breaks down.

Typically, explanations for compromised health in the biomedical model are sought in the physical and biological realms. For example, one may be diagnosed as having a virus, a broken bone, or a bacterial infection. Cross-culturally, however, the experiences of health and its absence are more complex. People may suffer depression, anxiety, or other symptoms and disabilities that defy explanation in the biomedical approach, but which are nevertheless experienced by the individual as very real and potentially disabling ailments. In light of this reality, we can separate our understanding of compromised health into two closely interrelated concepts: disease and illness. Disease is the more "objective" or "specific" of the two concepts, and can be defined as "an alteration in biological structure or functioning" leading to compromised health (KLEINMAN 1988: 5). Disease is typically the focus of the biomedical model, but does not encompass all states of compromised health. Illness, in contrast to disease, refers more generally to the subjective "experience of symptoms and suffering" (ibid.: 3).

Disease and illness are often experienced simultaneously, but not under all circumstances.

Illness is problematic for the biomedical model because its origins and causes are often non-specific, symptoms may be indefinite, and the course and progression of an illness may be affected by cultural and personal belief systems, as opposed to clear measurable biological processes (Helman 2007, Kleinman 1988, Moerman 2002). To the biomedical professional illness may be perceived as imaginary, a diagnosis that is sure to break trust with patients, and which also ignores very real experiences of suffering. Perhaps the best illustrations of illness can be found in what are known as culture bound syndromes (CBS), or culture bound disorders. CBS conditions are those that occur only in specific cultures, and which "often condense wider social and cultural concerns into a single diagnostic image or metaphor" (Helman 2007: 267). One example would be *Susto*, or *Fright*, a condition common in Latin America with symptoms similar to PTSD, which is believed to be caused by the soul, or part of the soul, being frightened out of the body (Rubel, O'Nell & Collado-Ardon 1991). *Anorexia nervosa* and *bulimia*, eating disorders associated with self-esteem and body image, could be considered Western examples of CBS conditions as they are typically found in Western countries and tend to involve culturally specific understandings of the body. These disorders can help to illustrate how illness can lead to disease. For instance, frequent vomiting associated with *bulimia* may lead to dental decay or to throat or mouth cancers—clear "alterations" in biological integrity.

The concepts of disease and illness are meant to illustrate the different ways that states of compromised health can be understood, and also to illustrate that health is affected not only by specific physical changes in the body, but also by non-specific mechanisms that may arise from a particular worldview, cultural beliefs, values, or other systems of meaning. More important is the relationship between the two concepts, and the reality that disease may lead to specific expressions of illness, and likewise, that illness may also lead to disease. The close relationship between these two states of being unwell requires an approach to health and healing that addresses both expressions of infirmity simultaneously.

When it comes to treating disease and illness there are three general processes at play that impact health outcomes (Moerman 2002). First is the body's natural immunological response to states of disequilibrium in the body. These immunological processes are always at work, regardless of any specific treatments that are administered, and ultimately must share responsibility for any gains in health. Second, are specific biological and physiological responses to medical treatments, such as physical manipulation (i. e. surgery) and drug administration or prescription. Third, are meaning responses that may be stimulated by personal interactions with a doctor or healer, by the context within which healing takes place, or by other symbolic factors. Recognizing that all three of these processes contribute to healing, it can be surmised that medical treatments that adopt and incorporate each of these processes (the first being a given) are likely to achieve higher success rates in restoring health than methods that focus on the second approach alone.

The peyote ceremony of the NAC can be seen as a therapeutic practice that effectively elicits both physiological and meaning responses in its participants. Below I will outline a model of therapeutic action to explain the structure of the NAC peyote ceremony,[3] as well as the various elements of the ritual, and illustrate how these elements ultimately combine to produce positive therapeutic outcomes for ceremony participants.

Proposed Model of Therapeutic Action

The proposed model begins by branching into two separate modes of treatment (Figure 1), both present in the NAC peyote ceremony. The first mode, here referred to as the *Total Drug Effect*, elicits both physiological and meaning responses, a fact often overlooked by medical professionals when administering or prescribing drugs. The second mode, *Therapeutic Intervention*, includes several techniques for actively involving patients in the healing process in ways that are both meaningful and empowering. Meaning, or what is described as the *Meaning Response* in the proposed model, is an essential component in both of these modes of treatment.

The *Total Drug Effect*, first proposed by Gordon Claridge in 1970, encompasses the gamut of therapeutic outcomes that are associated with any given drug or medication, only a part of which can be attributed to pharmacological activity. Clinical

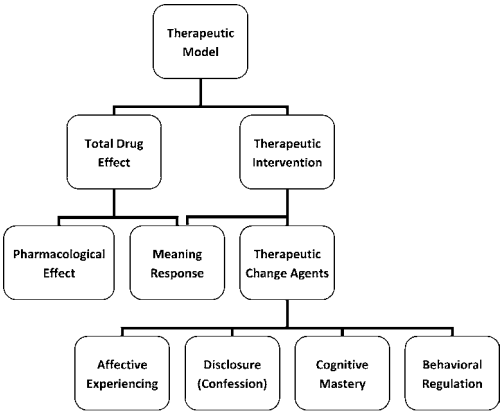

Fig. 1

studies have shown that many drugs exhibit extra-pharmacological therapeutic effects, effects which cannot be attributed to the individual pharmacology of the drug in question. These effects have generally been explained in terms of the "placebo effect," however, use of the term "placebo" is misleading as it implies that a substance is pharmacologically inert, whereas the phrase "placebo effect" actually implies the opposite, that placebos (inert substances) impact therapeutic outcomes.

In reviews of the "placebo effect," BEECHER (1955) concluded that 35% of drug effectiveness could be attributed to the placebo phenomenon. Others have concluded that this effect may be much higher, accounting for 30 to 60% of a particular medication's effectiveness (FRANK 1975). In order to clarify the significance of this effect, MOERMAN (1979: 62) explained that "if a placebo is 60% as effective as the active medication with which it is compared, then 60% of the effectiveness of a dose of the drug is due not to the active ingredients, but to the act of medication itself." But what is it about the mere act of medication that could explain the enhanced efficacy of a particular drug? MOERMAN & JONAS (2002) suggest that patients are responding to particular cues during the medication process that convey particular meanings, or messages, about the healing process. For these reasons MOERMAN & JONAS have adopted the phrase *Meaning Response* to describe this extra-pharmacological phenomenon, the significance of which is considerable. Following their lead, I employ the concept of *Meaning Response* as opposed to "placebo effect" in the proposed model; however, it remains necessary to use the phrase "placebo effect" in reference to much of the literature.

By combining the work of CLARIDGE with MOERMAN & JONAS we are provided with the concept of the *Total Drug Effect*, which can be separated into the specific pharmacological activity of the drug in question and the *Meaning Response*, which is elicited by a number of significant contextual factors present during the administration and or prescription of the drug. While the term *Meaning Response* comes from MOERMAN & JONAS (2002), CLARIDGE (1970) succinctly identified four contextual factors that influence how a patient responds to any particular medication. These factors include: (1) the individual *attributes of the drug*, including: taste, color, shape, and name; (2) *attributes of the recipient* (patient), including: age, personality, experience, and expectation; (3) *attributes of the healer* (physician), including: attitudes, status, authority, and personality; and (4) the physical *setting* or micro-context, where the drug is administered (i.e.: doctor's office, lab, home, party, etc.). To this Cecil HELMAN (2001) has subsequently proposed including a fifth factor, the *macro-context*, which refers to the moral and cultural values attributed to a particular drug, and the more general cultural milieu within which the drug is taken. Within these factors one can find elements of Timothy LEARY's principles of "Set and Setting" (LEARY 1966, LEARY, LITWIN & METZNER 1963; LEARY, METZNER & ALPERT 2000), however, the factors identified above (Figure 2) are used here for the higher level of precision and clarity they provide in understanding how context elicits meaning in the patient, thereby influencing the ultimate effects of the drug administered.

The first factor, *drug attributes*, refers generally to "the form of medicines, their color, shape, and amount" (MOERMAN 2002: 47). Each of these attributes has the potential to convey particular mean-

Five elements of the Meaning Response
1. Drug Attributes
2. Patient Attributes
3. Doctor (Healer) Attributes
4. Setting (Micro-context)
5. Macro-Context

Fig. 2

ings to the consumer, meanings which may influence how the consumer experiences the effect of the drug. In a study by Blackwell, Bloomfield, and Buncher (1972), the researchers found that study participants taking two placebo pills reported a higher degree of therapeutic effect than participants receiving only one pill. This suggests a possible unconscious expectation among participants that two pills will be twice as effective as one. Similarly, subjects receiving placebo injections reported higher therapeutic responses than those receiving placebo pills, perhaps indicating a cultural perception that injected drugs are stronger than those administered orally.

Another interesting finding by Blackwell *et al*. (1972) was that the color of placebo pills had an effect on how participants perceived and experienced a "drug's" physiological action. Participants receiving red placebo pills tended to report stimulating effects, while participants receiving blue placebo pills were more likely to report a sedative response. Additional studies have also found a correlation between hot colors and the experience of stimulation, as well as correlations between cool colored pills and sedative/hypnotic effects (De Craen *et al*. 1996). But, it is not only physical attributes of a drug that have an impact on experienced effects. In another study, Shiv, Carmon & Ariely (2005: 384) found that "features that are not inherent to a product, such as its price, can also trigger a placebo effect." Here we might speculate that subjects have unconsciously made a correlation between price and the quality of the product consumed. While more studies are necessary, it appears clear that particular attributes of drugs convey certain meanings to their consumers, and that these meanings contribute to how a drug is ultimately experienced.

The second factor, *attributes of the recipient/consumer*, generally refers to the individual's attitudes towards and knowledge of the drug in question, and his/her expectations about the drug experience. At one time it was believed that "placebo-reactors," individuals with a propensity to respond to placebo treatments, could be identified based on particular personality or psychological characteristics, however, attempts to identify such characteristics have been unsuccessful (Gryll & Katahn 1978; Moerman 2009; Shapiro 1971; Shapiro *et al*. 1968). Instead, it is the individual's knowledge and expectation that are of primary importance in this factor. In a study by Amanzio *et al*. (2001), it was found that secret administration of a painkiller via injection was less effective than when administered with the patient's knowledge, suggesting that the patient's awareness of the treatment was significant in shaping expectations and influencing the effectiveness of the treatment.

The third factor, *attributes of the healer/physician*, refers generally to the attitudes, status, authority, and personality of the healer. To test the effect of the *healer* on therapeutic outcomes Gracely *et al*. (1985) constructed a double-blind study on the pain-killing properties of placebos (see also Moerman 2009). The study involved dental patients receiving extractions of molars. These patients were split into two groups. Each group of patients was informed that they would receive one of three possible treatments; they would either receive (1) a placebo (saline); (2) a narcotic analgesic (fentanyl); or (3) a narcotic antagonist (naloxone). The clinicians administering the treatment, however, were informed that only the second group had the potential to receive fentanyl. Knowing that fentanyl *might* be provided to the second group, the clinicians' were more enthusiastic about the potential effectiveness of treatment. Patients receiving the placebo in this group responded significantly better to treatment than patients receiving placebo in the first group, leading to the conclusion that the character and behavior of the *healer* contributed significantly to patient responses to placebo treatment.

A further illustration of the power of the *healer* concerns a study on LSD conducted in the 1960s, in which a psychiatrist informed one test subject that he would likely have an unpleasant experience (Krippner 1970). As the effects of LSD began to manifest the psychiatrist began to probe the subject for information on how much anxiety he was experiencing. The subject subsequently entered a state of panic and ultimately had a "terrible" experience, as predicted by the researcher. Had the psychiatrist behaved differently, the experience of the subject might have been drastically different, regardless of any personal characteristics of the individual subject. These two examples show how the *healer* can potentially have both positive and negative impacts on therapeutic outcomes.

The fourth factor, *setting*, refers to the physical and social environment in which the treatment or drug administration takes place. The basic premise

behind *setting* is that the manner in which a patient (drug-recipient) responds to a drug will vary depending on the *setting* in which the drug is administered and/or experienced. A home environment may put an otherwise anxious patient at ease whereas a hospital environment may provide a particular treatment with an extra air of authority that may be helpful in treating cynical patients. Within these various environments different objects, props, and symbols may also be found, objects which contribute to the character of the *setting* and how it is experienced by the patient. Symbols can be used not only to "create an appropriate ambience" but also "to transmit important information to [patients] … about the healer, the techniques [to be used] … and cultural sources of the healing power" (HELMAN 2001: 6). For example, the doctor's white coat and stethoscope may be symbolic of his medical training and expertise and may help instill faith and trust in his patients (HELMAN 2001).

Another important component of setting is the social atmosphere, or the presence of people. In a study by LEARY, LITWIN & METZNER (1963), it was observed that the presence of other individuals during drug treatment appeared to influence participant responses to the administered substance (in this case psilocybin). Two factors that stood out about the social component of a particular *setting* were the size of the group, and also the degree of familiarity between the participant (*patient*) and those present. Additional environmental features that might contribute to a patient's experience include visual, auditory, olfactory, and tactile stimuli (BENEDETTI 2002).

The fifth factor, *macro-context*, "refers to the wider social, cultural and economic milieu in which prescribing, and ingestion, take place" (HELMAN 2001:5). This *macro-context* includes broad cultural understandings of health, causes of disease and illness, and beliefs about how health is restored. More specifically, HELMAN posits that, within a particular *macro-context*, the patient, the healer, the patient's family members, and the broader community will tend to share common understandings about health and the efficacy of particular drugs and medical practices. This creates a community of belief, which may minimize doubt in the patient and may also help to create an optimistic support network among friends and family.

The cultural beliefs and values that underlie the use of a particular substance are also important. Whether a drug is stigmatized, like pain-killers and anti-depressants in the West, or perceived as being on the cutting edge of medicine, widespread cultural attitudes about specific drugs provide a backdrop against which the patient experiences drug therapy, and may influence how a patient ultimately responds to treatment. Each of the above five factors contribute to the *Meaning Response* in patients, potentially influencing a substances perceived efficacy as well as therapeutic outcomes. The function of the *Meaning Response* is essential to understanding the *Total Drug Effect*, and when understood and applied appropriately can be used to enhance the effectiveness of particular medications.

The second branch of the proposed therapeutic model (Figure 1) is *Therapeutic Intervention*. In the Western medical context drug administration and therapeutic intervention have been separated into distinct professions, with drugs being in the province of medical doctors and psychiatrists, while therapeutic intervention is relegated to the professional realm of psychologists and talk therapists. This is a peculiarity of the Western biomedical system, and tends to be the exception rather than the rule when considering the spectrum of global ethnomedicines (ERICKSON 2008). The concept of the *Meaning Response*, discussed above, is also a significant factor when considering the effectiveness of therapeutic intervention. *Attributes of the recipient* and the *healer*, and the *micro-* and *macro-contexts* within which a therapeutic intervention take place remain highly relevant to treatment outcomes regardless of whether pharmacological agents are administered. The focus here, however, is on the particular methods employed in therapeutic interventions.

What I mean by *Therapeutic Intervention* requires fleshing out. Here I refer to the work of KARASU (1986), who has identified three nonspecific agents of therapeutic change common to most modern varieties of psychotherapy. The first therapeutic change agent Karasu identified is that of *Affective Experiencing*. *Affective Experiencing* is the stimulation of emotional arousal in the patient, creating a state in which the patient has an increased receptivity to suggestion and heightened levels of acceptance. The benefit here is that patients' defenses are lowered and the individual becomes more receptive to reflection and new cognitive input. Generally, states of high emotional arousal are difficult to sustain, and lasting therapeutic benefit

requires repeated interventions at this level. According to Karasu, therapy involving the use of *Affective Experiencing* is most effective when combined with *Cognitive Mastery*, the second agent of therapeutic change in his model.

Cognitive Mastery involves the "acquisition and integration of new perceptions, thinking patterns, and/or self-awareness" (Karasu 1986: 691). This requires working within a patient's worldview in order to help patients understand their behavior and attitudes and how these factors affect themselves and the people around them. This worldview may also be a "mythic world," and through the manipulation of concepts and symbols a therapist (*healer*) can assist a patient to re-organize thoughts and attitudes through a process known as "symbolic healing" (Dow 1986). Symbolic healing, as elaborated by Helman (2001; 2007), provides a succinct and practical framework for exploring the function of *Cognitive Mastery* in the therapeutic process, and will be used as a model for exploring this important step.

Central to the process of symbolic healing is the need for a shared mythic world between the patient and healer. With this mythic world as a foundation, the healer seeks to convince the patient that his or her ailment can be explained in terms of this shared mythic world. This process is described in the literature as activating the "symbolic bridge" (Helman 2001; 2007; Kleinman 1988) because it allows the healer to bridge, or connect, cultural meanings and symbols with the patient's physiological processes and personal experiences. However, for therapeutic change to occur the patient must become personally and emotionally invested in the symbols of the healer.

Once the mythic world is established between patient and healer, and after the patient has become invested in a set of symbols chosen by the healer, the symbols can then be manipulated in order to affect personal transformations in the patient. If therapy is effective, the "healed patient acquires a new way of conceptualizing their experience in symbolic terms" (Helman 2007: 275), and the patient emerges with a new narrative for understanding his or her experiences with sickness and recovery.

A similar, but slightly different approach to *Cognitive Mastery* can be found in a process referred to as "narrative" or "therapeutic employment." Therapeutic employment has been described as "the interpretive activity, present in clinical encounters, through which clinicians and patients create and negotiate 'a plot structure within clinical time, one which places particular therapeutic actions within a larger therapeutic story'" (Good *et al*. 1994: 855, *citing* Mattingly 1994). Therapeutic employment does not necessarily require a shared symbolic world, or involve the manipulation of symbols, however, in a similar manner it requires the healer "to set a story in motion which is meaningful to the patient" (Mattingly 1994: 814). Thus, both approaches rely on the process of narrative development, a process in which patients engage in developing a new understanding of their illness experience, and which enables patients to re-organize thoughts and attitudes in order to develop a healthier outlook and to focus on positive behavior change. This brings us to the final therapeutic change agent in Karasu's model, *Behavior Regulation*.

The goal of *Behavior Regulation* is to change negative and maladaptive behaviors and to maintain the resulting positive behavior changes. Tools for regulating behavior are acquired and practiced within a supportive therapeutic context, and patients are challenged not only to learn positive behavior habits, but also to identify and learn to self-regulate maladaptive and self-destructive behavior patterns. *Behavior Regulation* is commonly a key component in psychotherapy, but often plays a broader role in the treatment of substance dependence and other compulsive behaviors.

While Karasu's non-specific therapeutic change agents are fairly comprehensive, based as they are on a broad review of different psychotherapy schools, he omitted an important feature common to all talk therapies: *Disclosure*. It is easy to see how something as basic to psychotherapy as disclosure could be overlooked, however, the role of disclosure in the therapeutic process cannot be overstated and should not be ignored. At the most basic level disclosure is speaking; the act of articulating thoughts and emotions. The articulation of one's inner world requires the construction of a narrative around these inner experiences so that they may be conveyed to, and understood by, others. As a result of this narrative process, disclosure may help patient's integrate traumatic events into "existing mental schemes, and thereby enable(d) some assimilation [of the traumatic event] to take place" (Lutgendorf & Antoni 1999: 435). Studies on the health benefits of disclo-

sure have shown a connection between disclosure and improvements in physical and mental health (KELLEY, LUMLEY & LEISEN 1997; LUTGENDORF & ANTONI 1999; PENNEBAKER & SEAGAL 1999), and have also shown improvement in immune functioning (PENNEBAKER *et al*. 1988; PENNEBAKER & SEAGAL 1999).

A particular type of disclosure also merits mention: *Confession*. While disclosure may or may not involve the divulging of highly emotional events, personal shame, or transgressions against others, confession is typically characterized by these types of admissions. MURRAY-SWANK *et al*. (2007) have identified four features of spiritual confession which, they argue, help explain the health benefits of this practice. First, they propose that the act of confession reduces guilt and shame surrounding past transgressions or personal failures. Second, that it builds social connections with those present during the confession. Third, that it helps the confessor to establish meaning and coherence out of his or her transgressions. Fourth, and finally, they propose that confession functions as a type of "Impression Management," meaning that through the act of confession that confessors have the opportunity to positively re-shape the impressions others hold of them in their community. Although MURRAY-SWANK *et al*. focus on "spiritual" confession, when comparing the impacts of written confession on religiously affiliated subjects and on secular subjects they found that "across all participants, psychological distress and guilt decreased over time" (2007: 287), suggesting that *Confession* produces therapeutic results regardless of an individual's spiritual or religious orientation.

Whether *Disclosure* is simply the sharing of internal thoughts and feelings, or whether it involves *Confession* of social transgressions or personal failures, the act of giving voice to and creating a narrative around one's inner experience appears to lead to positive therapeutic outcomes. In the proposed model I have placed *Disclosure* between *Affective Experiencing* and *Cognitive Mastery*. The reason for this placement is twofold: First, the act of disclosure, in the form of confession at least, appears to contribute to emotional arousal which is central to *Affective Experiencing*; and second, and more importantly, disclosure provides the material essential for *Cognitive Mastery* to take place.

Once one recognizes that healing is more complex than merely identifying physical abnormalities and manipulating the body by pharmacological and surgical methods to correct them, it becomes important to understand the role of context, relationships, and the ways in which meaning can be created and manipulated in order to affect therapeutic outcomes. The proposed model, by recognizing extra-pharmacological phenomena and the role of meaning in the healing process, seeks to move beyond the reductionist biomedical model in order to understand the various mechanisms employed to restore health in ethnomedical systems around the world. Before describing how the proposed model can be mapped onto the peyote ceremony of the Native American Church (NAC), however, a brief description of the ceremony and the mythic world in which it is embedded is necessary.

Peyotism and the Peyote Ceremony

History & Context

The spread of peyotism through the United States is a fairly recent phenomenon and one that is intrinsically linked to the cultural genocide perpetrated against Native Americans during the 19th century (CALABRESE 2013; LONG 2000; PETRULLO 1934; SLOTKIN 1956). The rapid expansion of peyotism was in large part due to the nature of the reservations established in Oklahoma. Tribes from across the country were forced off their lands onto small reservations, which they often shared with tribes who spoke different languages, had different cultures, and came from very different parts of the United States. While peyotism was unknown to most tribal groups in the early part of the 19th century, the removal of so many disparate tribes to isolated reservations produced circumstances in which numerous tribal groups rapidly accessed, shared and dispersed once remote practices and traditions. At this critical juncture, when many tribes were facing the loss of land, traditions, and way of life, peyotism surfaced as a way to create social and tribal solidarity among the diverse tribes that had been forced together, and at the same time preserve aspects of Native cultures (LONG 2000).

While most tribes would never be able to regain lost lifeways, the peyote religion provided an opportunity for Native Americans to re-define themselves in a way that remained distinctly Native. The

peyote religion helped establish bonds between different tribal groups and provided Native Americans with something external that provided consistency and continuity in their lives. While some peyotists adopted and adapted elements of Christianity into their peyote rituals (Petrullo 1934; Steinmetz 1998), the resistance to fully adopting a European religious model of worship allowed Native Americans to maintain a sense of autonomy, and preserve pride by maintaining a more familiar and culturally suitable model of worship and prayer.

The origins of peyotism as a pan-Indian religious movement had the Ghost Dance as its contemporary. Both were viewed as subversive movements by the government, but while the Ghost Dance was aggressive and combative, the peyote movement was pacifist, focused on healing and building unity between tribes (Long 2000; Slotkin 1956). As a pan-Indian movement, with various tribes adopting the practice at different times, there are various stories explaining the origins of the peyote religion—although they all share certain similarities. The origin story is essential to understanding the mythic world surrounding peyotism. James Mooney (1897) collected the following Kiowa peyote origin myth:

> Two young men had gone upon a war expedition to the far south. They did not return at the expected time, and after long waiting their sister, according to Indian custom, retired alone to the hills to bewail their death. Worn out with grief and weeping, as night came on she was unable to get back to the camp and lay down where she was. In her dreams the peyote spirit came to her and said: "You wail for your brothers, but they still live. In the morning look, and where your head now rests, you will find that which will restore them to you." The spirit then gave her farther instruction and was gone. With daylight she arose, and on looking where she had slept found peyote, which she dug up and took back with her to camp. Here she summoned the priests of the tribe, to whom she told her vision and delivered the instructions which she had received from the spirit. Under her direction the sacred tipi was set up with its crescent mound, and the old men entered and said the prayers and sang the songs and ate the peyote—which seems to have been miraculously multiplied—until daylight, when they saw in their visions a picture of the two young warriors, wandering on foot and hungry in the far off passes of the Sierra Madre. A strong party was organized to penetrate the enemy's country, and after many days the young men were found and restored to their people. Since then the peyote is eaten by the Indians with song and prayer that they may see visions and know inspiration … (Slotkin 1956: 22–23, *citing* Mooney 1897: 330).

While the story is open for interpretation it is likely that the backdrop of cultural genocide plays an important role in this origin myth (Calabrese 2013). Although the story discusses war with a neighboring tribe in the Sierra Madre, likely referring to the Occidental or Oriental, symbolically the story can be seen as a reflection of the conflict between Native Americans and the federal government during the western expansion of the United States. Many young men died fighting to protect their people and their traditional territories, and many more children were forced to attend missionary run boarding schools. Those attending boarding schools were often "lost" in a cultural sense, and peyotism was used as a vehicle to retain and promote some semblance of traditional culture during a period when forced acculturation prevailed. Peyotism, through a fusion of traditional beliefs and practices with elements of Christianity—note the oblique parallel to the miracle of loaves and fishes in the Bible—was used as a way to deal with the trauma caused by cultural genocide and to help establish and provide an identity for many of the youth who, through boarding school experiences, felt they did not belong to White or traditional cultures. In this story, peyote discovers the lost young men and through its teachings is able to reunite the tribe with its youth. Symbolically, this story might be seen as an example of cultural healing, of reintegrating "lost" youth into the life and customs of their people, a service that peyotism provided at the turn of the 20th century and which it continues to provide today (Calabrese 2013, Long 2000, Slotkin 1956).

The Ceremony

Peyote, as the sacrament of the NAC, is at the heart of their religious ceremonies. Peyote is not only considered a medicine but also an omniscient spiritual entity that acts as healer, guardian, and messenger between humans and the Creator (Calabrese 2013), and thus plays multiple roles in the ceremony. Peyote meetings are held for prayer, meditation, and healing, and generally follow one of two ritual formats: one is known as the Half-Moon ceremony or the Comanche Way; and the other is known as the

Cross-Fire ceremony (LA BARRE 2011, LONG 2000, MAROUKIS 2010). Below I will briefly discuss the Half-Moon ceremony, which must be initiated by presenting a Road Man[4] with sacred tobacco (RHINE *et al*. 1993, SMITH & SNAKE 1996).

To prepare for the Half-Moon ceremony a tipi must be erected with great care and pride so that it is presentable to the Great Spirit. The tipi can be seen as a representation of the womb, within which a rebirth experience takes place as symbolized by the coming of the dawn and the emergence of participants from the "womb" at the end of the ceremony to greet the new day (CALABRESE 2013). Inside the tipi an altar of fresh earth is created in the shape of a crescent moon, abutting the fireplace. The crescent moon represents liminality and transition. The peyote road, traced across the top of the crescent altar, represents the road of life and guides participants simultaneously down a virtuous path and a path back to the earthly plane from the spirit world (RHINE *et al*. 1993, SMITH & SNAKE 1996).

A large peyote button with thirteen ribs, generally referred to as the "Chief" or "Father" peyote, is placed upon the altar. During the ceremony the Road Man will direct the attention of participants towards the Chief Peyote, in order to maintain focus. Prayers may be directed towards the Chief Peyote, or may be directed towards the fire through use of a prayer fan. Smoke from the fire helps carry prayers through the tipi's smoke hole to the Creator. The sacred fire is also the means by which the Great Spirit communicates to the participants, and its flickering flames are considered by some to be the tongue of God (RHINE *et al*. 1993, SMITH & SNAKE 1996).

The night-long ceremony consists of four parts: praying, singing, eating peyote, and quietly contemplating (ANDERSON 1996, SLOTKIN 1956). The meeting generally begins at twilight when all enter the tipi. The Road Man usually begins with a prayer before leading into the opening song. Each participant takes turns singing sets of four songs, while the others pray and contemplate. A drummer accompanies each singer. For some the drum is meant to emulate the sound of thunder, but for others the drumbeat represents the heartbeat of new life growing within the womb (SMITH & SNAKE 1996: 90). Peyote is passed among the participants periodically throughout the night and may be consumed as tea, paste, or as fresh or dried buttons. At midnight the Road Man exits the tipi and blows a whistle, made from an eagle's wing bone, to the four directions. Participants are allowed a brief break, and then the ceremony continues until dawn. During this time, participants have revelations in the form of visions and audible messages from the Great Spirit, or from peyote itself (ALBAUGH & ANDERSON 1974, BITTLE 1960, CALABRESE 2013).

When the sun rises it is time for the Morning Water Ceremony. At this point the Water Woman, who represents the Peyote Woman from the origin myth—as well as the giver of life—brings in a pail of water which is then passed around the circle. Following the Morning Water Ceremony, each participant takes part in the four sacred foods (corn, fruit, meat, and water) before the Quitting Song is sung, and the ceremony officially closes. Peyote, when used in this ceremonial context, is believed to heal spiritual and physical maladies (ANDERSON 1996, CALABRESE 2013, SCHULTES 1938). Below, I will show how the healing outcomes of the peyote ceremony can be understood in the context of the proposed therapeutic model.

Total Drug Effect

Peyote Pharmacology

To begin our analysis of the therapeutic use of peyote, we start with the *Total Drug Effect*, which comprises the first branch of the proposed model. In order to understand the therapeutic role that peyote plays in the NAC ceremony it is necessary to first understand its unique pharmacology. While peyote has been shown to have some anti-biotic properties (ANDERSON 1996; MCCLEARY, SYPHERD & WALKINGTON 1960; RAO 1970), no specific medicinal properties have been identified that would account for its therapeutic use in healing ceremonies. Peyote, however, is no placebo and is known to contain over fifty-five different alkaloids (ANDERSON 1996: 139), the most notable being mescaline, a hallucinogenic compound. Although mescaline is not known to have any direct or specific medical action, the effects of this substance play an important role in the healing traditions of the NAC. Effects of mescaline include heightened emotional arousal, heightened suggestibility—similar to that produced in hypnotic trance (SJOBERG & HOLLISTER 1965)—and alterations in sensory perception and cognitive processing (INABA & COHEN 2004). According to CALABRESE (1994: 509), "Cognitive, emotional and therapeutic

alterations are more valued than perceptual alterations" by the NAC, and it is these essential effects of peyote that enhance the receptivity of participants to the therapeutic structure and purpose of the peyote ceremony.

As peyote is a powerful psychoactive substance, it is worth considering whether its use may produce any negative consequences or reactions that would portend against peyote's therapeutic use. In this regard, three specific studies merit mentioning, two of which were conducted specifically among Navajo peyotists. In 1971, Dr. Robert Bergman published the results of a four year study focused on adverse reactions to peyote among the Navajo. Bergman (1971: 698) reported finding "almost no acute or chronic emotional disturbance arising from Peyote use." Further, it was estimated that with around 30,000 peyotists on the Navajo reservation at that time, reporting an average of two peyote ceremonies a month, that there would have been approximately 180,000 ingestions of peyote on the Navajo reservation during the period of Bergman's study. Halpern *et al*. (2005: 630), in a separate study, conducted mental health evaluations and administered a number of neuropsychological tests to members of the NAC, and similarly concluded that religious peyote use "does not cause residual psychological or neuropsychological deficits." More recently, an analysis was conducted on a series of peyote exposures reported to California Poison Control between the years 1997 and 2008 (Carstairs & Cantrell 2010). Of the 31 cases reported, all were resolved without complications. The study concluded that "most peyote intoxications appear to be mild in nature and are unlikely to produce life-threatening symptoms" (Carstairs & Cantrell 2010: 353).

Peyote and the Meaning Response

Having briefly reviewed peyote's pharmacology we can now examine the role of the *Meaning Response* in shaping the individual's experience of peyote's effects. Of the five elements that contribute to the *Meaning Response* (Figure 2), the most important for traditional therapeutic uses of peyote are probably the *attributes of the healer* and the overall *macro-context* of the peyote ritual. The interplay of therapeutic intervention and meaning is also of significant import and, with the exception of *drug attributes*, the considerations for each element discussed below can be similarly applied to the context and function of therapeutic intervention. While some of the elements contributing to the *Meaning Response* are likely more significant than others, each component will be addressed briefly.

The first element of the *Meaning Response* concerns the *attributes of the drug* itself. Peyote is a bitter cactus that is consumed in several forms during peyote ceremonies, including fresh, dried, as a paste, and as a tea. Here, bitterness is probably the most important attribute. Bitterness is often an indicator of alkaloid content, and among many cultures the sensation of bitterness has become associated with healing plants (Brett 1998; Shepard 2004). For strands of peyotism that incorporate elements of Christianity, support for the sacramental use of peyote has been found in such Bible verses as the following: "And they shall eat the flesh in that night, roast with fire, and unleavened bread; and with *bitter herbs* they shall eat it" (Calabrese 2013: 104, *citing* Exodus 12:8; italics mine). The number of peyote buttons consumed may also have symbolic importance. In ceremonies using whole buttons, participants will often begin by consuming four buttons, four being a sacred number that represents the cardinal directions (Smith & Snake 1996). Peyote is also a natural substance believed to be put on earth by the Creator, indeed as a gift from the Creator, as opposed to a man-made compound, a fact that imbues peyote with spiritual potency and distinguishes it from Western medicines.

The second factor, *attributes of the recipient*, will vary from individual to individual. Here the primary attributes will relate to the individual's faith in the peyote religion, and to his or her belief in the therapeutic power of the peyote cactus. Individuals who have been raised in the Church, or who have been witness to the healing or recovery of family or community members may have a stronger belief in the efficacy of peyote as medicine. Outsiders, such as anthropologists or others, may enter a ceremony (if invited) with doubts that are not held by Church members, doubts which may color their experience of the peyote ceremony and its therapeutic outcomes.

The third element addresses *attributes of the healer*. In the peyote ceremony, the role of *healer* would likely be attributed to the Road Man. The Road Man, generally a respected individual in the community, acts in a supportive role throughout the ceremony and "frequently offers reassurance, ver-

bal suggestions and encouragement" to those in attendance (PASCAROSA & FUTTERMAN 1976: 216). The Road Man also seeks to maintain each individual's participation in the ceremony's rituals, for example "If a participant begins to stare fixedly into the fire and seems unaware of the others, the road man will speak to him and, if necessary, go to him to pray with him" (BERGMAN 1971: 698). In addition to the Road Man's knowledge and experience, his role in guiding and supporting participants through the meeting clearly places him in the important role of *healer* in the proposed model.

The fourth element concerns the *setting* of the therapeutic activity. Peyote meetings are generally conducted in a tipi, with the ceremony taking place from dusk to dawn. The *setting* also contains spiritually significant symbols, including the crescent altar, the peyote road traced across the crest of the altar, the tipi as womb, the Water Woman, and the sacred foods served at the closing of the ceremony. The group context of the meeting is also important, with the group generally comprised of friends, family, and community members and leaders. The group nature of the ceremony, and the supportive role that each member plays, is important for the purpose of spiritual communion and healing.

Finally, we must consider the role of the *macro-context*. The *macro-context* is comprised of the cultural beliefs and values that underlie the use of a particular substance. For example, a common experience of illicit marijuana users is one of paranoia (INABA & COHEN 2004), an experience which is at least partially due to a cultural context where marijuana use is viewed as deviant, and where the consequences of its use might lead to arrest and incarceration (ERICKSON *et al*. 2013; HAMILTON *et al*. 2013; ZIMMER & MORGAN 1997). In the context of the Native American Church, however, peyote is a religious sacrament. While rules surrounding peyote use outside of an explicitly ceremonial context vary from congregation to congregation, peyote's ceremonial use within the Church is seen as an ancient and sacred spiritual practice (SMITH & SNAKE 1996). To the peyotist, peyote is not only a medicine, but an omniscient spiritual entity that watches over the people, listens to prayers, and provides guidance through messages and visions, and may act as an intermediary to the Creator (CALABRESE 2013). This *macro-context* will clearly exert a very different influence on an individual's "drug" experience than a *macro-context* in which a drug is seen as deviant and dangerous.

While each of these factors will likely bear some influence on a substances perceived efficacy and the resulting therapeutic outcomes, little is known about which factors may weigh most heavily. Despite the influence of each of these factors, the *Meaning Response* can substantially be enhanced by some type of directed therapeutic intervention or process, which is why I suggest that the *Meaning Response* is an inherent component of both the *Total Drug Effect* and of *Therapeutic Intervention*, and why it is given a central position in the proposed model.

Therapeutic Intervention

The proposed model includes four agents of therapeutic change, each of which can be identified, to varying degrees, within the ceremonial practices of the Native American Church. The first of these, *Affective Experiencing*, is based on the notion that an individual must be emotionally open in order for therapy to be effective. Generally this emotional openness is produced by creating states of hyper emotional-arousal or emotional investment. While strategies for producing these states differ across particular psychotherapeutic philosophies, a common way to create this type of emotional openness, or vulnerability perhaps, is by inducing a state of exhaustion. Because it is difficult to sustain states of heightened emotional arousal and openness, types of therapy that rely on this method require repeated therapeutic interventions.

In peyote ceremonies the actual pharmacology of peyote contributes significantly to achieving states of emotional openness necessary for positive therapeutic outcomes. One of the primary properties of peyote is to produce states of hyper-emotional arousal, a state which continues for 8 to 12 hours, until the effects of peyote wear off (INABA & COHEN 2000). Unlike other therapies that rely on emotional arousal for therapeutic work, the use of peyote can sustain states of heightened emotional arousal for long periods of time. In addition to the pharmacological effects of peyote is the context of the peyote ceremony, which is held as an all-night ceremony. Participants remain alert in an upright sitting position, taking turns singing throughout the course of the ceremony, which lasts from sun-down to sunrise. This ceremonial structure requires a great deal of stamina from participants and also likely contrib-

utes to physical exhaustion, which in turn increases an individual's emotional openness and receptiveness to the therapeutic process (Karasu 1986).

Confession, the second therapeutic change agent, is not a universal component of the peyote ceremony, but is documented among Iowa, Oto, and Winnebago congregations of the NAC (La Barre 2011). Paul Radin once described how Winnebago peyotists would rise from their seats around midnight and "deliver self-accusatory speeches, after which they go around shaking hands with everyone, asking for forgiveness" (Radin 1914: 3). Among Iowa peyotists the process is more formal, with all participants being called upon to confess their sins (La Barre 1996). The act of confession before one's community, before "Father Peyote", and before the Creator, contributes to emotional catharsis (or *Affective Experiencing*) necessary for the healing process (La Barre 1947), and also alleviates guilt and shame by allowing the individual to publicly take ownership of their shortcomings and receive forgiveness from the group. Expressions of resolve to change behavior in front of family, community members, and community leaders, may also help the individual to stick with their resolutions or to seek extra support in doing so (Hill 1990).

The four psychological functions of spiritual confession outlined by Murray-Swank *et al*. (2007): (1) reducing guilt and shame; (2) seeking social connection; (3) seeking meaning and coherence; and (4) impression management; can also be identified in the peyote ceremony and are aptly illustrated by the following statement shared by a recovering alcoholic during a peyote meeting:

> I want to thank you for inviting me and my dad to this meeting. I always enjoy coming over to your place, seeing your family, like that. Last year, or nearly two years now, I only came in here to say hello, and then I planned to leave. My dad asked me to bring him over here because he had heard you were having a meeting. Then, when we got here, everyone was in the tepee, and my dad asked me to come in and say something. I came in and sat down but never did say nothing until I drank some medicine. I was kinda scared since I was drinking that very day. And I know this peyote doesn't mix with alcohol. Boy, I started crying and talking about myself. Then I felt good. I have been coming to these meetings ever since then and only been drinking one time in over a year, or nearly two years (Pascarosa *et al*. 1976: 523).

The speaker discusses his relief following his disclosures to the group, suggesting alleviation of guilt and shame. Although the speaker apparently had standing relationships with many of the individuals present his statement suggests that his bond to the group, and individuals in the group, has grown stronger as indicated by his greater ability to share personal feelings and experiences and by his increased attendance at meetings. His greater ability to share also suggests an enhanced ability to manage and maintain relationships with others. While "seeking meaning and coherence" is a little more difficult to identify in the above statement, the speaker nevertheless demonstrates how the process of opening up in a group environment can give way to emotional out-pouring, and contribute to the creation of a new life narrative and new behavior patterns. Although formal *Confession* is not a uniform component of the peyote meeting, most meetings provide participants with an opportunity to share, or make public prayers, which often involves the act of *Disclosure*, and similarly contributes to *Affective Experiencing* as well as to developing a narrative foundation to which *Cognitive Mastery* can be applied.

Cognitive Mastery, the third therapeutic change agent, requires the acquisition of new levels of self-awareness as well as acquisition and integrations of new thinking patterns and a new model of the self. The process of *Cognitive Mastery* is supported by *Affective Experiencing*, which creates states of emotional openness, and suggestibility, and also by *Confession/Disclosure*, which provides the biographical content necessary for constructing a healing narrative. *Cognitive Mastery* requires a cognitive model or mythic world that is shared between the *healer* and patient. Within the NAC this model is provided by a shared religious belief system comprised of commonly understood symbols. Several important symbols to the peyote ceremony include the crescent shaped altar, as well as the symbol of the peyote road, typically traced across the top of the altar. As stated earlier, the crescent altar is a liminal symbol reflecting the transitional phase of the crescent moon. At the heart of this symbol is the concept of transformation, also symbolized by the tipi as womb, which can be seen as facilitating the process of re-birth during the night long ceremony. The idea of transformation is further illustrated by

the symbol of the "peyote road," a symbol which reflects the path towards an honest and virtuous life. The following case report, collected by Bernard J. ALBAUGH and Philip O. ANDERSON (1974), helps provide an illustration of how these symbols can play an important role in creating self-awareness, and developing new thinking patterns:

> One member of the NAC related an event that had occurred during a peyote meeting several years before when he was attempting to resolve his long-time drinking problem. During the meeting, a tiny man appeared to walk out of the ceremonial fire and up the side of the low, crescent-shaped, earthen altar to the center of the "peyote road" that is drawn along the top of the altar. The tiny man paused for a long time as if he were trying to decide in which direction to walk. The tiny man finally took the path that led him to the way of the peyote religion rather than the path that led to a continuation of drinking. The patient interpreted this vision as an omen indicating that he should no longer continue drinking but should return to the peyote religion from which he had strayed. This was a turning point in his life (ALBAUGH & ANDERSON 1974:1249).

A shared mythic world and common understanding of symbols allows both the healer and patient to use symbols in order to understand emotional and spiritual afflictions, and allows symbols to be manipulated in a way that permits patients to construct a therapeutic narrative, like the one cited above, that can be used to positively change and shape future behavior and attitudes.

While *Affective Experiencing* creates openness in patients to the therapeutic process and *Confession* combined with *Cognitive Mastery* can help patients find new ways of understanding their problems, the ultimate therapeutic goal is often behavior change, which requires some form of *Behavior Regulation*, the final therapeutic change agent. *Behavior Regulation* involves encouraging individuals to modify behavior in positive ways and teaching them techniques of self-regulation. Often these individual achievements are then reinforced through repetition, or by social support networks. Within the peyote ceremony self-regulation is important in the form of discipline and through following ritual protocols. It is generally believed among peyotists that alcohol and peyote don't mix, and use of alcohol is forbidden in the day preceding the ceremony (HILL 1990). The ceremony requires participants to remain alert in a sitting position throughout the night, with one break at midnight for participants to stretch and relieve themselves (SMITH & SNAKE 1996). Each individual also carries responsibilities as a participant, with each individual taking turns singing throughout the night. In this way, there is a degree of discipline that is demanded of the peyote ceremony, and discipline is fundamental to maintaining positive behavior changes.

More importantly, perhaps, is the social support network provided by regular participation in peyote meetings. *Cognitive Mastery* achieved by participants in peyote meetings and their subsequent *Behavior Change* goals are supported by the community in a number of ways. Among some congregations recovering alcoholics are known to convene for an informal drum tie between meetings, usually gathering at someone's home to drum and sing peyote songs. "It is at such gatherings that the re-socialization of new members progresses under relaxed conditions. Recovered alcoholics talk openly about their problems and receive strong support from their new friends" (PASCAROSA *et al*. 1976: 523). Another feature of social support for behavior change is the mentoring of young NAC members. Young participants who disclose problems during a meeting may be approached by an elder following the ceremony and invited to discuss the problem further in private. Such encounters often lead to a mentoring or counseling type of relationship that may last for years (PASCAROSA & FUTTERMAN 1976).

The focus on discipline and ritual protocol provides participants with a particular ethic and structure that can be applied to their own lives, and which is reinforced through social ties with their religious community. Social support exists both within meetings, in the form of a supportive audience, and outside of meetings through mentorship or social support groups. Peyote meetings are also held regularly, which may help to reinforce emotional, cognitive, and behavioral changes achieved by individual participants.

Conclusion

Peyote, and its ceremonial use, has long been misunderstood by outsiders, and there are still those who believe that "religion" is being used as a legal shield by peyotists to protect hedonistic drug use.[5] A further point of misunderstanding is the combination of medicine and spirituality within the Na-

tive American Church, areas of social life which are clearly separate in the minds of Westerners, who seek healthcare from physicians while seeking spiritual fulfillment in houses of worship. Unfortunately, these misunderstandings obscure valuable lessons about health and healing inherent in the peyote ceremony, including how the pharmacological properties of a peculiar cactus can be shaped and magnified through context, relational interaction, and symbolic manipulations. The effects of peyote are known to contribute to psycho-spiritual states that open the individual emotionally, lower an individual's defense mechanisms, and increase an individual's receptivity to new cognitive inputs. While these pharmacological properties are not necessarily therapeutic when viewed in isolation, the effects of peyote cannot properly be understood without taking into consideration the *Meaning Response* or the therapeutic methods inherent in the ceremonial structure of an NAC peyote meeting.

The *Meaning Respons*e accounts for a variety of factors that ultimately contribute to the therapeutic effects of peyote within the ceremonial context of the Native American Church, including the emotional state and expectations of the *participant*, the qualities and attitudes of the *healer*, or Road Man, the ceremonial *setting*, and the cultural *macrocontext*. The role of therapeutic intervention is also fundamental to the efficaciousness of the peyote ceremony. Therapeutic intervention speaks largely to the degree of involvement of the *participant*, and his/her relationship with the Road Man (*healer*) and other participants, in exploring and participating with the identified agents of therapeutic change: *Affective Experiencing*, *Confession*, *Cognitive Mastery*, and *Behavior Regulation*. Following the therapeutic model outlined in the preceding pages, we begin to see how peyote can act as an effective medicine when methodically applied in a ceremonial context where spiritual guidance is provided, community support is experienced, and culturally salient symbols can be manipulated to create meaningful narratives of healing.

Research into compounds similar to mescaline, the psychoactive agent in peyote, has recently begun to receive the support of governments around the world as well as the necessary authorizations to move forward (Winkelman & Roberts 2007). While this research is generally focused on potential therapeutic use of these substances to address issues like Post-Traumatic Stress Disorder, Obsessive Compulsive Disorder, Cluster Headaches, Existential Anxiety, and Depression, it must be acknowledged that the pharmacological properties of any individual drug only accounts for a portion of the *Total Drug Effect*. As research into the therapeutic value of psychedelic substances expands it is necessary to consider models of therapeutic applications of these substances, like the peyote ceremony, that have been successfully and safely applied for generations. Herein I have offered a model of therapeutic action to help outline and explain the factors that contribute to the therapeutic actions of peyote within a ceremonial context. By combining our understanding of pharmacology with the power of meaning, and with universal agents of therapeutic change we can begin to understand the power behind the traditional medical uses of this unique cactus, and hopefully learn how such substances might be safely and successfully applied in a modern medical context.

Notes

1 Native terms meaning "medicine" but also used to indicate peyote: *biisung* (Delaware), *walena* (Taos), *puakit* (Comanche), *makan* (Omaha), *naw-tai-no-nee* (Kickapoo), and *o-jay-bee-kee* (Shawnee), among others (Schultes 1938).

2 Notable models on peyote's therapeutic action have been offered by Calabrese (2013) and by Pascarosa & Futterman (1976), elements of which have been incorporated into the present proposed model.

3 The NAC can be broadly characterized as a confederation of churches, with over 180 individual chapters. Among the individual chapters there are a broad range of practices, beliefs, and rituals, although core principles and ritual structures tend to be consistent.

4 The term "Road Man" refers to the individual who leads peyote meetings.

5 In a recent custody dispute involving a member of the NAC, the court speculated that "use of peyote in Native American church services is something that has been imported and may well have been imported for the purpose of avoiding U.S. controlled substance laws rather than for purely religious purposes" (Fowler v. Fowler 2000: 20).

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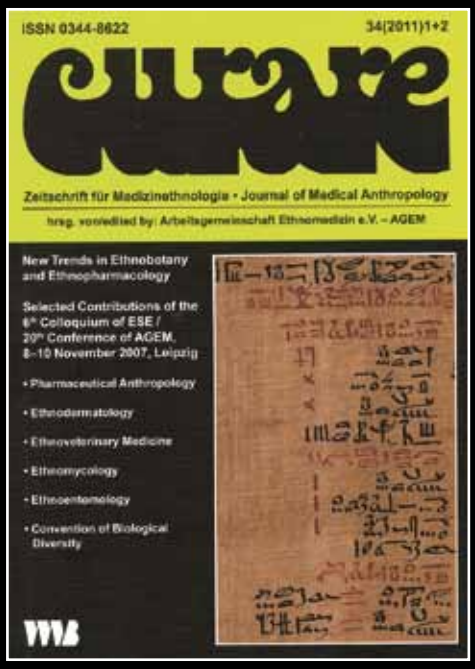

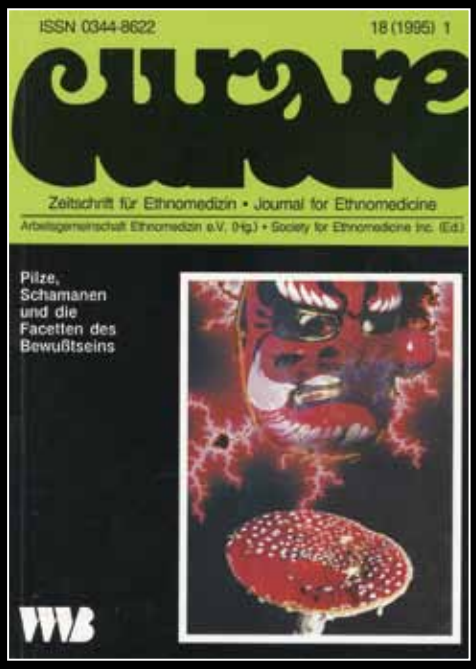

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