

Changes in Spirituality Among Ayahuasca Ceremony Novice Participants†

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Abstract—Ayahuasca, a hallucinogenic plant brew from the Amazon basin used as part of healing ceremonies by the local indigenous people of the region for centuries, is now being consumed by growing numbers of people throughout the world. Anecdotal evidence and previous research suggest that there are spiritual effects experienced among participants who take part in ayahuasca ceremonies. The current study examined whether novice participants' spirituality was affected through participation in an ayahuasca ceremony, and if so, how. A mixed-design method was used, comparing those participating in an ayahuasca ceremony to those who did not participate. This investigation used the Peak Experience Profile, the Spiritual Well-being Scale, and the Mysticism Scale as quantitative measures. Participant interviews and written accounts of ceremony experiences were analyzed. Results showed that neither the SWB score nor the M-Scale score increased significantly after participating in an ayahuasca ceremony. However, it was found that the higher the PEP score, the greater the positive change in SWB and M-Scale scores. Qualitative data revealed common spiritual themes in many of the participants' interviews and written accounts. Experiential differences were displayed within the ayahuasca ceremony group, warranting continued investigation into, and identification of, various confounding variables that prompt reported changes in spirituality within some participants while not in others.

Keywords—ayahuasca, entheogen, mysticism, spirituality

One group of compounds has shown promise in harnessing the power to increase an individual's spirituality and strengthen their sense of well-being. Known as entheogens, a term etymologically rooted in Latin meaning "generating the divine within," such compounds are commonly referred to as psychedelics or hallucinogens. Some of these, including the brew called ayahuasca (itself known by many names), have been used in sacred healing rituals in indigenous cultures for centuries. Ayahuasca too, like many of these compounds, has found more recent use in a wide variety of

modern spiritual contexts and communities, and its unique and prevalent application is evident in the literature (Wilcox 2003; Luna & White 2000). Shanon's (2002: 260) description of the spiritual power of ayahuasca provides a starting point in beginning to understand this phenomenon:

Personally, if I were to pick one single effect of Ayahuasca that had the most important impact on my life . . . I would say that before my encounter with the brew I was an atheist . . . and when I returned back home after my long journey to South America, I no longer was one. Likewise, a significant number of informants I have interviewed indicated that the main lesson they received from Ayahuasca was religious or spiritual.

Exploring the potential benefits of ayahuasca usage to an individual's spiritual well-being may assist in paving the way for future opportunities in mental health research and

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clinical practice to study the medicinal uses of ayahuasca and other psychedelics.

SPIRITUALITY AND MYSTICAL EXPERIENCE

In order to effectively consider here the spiritual dimensions of psychotherapy, some definitions of spiritual and mystical experiences need to be examined. James' (1902: 305-306) statement that "our normal consciousness, rational consciousness as we call it, is but one special type of consciousness, whilst all about it, parted from it by the filmiest of screens, there lie potential forms of consciousness entirely different" gives an indication of the scope and nature of the kind of experiences being studied here.

There is a swath in the spectrum of human experience that is commonly agreed upon as being spiritual. This invariably is perceived to include certain positive values, attitudes, perspectives, beliefs, and emotions. That which is termed "spirituality," coming from the Latin *spiritus* meaning "breath of life," is a human experience and exists at least potentially in all persons (Stace 1960). Spirituality is not the same as religiosity, if religiosity is defined as participation in the particular beliefs, rituals, and activities of a traditional religion. As such, it is possible to be spiritual without being religious.

Vaughan, in a collection of essays (Roberts 2001: 193), wrote that the differences between spirituality and religion are very important. She stated that spirituality is "a subjective experience of the sacred, whereas religion usually refers to an organized institution that provides a creed, a code of ethics, and community of rituals for believers. Religion may or may not provide a supportive structure for a person's spiritual life."

The primary difference between the terms "spiritual" and "mystical" is that "spiritual" refers to the individual's relationship with the sacred, nonordinary aspects of life while "mystical" refers to the conscious recognition of, and experiential union with, ultimate reality or God. Furthermore, a "religious experience" refers to a particular kind of spiritual experience tied to a particular doctrine or dogma of a religion. An example of such experiences would be a religiously-themed vision or feeling the presence of a certain deity or religious figure. Stace (1960) also stated that mysticism and religious experience are not the same thing. Though he did mention that there is an important connection between the two, he clarified that it is not as direct as many people think. The unique hallmark of the mystical involves "the apprehension of an ultimate non-sensuous unity in all things, a oneness or a One to which neither the senses nor the reason can penetrate. In other words, it entirely transcends our sensory-intellectual consciousness" (Stace 1960: 14-15). It transcends the dogma, the ritual, and the words that make up religions that, in themselves, simply point towards the mystical.

Stace (1960: 12) wrote that, "mystical consciousness is entirely unlike our everyday consciousness and is wholly

incommensurable with it." Huxley (1945: 133), in describing the mystic path, quoted the Lankavatara Sutra from the Buddhist tradition: "with the lamp of word and discrimination one must go beyond word and discrimination and enter upon the path of realization." Otto (1977: 5) stated that "[The mystical experience is] inexpressible, ineffable. . . .", a view corroborated throughout the ages in the testaments of recognized mystics. Stace (1960: 15) described two types of mystical experience: extravertive, which "looks outward and through the physical senses into the external world and finds the One there," and, in contrast, "the introvertive way [which] turns inward, introspectively, and finds the One at the bottom of the Self."

The value of mysticism, and the mystic experience, is yet to breach fully the realms of conventional therapeutic models, yet there is a growing recognition among members of the mental health community that spirituality is an important part of people's lives. The transpersonal psychology movement in particular is founded in part on this recognition. Many individuals now desire to have their spiritual beliefs and values integrated into counseling settings (Privette, Quackenbos & Bundrick 1994), and there is considerable and growing interest in examining the impact of spirituality on the psychological, social, and somatic dimensions of life. From the notable research undertaken to determine the effects of religious and spiritual behaviors on physical health and psychological and relational well-being, it appears that higher levels of spirituality are related to lower risk for disease, fewer medical and psychiatric problems, and higher levels of psychosocial functioning (Koenig, McCullough & Larson 2001; George et al. 2000; Ellison & Levin 1998; Pargament 1997; Gartner 1996; Ventis 1995; Larson et al. 1992). Sperry (2001) found that individuals with higher levels of spiritual and religious commitment, as measured in their attitude and beliefs towards the Divine as well as their spiritual behaviors, tend to report higher levels of well-being and life satisfaction on psychological measures. They experience less anxiety, including less fear of death, worry and neurotic guilt. They have lower rates of depression, substance abuse and dependence, report fewer suicidal impulses and have less likelihood of committing suicide. Such individuals also tend, among other positive measures, to show more empathy and altruism (Sperry 2001).

Many influential present-day thinkers have noted the waning of a spiritual perspective in Western culture. Carl Jung (Jung & Franz 1964: 84) stated, "We have stripped all things of their mystery and numinosity; nothing is holy any longer." Existential psychologists have emphasized that spiritual conflict and distress are at the root of many of the clinical pathologies found today. If this, or even a milder causal relationship is in fact the case, psychiatry and clinical psychology cannot afford to ignore what could be called the spiritual dimension of the human experience. If existentialists are correct in their assessment that the loss of a spiritual perspective produces an array of psychological problems,

then the recovery of a spiritual perspective is an obvious and wide-reaching treatment methodology. Jung (1933), in what is to a degree a confirmation of the validity of this approach, stated that he was able to treat only those midlife patients who recovered a spiritual orientation to life. More recently, Wilber (1984, 1980) and other transpersonalists have been attempting to call attention to this previously neglected area of psychology. Maslow (1962) said that “the human being needs a framework of values, a philosophy of life, a religion or religion surrogate to live by and understand by in about the same sense he needs sunlight, calcium and love” (Elkins et al. 1988: 206).

PSYCHIATRY, ENTHEOGENS AND SPIRITUALITY

There is, to date, little empirical research on the effects of ayahuasca on subjective spiritual experience, despite this being its traditionally recognized value. The bulk of the research on other significant entheogens was undertaken some decades ago, and before the imposition of research restrictions and laws limiting human subject research with these compounds.

Nevertheless, notable advancements were made in understanding these compounds and their effects during that mentioned era. In one of the well-known empirical studies, Pahnke (1966) systematically investigated the similarities and differences between experiences of divinity students under the influence of psychedelic drugs contrasted with students given a placebo. For this study, a phenomenological typology of the “mystical state of consciousness” was carefully defined, following the writings of recognized mystics themselves and of scholars who have attempted to characterize mystical experience. With this definition clarified, a double-blind, controlled experiment was conducted with subjects whose religious background and experience had been measured before their drug experience. The experimenter himself devised the experiment, collected the data, and evaluated the results without ever having had a personal experience with any of these drugs (Pahnke 1966).

The nine-category typology of the mystical state of consciousness, used in this study as a basis for measuring the phenomena of the psychedelic drug experience, may be summarized as follows: unity, transcendence of time and space, deeply felt positive mood, sense of sacredness, the noetic quality, paradoxicality, alleged ineffability, transiency, and persisting positive changes in attitudes and behaviors (Pahnke 1966).

Pahnke found evidence indicating that the experimental group, to a statistically significant degree, achieved a higher score in each of the nine categories than did the controls. This study is one of the most compelling studies to date. In the data of Pahnke’s research, there is strong evidence of the mystical effect of a psychedelic on the experience of a subject.

HALLUCINOGENS, ENTHEOGENS AND AYAHUASCA

Hallucinogens are psychoactive substances capable of inducing shifts in perception, thought, and feeling without a concomitant lapse of memory or loss of consciousness. It was Ruck and his colleagues (1979) who began using the term “entheogen” for these substances. Many studies of both the historical and contemporary use of entheogens 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 (Metzner 1999).

Ayahuasca, classifiable as an entheogen, is a psychoactive brew originating in the Amazon Basin region of South America. The ayahuasca drink is made by boiling, in a particular ratio, the stems of the *Banisteriopsis caapi* vine together with the leaves of the *Psychotria viridis* plant. Other admixture plants are often included such as *Justicia pectoralis*, *Bugmansia (toe)*, *Nicotiana rustica (mapacho, a variety of tobacco)*, and *Ilex guayusa*, a relative of *yerba mate*. The *Banisteriopsis* stem contains the beta-carbolines harmine, harmaline, and tetrahydroharmine, while the leaves of the *Psychotria viridis* contain N,N-dimethyltryptamine or DMT, a potent hallucinogen enhancing the activation of the neurotransmitter serotonin. The beta-carbolines serve to inhibit the production of the gastric enzyme monoamine oxidase (MAO), which is able to break down and inactivate the tryptamines (such as DMT) while they are still in the gut. In the presence of an MAO inhibitor, DMT can enter the circulatory system and penetrate the blood-brain barrier, thereby producing its effects (Strassman 2001).

Since prehistoric times, ayahuasca has been used in South America both as a healing tool and purportedly to communicate with plant and animal spirits. The term “ayahuasca” is a compound word from the Quechua language meaning “vine of the spirits” (Metzner 1999: 1). Depending on the region and cultural context of its use, there are a variety of other names for the brew, most notably yage, Daime, hoasca, and vegetal. Widely found in the Amazon cultures, the drinking of ayahuasca was taken up by mestizos (people of mixed European and indigenous, non-European ancestry) living nearby tribal peoples. This resulted in a number of different movements that have incorporated ayahuasca into their doctrines and activities. Today there are several ayahuasca churches in South America that combine indigenous traditional beliefs and practices with Christian and Afro-Brazilian elements in their patterns of use (Mercante 2006; Metzner 1999).

Ayahuasca has also more recently been adapted into contexts that are not affiliated with any particular religion (e.g., artistic movements, Brazilian group therapy). In addition to these and religious organizations, ayahuasca is still used in indigenous and mestizo communities in healing

rituals. Another example of secular use of ayahuasca comes from a therapeutic community in Tarapoto, Peru called Takiwasi. Here, a group of French and Peruvian psychiatrists, psychologists, and anthropologists use ayahuasca to treat drug addicts, particularly those addicted to cocaine paste. Ayahuasca's use is also documented in other communities in the treatment of alcoholism (Mercante 2006).

Finally, there is another type of setting for the use of ayahuasca that extends from South America to Europe and North America. These are ceremonies, independent from any centralized organization, which vary in form and in the manner in which they are conducted. Ceremonial leaders use techniques borrowed from both the more traditional and the contemporary expressions of ayahuasca usage. In addition, and of particular importance to this research, there is an increase in frequency of the occurrence of these ceremonies in North America, led by a shaman or by local experienced guides (Metzner 1999).

LEGALITY

In the Amazon Basin countries (Brazil, Peru, and Ecuador), the use of ayahuasca is fundamentally legal, both in the indigenous context and in the newer religious contexts described earlier. In the Western world, the situation is not yet clear. DMT, in itself, is a Schedule I substance in the United States, which makes it illegal for administration and consumption. However, it has not yet been settled whether this makes the consumption of the ayahuasca brew illegal. Similar questions of legality exist in Canada. Recently, the Church of Santo Daime in the Netherlands, following a lawsuit, ushered in the legalization of ayahuasca in religious rituals (Shanon 2002). On February 21, 2006 the United States Supreme Court ruled unanimously in favor of a small congregation that is part of the Uniao do Vegetal (UDV), a prominent ayahuasca-oriented denomination, stating that they may use ayahuasca in their religious ceremonies. The Supreme Court cited the Religious Freedom Restoration Act (RFRA) in its ruling, and stated that the RFRA protected the UDV from the prohibitions of the Controlled Substances Act (CSA), which makes DMT illegal in the United States. The Court ruled that the burden of proof was on the government to show that the use of ayahuasca would not "substantially burden a sincere exercise of religion by the UDV" (Supreme Court 2006). Furthermore, the Court pointed to legislation showing exception to CSA in the Native American Church's sacramental use of peyote, a hallucinogenic plant. One can only speculate on the implications of this ruling on the legality of ceremonial ayahuasca use in the United States; however, certain outcomes are likely. It is predicted that ayahuasca will be obtaining more public recognition for its use in religious ceremonies, that there will be more people openly using ayahuasca for religious purposes, and that the legal battle is likely far from over.

IMPLICATIONS OF ENTHEOGENS IN THERAPY

From the research thus far, there is significant reason to consider potential uses of entheogens in psychotherapy. It is clear that these substances are not panaceas, but provided proper guidance, and application as well as effort on the part of the user, they show great promise in alleviating suffering. A prominent value of incorporating an entheogen into a psychotherapeutic regimen is that by accessing and processing conscious and unconscious material from a different angle (the perspective offered by the substance), radical and effective solutions may occur to the individual. Though qualitative data suggests that the substance acts as a guide in itself, experienced external guidance while an individual processes the perspectives which accompany such therapy is invaluable. Alan Watts (1965: 16) stated that psychedelics "are useful to the extent that the individual can integrate what they reveal into the whole pattern of his behavior and the whole system of his knowledge." Therapeutically such a process can be assisted, and potentially, optimized.

Chilean psychiatrist Claudio Naranjo (1979) has used ayahuasca and harmaline in short-term analytic psychotherapy. His research showed 10 out of 30 psychoneurotic patients exhibiting positive changes that would otherwise be expected only after intensive psychotherapy.

Alan Watts (1965: 18) stated, "the [psychedelic] experience corresponds almost exactly to the theological concept of a sacrament or means of grace—an unmerited gift of spiritual power whose lasting effects depend upon the use made of it in subsequent action." The value of these experiences lies beyond the time in which the person is on the substance, and further defining value comes from the integration of the experiences into the individual's life. Roberts (2001: xii) explains that

a genuine encounter with the Ultimate does not guarantee a genuine spirituality. The experience may be authentic, but how authentic their spirituality was depends on what those who had the experience do with it . . . Not a few men and women who have risen to this task bear witness that entheogens first helped them open their eyes to that light.

METHODOLOGY

Significant anecdotal evidence suggests that the ingestion of entheogens in certain circumstances will increase spirituality and well-being, and research is only just beginning to investigate the psychological effects of ayahuasca on the individual. The present study, the first of its kind, investigated whether participating in an ayahuasca ceremony would change and/or effect participants' subjective experiences of spirituality, and if so, how?

It was hypothesized initially that participating in an ayahuasca ceremony would effect the general subjective spiritual experience of ceremony participants in a positive

direction, marked by an increase in one's focus on, and/or reverence, openness, and connectedness to something of significance believed to be beyond one's full understanding and/or individual existence (Krippner 2000: 72). This may include one's relationship with and sense of God or what one understands to be one's spiritual being, or one's personally defined sense of powerful, extraordinary forces that one sees as spiritual.

This hypothesis was divided into several subhypotheses that were measured through quantitative as well as qualitative assessment measures including written accounts and interviews with the participants before and after participation in an ayahuasca ceremony.

Participants and Location

A total of 54 participants took part in this research study. Five participants who served as a control group were administered interviews and other instruments, and did not take part in an ayahuasca ceremony. Forty-nine participants served as the experimental group (but two people in the Canada group dropped out following the initial follow-up session the day after the ceremony and did not complete the study). These 49 were self-assigned to four different ayahuasca ceremony groups through coordination with the ceremony leaders. The ceremonies in which the experimental group subjects participated were preexisting situations in which the researcher's function was only to do research. These groups were of the previously mentioned category of modern, nonorganizationally-aligned ayahuasca users found in North America and Europe. At the onset of the study, the intake data and instruments showed that the two groups were not significantly different from each other. All 49 participants in the experimental group participated in an evening-long ayahuasca ceremony. All participants in the study consisted of volunteers who were first-time ayahuasca ceremony participants, and who had already planned, prior to having any knowledge of the study, on attending the ceremony in which the researcher was present. The participants' primary and first language was English (Americans and Canadians). Inclusion criteria were that participants must never have previously taken ayahuasca, nor ayahuasca analogues (any combination of N,N dimethyltryptamine and a monoamine oxidase inhibitor) in any setting prior to the study and were required to pass the Mini Mental Status Exam (Folstein, Folstein & McHugh 1975) at the outset of the study.

Since ayahuasca is a powerful hallucinogen that potentially increases emotional sensitivity and increases access to unconscious material (Hoffmann, Keppel-Hesselink & da Silveira Barbosa 2001), the researcher took steps to conduct interviews and survey instruments in a sensitive manner. The research design and methodology was submitted to and approved by the Human Subjects Committee at Argosy University. It was taken into consideration that subjects could potentially find some of the topics in the interviews uncomfortable and/or upsetting due to memories

or psychologically sensitive areas that might have been uncovered during the research. Careful consideration was always made with regard to the protection of the welfare of the human subjects involved. Informed consent forms were given to participants, to be signed prior to beginning the study. In addition, a Mini Mental Status Exam was given to each participant, assessing for the possible presence of psychological disorder. Participants who showed the presence of psychological disorder as a result of the exam were deemed not suitable for the study.

This study took place in two locations, one in the San Francisco Bay Area of California and one in British Columbia, Canada. Two ceremonies were conducted in each location in order to facilitate all 49 participants taking part, for a total of four ceremonies. The ceremonies in the two locations were conducted by two different ceremony leaders, with both ceremonial leaders being natives of Peru, a traditional heartland of ayahuasca usage. The particular ceremonies in which the research was conducted were chosen because of the researcher's previous knowledge of the ceremony leaders. The ceremony leaders agreed to help the researcher solicit participants already planning on attending the ceremonies.

Quantitative Portion

The quantitative portion of this study was performed through the use of scaled surveys on spiritual experience. These quantitative instruments (and the more qualitative interview instrument) were group-administered by the researcher to all participants prior to the ayahuasca ceremony, six hours after the ceremony, one week after, and in one- and three-month follow-ups.

Many instruments made use of terms implying religion and religiosity, most notably from a monotheistic Judeo-Christian perspective (e.g., belief in, or experience of, God). Therefore, researchers must be skeptical of the construct validity of most of the tests designed to access spiritual/transpersonal concepts. The subject population being tested may demonstrate various empirical sensitivities to certain measures due to the differences in belief systems.

There were three quantitative instruments chosen for this study:

- 1) The Peak Experience Profile (PEP)
- 2) The Spiritual Well-Being (SWB) Scale
- 3) The Mysticism Scale (M Scale)

These instruments were chosen because they: (a) seemed to embody spiritual/transpersonal constructs in a manner which minimized or eliminated religious concepts; (b) appeared to be assessing unique constructs relative to the measures; (c) appeared to have satisfactory validity and reliability; and/or (d) had been used effectively in previous research (McDonald et al. 1995).

Peak Experience Profile. The Peak Experience Profile (Di Leo 1982) is a 184-question survey looking

specifically at the participant's experience of the altered state of consciousness during the ceremony. There are seven categories measured in the Peak Experience Profile (PEP): nadir experience, unity, sense of the sacred, objectivity and reality, transcendence of time and space, deeply felt positive mood, and ineffability. The maximum score for each scale is: 110, 30, 35, 20, 40, 35, and 25, respectively. Two total scores were compiled, one including the nadir experience and one without. The total possible score of PEP is 295, the total possible score excluding the nadir experience is 185.

The Spiritual Well-Being Scale and Hood's M-Scale were used to assess the general spirituality and mystical experiences of the participants. These instruments were applied to seek more stable spiritual measures.

The Spiritual Well-Being (SWB) Scale. The Spiritual Well-Being (SWB) Scale "provides an overall measure of spiritual quality of life" as well as "a self assessment of one's relationship with God, and one's sense of life purpose and life satisfaction" (Ellison 1983: 332). The SWB is a holistic measure, with constituent scales of religious well-being (RWB) and existential well-being (EWB). SWB is the sum total score of the RWB and the EWB together. RWB and EWB scales each can range from 10 to 60; SWB total can range from 20 to 120, with a higher score representing greater well-being.

The Mysticism Scale (M Scale). The Mysticism Scale (M Scale) is an instrument intended to assess an individual's intense experiences, characterized by a sense of unity with the outside world and/or with "nothingness," which may or may not be religiously interpreted. It was created explicitly to operationalize eight of Stace's (1960) nine phenomenological criteria for mystical experience (Hill & Hood 1999). The scores can range from a low of 32 to a high of 160.

Analysis

Data for the quantitative portion of the research was analyzed through ANOVA, regression, and the nonparametric Kruskal-Wallis test, looking at various data from the administered questionnaires from the experimental and control groups. Analyses were conducted examining changes in SWB and M-Scale scores in relationship to PEP scores. Data from each of the measures was analyzed within the experimental groups themselves as well as between the experimental groups and the control group. Findings from statistical analyses were considered statistically significant at p values of 0.05 or less.

Regressions for Mysticism Scale and Spiritual Well-being scores were conducted to assess effects of age, gender, ayahuasca session leader/group, and relationship to the previous score.

There was a need to deal both with missing data and the large inequality in comparison sample size (see limitations below). The missing data was the result of participant attrition and/or lack of response in follow-up data collection by study participants. To accommodate this missing data, while

still producing accurate analysis, the researcher decided to use a combination of the scores at time 2 and time 3 (six hours and one week after the ceremony).

Demographic Profile

The average age of the ayahuasca ceremony participants was 33 years. There were 23 males and 26 females. The average age of those in the control group not taking part in the ayahuasca ceremony was 31 years. There were three females and two males in the control group. All participants in both the ayahuasca group and the control group identified as Caucasian. Regressions for the Mysticism Scale score and the Spiritual Well-being score were conducted to assess effects of age, gender, and ethnicity on the results. It was found that neither age, gender, nor ethnicity data was statistically significantly different between the groups in predicting the scores on these two measures at a p value of 0.05.

Qualitative Portion

The qualitative portion of the study was performed using half-hour semistructured interviews given by the researcher and conducted within 24 to 72 hours prior to the ceremony, within 12 hours after the ceremony, within one week after, and then in one- and three-month follow-up interviews. All interviews were taped and transcribed by the researcher. The interviews were designed to explore the participants' sense of spirituality in their present life.

While in-person interviews and administration of instruments with participants was the preferred methodology, if necessary, phone interviews were conducted and administration of instruments was accomplished through the postal service or over email.

Additionally, the researcher solicited a written subjective account of the participants' experience of the ayahuasca ceremony that was completed within 12 hours of the conclusion of the ceremony. Data for the qualitative written and interview portions of the research were compiled, analyzed and used to supplement the quantitative findings.

Each written account was examined for various common themes as described in the literature. This study collected information on these themes and compiled frequency data on accounts while providing examples of written statements.

In addition to the written accounts, through information collected during multiple-stage interviews, participants in the study were able to reflect upon their spirituality, the ceremonies, and the effects of participating. Sections of the transcripts were chosen to display the various perspectives of the participants in the study.

Researcher's Observations

The observation portion of the study consisted of the researcher being present in the ayahuasca ceremonies while not ingesting the ayahuasca brew. The researcher therefore was able to effectively observe the interactions of the shamans

and the participants throughout the ceremony. The day following the ceremonies the researcher wrote down his observations with the objective of providing detail and accuracy. The researcher's observations of the ayahuasca ceremonies were not analyzed; however, selected items are reflected upon with regards to the other results.

Limitations and Delimitations

The researcher is aware of several limitations of this study. First, the generalizability, or the ability to extrapolate these findings to the general population, was limited due to the self-selection of the participants in the study. Often those seeking to participate in ayahuasca ceremony are expecting to have a spiritual experience. Therefore, there was uncertainty whether results of this study would determine whether participants were predisposed to having the changes hypothesized. Second, the context of the ceremony was highly spiritual in nature, being conducted by a shaman who works with the ayahuasca spiritually. Not all ayahuasca ceremonies are based in a spiritual tradition, though it is far less common. Third, like all experiential reports, subjects were vulnerable to faulty memory, distortion, or fabrication. In addition, the preceremony data collection may have influenced the effects of the ceremony on the participants. Finally, the researcher knew several of the participants in the study as they live in or are associated with the same community. This may have led to biased data, as participants may have wanted to produce the results the researcher desired.

In addition to the structural limitations of the study, there were limitations in the circumstances influencing the data collection procedure. The researcher found that the majority of those participants who lived in Canada did not participate in the follow-up sessions beyond the one-week mark (prior to which all were done in person). In contrast, those participants who lived near the researcher in the United States consistently participated in the follow-up sessions. All of these sessions were done in person. This phenomenon clearly needs to be taken into consideration when interpreting the results.

Another limitation to the study was that the groups participating in the study were assumed to be not statistically different from each other prior to the study. Although the results have shown that ethnicity and age were not significantly different between the groups, there are other potential differences that were not measured. Religious background, educational background, psychological history, etc could have played a part in the differences found in the data; however, these demographic differences were not examined.

There were other major hurdles in analyzing the data, one of the largest being the fact that the control group is far smaller than the experimental subjects group. It was difficult for the researcher to recruit control subjects for the study because of the lack of incentive to participate.

RESULTS

The results of this research are divided into three sections. The first section, researcher's observations, is the researcher's account of the specific ayahuasca ceremonies in which the research hypothesis was investigated. This narrative is not requisite for the purposes of this article, and is not included here. The second section, quantitative data, examines the data collected through the administration of the three instruments utilized in this study. Further, this section examines the initial hypothesis via several specific subhypotheses. The third section, qualitative data, examines the participants' written accounts as well as longitudinal interviews looking further into the original hypothesis.

Quantitative Data

The Ayahuasca Ceremony Peak Experience and the PEP. The ayahuasca group reported feeling a variety of peak experiences during the ceremonies. These experiences were similar to those reported in the previous literature (Shanon 2002). Participants reported having a variety of positive experiences ranging from connection with the divine and spirit world to experiences of healing their relationships with nature and people in their lives. Most participants reported being very moved by the experience and being grateful that they were able to take part in what they considered such a profound, awe-inspiring ceremony. These reports given by the participants correspond to high scores on the Peak Experience Profile (PEP.)

The total PEP scores did not differ between the two ayahuasca ceremony groups, but when the nadir score was removed, the two groups did differ, with the Canada ayahuasca group having a higher total Peak Experience minus nadir score than the California ayahuasca group. The data points to the Canada group having a more positive peak experience than the California group, despite both groups having equally significant total peak experiences. This corresponds to the differences reported in the two groups' written accounts. A greater number of the California participants reported having difficult experiences during the ceremony, some even describing the experience as "negative." The differences in data between the two ayahuasca groups raises concerns about whether or not the ayahuasca ceremonies were having the same effect upon the participants. These results will be discussed further in an upcoming section.

It was found that both the Spiritual Well-being and the Mysticism Scale scores are correlated to the Peak Experience Profile scores. The difference between the two groups as expressed in the total minus nadir may have led to more changes in the Spiritual Well-being score, but not in the Mysticism Scale score (which did not differ significantly between the groups.) This is evident in the Canada ayahuasca group having a greater change in the SWB post-ceremony score than the California group. It may be the case that the

experiences expressed in positive PEP scores (total minus nadir) lead to greater incorporation of the peak experiences into one's ongoing spiritual well-being. In contrast, perhaps the experiences reflected in the higher nadir scores of the California group prevented them from experiencing greater spiritual well-being after the ceremony. This may be due to participants having difficulty in positively incorporating challenging experiences in the short time period (one week) after the ceremony.

Spiritual well-being. In follow-up interviews, approximately half of the ayahuasca group participants said that their spirituality had become more important in their lives after the ceremonies. They reported that their spiritual beliefs had "deepened" and become more a "part of their everyday lives." These beliefs included connection to nature, a deep love for living things, belief in a higher power and belief in maintaining a peaceful existence of service to living things. Immediately following the ceremonies, many participants expressed the desire to engage in more regular spiritual practices. In later follow-up sessions, participants sometimes acknowledged that, although they were not participating in daily yoga or meditation to the degree that they originally planned, an overwhelming majority of those who took part in the ceremonies said that there was a new sense of spirituality in their daily tasks.

As defined previously, the Spiritual Well-Being (SWB) instrument "provides an overall measure of spiritual quality of life" as well as "a self assessment of one's relationship with God, and one's sense of life purpose and life satisfaction" (Ellison 1983: 332). The current study found that the post-session SWB scores were not predicted by baseline spirituality scores. This indicates that the spirituality scores change over time in relationship to other variables. Furthermore, the SWB score is predicted to some degree by taking part in an ayahuasca session versus being in the control group. Moreover, the spirituality scores were more strongly predicted by specific ayahuasca group than by simply taking part in a ceremony or not doing so. This was evident in the Canada ayahuasca group's scores six hours after the ceremony being significantly greater than those of the California group and the control group (who had the lowest scores).

Not only was there not a significant difference in scores between the entire ayahuasca group and the control group, but also in the change of the scores over time as well. Similarly, the Canada group demonstrated a significant difference in its increase in the SWB score as compared to both the California group and the control group. The California ayahuasca group's change in score was nearly the same as that of the control group (almost no change). This is probably why, when comparing only the taking part in a ceremony versus not, the results are not significant—the California ayahuasca group scores are closer to those of the controls, and they pull down the mean for the total ayahuasca group that took part in the ceremony. This difference in the scores between the Canada ayahuasca group and the California ayahuasca group

can be examined by investigating the participants' ceremony experiences. The data points towards there being a difference in the groups' peak experiences, which may have caused this difference in the SWB scores. Other factors that may have contributed to the difference in change in the scores may have to do with the characteristics of the two different ayahuasca ceremonies, and particularly having to do with differences in substance compounds, set and setting of the two groups. These differences will be discussed further.

The question of what exactly the SWB is measuring is an important one, and is highlighted in the results of this study. The data yielded from the analysis showed results dissimilar to what was found in the interviews with participants. This study found that equal portions of participants in both ayahuasca groups reflected a deepening of spiritual experience and incorporation of spiritual ideas in their lives. Perhaps that deepening and importance of spirituality in the Canada ayahuasca group has a higher correlation with the SWB scale's connection with God, purpose, and life satisfaction. In contrast, perhaps the California groups' spiritual beliefs fall outside the measures of the SWB scale, yet are equally moved by participation in the ayahuasca ceremony.

Mystical experience. As was stated, the Mysticism Scale (M Scale) is an instrument intended to assess an individual's intense experiences, characterized by a sense of unity with the outside world and/or with "nothingness," which may or may not be religiously and/or mystically interpreted. In contrast to the Spiritual Well-being score, the best predictor of the Mysticism Scale score post-ayahuasca ceremony is the baseline mysticism score. That is to say, the post-session M-Scale scores were more closely related to their baseline scores than any other variable. From the results, it seems that novel mystical experience is either less likely, or is even trait-like as compared to the spirituality score.

The above finding may be related to many of the participants reporting having had mystical experiences before the ayahuasca ceremony. Participants' definition of spirituality and spiritual beliefs often included aspects of Stace's (1960) description of mystical experience. Many of the participants at baseline told stories of having life-changing mystical experiences. They described feelings of unity, sacredness of life, feelings of peace and joy, understanding of a paradoxical quality and other characteristics of the mystical experience. Many of the participants gave accounts of using psychedelics, such as LSD, psilocybin, and mescaline in order to facilitate these insights earlier in their lives. Therefore, it seems that the M-Scale was not accurately measuring new mystical experience, but instead whether or not one has ever had a mystical experience in one's life. The data from the current study does not show that there was a significant difference between the whole ayahuasca group and the control group in the change in the M-Scale score from the baseline to the post-score. However, there was a trend in this direction.

Perhaps many of the participants in the study had previous mystical experiences in their lives; however, there is some suggestion that some of the ayahuasca group participants had new mystical experiences.

Ayahuasca group vs. control group. One of the greatest limitations of the current study is that there were so few participants, and the large difference between the number of participants in the ayahuasca group and the control group. Not only is this a limitation of the generalizability of the study, but it also affects the statistical analysis of the data of the quantitative portion.

One fortunate aspect of the current study is that it appears from the data that the controls did not differ significantly from the ayahuasca participants prior to the ayahuasca ceremonies. This is important, even if there are only five controls, because one of the biggest concerns of the present study was that participants who took part in the ayahuasca sessions were possibly more spiritual or mystical beforehand than the people who did not take part. However, that does not seem to be the case.

Comparing the ayahuasca groups. Given the collected data, this study can only begin to posit what the differences between the two ceremony groups were that caused a significant difference in the quantitative results. First and foremost was difference in the number of participants in the two groups (33 in the Canada group and 14 in the California group). This difference affects the statistical analysis. However, several differences based on the researcher's observations of the ceremonies are worth noting here, despite not knowing specifically how they affected the outcome of the present study. First, the location of the ayahuasca ceremonies was different. The California group's ceremonies were held in an old church in an urban center. This is compared to the Canada group's ceremonies being held in a rural location in the forest. Perhaps the more natural environment of the Canada location was more conducive to having a stronger peak experience and greater effect on spiritual well-being. This phenomenon is similar to "setting" in the "set and setting" concept that Leary and colleagues (1964: 11) introduced regarding psychedelic experiences. He wrote:

Of course, the drug dose does not produce the transcendent experience. It merely acts as a chemical key—it opens the mind, frees the nervous system of its ordinary patterns and structures. The nature of the experience depends almost entirely on set and setting. Set denotes the preparation of the individual, including his personality structure and his mood at the time. Setting is physical—the weather, the room's atmosphere; social—feelings of persons present towards one another; and cultural—prevailing views as to what is real.

This research leads to further interest in Leary's beliefs that setting plays a role in the psychedelic experience. Setting appears to be one of several factors that may have caused differences in experience between the Canada and the California groups. Further clarifying his explanation

of the importance of setting, Leary and colleagues (1964: 106) stated:

The first and most important thing to remember, in the preparation for a psychedelic session, is to provide a setting which is removed from one's usual social and interpersonal games and which is as free as possible from unforeseen distractions and intrusion.

Perhaps this played a role in the differences in results between the Canada group that traveled to a remote natural setting, and the California group that stayed in an urban setting.

In addition to difference in locations of the ceremonies, two different Peruvian shamans led the ceremonies in Canada and California. Although this research did not undertake to pinpoint what the differences between the shamans were, undoubtedly they each had different personalities, different ways of connecting with the participants, and different musical styles when singing the *icaros*, the songs chanted during an ayahuasca ceremony. Perhaps one of the shamans was more skilled at connecting with the participants in the ceremony or perhaps more adept at calling the purported spirits into the room during the ceremony. One of the more noticeable differences between the two shamans was that the one for the Canada group spent more time talking to the participants both before and after the ceremony. His English was superior, which may have had an effect on the participants' experiences. In addition, the intimate nature of the Canada group's shaman calling each participant up to him for a personal healing may have affected the participant's experience. These factors need to be taken into consideration when interpreting the results of this study. Further research in this area is suggested, examining the participant rating of the shaman's rapport, charisma and interactions to shed more light on these variables.

A third difference was that the ayahuasca brews were different. Each brew was created by the shaman while in Peru and brought to its respective location. Therefore different plants, types of plants, ratios of plants and preparation styles may have affected the strength and other qualities of the ayahuasca in the two different groups for the ceremonies. Perhaps the contents of the Canada groups' brew produced visions and experiences that led to more positive peak experiences during the ceremony and greater positive changes in spiritual well-being. These factors need to be seriously considered when interpreting the results of this study, as well as in designing the requisite controls for future studies.

A final possibility is that the groups may have been different in a way not assessed in the current study. Perhaps personality differences existed in the groups and therefore may have affected the results. The participants in the two groups were residents of the areas in which the ceremonies took place. Perhaps the cultures of the Bay Area in California and of British Columbia, Canada, differed in

how the participants responded to the ceremonies. Perhaps these group personality differences affect how members of each group incorporate entheogenic experiences or interpret mystical experiences. One such example may be that the Canadian culture, and therefore the participants in the Canadian group, is generally thought of as more welcoming and less guarded than the culture of the United States. Perhaps this led the Canadian group to be more open to more profound spiritual experiences.

Qualitative Data

Through information collected during multiple-stage interviews, participants in the study were able to reflect upon their spirituality, the ceremonies, and the effects of participating.

Ten common themes. The powerful effects of the ceremonies could be seen in the immediate responses of participants in their written accounts within twelve hours of the ceremony. From what was written, the researcher noticed several common themes that emerged during participants' ceremony experiences. The most popular themes discussed in the reports were recorded. These themes, in descending order of frequency, were (1) presence of light/geometric patterns, (2) sense of honor, respect, gratitude and/or awe, (3) sense of connection, (4) self reflection and/or insights on personal life (5) spiritual experience (6) supernatural experiences, (7) sense of peace and/or calm, (8) healing, (9) death/near-death experiences, and (10) desolation.

The *presence of light and geometric patterns* was the most common theme in the visions of the participants. Almost 60% of those who took part in the ceremony wrote about such experiences in their written accounts. One participant described her visions as "colors fluorescent and iridescent around things—delicate four dimensional images—fine exquisite design and art work—patterns moving. Escher-ish."

A *sense of honor, respect, gratitude and/or awe* was experienced by approximately 55% of participants. The participants expressed these feelings in various ways, including through an overall sense of awe for life in general. One participant stated "A sense of lingering awe and thankfulness continues."

A *sense of connection* was a third common theme that over 50% of the participants reported in their written accounts. Some of them felt connection to personal relationships in their lives (those present in the ceremony, family members, partners), while others felt connection with nature, god or the divine. One participant recollected having "a deep connectedness with those next to me," with others recounting feeling connected to those most important in their lives. A participant stated that from the ceremony, "a reflective process ensued in which I affirmed my relationships with different people in my life and resolved to set up meaningful interactions with many of them."

Personal reflections and insight was the fourth most common theme, and which approximately 50% of the participants shared. These types of experiences included participants' examination of personal interactions from their past, and reflections on attitudes and beliefs. One Canada group participant stated that as a result of the ayahuasca ceremony he had a new "understanding of past traumas." Another explained in his written account "I gained huge insights into my physical and emotional challenges."

The *sacred, a higher power or God* was the fifth most common theme. Nearly half of the participants in their ayahuasca visions during the ceremony mentioned the presence of "God," "the divine," or some intangible, difficult-to-describe force that exists outside of everything else. One California group participant wrote, "My sense of spiritual identity has been 'remembered' and reawakened." One participant called the ceremony "a sacred experience."

Supernatural experience was another theme that was frequently observed by the participants. This theme includes becoming invisible, traveling through space/time without the body, and interacting with spirit creatures, spirit guides, or spirit animals. Over 40% of the participants had such an experience. One from the Canada group stated, "at one point it felt as if I was being ushered into the world of the spirits."

A *sense of peace and calm* was a theme written in approximately 40% of the accounts. Many of the participants, even those who had challenging experiences during the ceremony, felt a strong sense of calm. Most of the reflections on this state of being seemed to refer to the state of the cosmos, rather than merely describing one's current state of mind. A participant from the Canada group stated that he felt "a great sense of love, compassion, peace and joyful calm." Another remarked that she "arrived at a place where everything felt calm, where I felt in the center of all."

Healing was the eighth most common theme, with about 40% of accounts written by participants discussing healing on a personal level or global level. As an example, one participant stated that the ceremony was "deep and profoundly healing."

Death or near-death experience was another theme that was revealed in the written accounts, with approximately 10% of participants in the ceremonies reporting having some experience around death. These experiences varied from feeling that one had died during the experience to realizations about what death means or is. One Canada participant stated, "I thought of death as I never had before. Not as the end or something to fear, but instead as a reunification with the love, beauty and truth that was manifesting around, above and through me."

Desolation was the final, and least prevalent of the common themes. Approximately 10% of those who participated in the ayahuasca ceremony, during some part of their experience, felt overwhelming and unpleasant feelings. Some participants reexperienced traumas from earlier times in

their lives, while others experienced “demonic” spaces. One California group participant recounted, “a sense of restless energy overcame me, wrought with fear and concern.”

Further questions were included in the interviews, and analyzed in the order in which the questions were asked of participants.

Definition of spirituality. Prior to the ceremony, participants were asked their definition of spirituality. One Canada group participant stated that spirituality “is the connection through everything seen and unseen. It is feeling connection with nature, inanimate objects and people . . . what we see right here and right now isn’t everything that is going on.” A California participant stated that “spirituality is about seeing the perfectness in everything . . . there is a sense of being . . . a recognition . . . a sense of inner peace.”

Participants were asked if (and how) the ayahuasca experience had affected their definition of spirituality. Over 90% of participants did not change their definition of spirituality after participating in the ayahuasca ceremony.

Spiritual beliefs. Participants were asked if participation in the ceremony changed their beliefs about spirituality. Despite participants’ definitions of spirituality not being affected by participation in the ceremony, more than 75% of participants did find that there was an impact on their spiritual beliefs. Most of the participants felt that they did not gain new spiritual beliefs, but were reminded of old ones, or that previously-held beliefs were strengthened and reconfirmed because of the ayahuasca ceremony. Immediately following the ceremony, a Canada group participant explained how “It has deepened and reaffirmed my definition of spirituality. It is a crystallization of the actual power of healing. More than just an idea or vague concept.” A Canada group participant, one month following the ceremony, stated that his spiritual beliefs were “not different . . . but the actualization of my beliefs is taking shape. It has been within the scope of my rational mind that all things are united and nothing can be considered . . . separate from the All of existence, but now I feel as though I am living that awareness more than just holding the thought of it.”

Importance of spirituality. Participants were asked if spirituality was more, less or equally important to them after the ceremony. Immediately following the ceremony about 50% reported that it was more important and about 50% reported that it was equally important to them. No participants reported that their spirituality was less important to them. This continued to be the trend throughout the follow-up interviews.

One week following the ceremony, a Canada group participant reflected on how the importance of spirituality in his life wasn’t something new. “It is always important to me, but I always seem to forget. Taking the ayahuasca helped me remember who I am and who we are.”

Change in experience of God/Higher Power. Participants were asked if they “experienced change in [their] belief

in God or a higher power?” Less than 5% of participants stated that they experienced a change in their concept of God or a Higher Power at any point during the study.

Participation in spiritual practices. During the interview, participants were asked if their experience changed their ideas about participating in or engaging in any practices that may be described as spiritual. Over 75% grew interested in participating in new spiritual practices, such as yoga, meditation, further ayahuasca ceremonies, etc. However, with time (beginning one month after participation) over half of the participants expressed sentiments recognizing that the emotional effects of the ceremony were not as strong, new spiritual practices became less important, and “the business of everyday life pushes it to the back of my mind.”

Over half of those who discussed making changes immediately following the ceremony noticed the introduction of a spiritual component to the more day-to-day aspects of their lives.

Reflections on the Research

This study is one of the few studies on ayahuasca that looks at the subjective spiritual effects of ayahuasca on novice users. This study has had its challenges, but has cleared a path for future research in this area. Future research should optimize consideration of certain confounding variables made apparent through this research and create better opportunities for communication with research participants for their follow-up sessions by creating incentives, as well as having participants and the research team placed in the same geographic area.

It should be noted that the researcher’s role in the study is likely to have played a part in the results. Throughout the study, participants were asked to reflect upon their spirituality and spiritual themes, both before the ceremonies and in the follow-up sessions. In essence, the research might have framed the whole experience as a spiritual experience for the participants more so than if the shaman alone framed it as such. Several participants remarked during the follow-up sessions that they were always appreciative of the follow-up sessions because it gave them an opportunity to reflect upon the ayahuasca ceremony experience, recall some of the aspects of it, and incorporate some of the lessons into their lives. One could speculate that if the follow-up sessions did not exist, that many of the participants would feel less impacted by the spiritual effects over time. Though this may have had confounding effects on data in the current study, that this has been deemed beneficial by participants bears indications for therapeutic applications in the future.

Overall this research may have had an effect on the longevity of an ayahuasca ceremony’s spiritual impact on the participants’ lives, and as such may fit into a model in which an ayahuasca ceremony can be a beneficial therapeutic tool. Strong spiritual experiences, such as those of the ayahuasca ceremony, should perhaps have a system of

follow-up meetings so that people can continue to incorporate the information they received during the ceremony into their lives. Follow-up sessions also create an opportunity for participants to positively process difficult material that may have arisen during the ayahuasca ceremony. It may be possible that if participants were to take part in multiple ayahuasca ceremonies, this would amplify the affects and/or increase the longevity of the spiritual and mystical affects of ayahuasca on participants. This is in fact the assessment of users of ayahuasca in its religious contexts, and the aim for which their communities are organized. Further examination of this potential is due.

One of the greatest and most present challenges facing the continued study of the spiritual effects of ayahuasca on humans is that of creating a protocol. With a protocol, studies can be reproducible and standardized. Some of the many unknown variables that may have led to the differences between the Canada and the California ayahuasca groups could be prevented if previously identified by such a protocol. A standardized pharmaceutical-grade brew could be created and analyzed. A specific setting, specific training for the leader of the ceremony, and a specific format for the ceremony itself could all be chosen. This would eliminate many of the confounding variables that have influenced the results of this study. Riba and Barbanoj (2005) reported that, in Spain, such protocols are being developed and research has begun testing the effects of ayahuasca on humans in a clinical setting.

The positive benefits to creating a clinical protocol for the testing of ayahuasca on human subjects are notable, yet on the way to achieving this there are many challenging factors to overcome. One of the greatest challenges is to reproduce an authentic spiritual setting in which the ceremonies would consistently take place, whether in an indigenous setting or in a church. Additionally, the training of ayahuasca guides and healers seems to be outside the bounds of Western scientific study and therefore initially it is difficult to have standardized leaders of the ceremonies. A final challenge is that the ayahuasca itself, although able to be analyzed and made consistent in chemical and plant make-up, can be assumed to elicit different psychological effects in a user depending upon whether it is prepared by a shaman and taken in drink form, or prepared and administered in clinical pill form.

A final reflection on this study calls for further study into the differences among ayahuasca ceremony research participants. This study concentrated on examining the differences between different ayahuasca ceremony participants and a control group. As a result, the study was unable to focus on some of the differences that manifested within the ayahuasca group. Further research should be conducted to examine why certain participants show greater peak experiences or longer-lasting effects on their spiritual well-being. Such research would likely include examination of personality

characteristics, belief inventories, and the use of other psychological instruments.

Based on the initial findings reported here, the researcher calls for the continued investigation into the effects of participating in an ayahuasca ceremony on an individual's spirituality. Further examination will expand upon the results of this study, fine-tuning the hypotheses and instruments utilized, and expand upon this study's themes and trends. In addition, it is recommended that the next stages of research consider using (1) a homogeneous group of participants, (2) a single setting, (3) a single shaman, (4) and a single batch of ayahuasca with its chemical composition analyzed.

CONCLUSIONS

Since this research, a plethora of clinical research has begun on the effects of various entheogens on human subjects. Mithoefer (2005) is currently conducting a study examining MDMA-assisted psychotherapy in the treatment of post-traumatic stress disorders in which he reports some successes during the beginning stages of the research. Grob (2006) has nearly completed his research looking into the effects of psilocybin on advanced-stage cancer patients, also with promising results. The Multidisciplinary Association for Psychedelic Studies (MAPS) has been at the forefront of assisting researchers in obtaining government approval for clinical research using psychedelics on human subjects. With other studies already in development, the near future holds many more opportunities for the examination of entheogens, for discovering further therapeutic and clinical applications, and for gaining further insight into their potential benefit to humans.

While some of the current research is being pushed forward in the clinical arena, research continues to grow that examines the spiritual effects of entheogens on human subjects. However, this latter area of study is underinvestigated at present. This study is one of the first bodies of research to examine the spiritual effects of ayahuasca through a mixed-design model. Several other researchers have begun investigating the use of entheogens in a spiritual setting (Grob et al. 1996). If favorable conditions continue to exist for this type of research, further exploration in this area will be both timely and necessary.

In February of 2006, in a case before the United States Supreme Court, the Court unanimously agreed to allow a congregation of one hundred and thirty members of the Uniao do Vegetal to use ayahuasca as a religious sacrament. The Court argued that the government did not present a convincing case as to why ayahuasca should be treated differently than peyote as an exemption to the laws prohibiting Schedule I drugs usage (Supreme Court 2006). This leads this researcher to believe there may be a movement in the United States towards accepting a diversity of spiritual practices as legitimate therapeutic and healing tools.

As spirituality becomes increasingly recognized as a valuable aspect of people's lives, changes may occur both in the clinical and political atmospheres that permit and encourage greater opportunities for personal spiritual growth. If this is the case, these opportunities will take many forms, with the use of entheogens likely being one of them. Over recent years, ayahuasca has been shown to help those people who apply it in a spiritual setting to lead happier and healthier lives (Doering-Silveira et al. 2005a, b). The current study shows that those who drink ayahuasca on just one occasion tend to have positive spiritual experiences during ceremonies and afterwards, and then take these

positive experiences and integrate them into their daily lives. These ayahuasca ceremony participants tend to, after their experience, be more empathic and feel more connected to others, nature and their sense of god or the divine. They are consistently shown to, in the short-term, feel healed, grateful and peaceful, with an increased sense of responsibility for, and reconciliation with, themselves, others, and the world. The data from this research indicates that these positive measures are clearly linked to experience of an ayahuasca ceremony, and reveals incentive for further investigation into ayahuasca's promise.

REFERENCES

- Di Leo, F. 1982. Protocol: LSD-assisted psychotherapy correlation of peak experience profiles with behavior change. Appendix C: Peak experience profile. Unpublished manuscript.
- Doering-Silveira, E.; Lopez, E.; Grob, C.S.; Dobkin de Rios, M.; Alonso, L.K.; Tacla, C.; Shirakawa, I.; Bertolucci, P. & Da Silveira, D. 2005a. Ayahuasca in adolescence: A neuropsychological assessment. *Journal of Psychoactive Drugs* 37: 123-28.
- Doering-Silveira, E.; Grob, C.S.; Dobkin de Rios, M.; Lopez, E.; Alonso, L.K.; Tacla, C. & Da Silveira, D. 2005b. Report on psychoactive drug use among adolescents using ayahuasca within a religious context. *Journal of Psychoactive Drugs* 37: 141-44.
- Elkins, D.N.; Hedstrom, L.J.; Hughes, L.L.; Leaf, J.A. & Saunders, C. 1988. Toward a humanistic-phenomenological spirituality. *Journal of Humanistic Psychology* 28 (4): 5-18.
- Ellison, C. G. & Levin, J.S. 1998. The religion-health connection: Evidence, theory, and future directions. *Health Education and Behavior* 25: 700-20.
- Ellison, C.W. 1983. Spiritual well-being: Conceptualization of measurement. *Journal of Psychology and Theology* 11: 330-40.
- Folstein, M.F.; Folstein, S.E. & McHugh, P.R. 1975. Mini-Mental State. A practical method for grading the cognitive state of patients for the clinician. *Journal of Psychiatric Research* 12 (3): 189-98.
- Gartner, J.D. 1996. Religious commitment, mental health, and prosocial behavior: A review of the empirical literature. In: E.P. Shafranske (Ed.) *Religion and the Clinical Practice of Psychology*. Washington, D.C.: American Psychological Association.
- George, L.K.; Larson, D.B.; Koenig H.G. & McCullough, M.E. 2000. Spirituality and health: What we know, what we need to know. *Journal of Social and Clinical Psychology* 19: 102-16.
- Grob, C.S. 2006. Revisiting hallucinogen research: An experimental model with advance-stage cancer patients and anxiety. *San Francisco Medicine* 79 (8): 22-23.
- Grob, C.S.; McKenna, D.J.; Callaway, J.C.; Brito, G.S.; Neves, E.S.; Oberlaender, G.; Saide, O.L.; Labigalini, E.; Tacla, C.; Miranda, C.T.; Strassman, R.J. & Boone, K.B. 1996. Human psychopharmacology of hoasca, a plant hallucinogen used in ritual context in Brazil. *Journal of Nervous and Mental Disorders* 184: 86-94.
- Hill, P.B. & Hood, R. 1999. *Measures of Religiousness*. Birmingham, AL: Religious Education Press.
- Hoffmann, E.; Keppel-Hesselink, J.M. & da Silveira Barbosa, Y.M. 2001. Effects of a psychedelic, tropical tea, ayahuasca, on the electroencephalographic (EEG) activity of the human brain during a shamanistic ritual. [Electronic version]. *Multidisciplinary Association for Psychedelic Studies (MAPS) Bulletin* 11: 1.
- Huxley, A. 1945. *The Perennial Philosophy*. New York: Harper & Brothers.
- James, W. 1902. *The Varieties of Religious Experience*. New York: New American Library
- Jung, C.G. 1933. *Modern Man in Search of a Soul*. NY: Harcourt, Brace & World.
- Jung, C.G. & Franz, M.-L. (Eds.) 1964. *Man and His Symbols*. Garden City, NY: Doubleday.
- Koenig, H.G.; McCullough M.E. & Larson, D.B. 2001. *Handbook of Religion and Health*. New York: Oxford University Press.
- Krippner, S. 2000. Identifying spiritual content in reports from ayahuasca sessions. *International Journal of Transpersonal Studies* 19: 59-76.
- Larson, D.B.; Sherrill, K.A.; Lyons, J.S.; Craigie, F.C. & Theilman, S. 1992. Associations between dimensions of religious commitment and mental health reported in the American Journal of Psychiatry and Archives of General Psychiatry: 1978-1989. *American Journal of Psychiatry* 149: 557-59.
- Leary, T.; Metzner, R. & Alpert, R. 1964. *The Psychedelic Experience—A Manual Based on the Tibetan Book of the Dead*. New Hyde Park, NY: University Press Books.
- Luna, L.E. & White, S.F. (Eds.) 2000. *Ayahuasca Reader: Encounters with the Amazon's Sacred Vine*. Santa Fe, NM: Synergetic.
- Maslow, A.H. 1962. *Towards a Psychology of Being*. Princeton, NJ: Van Nostrand.
- Masters, R. & Houston, J. 1966. *The Varieties of Psychedelic Experiences*. New York: Rinehart & Winston.
- McDonald, D.A.; LeClair, L.; Holland, C.J.; Alter, A. & Friedman, H.L. 1995. A survey of measures of transpersonal constructs. *Journal of Transpersonal Psychology* 27: 171-235.
- Mercante, M.S. 2006. Images of healing: Spontaneous mental imagery and healing process of the Barquinha, a Brazilian ayahuasca religious system. Ph.D thesis in Human Sciences, Saybrook Graduate School and Research Center.
- Metzner, R. 1999. *Ayahuasca: Human Consciousness and the Spirits of Nature*. New York: Thunder's Mouth Press.
- Mithoefer, M. 2005. MDMA-assisted psychotherapy in the treatment of posttraumatic stress disorder (PTSD): Sixth update on study progress. *MAPS Bulletin* 15 (3).
- Naranjo, P. 1979. Hallucinogenic plant use and related indigenous belief systems in the Ecuadorian Amazon. *Journal of Ethnopharmacology* 1: 121-45.
- Otto, R. 1977. *The Idea of the Holy*. London: Oxford University Press.
- Pahnke, W. 1966. Drugs and mysticism. *International Journal of Parapsychology* 3: 295-313.
- Pargament, K.I. 1997. *The Psychology of Religion and Coping*. New York: Guilford Press.
- Privette, G.; Quackenbos, S. & Bundrick, C.M. 1994. Preferences for religious and nonreligious counseling and psychotherapy. *Psychological Reports* 75: 539-47.
- Riba, J. & Barboanoj, M. 2005. Bringing ayahuasca to the clinical research laboratory. *Journal of Psychoactive Drugs* 37: 219-30.
- Roberts, T.B. (Ed.) 2001. *Psychoactive Sacramentals*. San Francisco, CA: Council on Spiritual Practices.
- Ruck, C.; Bigwood, J.; Staples, D.; Ott, J. & Wasson, R.G. 1979. Entheogens. *Journal of Psychedelic Drugs* 11: 145-46.

- Shanon, B. 2002. *The Antipodes of the Mind*. New York: Oxford University Press.
- Sperry, L. 2001. *Spirituality in Clinical Practice: Incorporating the Spiritual Dimension in Psychotherapy and Counseling*. Philadelphia: Brunner-Routledge.
- Stace, W.T. 1960. *The Teachings of the Mystics*. New York: New American Library.
- Strassman, R.J. 2001. *DMT the Spirit Molecule*. Rochester, VT: Park Street Press.
- Supreme Court of the United States. 2006. *Gonzales, Attorney General, et al., v. O Centro Espirita Beneficente Uniao do Vegetal, et al.* Accessed at <http://a257.g.akamaitech.net/7/257/2422/21Feb20061230/www.supremecourtus.gov/opinions/05pdf/04-1084.pdf>
- Ventis, W.L. 1995. The relationship between religion and mental health. *Journal of Social Issues* 51 (2): 33-48.
- Watts, A. 1965. *The Joyous Cosmology*. New York: Random House.
- Wilber, K. 1984. *A Sociable God*. Boulder, CO: Shambala.
- Wilber, K. 1980. *The Atman Project*, Wheaton, IL: Quest.
- Wilcox, J. 2003. *Ayahuasca - The Visionary & Healing Powers of the Vine of the Soul*. Rochester, VT: Park Street.