

# PHARMACOLOGY OF CONSCIOUSNESS OR PHARMACOLOGY OF SPIRITUALITY? A HISTORICAL REVIEW OF PSYCHEDELIC CLINICAL STUDIES

Ismael Apud, M.Sc.  
*Montevideo, Uruguay*

*ABSTRACT:* In the second half of the twentieth century, when psychopharmacology was not developed as we know it today and psychoanalysis was an influential school, various psychiatrists began to develop a 'pharmacology of consciousness,' and became interested in hallucinogens as new paths for accessing the unconscious. However, with the psychedelic model, the pharmacology of consciousness turned also into a 'pharmacology of spirituality,' focused on the use of spiritual experiences as catalyzers of psychological change. This article is a historical review of the origins and development of this spiritual aspect of psychedelic research, from its beginnings in the 1950s to the 'Renaissance of psychedelic studies' that we have witnessed in recent decades. The guiding principle is that spiritual experiences have played a key role in psychedelic studies, shaping scientific ideas, psychotherapeutic strategies, and the ideological positions of many of the researchers interested in the clinical applications of hallucinogens.

*KEYWORDS:* psychedelic research, spiritual experiences, pharmacology of consciousness, pharmacology of spirituality.

Since the 1990s, we have witnessed what some authors call the 'Psychedelic Renaissance' (Sessa, 2012a, 2012b), after two decades of almost no clinical research on the potential psychotherapeutic uses of hallucinogens. The first studies can be traced back to the 1950s, when psychopharmacology was not a developed discipline as we know it today, and psychoanalysis was an influential school in mainstream psychiatry. In a psychoanalytical milieu dominated by the idea of unveiling the unconscious, hallucinogens aroused the curiosity of psychiatrists, as a new way to access the unconscious, which was faster than free association. It was a 'pharmacology of consciousness,' interested in the therapeutic effects derived from the analysis of the subjective experience in altered states of consciousness (henceforth ASCs) rather than the pharmacological action itself. However, with the psychedelic model, the pharmacology of consciousness subsequently became a 'pharmacology of spirituality,' and some ASCs were recognized as transcendental experiences, which were the main catalysts for psychological therapeutic changes. The connection between psychopharmacological drugs and spirituality was an important influence in the transpersonal paradigm, in which experiences beyond the body and ordinary reality began to be considered as ontologically valid. The idea was that changing the brain's chemistry allows us to access different spiritual realities, which Thomas Roberts (2006) calls 'pharmatheology,' and Nicolas Langlitz (2013) calls 'neurospirituality.'

In this article, spiritual experiences will be considered using a generic definition, as those related to ASCs in which the subject experiences a reality different from the

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ismaelapud@psico.edu.uy

This article was funded by the ANII, Uruguay (reference code POS\_EXT\_2013\_1\_13637).

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ordinary material world. In these kind of states, consciousness is experienced as independent of the natural world, and interacting in a spiritual realm. Sometimes the experience includes supernatural agents, other times it can be related to feelings of transcendence, awe, wholeness, joy. The term ASCs was coined by the psychiatrist Arnold Ludwig (1966), who attempted to scientifically understand the complex cultural variation of experiences and procedures involved in those states. It was subsequently popularized by Charles Tart within a transpersonal paradigm, in which both altered and ordinary states of consciousness were considered equally reliable sources of knowledge (Tart, 1969, 1971, 1972). ASCs occur in more than 90% of the world's cultures (Bourguignon, 1980), and usually involve chemical and/or nonchemical techniques. These experiences include communication with supernatural beings, possession, mystical experiences, communication with divinity, shamanic trances, near-death experiences, out-of-body experiences, cosmic journeys, remembrances of other lives and death-and-rebirth experiences, among others. Some authors place these heterogenic experiences in a common broad category. Others scholars stress the diversity of experiences, or the attribution of meaning to the experience as the key element in defining its spiritual or religious quality (for a review of the topic, see Czachesz, 2017).

This article is a review of the spiritual aspect of the history of psychedelic research. The guiding idea is that spiritual experiences have played an essential role since the beginnings of psychedelic studies. These experiences have shaped scientific ideas, psychotherapeutic strategies, and the ideological position of many of the scholars interested in the clinical applications of hallucinogens. Furthermore, these experiences were not only observed in the experimental subjects or patients, but also experienced by the researchers themselves. Most of them created a strong commitment to spiritual perspectives, since these phenomenological experiences gave factuality to spiritual beliefs. Thinking of the psychedelic model in terms of a pharmacology of spirituality implies considering it as an academic hybrid, between science and religion.

The article starts with the beginnings of pharmacology of consciousness, and its relation with a psychoanalytic perspective, which became popular in the first half of twentieth century. The second section continues with the emergence of the psychedelic model, which assumed a pharmacology of consciousness especially concerned with spiritual experiences, mainly after Osmond & Hoffer's observations in their studies of alcoholism. The third part describes how these new academic spiritual perspectives contributed to the countercultural movements of the 1960s, and describes the beginnings of censorship in hallucinogen studies. The final section covers the renaissance of psychedelic studies in the 1990s, describing the general context, and then focusing on the specific case of some new treatment centers, considered as cultural hybrids of western and non-western therapeutic and spiritual practices.

### **The Birth of Pharmacology of Consciousness**

The discovery of *Lysergic Acid Diethylamide* (LSD) by Albert Hofmann established a new agenda of studies of hallucinogens and their application to mental health problems. These substances were initially thought to be

psychotomimetics -*psychoto*, psychosis; *mimesis*, imitation, which copied the effects of mental illnesses, and caused a reversible psychosis. This property was considered to be a window on the phenomenological world of mentally ill patients, and useful for a better understanding of their subjective experiences. The psychotomimetic model could be traced back to the nineteenth century, when Kraepelin and other psychiatrists suggested that the various forms of madness could have a common origin in an endogenous toxin (Yensen, 1998). The idea was also that some substances could temporarily recreate the experience of being mad. The French psychiatrist Jacques-Joseph Moreau de Tours, who used hashish both on patients and on himself, was the first to study the idea. Later, in the 1920s, Kurt Beringer (1927) replicated Moreau de Tours' idea but used mescaline instead of hashish.

Since Albert Hofmann discovered LSD's psychoactive properties in 1943, the same psychotomimetic conception was applied, and various scientists soon began to establish a new research field that Stanislav Grof (2014) refers as the 'pharmacology of consciousness.' The discovery of LSD was immediately followed by the study of other substances, such as psilocybin, mescaline, ibogaine and harmaline. In the early 1960s, various psychotomimetic substances were being studied by scientists for their potential therapeutic applications for depression, anxiety, end-life distress, chronic pain, addictions, and other psychological disorders. As pointed out by Grof (2008), the variety of psychotherapeutic uses of these substances was reflected by the many different names used in the professional literature: psycholysis (Leuner, 1962), psychedelic therapy (Hoffer & Osmond, 1967), oneiranalysis (Delay, Pichot, & Lempriere, 1963), and hypnodelic treatment (Levine & Ludwig, 1965). At some risk of oversimplification, these therapies are usually divided in two main categories: the psycholytic therapies (which used smaller doses of the psychoactive agent, combined with drug-free analysis sessions), and the psychedelic therapies, involving higher doses, and the central role of 'peak experiences' to generate a psychic change.

The psycholytic model - from *psycho*, mind and *lysis*, dissolution - spread mainly in Europe, with 18 centers using psycholytic therapies in the 1960s (Passie, 1997). The German psychiatrist Hanscarl Leuner was one of the first to coin the term, as *Psycholytische Therapie* (Leuner, 1962). This paradigm included the therapies that used hallucinogens to assist patient analysis, in order to create new ways of accessing repressed unconscious contents and memories. One of the first reports of this possible use was written by Busch & Johnson (1950), who considered the effect of LSD as a transitory toxic state that weakens the barriers of repression, and as a possible tool for shortening psychotherapy. The general idea of inducing oneiric experiences in therapy was not uncommon in psychoanalysis, if we consider the initial use of hypnotherapy by Sigmund Freud, the importance of dreams in psychoanalytical interpretation, and the idea of engendering 'free association' in a setting where the patient is laying on a couch. The classic psychoanalytical method could perhaps be considered a mild kind of dream-like ASC for accessing the unconscious. In the early studies of the new pharmacology of consciousness, Walter Frederking wrote about this relationship between dreams and the novel use of intoxication,

In the course of psychotherapy, the close connection between the subject and his dream is clearly and meaningfully revealed in still another manner: the patient's essential problems are presented to him during the state of intoxication just as they are in his dreams. This comes about in one of two ways: in some, childhood memories are uppermost, reaching very far back and with strong emotional content; instead, in others, life situations including their psychopathological history are presented in dream-like symbols. (Frederking, 1955, pp. 262–263)

In England, Sandison, Spencer, & Whitelaw (1954) also studied the effects of LSD as a way to produce memories and abreactions. In France, Delay, Pichot & Lempérière were doing the same thing under the name of oneiranalysis, which stressed not only the interpretation of the unconscious, but also the biological modification of the patient's mood, and the positive effects of the transference between doctor and patient:

The therapeutic effect of psilocybine can be conceived in a double perspective; first, a direct biological action of the drug on the organism, especially a stimulating effect on mood and awareness [...] Secondly, there is a psychological action through the utilization of material brought up in the course of the experiment, and through alterations in doctor/patient relationship. [...] The emergence of childhood memories or unpleasant conflictual situations produces intense emotional reactions of cathartic value. Remembering well what has occurred during the experiment the patient can give a detailed report of it. It is in fact in the hours or days following the experiment that the most fruitful processes of association and interpretation continue, in which the patient readily links what he has just lived through with his past experiences. [...] A transference relationship is established, which can be used therapeutically, since it allows the patient an easier externalization of his emotional needs and a better grasp of the meaning of the material brought up during the experiment. (Delay et al., 1963, pp. 40–41)

In all these cases, psychiatrists were therefore experimenting with new ways of accessing the oneiric language of the unconscious, with methods they considered faster than those proposed by Freud. The twofold idea that an inductor of a reversible psychosis could also be a psychotherapeutic tool was not a contradiction within a psychoanalytical framework. This conception was consistent with the Freudian idea that the language of the unconscious was intimately related to psychosis, in what Freud (1915) called the primary process. In the treatment of neurosis, the psychoanalytical method consisted of unveiling the memories hidden in this symbolic language, and re-elaborating the symptoms and repetitions through transference and analysis (Freud, 1914). From a strictly psychoanalytical point of view, hallucinations are a negative repetition and a narcissistic withdrawal defense, but also a failed – but positive – attempt at communicating with missing internal objects and repressed experiences (Melgar, 1995). All of these could be considered of therapeutic value when induced in non-psychotic disorders. Furthermore, in the neuroscientific field, the psychotomimetic paradigm offered a possible way to explain the neurochemistry of psychosis—an idea that was considered plausible after the Nobel Laureate Julius Axelrod discovered N,N-Dimethyltryptamine in human brain tissue (Saavedra & Axelrod, 1972).

But the misinterpretation and decontextualization of these notions were also a way to discredit the potential therapeutic applications of these substances. Furthermore, for a considerable number of psychoanalysts, the similarities between the effects of hallucinogens and psychosis were too close for them to be considered medical applications,

For most psychiatrists and psychologists, psychotherapy meant disciplined face-to-face discussions or free-associating on the couch. The intense emotions and dramatic physical manifestations in psychedelic sessions appeared to them to be too close to what they were used to associate with psychopathology. It was hard for them to imagine that such states could be healing and transformative. As a result, they did not trust the reports about the extraordinary power of psychedelic psychotherapy coming from those colleagues who had enough courage to take the chances and do psychedelic therapy, or from their clients. (Grof, 2014, p. 296)

### **The Psychedelic Model: A Pharmacology of Spirituality**

In 1957, Humphry Osmond decided to move away from the psychotomimetic model, replacing the term with psychedelics – *psycho*, mind; *deloun*, reveal - signaling the mind-opening properties of these substances (Osmond, 1957). Psychedelic therapy was initially developed by Osmond with Abram Hoffer at the University Hospital in Saskatoon, Canada, using large doses of LSD on alcoholic patients. The initial idea was to provoke an artificial *delirium tremens* in the patients, a ‘hitting bottom experience’ (Hoffer & Osmond, 1967). It was a kind of shock therapy without the dangers of the natural delirium, which allowed the patients to experience the consequences of their self-destructive behavior. However, what Hoffer and Osmond discovered was that the patients who benefited most from the treatment had not had any frightening experiences, but instead mystical and meaningful ones. One of the psychiatrists using LSD with alcoholics in Saskatoon was Colin Smith, who reported three common experiences with hallucinogens: effects resembling *delirium tremens*, the remembrance of repressed material, and experiences similar to a kind of religious conversion. Although he also started with the idea of producing a hitting bottom experience, he finally considered the other two experiences as the important ones for the recovery of patients:

I began using the hallucinogenic drugs with the idea that the delirium tremens-like experience might act as a caveat to the alcoholic, the more effective in that it occurred in a setting of therapeutic exploration and optimism, and was being combined with rehabilitative measures. At no time, however, was the experience designed as merely a frightening one. Later I began to place more emphasis on the second and third phenomena. Many of the patients who were favorably affected seemed to undergo a kind of conversion experience. They felt differently about themselves and their fellow men, were able to overcome their need for alcohol, and in some cases, reportedly, even became social drinkers. (Smith, 1959, p. 293)

Both in psycholytic and psychedelic therapies, the main focus was not the substance itself, but the experience as a key therapeutic factor. This was not consistent with the mainstream, and Morton Jellinek's idea of alcoholism as an objective biological disease located in the brain (Dyck, 2006). The idea of alcoholism as a medical disease could be traced back to Benjamin Rush at the end of the nineteenth century, but Jellinek's ideas in the 1950s were an important step towards the full medicalization of alcohol-related problems (Apud & Romani, 2016). Besides, Jellinek's refusal to consider alcoholism as a moral problem was a boost for the temperance movement, so spiritual experiences as part of the treatment had no place in his medical conceptions (Jellinek, 1960). However, the psychedelic perspective did not contradict the tenets of *Alcoholics Anonymous* (AA) and its more religious approach. As it is well-known, the co-founder of AA, Bill Wilson, not only initially approved of LSD use for alcoholic treatment, but also experimented with the substance himself, and frequently communicated with Hoffer and Osmond in an attempt to introduce spirituality into the medical conceptions.

Unlike psycholytic therapy, the experiences produced in psychedelic therapy were not only related to psychodynamic material (e.g., unconscious remembrances, emotions, and traumas), but also to perinatal and transpersonal experiences (Grof, 1972), and to mystical ones, such as a sense of unity, transcendence of time and space, ineffability, and a sense of awesomeness, love, purity and joy (Pahnke & Richards, 1966). After a long career studying the clinical applications of psychedelics, William Richards emphasizes the importance of these kinds of experiences in recovery from addictions:

...when an addict finds within himself the memory of mystical consciousness, his view of himself, others, and the world is likely to be forever altered. Having experienced incredible beauty and love within himself, it is much more difficult to view himself as worthless. He knows that there is no source of guilt or remorse that cannot be resolved and forgiven. The noetic awareness of his interconnectedness within the family of man can replace feelings of alienation and estrangement. And, of course, there is no doubt that the "higher power" stressed in Alcoholics Anonymous (AA) and Narcotics Anonymous (NA) now clearly is recognized as a very real and vibrant reality. (Richards, 2009, pp. 144-145)

The importance of these experiences was a common topic in studies of psychedelic treatment of addictions, and it was quite clear that the therapeutic effect could not be considered solely as a psychopharmacological action.

The idea of using large doses in order to provoke profound existential or mystical experiences was a crucial element in all the treatments studied within the psychedelic model (Griffiths, Richards, Johnson, McCann, & Jesse, 2008; Griffiths, Richards, McCann, & Jesse, 2006). This idea was very popular in American universities and research centers, through various studies and applications: at Harvard University, Timothy Leary and Richard Alpert conducted the controversial *Psilocybin Project*; in California, Sidney Cohen, Oscar Janiger and others created a psychedelic therapy center; at the Chicago Medical School, Eric Kast and his

collaborators studied the psychotherapeutic use of LSD; at Spring Grove State Hospital (later renamed the Spring Grove Hospital Center) in Baltimore, Maryland, psychedelic research was conducted by a team of old and new researchers, including Stanislav Grof, William A. Richards, and Albert Kurland. Psychedelics offered a useful therapeutic tool, as they could directly address William James' 'noetic quality' of mystical states, producing profound intellectual and emotional changes (James, 1902). The connection was also consistent with the early descriptions of traditional religious healing practices, in which spiritual experiences were usually provoked—with or without substances—in order to cope with psychological or social problems (e.g., Aberle, 1957; Eliade, 1951; La Barre, 1938; Lévi-Strauss, 1949).

However, it was also the influence of the mystical experiences that the researchers themselves had undergone which led to the transition from a mere pharmacology of consciousness to a pharmacology of spirituality. For example, the Chilean psychiatrist Claudio Naranjo emphasized the psychotherapeutic applications of *ayahuasca*, after having a profound mystical experience:

This experience was an ascension, a progress in my spiritual awakening; but also a descent, because this progress produced a movement of my attention to my body, to the ground, to death, to the instincts and apparently, to the constitutive particles of the material world. This session involved not only a journey to death, but also a change of identity in which, after a certain period of time, I experienced myself as a cloud of subatomic particles, not caring about putting my body together or being part of nature's elements. At the end of this momentary and never expected immortal experience, I felt myself to be a healthy animal for the first time in my life. And as I owe yage this great leap into my long process of healing, I must also use it in the healing of others. (Naranjo, 2012, pp. 28–29, my translation from Spanish)

Psychology is not the only example, considering that psychedelic and spiritual ideas were developed by different scholars in a variety of disciplines: the ethnobotanist and ethnopharmacologist brothers Terence and Dennis McKenna had their own experiences in *La Chorrera* in the Colombian Amazonia (McKenna & McKenna, 1994); the anthropologist Michael Harner had a quite frightening one with the shamans of the *Jivaros* in Ecuador (Harner, 1980); the ethnomycologists Robert Gordon Wasson and Valentina Pavlovna also had a psychedelic experience in a mushroom ritual in Oaxaca (Wasson, 1957). The spiritual experiences undergone in real life by the researchers were an important factor in the establishment and support of spiritual beliefs, and created a strong commitment to the need for a spiritual shift in modern western culture.

### **Spirituality, Counterculture, and Prohibition**

While this pharmacology of spirituality was developing a new research agenda. Western society was experiencing a tense cultural crisis. The turning point of this crisis came in the 1960s, in a post-War and Cold War context, and the general criticism of the western model of social progress and emancipation, including the

mainstream scientific materialistic worldview and its promises of rational solutions to social inequalities, economic crisis, and health problems. This crisis of modernity had various causes: social inequalities, individualistic culture patterns, environmental crisis, warfare all over the world and weapons of mass destruction, and economic and social instability. All these problems led to disenchantment with the western modern model of social emancipation, which Lyotard (1979) called post-modernity. Countercultural movements made their appearance: hippies, feminism, ecologism, indigenism, anti-war movements, Civil Right movements, and of course, the psychedelic movement.

Some authors stress the leaking of LSD from scientific laboratories to the general population as the origin of first, the psychedelic countercultural abuses of the substance by naïve and inexperienced young people, and second, the subsequent political prohibition (e.g., Grob & Bravo, 2005; Hofmann, 1979). However, this idea implies a classic internalist conception of an unpolluted history of science, which is not influenced by external social biases. Science was not isolated from the countercultural milieu of that time, and some emerging trends in psychology and anthropology cannot be explained without this general social background. The foundations of the psychedelic movement were already being laid in the 1950s, with the exchange of ideas between scientists and other social actors. For example, Aldous Huxley (1954) published *The Doors of Perception*, in which he described his experience with the mescaline provided by his friend Humphry Osmond. The book led to reactions from the novelist Thomas Mann, the psychiatrist Steven Novak, and a vigorous debate with the theologian Robert Zaehner. A few years later, in 1957, *Life* magazine published an article about the trip by Gordon Wasson and his wife Valentina Pavlovna to Oaxaca, where they participated in a ritual with mushrooms (Wasson, 1957). The article had a significant public impact, and triggered a wave of psychedelic tourism to Mexico. In the same decade, the beatniks became interested in hallucinogens, and in the early 1960s Ginsberg and Burroughs published their famous *Yage Letters* (Ginsberg & Burroughs, 1963). Hallucinogens were present in the social media, and scientists were both an influence and influenced by this cultural milieu.

Science was not isolated from post-modernity and countercultural movements. Within the *American Psychiatric Association*, different factions were struggling to establish the political definitions of mental health and therapy (Richert, 2014). In the social sciences, disenchantment with modern science led to what Anthony Giddens (1976) called the ‘breakdown of the scientific orthodox consensus.’ In cultural anthropology, positivism and its multiple schools (structuralism, functionalism, neo-evolutionism) were displaced by symbolic anthropology, which was more critical of modern science, and open to other cultural non-western worldviews. As a reaction to modern scientific materialistic worldview, some anthropologists started not only studying psychedelics and ASCs, but also became shamans themselves (e.g., Castaneda, 1968; Harner, 1980). This spiritual turn in academia—with the corresponding rejection of scientific materialism and mechanism—was part of the general social countercultural longing for alternative non-western models of emancipation. The same situation arose in psychology, with new schools in the second half of twentieth century, such as humanistic psychology, the gestalt school, transpersonal psychology and the Bioenergetic School.



Transpersonal psychology focused on the importance of spiritual and transpersonal phenomena (Ferrer, 2014), and since its foundation has developed various ASC techniques for accessing those experiences (Puente, 2014). It is important to note, however, that focus is not limited to the experiences per se, but the way in which transpersonal experiences can be integrated to serve individual and societal development. Transpersonal psychology is also interested in non-western mystical traditions, and some scholars may posit a common core of spiritual awareness as part of a perennial philosophy. Such perspectives go far beyond the usual cognitive limitations of western materialistic reductionism. According to Méndez López (2013), psychedelics have an important role in this worldview, as a direct path to a ‘revolution of consciousness.’

The countercultural movements were considered subversive and dangerous for the status quo in the United States, at a time when the entire world was polarized by the Cold War. In this context, Richard Nixon declared the ‘war on drugs,’ due to not only being worried about hippie, black and anti-war movements (as it was mentioned by former Nixon domestic policy chief John Ehrlichman, in Baum, 2016), but also being interested in finding a good excuse for military intervention in Third World countries (Chomsky, 2003). In 1971, the United Nations *Convention on Psychotropic Substances* included psychedelics on the list of illegal drugs, grouping together all substances related to the expansion of consciousness, without discriminating with regard to their different toxic properties, medical advantages, or psychological effects (Escotado, 1992). The consequence was the sudden death of psychedelic studies:

In 1966, 70 active research projects investigating the clinical effects of hallucinogens were being conducted; by 1970 only six remained; by the 1980s they were virtually non-existent. The focus of the few remaining hallucinogen research programs shifted from the clinic to the research laboratory, where these substances became pharmacological tools to explore brain neurochemistry. (Nichols & Chemel, 2006, p. 12)

### **The Renaissance of Psychedelic Studies**

The prohibition of psychedelics and the consequent suspension of the research agenda was part of a historical context, and so was the ‘renaissance of psychedelic studies’ in the 1990s (Sessa, 2012a, 2012b, 2015). One crucial factor was new political initiatives in the regulation and legalization of prohibited substances. In drug policy, the various aspects of the war on drugs are increasingly perceived to have failed. First, there is the idea that prohibition policies are incapable of dealing with drug-trafficking, and also that trafficking networks are the logical result of prohibition (Miró, 2014). Second, there is a perceived need for a ‘humanization of international law’ for drug penalties, most of which infringe basic human rights, such as the right to privacy, health, ethical treatment (Boiteux, Peluzio Chernicharo, & Souza Alves, 2014), and the proportionality of punishment according to the crime (Uprimmy Yepes, Guzmán, & Parra Norato, 2013). Third, these policies have been unable to deal with important health emergencies in recent decades. Paradigmatic examples were the epidemics of HIV-AIDS, heroin, and

hepatitis-C in the 1980s, which resulted in the failure of prohibition strategies, and the consequent implementation of alternative ways of dealing with drug abuse such as harm reduction programs (Funes & Romani, 1985). The success of these programs in countries like Holland, United Kingdom, Spain and Australia led to a review of the prohibitionist paradigm. Today, an increasing number of countries are starting to consider new alternative policies on drugs, including Spain, Portugal, the United States, Uruguay, Holland, Bolivia and New Zealand. Accompanying these changes is the progressive normalization of the use of some soft drugs, e.g., cannabis, and the transnationalization and popularization of certain psychedelics, e.g., *ayahuasca*, in what some authors have called New Age networks (Labate & Jungaberle, 2011). Taken together, all these factors have created a large population interested in the legitimation of their practices, in a spectrum that includes recreational uses (cannabis), spiritual/religious practices (*peyote* by the *Native American Church*, or *ayahuasca* by Brazilian churches), and psychotherapeutic uses (the use of psychedelics in alternative therapy centers).

However, the foundations for this renaissance were also laid by the researchers and therapists that initially experimented with psychedelics. Prohibition forced them to look for other non-chemical ASC techniques, which became popular in psychotherapeutic circles and among spiritual seekers. Stanislav Grof developed the Holotropic Breathwork (Grof & Zina, 1993), Hanscarl Leuner the Guided Affective Imagery (Leuner, 1984), and Ralph Metzner explored techniques such as yoga, meditation, and shamanic rituals (Metzner, 1979). As Grof points out:

The last three decades have brought many revolutionary changes that have profoundly influenced the climate in the world of psychotherapy. Humanistic and transpersonal psychology have developed powerful experiential techniques that emphasize deep regression, direct expression of intense emotions, and bodywork leading to release of physical energies. Among these new approaches to self-exploration are Gestalt practice, bioenergetics and other neo-Reichian methods, primal therapy, rebirthing, and holotropic breathwork. The inner experiences and outer manifestations, as well as therapeutic strategies, in these therapies bear a great similarity to those observed in psychedelic sessions. These nondrug therapeutic strategies involve not only a similar spectrum of experiences, but also comparable conceptual challenges. As a result, for therapists practicing along these lines, the introduction of psychedelics would represent the next logical step rather than dramatic change in their practice. (Grof, 2014, p. 300)

It was in the 1990s when psychedelic studies started to reappear at various centers in Switzerland, Germany, Spain, England, Holland, Israel, Brazil, Peru, and other countries. Many universities and research centers returned to psychedelic research: Rick Strassman at the University of New Mexico, William Richards and collaborators at Johns Hopkins University, Charles Grob and collaborators at the University of California Los Angeles, Stephen Ross and Anthony Bossis at the New York University's Medical School, Jordi Riba and collaborators in the *Hospital de la Santa Creu i Sant Pau* in Barcelona, Felix Hasler and collaborators at the University of Zurich, Gerald Thomas and collaborators at the University of British Columbia and the University of Victoria in Canada.

Organizations funding and/or providing legal advice to psychedelic initiatives also appeared, such as the *Multidisciplinary Association for Psychedelic Studies* (MAPS), the *Heffter Research Institute*, the *International Center for Ethnobotanical Education Research & Service* (ICEERS), the *Beckley Foundation*, and the *Núcleo de Estudos Interdisciplinares sobre Psicoativos* (NEIP). A wide variety of substances such as MDMA, psilocybin, mescaline, ibogaine, DMT, LSD, and ayahuasca began to be studied with modern technology and fulfilling the proper methodological criteria, which were absent in the studies in the first period. The possible clinical applications include problems such as the treatment of end-of-life related anxiety, obsessive-compulsive disorder, cluster headaches, addictions and post-traumatic disorders.

In this revival of psychedelic research, views differ about the relationship between psychoactive substances and spirituality. For example, the *Council on Spiritual Practices* is openly concerned about psychoactive substances as tools to make direct religious experiences easier, and provide a closer encounter with spirituality for different kinds of people. The *Heffter Research Institute* considers itself as a scientific organization, free from religious values, which reflects a "... neuroscientific disenchantment and depoliticization of hallucinogen research" (Langlitz, 2013, p. 45), although the institution has a strong interest in the health effects of mystical and spiritual experiences. *MAPS* directly addresses the overcoming of policy impediments in psychedelic research (DPA & MAPS, 2015). The *International Transpersonal Association* of Stanislav Grof is interested in transcendental and transpersonal experiences; the *European College for the Study of Consciousness*, founded by Hanscarl Leuner, is diverse and interdisciplinary, bringing together natural and social scientists for a better understanding of psycholytic studies.

One new feature of this new period was the appearance of applied therapeutic centers combining academic psychotherapeutic approaches with traditional spiritual/medical practices: *Takiwasi* in Peru, *Runawasi* in Argentina, *Wasiwaska* in Brazil, *Nierika* in Mexico, *IDEAA* in Spain and Brazil. All of them are cultural hybrids that in different ways combine traditional medical practices, alternative medicines, oriental practices, and psychological techniques from gestalt, bioenergetic, and transpersonal schools. Although these centers started to appear in the 1990s, some initiatives had already begun in the 1980s, especially for the treatment of addictions. The *Ketamine Psychedelic Therapy* was founded in 1985 by the psychiatrist Evgeny Krupitsky in Russia, using *ketamine* combined with psychotherapy for the rehabilitation of heroin and alcohol addicts (Krupitsky, 1992). In 1986, Howard Lotsof founded *Endabuse* in Holland, using ibogaine in the treatment of addictions (Donnelly, 2011). However, it was in the 1990s when a variety of addiction treatment centers started to appear, with most combining western and non-western traditional treatments.

One of the most popular psychedelics used in these centers is *ayahuasca*, an Amazonian concoction usually prepared by mixing two plants: *Banisteriopsis caapi* (a vine containing the beta-carbolines harmine, harmaline and tetrahydroharmine), and *Psychotria viridis* (a shrub containing N,N-dimethyltryptamine, an alkaloid similar to serotonin). It was first described in the nineteenth century by Manuel

Villavicencio (1858) and Richard Spruce (1873, 1908), and later by Richard Evans Schultes in mid-twentieth century, at the same time as the first studies on psychedelics were being published (Schultes, 1967). However, psychedelic studies preferred to focus on other more well-known substances, at a time when the psychopharmacological properties of ayahuasca were not fully understood. It was during the renaissance of psychedelics that ayahuasca began to be given a central role on the updated psychedelic agenda.

An important historical and cultural factor was the popularization and appreciation of traditional medical practices as alternatives to biomedical treatments, and the need for new health strategies, as laid out in the Declaration of Alma-Ata (WHO, 1978). In Latin America in the late 1970s, the psychiatrist Mario Chiappe (1977) studied the traditional medicine of Peru, and argued that its practices were more effective than usually considered by biomedicine. He paid particular attention to psychoactive plants, used both in the Amazon forest (ayahuasca) and in the mountains (the *San Pedro* cactus). He also stressed the folk uses of these hallucinogens for addiction problems among the local population. Chiappe was an important influence for the French psychiatrist Jacques Mabit, who in the late 1980s founded the first center to use traditional Peruvian medicines and western therapies to treat addictions (Mabit Bonicard & González Mariscal, 2013). The center was called *Takiwasi* – from the Quechua for ‘the house that sings’ – located in the city of Tarapoto. Takiwasi provided a major boost for the spread of these kinds of centers interested in spiritual approaches, mixing western therapies with shamanic traditional healing practices. One of these centers was founded by the Argentinian psychologist Sacha Domenech. He initially went to Northern Peru to study the shamanic use of *San Pedro* with the famous *curandero* Eduardo Calderon Palomino (Domenech, *personal communication*, May 2014). A year later, he travelled to the Amazon rainforest and met Mabit, and took part in the foundation of Takiwasi. After working in Takiwasi, he returned to Buenos Aires, and created the *Runawasi* center in 2001, which is still operating, and focuses mainly on addictions. Another center was the *Instituto de Etnopsicología Amazónica Aplicada* (Institute of Applied Amazonian Ethnopsychology, or IDEAA) created by the Catalan psychiatrist Josep Maria Fábregas in 2000, in the Brazilian Amazon rainforest (Fernández & Fábregas, 2013). The center focused on the use of ayahuasca to treat resistant cases of addiction in patients brought from Spain. IDEAA no longer exists, partly because of the ambiguous interpretations of international treaties in Spain and Europe (Apud & Romani, 2017; Feeney & Labate, 2013).

## Conclusions

Although the psychedelic research agenda has had positive results in the therapeutic use of hallucinogens since its beginnings, it has also encountered resistance in western modern societies and in academic circles. In a broad cultural sense, these kinds of substances have sometimes been associated with profane cults, and related with madness, evil, lust, and superstition (Escotado, 1992). Furthermore, since the industrial revolution, hallucinogens have not found a useful place in the chain of production-and-consumption: they are neither stimulants for working harder than usual (with the exception of the novel study of ‘microdosing’

to improve daily activities), nor intoxicants for relaxing during leisure time. If that was not enough, they may also lead to anomic, countercultural, and subversive ideas. In scientific circles, the idea of a pharmacology of consciousness has intrigued some psychiatrists, interested in new ways of accessing to the unconscious. With the development of modern psychopharmacology and Neo-Kraepelian psychiatry, however, the subjective side of the treatment started to be considered too soft and less scientific. The situation worsened as those experiences were spiritual—a category in direct confrontation with mainstream scientific ideas. Last but not least, one must mention the countercultural ideology developed by academics related with psychedelic studies, in a paranoid Cold War context, and the war on drugs (Ellens & Roberts, 2015).

But spiritual perspectives persisted, although they were forced to seek other non-chemical techniques for ASCs, and over the decades the ground was prepared for a new revival of psychedelic clinical studies. This new revival is taking place at different institutions with different views about science and religion. This movement shows that scientific communities are permeable to spirituality—something that can be traced back to the relation between mysticism and physics in the first half of twentieth century, or further back, to the spiritualism in scientific circles in the nineteenth century, and even to the Neoplatonism of Kepler and Galilei. This permeability can be explained by the fact that scientists are also heterogenic social agents, with different beliefs and life experiences. Although they are fragmented in different social roles, they also try to synthesize their own experiences and commitments, producing different trajectories of reflection of science and religion (Hefner, 2009). In the specific case of psychedelic studies, there is another important factor, which is the effectiveness of spiritual experiences on the transformation of behaviors and beliefs, revealing perhaps not the unconscious, but the need to consider religion and spirituality as an important dimension of human experience.

The renaissance of psychedelic studies is today attracting the attention of important journals including *Scientific American* (Jacobson, 2014) and *The New Yorker* (Pollan, 2015). Times have changed, and some generations have grown up with a different conception about drugs, and their real and their imaginary dangers. But the controversy will continue, and the future of psychedelic studies will be debated both in the academic and the mass media, considering both their spiritual/religious value (Hood Jr., 2014; Richards, 2015; Roberts, 2016; Smith, 2000), and medical applications (Grof, 2014; Richards, 2009; Winkelman, 2015) .

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## The Author

*Ismael Apud* is Assistant lecturer at Faculty of Psychology, Universidad de la República (Uruguay); researcher included in the National System of Researchers, Agencia Nacional de Investigación e Innovación (ANII, Uruguay); Ph.D. candidate at the Medical Anthropology Research Center (MARC), Universitat Rovira i Virgili (Spain). He has a Master's Degree in Methodology of Scientific Research, Universidad Nacional de Lanús (Argentina) and Degrees in Psychology and Social Anthropology, both at the Universidad de la República. His research areas include mental health, religious/spiritual practices, and psychedelics. E-Mail: ismaelapud@psico.edu.uy. Postal address: Universitat Rovira i Virgili. Campus Catalunya URV, Avda. Catalunya, 35, 43005 Tarragona. Tf. (34)977559748, Catalonia, Spain.