

Psychedelics as Treatment

Barry Klein, PhD student,

Holistic Psychology (PSYC-8805)

Walden University

November 13, 2013

Abstract

After an approximately 40-year ban on psychedelics, whether for research, for therapy, or for personal transformation or illumination, or for recreation, we are now seeing a cautious but promising revival of serious research into the use of psychedelics as an adjunct to conventional psychotherapy and even medical procedures for a host of ailments. Despite a suspect reputation only partially deserved, psychedelics like LSD and MDMA are enjoying an ever-widening use in psychotherapy and personal growth. Current research on applications for psychedelic healing is not yet conclusive, having only recently become permitted once again. Although the preliminary studies are generally favorable, one cannot ignore serious problems associated with them. This recent resurgence of psychedelic research shows promise for relief of not only psychological issues, but also numerous physical and neural maladies. This paper discusses the findings and the potential of psychedelic-based research on the effects of psychedelics on the mind, on the emotions, and on health, and also on how this research impacts people in present-day society. I include information about the neurobiological underpinnings of the substances with their receptors and operative structures in the brain and the body, and also the impact of the 40-year ban on psychedelic research and risks associated with the use of psychedelics. There is useful information about applications in native cultures and in other countries. The main research questions of this paper are: 1) Can the stigma of street use be overcome so that serious research can proceed unhampered? 2) Is the reward-to-risk ratio of psychedelic use high enough so that the fruits of new research can be disseminated? 3) Is psychedelic therapy safe and effective enough to be considered viable replacements or adjuncts to conventional therapies?

Psychedelics as Treatment

Despite the fact that psychedelic substances have been generally banned for almost 50 years (Corte, 2010), there is a recent resurgence in their use for treating various psychological as well as physical disorders (Alyushin, 2011; Griffiths & Grob, 2010; Hofmann, 2012). A great advantage in such usage is that these substances can be used in holistic traditional contexts in which people are more responsible for their own healing and recovery (Tupper, 2009), and side-effects associated with the standard medical model can be avoided (Polito, Langdon, & Brown, 2010; Sigafos, Green, Edrisinha, & Lancioni, 2007). Both healers and clients appreciate working in harmony with nature and spirit, as provided with many of these substances (Ross, 2011), and the relative safety of their use, despite decades of propaganda to the contrary (Shulgin, 2012; Sumnall, Measham, Brandt, & Cole, 2011).

Despite persistent propaganda to the contrary, there is growing evidence that addictions and other behavioral disorders can be alleviated with the use of psychedelic substances in both clinical and ritual settings. Despite official governmental policies that any drug, particularly a psychedelic, is necessarily evil and must be harshly restricted or abolished (even if these 'evil' substances are produced one's own organism, as DMT is), there are pilot studies in the United States, and more extensive studies in other countries, showing much promise for alleviating addictions, alcoholism, behavioral and psychological disorders, and even some physical ailments (MAPS, 2010; MSMC, 2013; Sigafos, Green, Edrisinha, & Lancioni, 2007).

Aside from official resistance, research in these areas has been hindered by the stigma of researchers' not wanting to be associated with recreational usage. Furthermore, the pharmaceutical industry has had little incentive to fund or otherwise support studies which are unlikely to lead to patentable drugs for marketing; unfortunately, it has often been such

extractions (e.g., cocaine, THC, DMT, LSD, MDMA) which have become diverted for street use, primarily because they are more convenient for distribution and usage, and provide more intense experiences which are valued by the American drug market. Peoples of traditional cultures, when left to themselves, content themselves with natural products like leaves and gums for chewing, or brews of various kinds (e.g., teas, coffee, beers, etc.), which provide mild, long-term alertness or palliative effects, without the risks of physical or psychological dependence, moral degeneracy, or contributing to black markets.

Therefore, I propose to demonstrate that these marginalized substances not only do not, in themselves, cause harm, but can be used to achieve much greater success with treatment of psychopathologies and behavioral disorders than by the use of conventional treatments alone.

Background

Despite the risks of recreational use and potential abuse, and despite regulatory blocks against research, the scholarly climate seems to have reopened for new investigations into salutary and therapeutic use for many people afflicted with psychological ailments who might benefit from this research (Alyushin, 2011; Griffiths & Grob, 2010; Hofmann, 2012). In addition, much potential for well people's self-knowledge is indicated (Griffiths Richards, McCann, & Jesse, 2006; Hofmann, 2012; MacLean, Johnson, & Griffiths, 2011; Walsh, 2012). Attractions for holistic therapists include the safety and efficacy of psychedelics, compared to normal practices (Polito, Langdon, & Brown, 2010; Sigafos, Green, Edrisinha, & Lancioni, 2007), as well as their tendency to blend with spirit and nature (Shulgin, 2012; Sumnall, Measham, Brandt, & Cole, 2011).

Statement of the Issue

Despite adverse propaganda and a history of suppressive laws (Corte, 2010), psychedelic substances are resurging as a source for many physiological and psychological treatments (Arvanian et al., 2006; Grof, 2001; Polito, Langdon, & Brown, 2010; Sigafos, Green, Edrisinha, & Lancioni, 2007) but, moreover, have an important role in holistic psychology, particularly in that they can induce holotropic states of consciousness (Griffiths & Grob, 2010; Grof, 2000; Shulgin, 2012; Sumnall, Measham, Brandt, & Cole, 2011). However, therapists must take care that the set and setting are conducive to positive states (Griffiths, Richards, McCann, & Jesse, 2006) and that there is sufficient help available for deeply rooted traumas and issues which may surface from the subconscious; participants may experience paranoia, anxiety, depression, and feelings of isolation or hypersensitivity (Shulgin, 2012; Sumnall, Measham, Brandt, & Cole, 2011; Vollenweider & Kometer, 2010) in addition to euphoria, insightfulness, and well-beingness (Ross, 2011; Walsh, 2012).

Psychedelic substances have the potential of reaching and operating on deep recesses of the mind; therefore, appropriate care must be taken against negative reactions and traumatic experiences (Maas & Strubelt, 2006). However, with ethical and judicious usage, many researchers now trust that the use of psychedelics in psychotherapy can safely achieve more consistent recoveries and preservation of benefits (Back-Madruga et al., 2003; Cole, Sumnall, & Grob, 2002).

It is hoped that predominantly ethical and professional research on the uses of psychedelics, and appropriate publication of the results, will counter the resistance of society and government against allowing important research and usage of these potentially valuable therapies. It has been all too easy for society to lump psychedelics in with all illegal drugs and

abolishing them, despite clear progress that was made by researchers (Alper, Lotsof, Frenken, Luciano, & Bastiaans, 1999; Cutter, 1967; Doblin, 2002; Griffiths & Grob, 2010; Grof, 2001; Kirchner, 2010; Müller-Vahl et al., 2003; Ross, 2011; Sigafoos, Green, Edrisinha, & Lancioni, 2007; Vollenweider & Kometer, 2010).

Definition of Terms

Altered state: transient state of consciousness, independent of structures, discrete from each other
– see also *peak experience* (Wilber, 2000, p. 134).

Holistic psychology: “brings about a theoretical and practical integration that includes all aspects of the person: physical, mental, and spiritual, within a physical and social context” (Martin, 2013); an extension of the humanistic psychology movement that involves the study of conscious and unconscious experiences and “the wholeness of human nature” (Schultz & Schultz, 2012, p.374).

Holotropic therapy: “dramatic perceptual changes in all sensory areas” (Grof, 2000, p.2)
extending within ritual and spiritual practices.

Integral psychology: the study of psychology that encompasses “the endeavor to honor and embrace every legitimate aspect of human consciousness” (Wilbur, 2000, p.2);

Medium: a psychic who can contact particular spirits, typically dead loved ones (Cortright, 1997).

Peak experience: transient state of consciousness, independent of structures, discrete from each other – see also *altered state* (Wilber, 2000, p. 134).

Psychedelic substances (including MDMA and cannabis for their state-changing properties): a drug, substance, plant, or admixture which can produce altered states in an individual (Cortright, 1997).

Set: the participant's frame of mind and composure (Cortright, 1997).

Setting (whether in a laboratory, hospital, residence, or nature). A condition which supports the transformational process (Cortright, 1997).

Spirit: any supernatural force or entity, whether real or imagined (Cortright, 1997). According to Wilber (2000), the term may be confused with soul, but is the highest part of a being.

Spiritual (including spiritual work): an attitude regardless of stage. Definitions range from religiosity to love of nature to philanthropy to holotropic (Wilber, 2000, p. 133).

Suffering (as distinguishing psychedelic experience from psychosis): Religious and spiritual sacramental traditions value suffering in order to release trauma and disease (Anderson, 2013).

Transcendance: lying beyond the ordinary state of perception (Grof, 2000); the conditions of possibilities in spiritual matters.

Transpersonal psychology: "melding of the wisdom of the world's spiritual traditions with the learning of modern psychology" (Cortright, 1997, p.8); "a catalyst for human transformation or change" (Hartelius, Caplin, & Rardin, 2007, p.144).

Literature Review

The following issues from the literature seem to encompass the background for this current paper. They have been grouped into functional sections.

Safety and Risk Issues of Psychedelic Compounds

A study of adverse reaction reports (dos Santos, R. G. (2013) indicated that, despite lack of toxicity in ayahuasca, problems could occur with concurrent use of serotonergic drugs and with liver or heart diseases.

There has been much concern, in Brazil, about ayahuasca usage among pregnant women and children who are members of the ayahuasca-based religions (Labate, B. C. (2011). However, the only issue found that could be verified was that imbibing could induce labor in late term. There is also concern that ayahuasca use might cause behavioral problems among adolescents in these groups (da Silveira *et al.*, 2005); however, preliminary studies indicate counter to expectations: behavior and social adjustment were markedly superior in such teens than in those of normal society. It could not be concluded whether the improvements were caused by the beverage or by the religious culture in which they live.

A neuropsychological study did not show significant cognitive or neural damage from recreational use of MDMA, aside from some decline in visual memory among heavy users (Back-Madruga *et al.*, 2003). Even when neurotoxicity was induced, MDMA did not cause significant cognitive or psychological impairment (Cole, Sumnall, & Grob, 2002).

Even so, the United Nations' Commission on Narcotics Drugs has been attempting to codify how psychedelic compounds should be scheduled, compared to narcotic drugs, and how

they fit into international treaties (Corte, 2010). Once the effects and legal disposition of each substance has been determined, it is hoped that research can proceed more efficiently.

On the negative side, the Maas and Strubelt (2006) paper investigates the issue of several deaths having occurred following the use of small doses of ibogaine for treatment of addiction. The authors point out that deaths do not occur in the native Gabonian initiation rituals, and therefore base their hypotheses for the deaths on the differences in administration between the native practices and the clinical environment. Basically, the Gabonian ritual induces a life-changing near-death experience, in a special context which prepares the patients for the ordeal; this preparation has not been addressed in Western usage, which too often fails to respect the long traditions of native healers.

The Need for More Effective Treatments

Both the FDA and the Spanish Ministry of Health recognized that many chronic sufferers of post-traumatic stress disorder failed to find relief from conventional treatments, and therefore approved a pilot study for the use of MDMA in potential treatments (Doblin, 2002). MDMA was the psychedelic of choice because of its relatively short duration of primary effects, its non-interference with cognitive functioning and perception, and the ease with which subjects can negotiate with their deep-seated thoughts and feelings.

The Elliott and Shelley study (2006) presented the risks of leaving alcohol and drug abuse untreated in the workplace, and that employees who were able to self-disclose had much more favorable safety records. While this study did not address the use of psychedelic substances for abuse treatment, it did demonstrate the need for more effective treatments in general.

In a lecture at the 2011 BioEthics Forum in Madison, Wisconsin (Ross, 2011), the speaker, a noted cancer surgeon, outlined the use of psilocybin in easing end-of-life anxiety. He pointed out that dealing with death and dying among their patients has been viewed as having only low priority in the teaching of medical students, despite the considerable population facing terminal illnesses.

From 1959 to 1974, children with otherwise untreatable autism had been treated with LSD, showing promising results, but research was banned until recently. A current paper (Sigafoos, Green, Edrisinha, & Lancioni, 2007) demonstrates the need for updating this research and putting it on a sound scientific basis.

Treatment of Alcohol and Drug Dependence

As of 1999 (Alper, Lotsof, Frenken, Luciano, & Bastiaans), ibogaine had become a prescription medication in New Zealand, and was becoming an accepted treatment for opiate addiction in many countries because of being considered safer than methadone treatment and, coupled with psychotherapy, was found to be fast acting in the arrest of the addictive tendency and long-lasting because of the concomitant psychotherapy. Unfortunately, the safety of ibogaine therapy had come into question (Maas & Strubelt).

The Use of Psychedelics in Psychotherapy, Trauma Therapy, Mood Disorders, and Death Anxiety

An animal study (Arvanian et al., 2006) demonstrated the potential usefulness of LSD, when combined with neurotrophin-3, in behavioral recovery of rats with spinal injuries. Although the experiment was preliminary, and effectiveness for human trauma remained a long way off, this sort of research bodes to pave the way for more extensive studies involving

psychedelics. The authors attempted to find non-psychoactive alternatives to the LSD, such as 5-HT₂, but those did not involve the specific receptors which restored the neural motor behaviors.

The MDMA study cited above (Doblin) indicated that this drug, popularly known as the drug of choice for raves and parties, has great potential for psychotherapeutic work, not only for PTSD, but for many sorts of deep emotional healing and, in fact, that was its main usage until the mid-1960s, both by therapists and by individuals who wished to understand themselves better. This was due to its property of reducing the sense of separateness and defensiveness so that very sensitive issues could be explored. Those of us who were present as counselors would caution couples who had taken MDMA together in a session, not to make any major decisions concerning their relationships for at least two months following their session, because of the ease of bonding under the drug's influence, and also because internal information that was revealed thereby might change the way partners saw each other and themselves.

Cutter (1967) found that low doses of LSD (25-50 mcg) administered intra-muscularly each week of group therapy sessions, would give many of the same psychotherapeutic benefits as I described above for MDMA: relatively short duration and group therapy is facilitated. One difference from that of MDMA was that ego boundaries remained present, which allowed for greater safety and control. Also, the low dosage prevented the types of phenomena associated with higher dosages of LSD.

A study at Johns Hopkins University (Griffiths & Grob, 2010) evaluated psilocybin and other hallucinogens as treatments for addictions, psychological disorders, and even cancer. Although these studies, as before, were preliminary to various degrees, they showed much

promise as long as precautions were taken against potential adverse reactions (e.g., depression, psychosis, anxiety, visual distortions), especially at higher doses.

A recent phase-II study on LSD as an adjunct to psychotherapy (Kirchner, 2010) showed that positive long-term changes can occur, although support is usually required to maintain the results. Based on three case studies of patients suffering from anxiety in the face of life-threatening diseases, this research would have to be considered preliminary, even though promising.

Although cannabinoids are often not considered to be psychedelics, many researchers treat them as such, and my personal observations have been that cannabis does, in fact, produce vivid hallucinations and psychedelic effects on people in concentrated contexts, such as rituals of various kinds, as well as relief from numerous emotional concerns. A promising treatment for Tourette syndrome (Müller-Vahl et al., 2003) showed improvement for the disorder with D9-THC. This study revealed neither acute nor long-term cognitive impairments from the use of the drug, although conclusions should be drawn, according to the paper, only after larger and more long-term studies have been conducted.

A more medical application of cannabinoids is found in a paper on Alzheimer's disease (Ramírez, Blázquez, Gómez del Pulgar, Guzmán, & de Ceballos, 2005). This study found that not only did cannabinoids prevent neurodegeneration, but they proved significant tool in analyzing the pathology of Alzheimer's disease. A comprehensive paper (Pacher, P., Bátkai, Kunos, G. (2006) reviewed the entire panoply of therapeutic uses of cannabinoids, both psychotherapeutic and medical. The studied syndromes include, for example, mood disorders, metabolic disorders, neuro-motor disorders, spinal cord injury, cancer, neuropathy, circulatory

diseases, glaucoma, stroke, and osteoporosis. The authors acknowledged the lack of societal acceptance of the psychoactive effects of both natural and synthetic preparations of cannabinoids, and therefore offered methods for selectively enhancing and blocking the CB receptors.

In the cited lecture by Ross (2011), which I attended in person, the speaker demonstrated the value of the use of psilocybin in easing end-of-life anxiety. He was able to cite cases of terminal patients who continued to experience relief, and even profound spiritual peace, for as long as 14 months following a session with psilocybin enhancement, with no additional treatment needed.

A paper, cited above, on the early use of LSD on children with autism (Sigafos, Green, Edrisinha, & Lancioni), noted that those reports lacked proper scientific basis, although they did show promising results on children for whom no other treatment had been found effective. This 2007 paper endeavors to update these methods following the general ban on the use of LSD in treatment, and calls for the research to be continued, but on a more scientifically-rigorous manner.

The Effects of Age, Gender, Race, and Cultural Differences

Da Silveira et al. (2005) studied the effects of ayahuasca (decoction of two Amazonian plants, *Banisterii Caapi* and *Psychotria Viridis*) on adolescents in Brazil. Compared to control groups, teens taking the beverage within religious settings (usually one of the three main syncretic religions: *Santo Daime*, *União do Vegetal*, and *Barquinha*) showed low scores for anxiety, attention deficit disorders, and syndromes related to body-image. As promising as these

results seem, the authors point out that further studies are still needed to assess safety and reliability issues.

A qualitative study on adolescents in Brazil (Dobkin de Rios et al., 2005) found that those who were members of the ayahuasca religion *União do Vegetal* appeared to be healthy and considerate, and that they had good bonding with their families and peers. Furthermore, no behavioral or developmental differences were observed in the sacrament-using teens, compared to those not participating.

Neurobiology Related to Psychedelics

According to Dobkin de Rios, Grob, and Baker (2002), a 1977 study by Blum compared the isoquinolines found in mescaline plants with the metabolites produced by heroin and alcohol, and hypothesized a connection between plants like peyote for replacing the addictive metabolites at the neural receptors. In 1977, the authors continued, Grob, McKenna, and Callaway proposed that ayahuasca may lead to serotonin up-regulation, resulting in a putative antidepressant effect.

Winkelman, in 1996, proposed that the chemical similarities between these plant substances and serotonin had the effect of blocking serotonin reuptake, freeing structures in the mesolimbic temporal lobe, and allowing a synchronous discharge of the brain. All together, psychedelics have shown a complex array of palliative neurobiological effects which need to be included in larger studies (Dobkin de Rios, Grob, & Baker, 2002).

According to Maas and Strubelt (2006), the African plant-medicine ibogaine affects the autonomic nervous system by impacting several neurotransmitter-systems of the ANS and the fastigial nucleus. Small doses of ibogaine cause the cerebellar nucleus to respond with a stimulation of the sympathetic system, leading to an emergency-type reaction. High doses, on

the other hand, would bring about a vagal dominance in the form of a pseudo-death. This exacerbates the risk of cardiac arrhythmias where either sympathetic stimulation or a high parasympathetic indicator with a left-sided sympathetic enhancement occurs. This could happen, the authors claim, when small doses of ibogaine are administered, and also when exhaustion occurs with a high vagal tonus, when sudden fear reactions could cause a critical left-sided sympathetic stimulation.

For my final example, we find recent behavioral and neuroimaging data showing that psychedelics modulate neural circuits for emotional disturbances, thereby reducing their clinical symptoms. Research into psychedelics, according to the authors, could reveal new therapeutic mechanisms and approaches based on glutamate-driven neuroplasticity (Vollenweider & Kometer, 2010).

Evaluation and Critique

Our culture, and state of the art in psychotherapy, has become heavily dependent upon pharmaceuticals for virtually every conceivable ailment, and this has caused losses, performance difficulties, relationship problems, worse side-effects than the diseases they purported to treat, and even death. At the same time, the incessant “war on drugs,” driven as much by political and commercial issues as by concerns for public safety, has driven psychedelic research underground, or has simply stifled it.

Fortunately, pressures from both the public and the scientific community has produced some headway into demonstrating the benefits of using psychedelic substances, in many cases natural or derived from natural plants, and often having been in traditional use for thousands of years. Now we are seeing such disreputed drugs as LSD, cannabis, MDMA or Ecstasy (MAPS,

2010), ketamine (Yale, 2012), and psilocybin mushrooms, as well as such lesser-known substances as ayahuasca, peyote, salvia divinorum, and San Pedro cactus showing very promising results in legitimate research (Tupper, 2009).

Ailments under study with psychedelics include PTSD, using MDMA as well as ibogaine and psilocybin (Maas & Strubelt, 2006; MAPS, 2010; MacLean, Johnson, & Griffiths, 2011), death-anxiety (Ross, 2011), depression and BPD via ketamine (ASA, 2013; MSMC, 2013; Yale, 2012), alcoholism and drug addiction (Grof, 2001; Loizaga-Velder, 2013), recovery from surgery (Arvanian *et al.*, 2006), obsessive-compulsive behaviors, autism (Sigafos, Green, Edrisinha, & Lancioni, 2007), and mood disorders (Vollenweider & Kometer, 2010). Pacher, Bátkai, and Kunos (2006) reviewed a number of the many therapeutic uses of cannabinoids or marijuana. Scopolamine, found in plants such as Jimson weed, prevents motion sickness and is used to dilate bronchi and eye pupils.

There are, however, caveats to many of these psychedelic treatments. According to Maas and Strubelt (2006), ibogaine can be toxic in certain administrations. MDMA can lead to serotonin toxicity above some dosage levels (Back-Madruga *et al.*, 2003). Ayahuasca can induce labor in late-term pregnancies (Labate, 2011). Ketamine can cause temporary paralysis in sub-clinical doses and respiratory distress in larger doses (MSMC, 2013; Yale, 2012). Cannabinoids can lead to dependence and attentional disturbances (Pacher, Bátkai, & Kunos, 2006). Jimson weed, belladonna, and similar scopolamine-containing plants, must be used carefully to avoid toxicity, despite their medical usefulness in low doses (Brittanica (n.d.b)).

In addition to the above-stated therapeutic uses, these substances are being used as tools for state-mapping (Grof, 2001; Roberts, 2012) and neurological analysis (Alyushin, 2011; de

Araujo *et al.*, 2011), responsiveness to other therapies (ASA, 2013), and transformation and personal growth (Griffiths, Richards, McCann, & Jesse, 2006; Hofmann, 2012; MacLean, Johnson, & Griffiths, 2011; Shulgin, 2012). Natural forms of some of these substances are used to contact spirits; these include ayahuasca, peyote, psilocybin mushrooms, and Jimson weed or belladonna (Brittanica (n.d.a)). In addition, numerous spiritually-satisfying religions are based on using some of these substances as sacraments. Rastafari (Important (n.d.)) supports the use of cannabis for “clearing the mind,” although not fundamental to the religion. Peyote (along with tobacco) is the sacrament for the Native American Church (NAC, n.d.), and there is an informal church based on psilocybin mushrooms (THM, n.d.).

At least three ayahuasca churches are well-established in Brazil: União do Vegetal (UDV, n.d.), Santo Daime (n.d.), and Barquinha (Frenopoulo, 2004); UDV has branches in the United States and Santo Daime has branches around the world. The use of Jimson weed and similar scopolamine-containing drugs is used by some Voudou sects (Brittanica (n.d.a)) to induce spirit-trances (Brittanica (n.d.b)).

Because of the current resurgence, in the West, of the use of psychedelic substances, not only for physical and psychological treatment, but also for personal growth, transformation, and spiritual aspirations, the public is beginning to benefit from remedies which have been successfully used for thousands of years in ancient and primitive societies. People are beginning to become convinced that the “war on drugs” (Corte, 2010) has deprived the public of alternative treatments which may be far more effective and safer than the artificial pharmaceuticals (Schatzberg, Cole, & DeBattista, 2010).

Summary and Future Directions

This paper discussed the findings and the potential of psychedelic-based research on the effects of psychedelics on the mind, on the emotions, and on health, and also on how this research impacts people in present-day society. The impact of the 50-year ban on psychedelic research was included, as well as many of the risks associated with the use of psychedelics. Useful information was found on safe and effective applications in native cultures and in other countries.

Current research on these psychedelic healing applications cannot yet be conclusive, as it has only recently become (begrudgingly) permitted after the decades-long ban. Therefore, the studies cited are mostly reviews of past research, preliminary assessments, Phase-I and Phase-II studies, or general compendia of current knowledge on a given aspect of the field. The projections of the studies are mostly positive, but with such cautionary issues as the eight deaths associated with ibogaine; the psychological addictiveness of marijuana, the loss of control associated with LSD, psilocybin, DMT (active ingredient in ayahuasca), and ketamine; and the societal and legal prejudice that has accrued from the excesses of recreational use and the disinformation constantly provided by governmental agencies and media outlets.

As new research becomes completed, we may come to view psychedelic use as powerful and safe healing implements, respectful of long traditions of native and historical use. We may then find that we have only rediscovered a natural resource that has been available for thousands of years, but which we have ignored as “witch-doctor voodoo” or criminalized far out of proportion to their actual risk, especially compared to the tolerated use of far-more dangerous substances alcohol, tobacco, caffeine, and sugar.

References

- Aldridge, D., & Fachner, J., De Rios, M. D. (2005). Chapter 8: The role of music in healing with hallucinogens - tribal and Western studies. *Music & Altered States*, 97-100
- Alyushin, A. (2011). Psychedelic experience as a heuristic tool for exploring the mind and the brain. *NeuroQuantology*, 9(3), 577-590
- Arvanian, V. L., Manuzon, H., Davenport, M., Bushell, G., Mendell, L. M., & Robinson, J. K. (2006). Combined treatment with neurotrophin-3 and LSD facilitates behavioral recovery from double-hemisection spinal injury in neonatal rats. *Journal of Neurotrauma*, 23(1), 66-74. ISSN: 0897-7151; PMID: 16430373
- American Society of Anesthesiologists (ASA). (2013). Study identifies which bipolar patients will respond to ketamine therapy for depression, pain. *ScienceDaily*. Retrieved November 3, 2013, from <http://www.sciencedaily.com/releases/2013/10/131013163316.htm>
- Back-Madruga, C., Boone, K. B., Chang, L., Grob, C. S., Lee, A. ... Poland, R. E. (2003). Neuropsychological effects of 3,4-Methylenedioxymethamphetamine (MDMA or Ecstasy) in recreational users. *Clinical Neuropsychologist*, 17(4), 446-459
- Boyer, P. (2011). Intuitive expectations and the detection of mental disorder: A cognitive background to folk-psychiatry. *Philosophical Psychology*, 24(1), 95-118; doi: 10.1080/09515089.2010.529049.
- Corte, C. G. (2010). The forms of international institutional law: An historical analysis of the scheduling decisions of narcotic drugs and psychotropic substances taken by the United Nations' Commission on Narcotics Drugs. *International Organizations Law Review*, 7(1), 171-221; doi: 10.1163/157237310X523786

- Cortright, B. (1997). *Psychotherapy and spirit: Theory and practice in transpersonal psychotherapy*. Albany, NY: State University of New York Press.
- da Silveira, D. X., Grob, C. S., de Rios, M. D., Lopez, E., Alonso, L. K., ... Doering-Silveira, E. (2005). Ayahuasca in adolescence: A preliminary psychiatric assessment. *Journal of Psychoactive Drugs*, 37(2), 129-133
- de Araujo, D. B., *et al.* (2011). Seeing with the eyes shut: Neural basis of enhanced imagery following ayahuasca ingestion. *Human Brain Mapping*, doi: [10.1002/hbm.21381](https://doi.org/10.1002/hbm.21381); PMID: 21922603.
- Dobkin de Rios, M., Grob, C. S., Lopez, E., da Silveira, D. X., Alonso, L. K., & Doering-Silveira, E. (2005). Ayahuasca in adolescence: Qualitative results. *Journal of Psychoactive Drugs*, 37(2), 135-139. ISSN: 0279-1072; PMID: 16149325
- dos Santos, R. G. (2013). Critical evaluation of reports associating ayahuasca with life-threatening adverse reactions. *Journal of Psychoactive Drugs*, 37(2), 129-133
- Brittanica (n.d.a). Vodou. Retrieved from <http://www.britannica.com/EBchecked/topic/632819/Vodou>
- Brittanica (n.d.b). Scopolamine. Retrieved from <http://www.britannica.com/EBchecked/topic/529289/scopolamine>
- Frenopoulo, C. (2004). The mechanics of religious synthesis in the Barquinha religion. *Revista de Estudos da Religião*, 1, 19-40. ISSN 1677-1222. Retrieved from http://www.neip.info/downloads/t_christ1.pdf

Griffiths, R. R., & Grob, C. S. (2010). Hallucinogens as medicine. *Scientific American*, 303(6), 76-79

Griffiths, R., Richards, W., McCann, U., & Jesse, R. (2006). Psilocybin can occasion mystical-type experiences having substantial and sustained personal meaning and spiritual significance. *Psychopharmacology*, 187(3), 268-283; doi: 10.1007/s00213-006-0457-

5Kirchner, K. (2010). LSD-supported psychotherapy: Effects on daily life and long-term changes [master thesis in psychopathology]. University of Zurich: Institute of Psychology.

Grof, S. (2000). *Psychology of the future: Lessons from modern consciousness research*. Albany, NY: SUNY Press.

Grof, S. (2001). *LSD psychotherapy: The healing potential of psychedelic medicine*. Sarasota, FL: Multidisciplinary Association for Psychedelic Studies

Hartelius, G., Caplan, M. & Rardin, M.A. (2007). Transpersonal psychology: Defining the past, divining the future. *The Humanistic Psychologist*, 35(2): 135-160. Retrieved from <http://www.tandfonline.com.ezp.waldenulibrary.org>

Hofmann, A. (2012). LSD as a spiritual aid. In *Spiritual Growth with Entheogens: Psychoactive Sacramentals and Human Transformation* (Ch. 12) [Ed. T. B. Roberts]. Rochester, VT: Park Street Press

Important (n.d.). Rastafari and ganja. Retrieved from http://www.important.ca/rastafari_ganja.html

- Labate, B. C. (2011). Consumption of ayahuasca by children and pregnant women: Medical controversies and religious perspectives. *Journal of Psychoactive Drugs*, 43(1), 27-35
- Loizaga-Velder, A. (2013). A psychotherapeutic view on the therapeutic effects of ritual ayahuasca use in the treatment of addiction. MAPS Bulletin Special Edition. Retrieved from http://www.neip.info/html/objects/_downloadblob.php?cod_blob=1317
- Maas, U., & Strubelt, S. (2006). Fatalities after taking ibogaine in addiction treatment could be related to sudden cardiac death caused by autonomic dysfunction. *Medical Hypotheses*, 67(4), 960-4; ISSN: 0306-9877. PMID: 16698188
- MacLean, K. A., Johnson, M. W., & Griffiths, R. R. (2011). Mystical experiences occasioned by the hallucinogen psilocybin lead to increases in the personality domain of openness. *Journal of Psychopharmacology*, 25(11), 1453-1461
- MAPS (2010). MDMA research. Retrieved from <http://www.maps.org/research/mdma/>
- Melo, R. (2011). A união do vegetal e o transe mediúnico no Brasil ("The union of the plant and the mediumistic trance in Brazil"). *Religião e Sociedade*, 31(2). ISSN 0100-8587.
- Mount Sinai Medical Center (MSMC). (2013, May 18). Ketamine shows significant therapeutic benefit in people with treatment-resistant depression. *ScienceDaily*. Retrieved November 3, 2013, from <http://www.sciencedaily.com/releases/2013/05/130518153250.htm>
- Native American Church (NAC, n.d.). Welcome to our indigenous American native spiritual heritage. Retrieved from <http://nativeamericanchurches.org/>

- Polito, V., Langdon, R., & Brown, J. (2010). The experience of altered states of consciousness in shamanic ritual: The role of pre-existing beliefs and affective factors. *Consciousness and Cognition: An International Journal*, 19(4), 918-925. doi:10.1016/j.concog.2010.05.013
- Roberts, T. B. (2012). An entheogen idea map: Future explorations. In *Spiritual Growth with Entheogens: Psychoactive Sacramentals and Human Transformation* (Ch. 25) [Ed. author]. Rochester, VT: Park Street Press
- Ross, S. (2011). Easing the transition at the end of life with psychedelics [lecture]. Madison, WI: BioPharmaceutical Technology Center: Manifesting the Mind forum. Retrieved September 12, 2011, from <http://www.btc.org/bioethics/2011/videos2011/vid12.html>
- Santo Daime. (n.d.). The religion of the rainforest. Retrieved from <http://santodaime.org>
- Schatzberg, A. F., Cole, J. O., & DeBattista, C. (2010). *Manual of clinical psychopharmacology* (7th ed.). Arlington, VA: American Psychiatric Publishing
- Shulgin, A. (2012). The new psychotherapy: MDMA and the shadow. In *Spiritual Growth with Entheogens: Psychoactive Sacramentals and Human Transformation* (Ch. 21) [Ed. T. B. Roberts]. Rochester, VT: Park Street Press
- Sigafoos, J., Green, V. A., Edrisinha, C., & Lancioni, G. E. (2007). Flashback to the 1960s: LSD in the treatment of autism. *Developmental Neurorehabilitation*, 10(1), 75-81. ISSN: 1751-8423; PMID: 17608329
- Sumnall, H. R., Measham, F., Brandt, S. D., & Cole, J. C. (2011). Salvia divinorum use and phenomenology: Results from an online survey. *Journal of Psychopharmacology*, 25(11), 1496 – 1507

- Studerus, E., Gamma, A., & Vollenweider, F. X. (2010). Psychometric evaluation of the Altered States of Consciousness Rating Scale (OAV). *PLoS ONE*: 5(8), e12412
- The Holy Mushroom (THM). (n.d.). Church of the Holy Mushroom. Retrieved from <http://theholymushroom.org/>
- Tupper, K.W. (2009). Ayahuasca healing beyond the Amazon: The globalization of a traditional indigenous entheogenic practice. *Global Networks: A Journal of Transnational Affairs*, 9(1), 117-136.
- União do Vegetal (UDV, n.d.). Centro Espirita Beneficente União do Vegetal in the United States. Retrieved from <http://udvusa.org>
- Vaitl, D., Birbaumer, N., Gruzelier, J., Jamieson, G. A., Kotchoubey, B., ... Weiss, T. (2005). Psychobiology of altered states of consciousness. *Psychological Bulletin*, 131(1), 98-127
- Vollenweider, F. X., & Kometer, M. (2010). The neurobiology of psychedelic drugs: implications for the treatment of mood disorders. *Nature Reviews Neuroscience*, 11(9), 642-651
- Walsh, R. (2012). From state to trait: The challenge of transforming transient insights into enduring change. In *Spiritual Growth with Entheogens: Psychoactive Sacramentals and Human Transformation* (Ch. 3) [Ed. T. B. Roberts]. Rochester, VT: Park Street Press
- Wilber, K. (2000). *Integral Psychology: Consciousness, spirit, psychology, therapy*. Boston: Shambhala Publications, Inc.

Yale University (2012). How ketamine defeats chronic depression. *ScienceDaily*. Retrieved November 3, 2013, from [http://www.sciencedaily.com-
/releases/2012/10/121004141747.htm](http://www.sciencedaily.com/releases/2012/10/121004141747.htm)