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THE THERAPEUTIC POTENTIAL OF ENTHEOGENS

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The therapeutic potential of entheogens

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Abstract

This work has the objective of discussing the possibility of the therapeutic use of substances more commonly known as *hallucinogens*. Stigmatized after the problems related to the abuses in the 60's, these substances have been demonstrating efficacy in complex areas of psychotherapy and in the treatment of pathologies that have a history in not responding well to conventional treatments. In this thesis, recent publications in scientific journals, as well as older studies done before the prohibitions established in the 60's and 70's are analyzed. The possible risks, as well as ways to control them are also looked at..

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1. Introduction

When the subject of illegal psychoactive substances is mentioned in our culture, it is almost always done so with a negative connotation, denouncing abuses and associating the use of drugs with criminality and other undesirable expressions of the human being. The western ideal of a good human being is connected to his productivity, social functioning, amount of memorized intellectual knowledge and to abilities possible to be measured or shown. The evolution and development of men in this paradigm is, therefore, incompatible with the use of substances, especially *psychedelics*, which are viewed as serious disturbers of behavior and health, or in the very least as superficial amusements.

There are, nevertheless, other cultures with a different attitude, where some substances are carefully used for beneficial ends. Some indigenous tribes such as the Kaxinawa, for example, use ayahuasca, a psychoactive concoction made from two Amazonian plants, both for psycho-spiritual cures and also to resolve social conflicts. This is not to say that the collective generalized use when transposed to our social context would necessarily work as well, maybe even the contrary, but it shows us that there are alternative beneficial ways of dealing with such psychoactive substances.

A positive view of the commonly called *hallucinogens* is not limited to indigenous cultures, though. Even in the western culture we can observe, both in the past and in the present, their therapeutic, beneficial and controlled use. Recently the discussion of this therapeutic potential of the *entheogens* has been brought forward by renowned scientists and in famous magazines such as the Scientific American, which recently this year published an article with the title “Psychedelic Healing?”, talking exactly about these new researches. New researches in this area are constantly being made, demonstrating perhaps a rebirth in the interest for these substances that had been forgotten in the academic and scientific world for a few decades.

The traces of the abuses in the 60's can still be felt, bringing a warning on the possible dangers of indiscriminate use. Are we ready to take a new step? Is there, behind the dangers and barriers, something valuable in the *entheogens* for psychology

and society? Is there enough potential therapeutic benefits for us to open this door? These are the questions that this work will try to answer.

The first part will consist of a general look at *entheogens*. We will analyze the meaning of this definition, and also make a criticism to other more commonly used terms. A small history and description of the substances that can be defined as such will be made. The chemical and pharmacological aspects, the mode of action and a summary of the subjective effects as described in psychiatric terms and in the language of the participants/users themselves will also be made. Closing the first part, we will take a look at the law and the control by the regulatory agencies related to this line of interest.

The second part will be composed of different subchapters, each separately containing a discussion of a potential area of therapeutic utilization of *entheogens*. Early and recent scientific publications will be analyzed, and new suggestions and comments will be made about several areas such as the treatment of drug addiction, anxiety in terminally ill patients, obsessive compulsive disorder, as well as the possibility of these substances catalyzing therapeutic insights in general and occasioning genuine spiritual experiences. Other areas about which less information is available will be more briefly mentioned, such as depression, neurosis and post traumatic stress disorder treatment.

Following this, the inherent risks to the use of these substances will be looked at, both in physical and psychological terms. We will discuss if there is the possibility of these substances creating dependency, triggering perceptual disorders and psychotic symptoms, and also subjectively negative experiences in general.

This work will also look at how a possible utilization of *entheogens* in psychotherapy can occur, how the therapy could be structured, and for this we will use as a basis the information and publication of studies and treatments already used, as well as bringing new suggestions. Also measures to diminish the risks above mentioned and maximizing the benefits will be suggested.

Lastly, this work will be concluded measuring the pros and contras, giving a final outlook and opinion of whether there is or not a real and worthy therapeutic potential through the use of *entheogens*.

2. What are Entheogens

Before we analyze the potential therapeutic uses and the inherent risks, we must first see what exactly are *entheogens*, the meaning of this name, as well as the reason why the common term *hallucinogens* is avoided in this work. We will also see a brief description of the substances that can be classified as such, their pharmacology and chemistry, and also some commentaries regarding their status in relation to the law.

2.1 Definitions and Etymology:

The word *entheogen* is a neologism suggested by researchers in the 70's [RUCK *et al*, 1979], and is derived from the ancient Greek ἔνθεος (*entheos*) = God inside, or divine inspiration, and γεννώ (*genno*) = generate. In other words, *entheogen* can be defined as a substance that *generates or brings in evidence the inner divinity* or that *generate divine inspiration*. This etymology is connected in great part to the ritualistic use with spiritual aims, but we can also see simply the more respectful and careful way of dealing with these substances, or that they can be a source for deep inspiration. If we connected the word *divinity* with the concept of *Self* from Jung, or with the *Cosmic* or *Transpersonal Consciousness* of Grof, the entheogens can be seen as instruments that permit a contact with the deeper levels of the psyche.

Another definition of these substances that could be used alternatively as a synonym of *entheogens* is the denomination *psychedelics*. In the ancient Greek, ψυχή (*psyche*) = Soul e δῆλος (*delos*) = Manifest. In other words, *psychedelics* are the substances capable of manifesting the essence or primary aspects of the individual. The problem with this word is that it is heavily associated with the 60's counter-cultural movement, and consequently with all the problems experienced in those times. Therefore in this work this definition will be used secondarily, while the main one will be *entheogens*.

The third denomination which we will discard is the most used both between laymen and in the medical-scientific domain: *hallucinogens*. This term is here considered inappropriate because it is based on incorrect, incomplete and/or

misleading premises. In general, the word *hallucination* when talking about these substances is related to the ideal of *visual hallucinations*. In such case, the use of this word shows an overvaluing of the visual aspect of the experience, while a phenomenological analysis shows that the vision is not the only nor necessarily the main part of the effects. Even if the word is extended to other senses such as *auditory hallucinations*, it is still not adequate, because aspects such as alternative corporal relations, deepening of feelings, insights, experience of unity, transcendence and boundary dissolving, for example, are also fundamental parts of the experience, maybe even more so than the perceptual effects.

Another argument against the usage of the word *hallucinogens* is the fact that a hallucination is considered as a *perception without any foundation on reality*, which does not necessarily correspond with what occurs when ingesting such substances. The perceptions and visions are indeed in many cases felt with a certain truthfulness or importance associated to them, but in general they are perceived as qualitatively different than the perceptions of consensual reality, and therefore cannot be considered as usual hallucinations. Besides, many of the visions are not disconnected with the reality of the individual, because they may bring forward symbolic content which is pertinent to the person's life and context.

The term *hallucinogens* also brings with it a charge brought from the western psychiatric paradigm, where we see as a major aspect the black and white distinction between *normal* and *pathological*, based not on the capacity of individuals to deal with their experience (and the possibility of making their visions be incorporated positively and in practical ways in their context and subjective reality), but rather in what is usual, consensual, statistically more common. It is important to remember, nevertheless, that the greatest changes and paradigmatic transformations in history occurred exactly due to people who did not fit in *normality* (Copernicus, Einstein, Tesla, all the prophets of the main religions, etc.). What we must consider is the contextual value of the experience and the way an individual deals with it, as well as the consequences to their health, and not whether it is common or not. A person may have unusual experiences and ideas but act positively in the consensual and social domain, changing society positively.

2.2 Substances:

In this work, the following 5 entheogens/psychedelics shall be focused on, remembering that between brackets is the name of the active principles: Peyote and San Pedro (mescaline), Ayahuasca (DMT and β -Carbolines), Psilocybe mushrooms (psilocybin and psilocin), Iboga (ibogaína) and LSD.

There is no pretension to exhaust the list of all the substances that can be considered entheogens or psychedelics. We shall be focusing on the ones mentioned above, as there are strong indications that they may be used therapeutically. Below is a small description and information of these substances:

Peyote e San Pedro:

The peyote (*Lophophora Williamsii*), local from North America, in the territory ranging from Mexico to the southern part of the United States, and the San Pedro (*Trichocereus Pachanoi*), native from the Peruan Andes, are both cactus that contain the active substance *mescaline*. Peyote is used in rituals by indigenous people in Mexico, and is also the only entheogens authorized to be used in United States in the religious rituals of the Native American church. Researchers demonstrated that it was already used ritually 6000 years ago [TERRY *et al*, 2006]. San Pedro is also used for hundreds or thousands of years by different ethnic indigenous groups in Peru for religious purposes.

Psilocybe Mushrooms:

Popularly known as “magic mushrooms”, they are composed of several species, maybe the most well known of them being the *Psilocybe Cubensis*. These fungus have the ingredient *psilocybin*, which in the body loses the phosphoric group and becomes *psilocin*, a pharmacologically active substance. Data indicates the use of these mushrooms in rituals 3000 years ago by the Maya civilization in Guatemala [SCHULTES, 1976]. They were called by the Aztecs as *tenonanacatl*, or *flesh of the gods*. They are still used by the Mazatec natives in Mexico.

When the Spanish arrived in the New World, when they saw the mushroom rituals of the indigenous tribes, they considered it “work of the devil” and started

persecuting them, which led the natives to hide the use. In fact, the mushroom rituals were considered extinct, until the banker and amateur mycologist Robert Gordon Wasson, in an expedition to the Mazatec region in Mexico, found out about their continued use until the present. He participated in a ritual with the local shaman Maria Sabina, and his accounts later on started the popularized interest of entheogens by the Western world [WASSON *et al*, 1978].

Ayahuasca:

Ayahuasca is a concoction from the Amazon, better known due to the increasing popularity of Santo Daime religion and ayahuasca tourism in Peru. It is usually made with two plants that are boiled together for a number of hours and then filtered to create a brown and bitter tasting brew. The liana *Banisteriopsis caapi*, also known as Jagube or Mariri, is by itself also known as ayahuasca and used alone in some tribes, but in general ayahuasca includes another plant called *Psychotria viridis*, also known as Rainha (*queen* in Portuguese) or Chacrona. In some tribes instead of the chacrona, another plant is used, *Diplopterys cabrerana*, better known as chaliponga or chacropanga, which has a similar chemical make up as chacrona.

Both the chacrona and chaliponga contain the active alkaloid DMT, which is destroyed in the human body by an enzyme called monoamine oxidase, or MAO. To become active, then, it is necessary that the DMT be ingested together with the caapi vine, which contains the *beta-carbolines* (harmine, harmaline and tetrahydroharmine), substances which are IMAO, inhibitors of the monoamine oxidase enzyme. The necessity for this specific combination is a curious fact because it is hard to explain how, in the biological diversity of the amazon with over 80.000 plant species and the odds of 1 to 3,2 billion for each combination, the indigenous people were able to discover this exact necessary combination for there to be an effect.

Ayahuasca, which means “vine of the souls” in quechua language, is also in some areas called *yage*. It is used for hundreds, if not thousands of years by different indigenous tribes of the amazon basin, and is an integral part of their cultures, influencing art and mythology in a unique way (SAMORINI, 2001). Since the beginning of the 20th century, the use of ayahuasca has expanded, and, coming out of the forest, started being incorporated in ayahuasca urban religions such as Santo

Daime, União do Vegetal (UDV) and Barquinha. These religions, exclusively Brazilian phenomenon, shows influence of not only indigenous shamanism, but also of Catholicism, Kardecism, European esoterism and also African religions, in a peculiar religious syncretism. These religions, in special Santo Daime and UDV, have been opening centers also abroad, in places such as USA and countries in Europe, being accepted by the local legislation in some cases and facing legal issues in others (LABATE, 2005). In other countries of Latin America, specially in Peru, besides the use by indigenous tribes, there exists also what is called *vegetalism*, practiced by mestizo populations. The work of the *curanderos*, or healers, as they are also called, is part of an informal popular medicine composed of the use of sacred plants and drinks such as ayahuasca, chants, known as *icaros*, and diets, always with the main objective being the physical, mental and spiritual healing.

Iboga:

Native from Africa, more specifically in Gabon and Congo, the *Tabernanthe Iboga* is a bush that contains the potent alkaloid ibogaine. It is considered as the plant responsible for preventing Christianity and Islamism from spreading in the area, due to the construction of a strong religious identity [SCHULTES, 1976]. Used by the Bwiti tribe, iboga is a fundamental part of rites of passage, especially when teenagers become adults or in a more general way when an individual decides to become a member of the religious community.

The knowledge of this plant was transmitted by the Pygmies, which until today practice the “Iboga misteries” in secret and far from the eyes of westerners (SAMORINI, 2005). The Bwitis, on the other hand, have become much more open to the curiosity of foreigners and some groups even consider a great event when there is the initiation of an interested westerner (*idem*).

Ibogaine, both in its pharmacological and in its associated risks profile is a particular exception and differs from other entheogens, as will be discussed in the fourth chapter, and that is why a special care is needed with this substance. To deal with these risks, Bwitis have developed complex techniques to supervise the effects and state of the initiate, like for example poking needles in specific parts of the body

that they know are anesthetized when a certain level of the effects has been reached, knowing therefore the exact moment to stop the administration of the iboga.

LSD:

Semi-synthetic substance, LSD (lysergic acid diethylamide) is produced by a chemical process using Ergotamine Tartrate as a base, which can be extracted from the *Claviceps purpurea*, or ergot, a fungus that attacks rye. LSD was discovered by accident by Albert Hofmann, a chemist at Sandoz in Switzerland who was researching ergot derivatives for the treatment of labor hemorrhages, and was intoxicated accidentally. Communicating to his colleagues about the profound effects in consciousness, attracted the interest of psychiatrist and researchers, who thought they could find, through LSD, insights about the functioning of the brain and consciousness in general, and also explanations about the causes of schizophrenia.

Acid, as its popularly called, was extensively researched in the 50's and 60's for its potential application in several areas of medicine by psychiatrists and therapists. Even the CIA, the American intelligence agency, investigated LSD as a potential instrument to use for brainwashing and more easily obtaining information in enemy interrogation, in the now known MKULTRA project, abandoning the research justifying the effects were too unpredictable (TENDLER and MAY, 2007).

During the 60's, the use of LSD became very associated with counterculture and the hippie movement. One of the most notable exponents of this movement was Ken Kesey, writer of the classic *One Flew Over the Cuckoo's Nest*. Initiating in California together with his group of friends, the lively *Merry Pranksters*, they traveled through USA in a reformed bus completely painted with fluorescent *day-glo* colors. They made jokes with whoever was on the way, recording the sounds coming from outside the bus, while playing music and the recorded sounds back to the exterior by speakers attached to the rooftop, consuming LSD and making parties wherever they went. Ken Kesey and the Merry Pranksters used acid primarily for its supposed creative and recreational potential, and by them a whole new type of aesthetics was invented, of fluorescent colors and light shows, clothing style and musical creations using random juxtaposed samples (WOLFE, 1999).

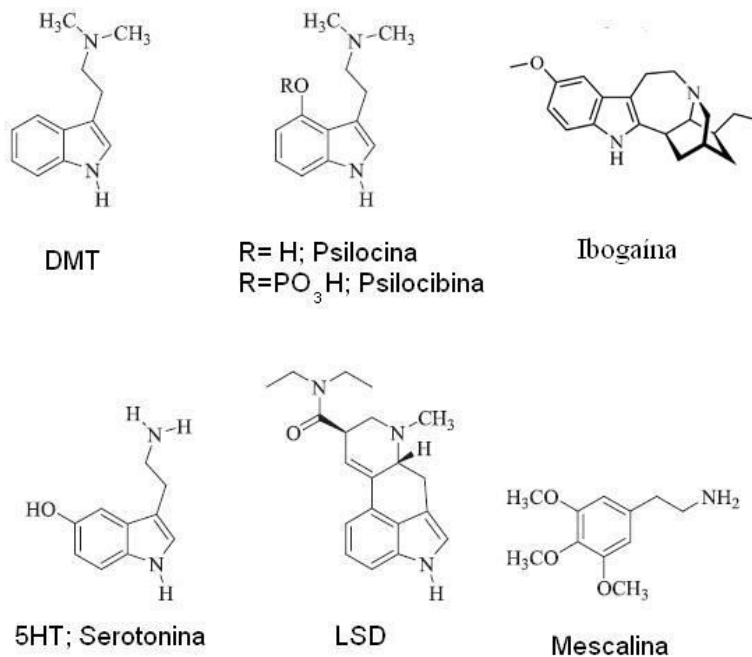
On the other side of the United States, in the east coast, was Timothy Leary, a Harvard PhD psychologist. Initiating his studies in social psychology, Leary eventually started researching the therapeutic possibilities of LSD and psilocybin. He investigated the use of these substances with prisoners, to diminish recidivism when they were released, but ended up being famous more because of his communication skills, always appearing on the media with his sarcastic comments and criticism to the government and his maybe exaggerated reviews of the positive qualities of LSD. Tim, as he was called by some around him, ended up becoming a controversial icon, adored by some and strongly criticized by others. Both Leary, Kesey and their groups were, therefore, greatly responsible for the popularizing of LSD.

Appropriated by the counterculture in a moment of political crisis, war in Vietnam and protests for the individual and also sexual liberty, the use and significance of LSD ended up mixed with politics, which interfered with the continuing and development of researches about its therapeutic uses. LSD was prohibited and its use heavily controlled even by researchers in the late 60's and beginning of the 70's, partly due to two great factors: the biased information propaganda and lobby coming from the American Government of Lyndon Johnson and after him Richard Nixon, and also due to the real problems such as triggering of psychological pathologies or accidents with people that happened with the popularization and informal use by people in uncontrolled, unfavorable and negative contexts and mental states (known as *set* and *setting*). LSD started having at that point, then, a negative notoriety that persists to this day.

2.3 Chemistry and Pharmacology:

The entheogens are chemically divided in two groups: The tryptamines, or indole-based compounds, and the phenethylamines. In the first group are most entheogens, such as psilocybin and psilocin (4-hidroxy-n,n,dimethyltryptamine), DMT (n,n,dimethyltryptamine), ibogaine (12-Methoxyibogamine) and LSD (Lysergic Acid Diethylamide). In the second group the main entheogen is mescaline (3,4,5-trimethoxyphenethylamine), and some synthetic substances such as 2-CB, about which we will not talk about in this work

It is interesting to notice that these substances that produce so drastic effects are not necessarily complex molecules unlike what our bodies are familiar with, but on the contrary, they are many times extremely similar to neurotransmitters already found in our brain. In fact, serotonin is also a tryptamine, with the chemical name of 5-hydroxy-tryptamine, or 5-HT. Below are diagrams of the molecular arrangements of these entheogens and of serotonin.



DMT is a peculiar case because it is actually an endogenous psychoactive, meaning that it is found in our bodies in low concentrations [FRANZEN, 1965]. This led some scientists to consider a possible connection between unregulated amounts of DMT and schizophrenia [POMILIO, 1999], but other studies contradict this connection [MURRAY, 1976. JACOB and PRESTI, 2005], suggesting that maybe DMT has an endogenous anxyolytic role, or that it may be related to the dream process [CALLAWAY, 1988]. So far these are only hypothesis and more studies have to be made to find exactly why DMT is in our bodies.

There are peculiarities of each entheogens, but in a general view, they are serotonin agonists, which means they act in the serotonin neuroreceptors. They work specially in some particular receptor subtypes, such as 5-HT_{2a}, but also partially in subtypes 1a and 2c [SMITH, 1998; VOLLENWEIDER, 2003; NICHOLS, 2004].

Serotonin is known for being a neuromodulator, not having only one particular function but affecting several processes in the Central Nervous System (CNS). Serotonin and also its unregulated levels is connected to different behavior effects, and also to pathologies such as depression and anxiety. This is a possible clue on some of the possible areas where psychedelics can act. As we will see later on, the serotonergic system is not connected to vegetative vital functions, and therefore the effects of entheogens are restricted to consciousness and don't provoke direct life-threatening changes.

Ibogaine is an exception, affecting not only different receptor systems besides the serotonin system, such as dopamine, GABA, acetylcholine, amongst others, but also the Autonomous Nervous System. This is why we will treat ibogaine separately in chapter 4 where the possible risks are analyzed.

In terms of blood flow and brain activation and metabolism, neuroimaging exams have demonstrated that under the effect of entheogens, different areas are affected such as the frontal cortex, limbic regions and other areas of the brain, in special of the right hemisphere, related to the processing of emotions, perception and interoception (sensitivity to the stimulus originated in the body), amongst others [RIBA, 2006].

2.4 Entheogen Effects:

We can analyze the effects according to the medical-psychiatric model, or through a phenomenological look at the subjective experiences described in the so-called "trip reports". In any case, in both visions, it is generally accepted that the entheogens, unlike many other legal and illegal drugs, do not have entirely predictable effects, and that maybe as important as the substance itself is what is called *set and setting*, or in other words, the mental state of the patient/user and the situation and context where it is ingested [WINKELMAN, 2001].

All these substances, even though having differences between themselves, have many common qualities. Using the medical model, we can divide the effects in 3 groups: Somatic, perceptual and psychic symptoms [NICHOLS, 2004]:

- Somatic: Dizziness, weakness, tremors, nausea, drowsiness, paresthesias, blurred vision.
- Perceptual: Altered shapes and colors, difficulty in focusing on objects, sharpened sense of hearing and rarely synesthesias
- Psychic: alterations in mood, tension, distorted time sense, difficulty in expressing thoughts, depersonalization, dreamlike feelings and visual hallucinations

It is important, nevertheless, especially if what interests us are the possible uses in psychotherapy, where subjective psychological experiences are fundamental, that we analyze the effects as described by the users themselves, in their terminologies. It is important to remember that one of the main characteristics described is the ineffability, or in other words, the impossibility of describe the experience in a satisfactory manner, as normal words cannot do justice to what is felt. The reports are always seen as poor, in front of the richness of the experience. In any case, for informational purposes, let us follow with a resumed and generalized description of these substances, taken from a variety of reports in Erowid database¹, remembering that each experience is unique and that this description is only a general look, and does not have intentions of being final or including absolutely all the possible effects:

The first effects are felt between 20 minutes and 1 hour, and peaking around 3 hours after ingestion. Initially some people describe “waves of energy”. The individual may start having his perception altered: objects may seem more clear and three dimensional, or blurred. Different kinds of patterns and enhancing of textures can be seen, such as mathematical and fractal designs in the clouds, or faces in the trees, for example. Closed eye visions may be present, normally with either abstract and geometric moving imagery, or realistic scenes and landscapes, that may or may not have to do with the person’s past experience and memory.

Besides visions, the body perception may be altered. Body parts may seem huge or small, boundaries between different parts of the bodies, or in between the person and objects or people around him/her may be dissolved.

¹ <http://www.erowid.org/experiences/>

Another key aspect of the experience which is very common is the insights, or internal realizations about habits, past actions and behavior of the individual him/herself, or about others. Insights can also be with spiritual connotation, about life's purpose, or about death and existence in general.

Some people report very unpleasant experiences. The visions can be related to death, scary or disgusting insects or beings, sensations can be painful, constant nausea can be unsettling, and there may be feelings of despair, loneliness, regrets, sadness. These experiences are normally called *bad trips*. Great part of these negative experiences is related to *set and setting*, for example if the person is mentally unbalanced or has latent pathologies such as schizophrenia, has unfinished business or pending tasks, is in a bad moment in a relationship with a close friend or relative, and so on. Also if the person is taking it in public, in an uncomfortable place, around unfamiliar or unfriendly people and so on, all of these tend to precipitate a *bad trip*.

Nausea and vomiting are mentioned in some reports, especially in the case of ibogaine and ayahuasca. In the indigenous context, this is called *the purge*, and is seen not as negative, but as positive, as a symbolic and literal cleansing of the body.

Slight to moderate increase of cardiac frequency and blood pressure is possible, as well as muscle tension and ataxia (lack of coordination, affecting muscular strength and balance), all of which are only temporary conditions.

The effects subside gradually in 4 to 12 hours after ingestion, depending on the substance and dose. Many individuals report a night of sleep being necessary to return to normality.

One of the great problems of illegality and indiscriminate uncontrolled use is that the variables of set and setting are not controlled, and without an experienced facilitator such as a professional psychotherapist, the number of the negative experiences is increased.

Recapitulating: enteogens are, therefore, substances whose sources are natural plants and fungus, used for thousands of years in controlled ritual context. Their effects bring an alteration in consciousness, with the potential of being both pleasant and unpleasant, depending on context and the mental state of the individual. In the last two decades, scientists were able to get authorization for researches around

the world with promising results. This generated an expectation in relation to these substances, which possibly will be used in the future as therapeutic tools.

2.5 Legal aspects

The discussion of the legal status of entheogens is not the focus of this work, but it is relevant to bring a brief description of how these substances stand in relation to the law, especially in the case of Brazil where this work is written, since practical uses will be suggested later on.

There are peculiarities in the drug laws in each country, but overall they all follow the recommendations of the United Nations, in special from the 3 conventions on drugs from 1961, 1971 and 1988. Even without scientific evidence, in response to the panic generated due to the problems in the 60's, the UN, through the convention on psychotropic substances in 1971, classified all the main entheogens mentioned above (with the exception of ibogaine, maybe due to it being relatively unknown at the time) in the same category of heroin, prohibiting any use and making it difficult even for researches.

In the case of Brazil, the regulatory agency responsible for defining which substances are prohibited is ANVISA, the national agency of sanitary vigilance. In the *F2* list, where the proscribed substances are named, LSD, mescaline, psilocybin (and psilocin) and also DMT, in their pure chemical forms, are all listed. The legal situation, though, is less clear when we talk about the plants and fungus in their natural form from which these substance come. As an example, both marijuana and the poppy, in their plant forms, are present in the *E* list, as well as THC and heroin are present in the *F2* list. In the case of entheogens, the only natural version named is *peyote*. All the other plants such as San Pedro, psychoactive mushrooms and both plants of ayahuasca are not present in the *E* list, leaving their possession and use in a certain legal "gray area". Iboga and its active principle ibogaine are not present in any list, neither the chemical purified form list nor the natural plants list, which appears to mean that it can therefore be legally possessed and used [ANVISA].

Ayahuasca is worthy to be mentioned separately, because it is a part of a specific legislation where it is totally allowed for ritual use in Brazil. In 1985 the

medications division, DIMED, now substituted by ANVISA, included ayahuasca in the list of forbidden psychoactive substances. The now extinct Federal Council on Narcotics, CONFEN, in the time agency higher in hierarchy to DIMED, requested the formation of a multidisciplinary study to analyse the subject. With favourable results of the studies, ayahuasca was provisionally taken off from the proscribed substances list. In 1992, after an anonymous accusation that mentioned abuses in the rituals, once again researches were called to investigate ayahuasca. This time, researches from all over the world were called, in the study called the Hoasca Project. Once again the favourable results, about which we will mention later, served to maintain ayahuasca out of the proscribed substances list. Finally in 2006, the new drug agency CONAD permanently legalized the ritual use of ayahuasca, as well as opened the possibility, in case it's value is proved through scientific researches, the therapeutic use of ayahuasca [CONAD]. Still related to ayahuasca, another relevant event to mention was the recent declaration now in 2008 of ayahuasca as a cultural heritage of Peru, strengthening the south American and also world wide acceptance of ayahuasca as a valid instrument for personal development when used in a controlled respectful context.

The utilization of any substance in an official therapeutic setting implicates in the acceptance of the local laws, as well as in the following of rules and institutional guidelines. In the case of Brazil, and in the present moment, there appears to be the possibility of the therapeutic usage or at least research, given certain pre-requisites be met, of some of the substances mentioned, in special ayahuasca, while for other entheogens there seems to be no possibility of official use for now. Nevertheless, the present work serves at least to open the theoretical discussion and suggest the practical therapeutic usage both in the future in Brazil, as well as in other countries where the possibilities here absent open up. If even in the United States, country mainly responsible for the controversial *War On Drugs*, researches with these substances are currently being allowed, then maybe in a near future also here it may become viable.

3. Potential therapeutic uses:

Next, we shall see different areas of psychotherapy where studies and articles demonstrate the possible uses of entheogens as instruments to help health professionals, in special psychiatrists and psychologists. The areas of use are divided in sub-chapters for easier visualization and reading, but these divisions are meant to be absolute in practical terms, and in the case of comorbidities or joint necessities, the treatments for different pathologies may be done simultaneously. There are other potential areas mentioned in literature or suggesting in reports, but we will focus on the ones we have most information and scientific data about, and the ones that fall under the psychotherapeutic domain.

3.1 Treatment of drug addiction

Chemical dependency and legal or illegal drug abuse is one of the main problems of our modern society. According to the World Health Organization, 76 millions of people suffer from different problems related to alcohol, and another 15 million suffer from different syndromes related to other drugs, not including tobacco [WHO]. The dependency and abuse of alcohol, tobacco and other drugs is responsible for millions of deaths every year, causing suffering and also high costs to society and the economy. It is of extreme value, therefore, that we find ways of perfecting the existing treatments or bring forward new treatments, saving lives and improving the general quality of life in human existence. There are indications, as we will see, that entheogens can be useful instruments in this area of health.

In 1992, in the city of Tarapoto, in the Peruvian Amazon, the Takiwasi clinic initiated it's job with a differentiated attitude towards the treatment of drug addiction. In the program, 3 levels of work are proposed: the use of entheogenic plants, in specific ayahuasca, psychotherapy and communal activities and duties. The guided experiences with the substances generate psychological material which is later worked in the psychotherapeutic sessions, and then redirected to the practice in communal life. The theory is that, like this, the patient is not simply hiding from the old context

where drug consumption was done, but dealing with the roots of the problems, and applying what is learned in practice on daily life. After seven years of activity, a research was done with ex-patients that had already completed the treatment for at least two years. Result showed that only 23% of the patients had a relapse and went back into their old habits. Out of these patients, 55% returned to the Takiwasi center, and another 26% searched for other centers that also used indigenous medicine, demonstrating the high esteem that they had in the method, in spite of the relapses [MABIT, 2002].

In an older controlled research with 135 alcoholic hospitalized patients randomly chosen in Maryland, USA, half received high doses of LSD (450 micrograms, while standard dose is 100 micrograms) and another half of the patients received smaller doses (50 micrograms), and both together with psychotherapy. After 6 months, an independent group assessed the patients and concluded that 53% of the high dose group was “essentially rehabilitated” while 37% of the low dose group was also considered rehabilitated. The numbers did not lower after 18 months [GROF, 1979].

Earlier than that, in 1955, the psychiatrist Colin Smith initiated an investigation with alcoholism and LSD therapy. Twenty four patients participated, and in the end of 3 years, 12 patients did not considerably improve, 6 had some improvements and 6 had great improvements. In the terminology of the study, “some” improvement meant that the patient had positive social changes, as well as significantly diminished the consumption of alcohol. Great improvements meant the patient was totally abstaining from the use [SMITH, 1958].

In response to the data published by these and other researches, a study was done in the University of Toronto to check for the effect of LSD in alcoholics, and the conclusion was there are no considerable benefits [SMART *et al*, 1967]. In reply to this research, the Canadian psychiatrist Abram Hoffer criticized the attitude of the researches not only for the lack of validity of the experiment, but also for the lack of ethics. The patients had been pre-medicated with barbiturates to prevent against convulsions, tied to the bed, dosed 800 micrograms of LSD (8 times the standard dose) and the psychologist present not only did not perform any kind of psychotherapy, but not even interact with the patients, only writing notes down

[HOFFER, 1998]. What this study served to demonstrate, though, was that LSD by itself does not have therapeutic powers, especially in a negative setting, but one cannot affirm if, concomitant with psychotherapy and an adequate setting, it can or cannot be an effective instrument.

There were other researches with unfavorable conclusions. In another investigation with LSD and alcoholics, the effects of common therapy, therapy with LSD, therapy with lsd and hypnosis and only LSD were compared. The results demonstrated that there was no significant difference between the groups [LUDWIG, 1970]. In a criticism tot his study, the psychiatrist Stanislav Grof pointed problems in the research such as the duration of the therapy, the skeptic orientation of the therapists as a barrier for the therapeutic relationship, lack of follow-up contact and work after the experience and the preparation and experience of the therapists in relation to the substances [GROF, 1979].

Still in relation to alcoholism, some preliminary data shows that also other entheogens may have therapeutic efficacy. John Halpern, from Mclean Hospital of Harvard University, as well as other researchers, have realized that, in spite of the incidence of alcoholism being twice the US national average, in the case of these indigenous people that belong to the Native American Church which uses peyote as a sacrament, the average is considerably smaller (HALPERN *et al*, 2005; HORGAN, 2005). It is important to notice, though, that peyote is not necessarily the main or sole responsible for this success, as it may well be more related to the participation in the Native Church in general. As in Alcoholic Anonymous groups, the influence and support of the group is essential for the treatment, and in the Native Church both this support as well as the moral and ethical codes may be the main factors for the smaller rates of alcoholism. In any case, this is still an area that deserves a more in-depth investigation.

Another substance which has been recently getting a certain publicity for it's potential in the treatment of drug dependency is *ibogaine*. Researches using animals demonstrated that ibogaine diminished self-administration of cocaine and morphine in rats for several days, as well as diminishing the abstinence syndrome [SERSHEN, 1997; LEAL, 2003]. It was also demonstrated that pharmacologically, ibogaine blocks the dopaminergic liberation characteristic in the use of opiates, as well as in nicotine

[GLICK, 1998]. In Miami, Deborah Mash has studied the safety and preliminary efficacy of ibogaine with heroin and cocaine addicts. The results showed that after the use of ibogaine, the patients showed significantly reduced values in the HCQN-29 scale, which measures the desire to reuse heroin, and the CCQN-45 scale, measuring the same for cocaine. Besides, users showed reduced levels of depression in their reports [MASH, 2000].

We have here, therefore, some examples of entheogens' efficacy for drug addiction treatment in the controlled studies, some old, as the ones made by Smith and the ones by Grof in the 50's and 60's, as well as new studies in the Takiwasi clinic and in the University of Miami by Deborah Mash. Favorable results can also be seen in the animal model research. It is important to notice that these need to be seen as preliminary data, and the replication of the studies, as well as new studies must be done to get definite results.

3.2 Anxiety in terminally ill patients

Of all the possible causes for anxiety, death is, probably, the most difficult to deal with. As living beings, we are genetically programmed to avoid it at all costs. The idea of death brings us in contact with the unknown, beyond intellectual knowledge and our mundane certainties. It is impossible, therefore, to guarantee through verbal arguments the tranquility to anybody else in relation to this subject. Facing mortality without fear and anxiety can only be achieved through the inner development, maturity and a sense of satisfaction in the individual.

There are people, though, that claim not to be afraid of death, but many times this is more due to them avoiding the complete realization of this sure destiny, then to a real inner tranquility. The inevitability of death is covered in our daily life by several psychological defenses and mental blocks. We think of and do thousands of things but do not really consider the possibility of our impending death.

In therapy, the question of death ends up being dealt with usually in an indirect manner, exactly because it's certainty is not, in general, considered consciously. In terminal patients, on the other hand, the matter is central to their

situation, and many times anxiety rises to elevated levels that must be worked with to guarantee a humane and peaceful end of life.

Conventional therapies are inherently limited in these questions because the central doubts of the patient in relation to the unknown and death remain. Any contribution from the therapist will come from knowledge and opinions originating in their life, and not in the “beyond” and death, who’s mystery is the cause of anxiety. It is in this context that perhaps entheogens can be of great use, because they appear to allow profound realizations about existence and mortality. These realizations would come from the individual’s own direct transforming inner experience, and not from suggestion or external interpretations.

One of the great themes present in the entheogens experiences is *death* and *spirituality*. A big part of the people report being able to understand better death, seeing it as a part of a bigger natural cycle, feeling an integral part of the *Whole*. Experiences such as these put the individual in perspective with a live universe, where all the parts are interconnected and where death is just one more part of the story, instead of seeing themselves as people who are simply about to die, lose everything and meaninglessly disappear forever. In this way, and with the help of a therapist to help make sense of the insights and give support to the experience, the person will potentially deal in a more peaceful and calm way with death, not because he/she is hiding behind some belief or avoids thinking about it, but because of the tranquility coming from the individual’s own internal experience about it.

The idea of using entheogens with terminal ill people in the western world started in 1958, when the Russian doctor Valentina Wasson suggested that the “magic” mushrooms could be used in therapeutic process, in special to help the terminally ill [WASSON, 1957]. Five years later, Aldoux Huxley, famous writer of books such as *Brave New World*, and *Doors of Perception*, as a cancer-struck terminally ill patient himself, when noticing his time to die had arrived, asked for his wife, Laura, to give him an injection of 100 micrograms of LSD to help with his passage to the “Other Side” [GROF, 1977].

Following such indications, starting in 1969 a group of researchers, psychologists and psychiatrists investigated the effect of LSD in over 100 patients

with cancer. Stanislav Grof the Czech psychiatrist and initiator of transpersonal psychology, as one of the professionals involved in this research affirmed that

Positive changes were observed quite consistently in several different areas. Many patients showed a definite alleviation of various emotional symptoms such as depression, general tension, sleep disturbances and psychological withdrawal. LSD therapy also had striking, although not predictable, effect on severe physical pain. In some patients who had not responded to analgesics or narcotics, pain was alleviated or even completely eliminated for periods of weeks or months after a single LSD session. The most remarkable changes were observed in the patients concepts of death and attitudes toward dying. [GROF, 1979, p.253]

More recently, between 1990 and 1995 the psychiatrist Rick Strassman began in the United States the first official research with an entheogens approved by the FDA and the DEA in over 20 years. Strassman administered DMT, one of the active principles of ayahuasca, to sixty healthy volunteers. The DMT was administered by intravenous route, which meant the effects were markedly stronger and also lasting much less time than the usual ayahuasca experience. Let us examine four reports from this research related to the subject at hand:

More than once, the DMT sessions gave me the gift of truly subjectively knowing the phenomenon described in “Introductions to the Dead” in The Tibetan Book of the Dead. Even greater is the gift of knowing that I have had practice dying and returning [ELENA *apud* STRASSMAN, 2001 p.222]

I no longer fear death. It’s like you’re there one minute and then you’re somewhere else, and that’s just how it is. So I think it had that effect. (...) I know what it’s like to be totally free. [ELI *apud ibidem*, p.223]

I think the high dose is like a death trauma. It knocks you out of your body. I could have tolerated death or some major physical leaping-out-of-this-plane type of experience under DMT. This would be a good drug for people in a hospice program or the terminally ill to have some acquaintance with. [JOSEPH, *apud idem*]

It’s so far out, so weird, so out of control, you have to learn something. I think I’ve learned what its like to die, to be completely helpless in the throes of something. That’s been helpful [SEAN, *apud idem*]

Now let’s look at another example of death-related experience, this time from na individual using iboga (not in a research setting).

I was enthralled. I recognized that reincarnation is a fact, and that I had to be born countless of times therefore the awareness of everything around me made so much sense. Our banal worry in this life seemed meaningless and ephemeral. I began to get very comfortable and take in the rest of the scenery around me. (...)By that time I felt at peace and possessed an amazing sense of tranquility. Everywhere I looked I only saw light and love. The whole place was pulsating with pure loving emotions. I realized I'm staring in the face of God. It was ineffable. I was blanketed with so much love and a deep sense of oneness that I didn't want to go anywhere or see anything else. I realized at that time we truly are a part of the universe. We are all one. We have to cultivate that love so we can get the full benefit of everything around us. I also comprehended that with our emotions, with our energies, we create God or the Devil. I got a glimpse then of the whole universe revolving in a giant circle and I realized that there is no beginning and no end, its all a big cycle that we go through until we reach higher stages of evolution. [EROWID Exp 41522]

These descriptions are clear examples of these possible reinterpretations of the meaning of death, as well as of the commonly seen deeper and more accepting ways of understanding, catalyzed by entheogen experiences. Skeptics could argue that these are nothing but delusions, fantasies, results of pharmacological actions and not real experiences about the essence of life and death. Searching for reductionist explanations, though, or the attempt at fitting into current models is of much less interest than analyzing the real tangible effects on the individual's psychological health, well being and capacity of dealing with the experience. We must ask ourselves if modeling and value-judgment due to the unconventional aspect of the experience is really desirable in this situation, or if this should be secondary in relation to the perceptible objective facts such as the dying person's diminished anxiety, fears and increased enjoyment of life. This will not necessarily occur for all people, of course, but data shows that in the appropriate context, these are some of the possible and reasonably common effects that can be utilized by a well prepared professional.

Since 2004, Charles Grob, a psychiatrist at Harbor-UCLA, has been studying the use of psilocybin, the active ingredient in the 'magic mushrooms', with terminally ill patients suffering from advanced stage cancer. The main objective is to assess the effectiveness of psilocybin mainly in diminishing the anxiety that is common with these patients facing the end of life, but also depression and even possibly physical pain. It was the first research of the kind in many years with psilocybin, so Grob, opting for scientific reliability, designed a double-blind, placebo controlled

experiment. This study attracted the interest of several news agencies such as the report by BBC, with the heading “Medicinal Hope for Psychedelic Drugs”²

In Dr. Grob’s study, scheduled to be finished by the end of 2008, the subjects first pass through a rigorous selection process that excludes those with other pathologies such as psychotic disorders and cardiovascular diseases. Then the ones who are selected go through a number of preparation sessions where they are properly informed about the substance and the experience they are about to go through. Each volunteer has two sessions, not being informed which is which: one with an inactive placebo, and another receiving a dose of 0,2mg/kg psilocybin. During the six hours of the experience, the subjects are encouraged to lie down, relax, close their eyes and open up to any content that may rise in their minds. The subjects also in general listen to a pre-selected list of non verbal music, and the doctor and assistant stay next to them for any eventual necessity. Each hour the blood pressure is measured, and if the volunteers so desire, they can make brief comments about what they are going through. The more extended commentaries and conversations with the doctor are saved for the final hours, after the main effects have subsided but the insights are still fresh in their minds. In the days, weeks and months following the sessions, the investigators stay in close touch with the subjects, providing help for integrating what has come up in the sessions, as well as interviewing and applying questionnaires that examine levels of anxiety, depression, psychological health, perception of physical pain levels, as well as probing information related to spirituality, general well being and quality of life. This contact is maintained at least up to the 6 months follow up point.

In the end of last year some preliminary results and case vignette were published [GROB, 2007]. One particular case described is of P., a 58 year old Japanese-American woman suffering from stage IV colon cancer. During her psilocybin session, she passed through very pleasant moments and tension relaxation, but in one particular moment she seemed very distressed and cried for twenty minutes. Later on she described she cried because she felt a very strong empathy to her husband, and felt as if she “became him” during the experience, feeling the

² Available online at: <http://news.bbc.co.uk/1/hi/health/3528730.stm>

suffering he would inevitably go through due to her impending death. In the months following the presumed active session, Grob [2007] tells that the volunteer

Reported sustained positive mood, less anxiety, and greater acceptance of her situation. In particular, she has described a further strengthening of her bond with her husband as well as greater interest and motivation in spending “quality time” with important friends in her life. The only criticism she has had regarding her participation in the research study was that the protocol only allowed for one psilocybin treatment study. P. strongly expressed her viewpoint that an additional “booster” session (or two) might further amplify the positive effects she attributes to her experience with the psilocybin treatment model.

Though good results are being mentioned in this chapter in general, it is important to notice that there is no suggestion that entheogens are the only possible way to deal with the Idea of death and having a humane end of life. Beliefs and philosophies, as well as experiences in life and time in general can also help people accept their inevitable conditions.

Different psychologists and psychiatrists also talk about the subject of death and feelings connected to deep losses from other perspectives. The psychiatrist Elizabeth Kübler-Ross, for example, has brought the idea that there are five major stages through which people pass when being confronted by tragedy and grief: negation, anger, bargaining, depression and acceptance. In this way, the process could eventually progress to acceptance, given that other variables don't prevent it from doing so. Kübler-Ross mentioned about individuals facing the death of near relatives, acquaintances or loved ones, and also about people losing their jobs or freedom, but the concept can also be applied for individuals facing their own impending death.

Apart from Kübler-Ross, we can notice that the whole concept of the hospice movement and palliative care in medicine is connected to this idea of bringing a more peaceful and humane end of life for people with incurable diseases, and it has achieved great successes, not being connected to entheogens. Being aware of the existence and value of these alternative ways of helping patients facing death and helping their transition, this present dissertation suggests that entheogens can also be used as an effective psychotherapeutic tool. These different ways are not mutually exclusive and there is no value judgment or pretension of a superior path through entheogens.

Facing with the knowledge of our own deaths is of great importance as one gives more value to life and the living moment, also allowing for the resolution of conflicts and fears, and improving life quality. In the case of terminal illnesses, where the patients are sure of their impending deaths, not dealing with it means a problematic, tense and anxiety-filled end of life. The therapist can, therefore, deeply help an individual achieving this more humane end of life, consequently helping those around him such as the near relatives too. As the psychologist Ralph Metzner [1998, p.145] wrote:

In situations involving terminal illness, a person approaches the final transition gradually (as opposed to the sudden and unexpected confrontation that occurs in a near-death experience) and has the opportunity to resolve old conflicts, complete unfinished business, and release fears and attachments to the images of self and others. This is the vast potential of dying slowly; but unless there is support (...) it is hard for a dying person to maintain this conscious attitude.

3.3 Obsessive Compulsive Disorder and Body Dysmorphic Disorder

Some of us will remember the scenes in the film “As good as it gets”, where Jack Nicholson repeatedly washes his hand, excessively worries about the forks and knives he uses and only steps on certain places according to the color of the floor. A laughing matter in Hollywood, the Obsessive Compulsive Disorder (OCD), as it is called, is a very serious psychic disease, causing much suffering to the patients as well as to their families. Frequently being associated with comorbidities such as depression, OCD is a very distressing disease and has as the main characteristic, according to the ICD-10, international statistical classification of diseases:

recurrent obsessional thoughts or compulsive acts. Obsessional thoughts are ideas, images, or impulses that enter the patient's mind again and again in a stereotyped form. They are almost invariably distressing and the patient often tries, unsuccessfully, to resist them. They are, however, recognized as his or her own thoughts, even though they are involuntary and often repugnant. Compulsive acts or rituals are stereotyped behaviours that are repeated again and again. They are not inherently enjoyable, nor do they result in

the completion of inherently useful tasks. Their function is to prevent some objectively unlikely event, often involving harm to or caused by the patient, which he or she fears might otherwise occur. Usually, this behaviour is recognized by the patient as pointless or ineffectual and repeated attempts are made to resist. Anxiety is almost invariably present. If compulsive acts are resisted the anxiety gets worse.

Representing another promising area of utilization of entheogens, the treatment of this disease seems, by anecdotal evidence and preliminary studies, to have a considerable efficacy.

Francisco Moreno [2006], psychiatrist in the University of Arizona, studied nine patients with OCD. Before the study, these patients had not responded well to other conventional treatment, including pharmacological ones. The research had as the objective measuring the safety, tolerability and preliminary efficacy of psilocybin in patients with OCD. Each subject received up to four doses, a low (0.1mg/kg), a medium (0.2mg/kg), a high (0.3mg/kg), as well as a very low dose (0.025mg/kg) randomly administered somewhere in between the others. The application of psilocybin showed to be safe, with only one case of transient hypertension with no relation to anxiety or somatic manifestations. There were no other significant adverse effects in any of the sessions. All the patients demonstrated considerable reduction to the symptoms during one or more of the experiences (a reduction of 23% up to 100% in the YBOCS scale). These changes in most cases lasted for over 24 hours, in two cases for one week and in one case the patient reported a remission of symptoms 6 months after the experiment. These results are very encouraging, but they must be seen as preliminary and not final. It would be of general interest to conduct phase II and phase III studies, where a larger number of volunteers participate, and more reliable statistical analysis of the efficacy of psilocybin in the treatment of OCD is made possible.

The Body Dysmorphic Disorder (BDD), similar to OCD in some aspects, is another disorder that seems it might respond well to psilocybin. This disorder is characterized by an excessive and disproportional worry at some small or imaginary defect, characteristic or problem in the body. Both BDD as well as TOC are connected to serotonin, and psilocybin as well as other entheogens act in the serotonergic neuroreceptors (MORENO, 2006; HANES, 1996; NICHOLS, 2004). In the case of BDD, the data is still relatively scarce. Apart from anecdotal evidence,

one of the few information we have comes from a published report about a case study of a 27 year old young man, referred to as Mr. A. He presented symptoms of BDD, with an exaggerated and debilitating worry about his cheeks. The young man avoided social situations and had even abandoned his studies because he considered himself extremely ugly, even though his appearance was normal, according to other people, including the doctor who treated him. He spent 4 hours a day looking at himself in the mirror. When using psilocybin-containing mushrooms by himself in a non-medical setting, Mr A, looking at himself in the mirror, reported noticing he was no longer deformed, he looked normal, so in that moment he questioned himself for the first time if his deformity was actually real or only imagined. The doctor did not use psilocybin, but prescribed fluoxetine, a selective serotonin reuptake inhibitor, which eventually also had an effect, diminishing the symptoms. When analyzing the case, the psychiatrist responsible for the case suggested the potential of psilocybin, due to its action being, like the medicine prescribed, active in the serotonergic system, and also because the patient only volunteered for treatment after having his experienced with psilocybin [HANES, 1996].

3.4 Therapeutic Insights

One of the main characteristics of entheogens observed in experience reports is the great quantity of insights, epiphanies or moments of deep understanding and self-awareness of the individual about himself, his psychological defenses, flaws and patterns of behavior. In conventional therapy, these are parts of the main objectives: bringing the patient in contact with himself. It is not without justification, then, that one could think of the possibility of the utilization of these substances in the therapy of the “common” individual, not necessarily needing a dominant pathology to be treated.

In Gestalt therapy, some of the techniques used have a very similar function to the above-mentioned entheogen effects, of experimentally demonstrating the mental, emotional and behavioral patterns of the individual, in a way that he sees himself, therefore having a bigger knowledge about himself. One of the techniques used is the

conscious exaggeration. If the psychologist realizes that the patient is, in the underlines of his speech, unconsciously stuck in a feeling of anger, for example, he can ask or incite the patient to say the same thing with more anger, in an exaggerated manner. In this way, putting the individual in the extreme of his unconscious emotion, it can make him realize more clearly how he was acting before, the possible inadequacy of these underlying emotions he was previously unaware of.

Another Gestalt technique is of the *empty chair*, where the patient is asked to talk to an important person in his life that is imagined to be sitting in a chair next to him. The therapist can also ask, for example for the individual to sit in the empty chair and then imagine himself as the person who he was talking to. These techniques aim at taking the individual out of his usual speeches and associations, and seeing himself from another position. This idea of “seeing oneself from outside” is present and of extreme importance also in shamanism. Mircea Eliade used the term *archaic techniques of ecstasy*, to define these different ways, one of which is entheogen use, through which various archaic cultures achieved an alternate state of consciousness. In fact, the word *ecstasy* itself comes from the greek *ex*, meaning outside, exterior, and *stasis*, meaning standing, staying. In other words, the shamanic *ecstasy* is the ability to stand, and consequently see oneself, from outside of the common perspectives and usual waking consciousness, much in the same way that psychology, with techniques such as the ones used by the above mentioned Gestalt therapy, helps the individual grow by allowing him to see himself from a different, unusual, external point of view.

Another characteristic of *insights* is the possibility of thinking in broader ways. Researches also show that entheogens have in their pharmacological action the natural characteristics of increasing the range of associations for those under their effect. This was demonstrated for example by the study of Spitzer (1996), which made people under the influence of psilocybin perform several tests and concluded that psilocybin does increase the activation of indirect semantic associations. Spitzer [1996, p.1056] affirms that

Our data suggests that the agent [psilocybin] in fact leads to an increased availability of remote associations and thereby may bring cognitive contents to mind that under normal circumstances remain non-activated

It is worth noticing, though, that the researcher also affirms that the volunteers under the effect of psilocybin had worse performance in other psychological measures, or in other words, psilocybin is not a “super-drug” of the mind, but it could be an instrument that, with its inherent multi-faceted characteristics, could be used in psychotherapy and in the increase of therapeutic insights, bringing new contents to consciousness that would not normally arise.

Used commonly in the entheogen culture, *ego loss* or *death* is an expression to explain some particular effects brought by the ingestion of high doses of these substances. It is the subjective experience that those under the influence sometimes have, of eliminating the superficial layers of the psyche, the disappearance of personality and common ego defenses, while the deeper observing center of consciousness, or *Self*, remains. These experiences may be difficult especially for those who are deeply identified with their ego or personality, who may think they are actually dying. On the other hand, if one *lets himself go* and embraces the experience, then it can be very transformative and learning. The individuals describe, for example, re-living situations where they acted incorrectly but their egos did not allow them to see, and with the entheogen effects, they saw what had occurred in a less “illusory” way. Let us examine for example the report from a young man who took ayahuasca in an indigenous ritual:

I re-experienced the situations in more proper way, without all the filters and mental blocks and defenses that I make to protect my ego in 'normal' life). I saw how, before I left, I had told my mom that I was going to this ritual, but I didn't care to explain to her. She was worried, but I didn't give the tranquility I should have given. I was suffering from all those visions. The spirit of Ayahuasca was teaching me how to be a better person. [EROWID EXP 56871]

In psychotherapy one of the main objectives is that the patient can find new meaning to his/her past experiences with a deeper level of understanding through the help of therapy, becoming more functional in life. In the same way, as we saw through the example above, so can entheogens serve for helping the individual reformulating healthily how he sees the past, and consequently how he acts in the present and plans the future.

3.5 Spiritual Experiences

The existence of humans is made present in many different and unseparable levels, that work in a network of interconnected relations. Besides being bio-psychic-social beings, we are also spiritual beings. This word does not necessarily imply in the belief in a superior, anthropomorphic controlling being with human characteristics, but more in what in transpersonal psychology we could call *self-transcendence instinct*. This is connected to the search for deep understanding of existence, to self-realization and actualization of hidden human potentials and to the overcoming of external and internal limits. Spirituality, in these terms, is also related to the recognizance that the scientific model is important, but that existence is bigger than the model, than the description, or in the words of Alan Watts, *the menu is not the meal*. Spirituality is also related to the attempt of comprehending the unity behind the multiplicity of the universe, and to the apparent necessity men has of finding a meaning to life, and of understanding things beyond the superficial appearances, so that real long term happiness becomes possible.

Carl Jung well said that “*man does not stand a meaningless life*”. In the clinic, there are innumerable cases of successful people with a recognized job, good social relations, healthy, and yet not happy and reporting an inner emptiness. Also if one looks at suicide rates, many developed countries are on the top of the list, such as Belgium, Finland, Switzerland and France. This may be partly explained by other variables such as cold, but the point still remains that external comforts and successes are not necessarily equated with real happiness. In the book “Man and his Symbols”, organized by Carl Jung [1964, *our translation*], M. L. Von Franz expresses this very well when saying that

Nowadays an ever greater number of people, above all those that live in big cities, suffer from a terrible feeling of emptiness and boredom, as if they were waiting for something that never happens. Cinema and television, sport events and political agitations may distract them for some time, but, exhausted and disenchanted, always end up returning to the desert of their own lives.

The emptiness of modern man can only be filled with a deeper signification of existence. It is necessary that psychology provides support for allowing these new

ways of understanding of the individual, going beyond the physical, emotional and intellectual levels of human dimension.

It is not uncommon nowadays to hear criticism to Descartes for his radical division between mind and body. In our modern paradigm, though, there are still radical dualisms that need to be overcome. Just as there is no absolute division between body and mind, there is also no absolute distinction between mind and spirit, and thus psychology needs to incorporate both the body as well as the spirit. Some researches and experience reports, as we will see, demonstrate how entheogens can also possibly catalyze the contact with the spiritual realms.

In the 20th of April, 1962, Good Friday, ten divinity students from Harvard University ingested psilocybin, another ten ingested niacin (vitamin B3) as placebo, and all went to participate in a service in a church. After the experience, the volunteers were interviewed and filled questionnaires about their experience, with the intention of finding out whether an entheogen could facilitate a genuine spiritual experience. This was the “Marsh Chapel” study, organized by Walter Pahnke and supervised by Timothy Leary. The answer of the questionnaires developed by Pahnke [1963] demonstrated that eight of the ten participants that ingested the active substance had a genuine mystical experience, as opposed to the control group where none had such experience. Rick Doblin [1991, p.23], in a follow up analysis of this study, when interviewing the individuals who participated in the experiment twenty four years later concluded that

All psilocybin subjects participating in the long-term follow-up, but none of the controls, still considered their original experience to have had genuinely mystical elements and to have made a uniquely valuable contribution to their spiritual lives. The positive changes described by the psilocybin subjects at six months, which in some cases involved basic vocational and value choices and spiritual understandings, had persisted over time and in some cases had deepened. The overwhelmingly positive nature of the reports of the psilocybin subjects are even more remarkable because this long-term follow-up took place during a period of time in the United States when drug abuse was becoming the public's number one social concern, with all the attendant social pressure to deny the value of drug-induced experiences.

An interesting characteristic that is common to spiritual and mystical texts, as well as to some psychology works and also to entheogen experiences, is the search for

higher levels of consciousness and conscience. The Armenian mystic Gurdjieff, for example, defined the usual waking consciousness of man as a hypnotic sleep, he said that

European and Western psychology in general had overlooked a fact of tremendous importance, namely, that we do not remember ourselves; that we live and act and reason in deep sleep, not metaphorically but in absolute reality. And also that, at the same time, we can remember ourselves if we make sufficient efforts, that we can awaken. [GURDJIEFF *apud* OUSPENSKI, 2001, p.128]

Gurdjieff's work consisted in techniques to make the individual more conscious of his actions, instead of being a mere automaton controlled by external influences. In psychology, we also see some professionals talking about this distinction between waking consciousness and a possible higher consciousness and self-awareness. Fritz Perls [1977, our translation], creator of Gestalt Therapy, affirmed that

We emphasize the difference between deliberate actions and the not having conscience of living in a certain way. This last fact is part of living the script of life, and doing it compulsively, without knowing this is a pathological form of living

Piaget's work, also touched the idea of different levels of inner freedom when talking about the difference between moral and cognitive heteronomy and autonomy. Kohlberg later extended Piaget's work in the realms of morality. Heteronomy is when the person's actions are dependent and focused on outer influences, such as wanting to impress others, looking for external rewards in general and not doing something due to punishment, for example. Autonomy is a higher level of choice, where one can think and act for his own beliefs, independent, or in spite of, external consequences.

Even Freud himself [1920, p.561], when noticing that the symptoms of neurosis did not disappear with the simple intellectual knowledge of the cause, but that it was necessary to have a deeper type of knowledge, said that "*there is knowing and knowing; they are not always the same thing. There are various kinds of knowing, which psychologically are not by any means of equal value*". Similarly, we see in different experiences with entheogens the deep realization that the usual waking state of consciousness is limited, and that there are other healthy levels and ways of seeing and interacting with the world, as in the example below:

In less than eight hours [after taking lsd] I had been shown a rare glimpse of the power of the human mind to shape reality. I saw that

my limited neurotypical consciousness was only one plane, level or aspect and that there were infinite new things to discover. I found new perspectives on birth, death, and the nature of mind and consciousness as the field of creation. The experience of the oneness of all things replaced the *myth* of separation.
[HARDISON, 2007]

Taking a closer look, one can see that, at times, the descriptions of religious experiences and visions by mystics and saints are extremely similar to reports of common people about their experiences with entheogens. If we look at different types of religious experience such as the ones analyzed by William James [1929], or in the study of the psychologist Ralph Metzner [1998] about the metaphors of transformation in different religions, cultures and myths, for example, we can find strong parallels with entheogenic experiences. Amongst the many common themes present in all of these manifestations above mentioned are: the division of the *Self* and it's reunification, understanding of the sick soul and it's possible cure, experiences of Oneness and the world as a connected, alive and integrated Whole, the experience of archetypes, death and rebirth, return to the Source, liberation from the prison of normality, the perception of invisible worlds, contact with different beings, integration of the inner wild animal, waking up from the sleep of usual consciousness and the transformation from darkness to light.

In fact, through a historical look one can see that, not only there are similarities, but in fact entheogens may have been fundamental for the original creation of the major religions and mystical movements. The Eleusinian mysteries, in Ancient Greece, for example, where initiation ceremonies part of a cult to Demeter, the Goddess of agriculture. These mystery-based cults deeply influenced Greek thought, and amongst the people who participated in it was Plato. In the rites, a mysterious drink called Kykeon was ingested, and it was responsible for ecstatic visions. One of most discussed theories is that this potion was made from cereals attacked by fungus of the *Claviceps* species, the same that serves as a base for the production of LSD [WASSON *et al.*, 1978]. Other religions also seem to have benefited from the use of substances such as Buddhism and Hinduism, where according to the Rig Veda, sacred texts, the high priests used Soma, a substance that researchers think is a certain psychoactive mushroom [DOBBBERSTEIN, 1995; WASSON, 1968]. Also in Zoroastrianism, an intoxicating drink called Haoma was a

fundamental part of the belief, and there are suppositions that even Judaism, Christianity and Islamism were influenced by psychoactive substances [SHANON, 2002; ALLEGRO, 1970].

The idea that entheogens can catalyze mystical and spiritual experiences is not only the object of speculation, historical analysis or old researches. A recent study about entheogens and spiritual experiences attracted the attention of the media, being shown in television channels, newspapers and popular magazines such as CNN, Los Angeles Times and the Newsweek magazine, also being shown in Brazil by Folha Online³. Lead by Dr. Roland Griffiths of John Hopkins University, this double-blind, active placebo-controlled study tested psilocybin in 36 volunteers, with the objective of finding out whether the active principle of the “magic mushrooms” can induce transformative spiritual experiences. This experiment was a historical landmark, being partly financed by NIDA, USA’s National Institute on Drug Abuse, and receiving many compliments from several scientists and professionals for the impeccability in the study design.

Griffiths (2006) study looked at 36 volunteers with the average age of 46 years, all entheogen-naïve. Besides psilocybin, in a separate occasion all volunteers ingested methylphenidate, better known as Ritalin®, a type of amphetamine, to compare the results with an active placebo. After fourteen months, Griffiths (2008) made a *follow up* study, to know if the results changed long after the experience. Both the initial and the follow up results were very positive. None of the volunteers described a worsening of their general well being or quality of life. 58% affirmed the session with psilocybin was one of the five most personally meaningful experiences of their lives, and another 11% affirmed it was *the* most meaningful experience of their lives. Also after these fourteen months, 64% affirmed psilocybin improved their sense of well-being either moderately to very much, and 61% indicated the experience was associated with moderate to extremely positive behaviour change. Also 61%, according to a pre-determined measure, fulfilled the criteria for having had a complete mystical experience. 67% affirmed this experience was one of the five most

³ CNN: <http://www.cnn.com/video/#/video/health/2008/07/02/costello.magic.mushroom.cnn>

Los Angeles Times: http://latimesblogs.latimes.com/booster_shots/2008/07/a-medical-use-f.html

Newsweek: <http://www.newsweek.com/id/144399/page/1>

Folha Online: <http://www1.folha.uol.com.br/folha/ciencia/ult306u418292.shtml>

spiritually significant experiences of their lives, and 17% affirmed it was *the* most spiritually significant experience of their lives. The tests and questionnaires also showed general improvements in self-esteem, positive outlook and no negative effects. The results with the active placebo methylphenidate did not show similar significant numbers, demonstrating that it was psilocybin that specifically induced these positive outcomes, and not just any psychoactive experience. A last interesting result to comment is that three close acquaintances of the volunteers were interviewed by an assistant of Dr. Griffiths who did not know about the results and had no or little contact with the volunteers. When inquiring about the possible positive or negative changes in behavior of the volunteers, the acquaintances also affirmed that in general they had seen small but significant changes in their behavior and well being.

All the information mentioned in this chapter has deep implications, showing us the real pertinence of entheogens as instruments for facilitating genuine spiritual experiences. Substances that systematically and safely induce, in a controlled context, deep, spiritual and meaningful experiences deserve at least some attention and more careful examination. We must remember, of course, that entheogens are not at all the only possible spiritual path, but one amongst the many possible choices. If we admit the possibility for a more encompassing psychology that incorporates these deeper levels of existence as a legitimate object of study, then it is important that we study and consider the possibility that these substances can be useful in helping the patients achieve a deep existential changing experience. This is one more area worthy of more studies.

3.6 Other Uses

Preliminary data indicates the possibility of using entheogens with success in other areas of psychotherapy that are relevant to be more briefly mentioned.

3.6.1 Depression

According to the World Health Organization, 121 million people suffer from depression in the world, considered one of the most debilitating mental diseases. It is a disease that manifests itself in several different levels, including biochemical, neurological, behavioral, emotional and intellectual. The most common treatment is, besides psychotherapy, the use of antidepressant medication, which can be crudely divided in three main groups: tricyclics, selective serotonin reuptake inhibitors (SSRI), and the inhibitors of the monoamine oxidase (MAOI). Antidepressant medications are not, as it is to be expected from the pharmaceutical industry, medications of single or short-term use, but a long-term continuous use is required, and consequently there are disadvantages associated.

Entheogens in general, but more specifically ayahuasca, can be of interest in this field of therapy because of its action in several levels that may help treat depression. In the chemical and pharmacological level, ayahuasca contains harmine, harmaline and tetrahydroharmine, all of them being IMAO, of the same class as some antidepressants, with the added advantage of being reversible IMAO (and consequently diminishing problems related to serious food and medication interactions present with irreversible MAOI medication). Also, tetrahydroharmine is a soft SSRI, increasing the quantity of serotonin in the synaptic cleft [MCKENNA *et al*, 1998, p.4], also potentially helping against depression. There are published data that show unbalanced levels of serotonin and 5-HT₂ receptors are connected to depression and self-destructive behavior [MEYER *et al.*, 2003], which points even more to the importance of investigation in this area of neuropsychiatry and psychology, and possibly to the use of entheogens as auxiliary instruments.

Another significant characteristic of ayahuasca and entheogens is that its actions would not be limited to the pharmacological level, and its daily or long-term use would not be necessary to obtain benefits in the treatment of depression. Ayahuasca, as other similar substances, by bringing forward unconscious information, allows the individual to face and work with his depression in its deeper levels, not only in the biochemical and neurological manifestation. It is up to the future researchers to investigate this area, in order to find out if entheogens such as ayahuasca can really be of use against mental illnesses ever so common and debilitating as depression

3.6.2 Psycholytic therapy and Neurosis Treatment

Before the UN conventions and the prohibition of the use and the laws that made it very difficult for researchers to get permission to work with entheogens, several studies and therapies were being done across the world. The therapies with these substances generally divided in two different kinds, and we can see these two separate influences in some of the recent researches: *psychedelic therapy* and *psycholytic therapy*.

Psychedelic therapy consists of fewer sessions and high doses. In this vision, the hypothesis is that the effect of high doses will overcome any usual psychological defense, allowing the person to establish contact with the deeper levels of the psyche and consequently having mystical transformative experiences which are latter worked on and incorporated with the help of the therapist. During the session itself, the therapist is present and will provide any needed support, but the primary work happens inside the patient's mind. Only after the effects having finished, the experienced is discussed and the therapist becomes active. The psychedelic therapy served as a model for some of the researches mentioned above such as the work of Dr. Grob with terminally ill patients, and Dr. Griffiths research about transformative spiritual experiences.

The psycholytic therapy (literally "mind dissolving), on the other hand, is based on a greater number of sessions, using low or medium doses, and during each session the content is worked as it comes up, through the talk and therapeutic work of the professional. Psycholytic therapy can be seen as an enhanced version of normal therapy, because the substance helps bringing forward unconscious content, facilitating the therapeutic work. The models and concepts already established by normal psychotherapy are adequate for psycholytic therapy, with few alterations, which makes it more easily incorporated in the modern therapeutic paradigm [GROF, 1979, p.123].

In psychoanalysis, for example, we see that for the treatment for several types of neurosis, it is essential that one can reach unconscious information, possible traumas and repressed memories and desires. As Freud himself said (1920, p.560),

“our therapy does its work by transforming something unconscious into something conscious, and only succeeds in its work in so far as it is able to effect this transformation”. The use of low or medium doses of entheogens can facilitate this process, without interfering negatively or “artificially” exposing the patient in any way that cannot be worked. Different than hypnosis, which was abandoned by Freud, for example, the therapist does not direct the content that comes up, and the person deciding the content to be discussed or analyzed is the patient himself, as in normal therapy. The free association still is present, being even more effective due to the increased associative reach of the mind under the effect of the entheogens.

After many years of experience with this kind of therapy, Stanislav Grof (1979, p.123), creator of *transpersonal psychology*, affirmed that the richness of the material obtained in psycholytic therapy brings unrivalled insights about the workings of entheogens, as well as of the dynamics of emotional pathologies and the functioning of the mind and brain in general.

It is interesting to notice that, measured by the NEO-PI-R inventory, the personality trait *neuroticism* and also *vulnerability*, defined as the difficulty of an individual in dealing with stress, are both correlated with 5-HT_{2a} receptor binding, as neuroimaging exams show [FROKJAER *et al.*, 2007]. As seen earlier, entheogens act exactly in this neuroreceptor, which points to the fact that, besides the psychological level discussed above, maybe also in the pharmacological level they can also help us understand and possibly treat different kinds of neurosis and affective disorders.

Neurosis and psychological disorders in general can possibly, therefore, be treated with the help of common psychotherapy in conjunction with entheogens, in the model of the psycholytic therapy.

3.6.3 Post Traumatic Stress Disorder

Being present to different degrees in at least 10% of the people who have passed through traumatic experiences, this potentially debilitating disorder is many times associated with mental and physical comorbidities, reduction in quality of life and many times even being related to financial difficulties [BRYANT, 2008]. A recent research has shown that the controlled re-living of the memory of the traumatic

event helps elaborating and possibly curing or diminishing and preventing symptoms of Post Traumatic Stress Disorder (PTSD). In the words of the researcher, “*the current findings suggest that direct activation of trauma memories is particularly useful for prevention of PTSD symptoms*” [idem, p.665]. It is reasonable to think, then, that entheogen substances can help in the cure and symptoms prevention and reduction process, due the already mentioned activation of important memories for the individual, facilitating the *abreaction*. It is important to notice, though, the study mentioned did not use entheogens, but instead it investigated behaviorist-cognitive techniques with post-traumatic patients suffering from Acute Stress Disorder, which is a disorder that likely develops into PTSD, so any conclusion of entheogens potential taken from this is our sole conclusion and not to be attributed to the researcher mentioned. Nevertheless, there is the essential commonality of the re-living of traumatic memories, both in the technique used, and as a commonly reported effect of entheogens, so it is not unreasonable to hypothesize that entheogens can possibly help with people suffering from PTSD. This is, therefore, one more area worthy of being at least researched, possibly diminishing human suffering in another of its manifestations.

4. Risks

So far, the different possible areas of utilization of entheogens in the therapeutic process have been discussed. We must remember, though, that there are also potential negative effects and dangers, and point out the ways through which these risks can be diminished. Only then we will be able to really measure if the benefits compensate for any possible problems, or if the contrary is true and we must reject the use of entheogens in the clinic. Let us now look at some of the common worries about this class of substance, discriminating between the true dangers and the misinformed affirmations, as well as offering later on recommendations on how to act to diminish those risks.

4.1 Toxicity and physical dangers

Several researches around the world have demonstrated the low toxicity of entheogens [STRASSMAN, 1984; NICHOLS, 2004; MCKENNA, 1998; GROB, 1996; RIBA, 2003; VOLLENWEIDER *et al*, 2004]. A key measure to determine the safety of a substance is the LD-50, which states the quantity necessary for a substance to kill 50% of the tested animals. These numbers are then divided with the quantity necessary for an effective or therapeutic dose, resulting in the *therapeutic index* (or *safety index*). Knowing that the bigger the number, the safer the substance, according to the Registry of Toxic Effects, the average safety index of tryptamines is over 600, while, for comparison rates, of aspirin it is 199, fluoxetine (prozac®) is 100, nicotine is 21 and alcohol is 10 [FRECSKA and LUNA, 2006, p.191; GABLE, 2004].

With the exception of ibogaine, which we will treat separately further down, there are virtually no registered cases of direct death related to entheogen use (LSD, DMT, psilocybin, mescaline). A search on medical databases comes up with one single report of an LSD related death. The report describes the death of an individual that, thinking it was amphetamine, injected intravenously three thousand times the effective dose of LSD. There is another case of eight individuals who sniffed pure LSD thinking it was cocaine, ingesting quantities of up to one thousand times the standard dose, and in spite of the temporary complications such as bleeding and respiratory problems, all of them recovered [FRECSKA and LUNA, 2006]. If one compares this to the 2,3 millions of deaths every year (or one every 15 seconds) due to alcohol according to the WHO, even if one does not count the indirect death, one can still say that entheogens are relatively safe in physical terms.

There was one case where eight individuals snorted pure crystal LSD, which they had mistaken for cocaine, ingesting quantities estimated as up to 100,000 µg, or 1000 times the standard dose. There were temporary complications such as bleeding and respiratory issues, but they all recuperated [FRECSKA and LUNA, 2006].

The somatic alterations resulting in the use of entheogens, as for example the occasional increase in cardiac frequency and blood pressure in some individuals, occur only in slight to moderate levels, not offering risks to healthy individuals [RIBA, 2003]. As a precaution, people to whom any type of emotional stress can be

dangerous, such as those suffering from coronary arteriosclerosis, should avoid these substances.

The lack of serious direct physical dangers in the ingestion of entheogens is related to their peculiar pharmacology. As mentioned earlier in this work, these substances act specifically in the 5-HT_{2a} receptor, which is not responsible for vegetative vital functions. They do not cause dangerous alterations in cardiovascular, renal or hepatic functions, therefore having their effects limited to the Central Nervous System (CNS), in special aspects of consciousness, not offering direct life risks [NICHOLS, 2004, p.134]

In the case of ibogaine, however, there are at least eight registered deaths [MAAS, 2006]. Ibogaine has a very different pharmacology, and it acts in different receptor systems such as from dopamine, GABA, glutamate, opioids, and also acetylcholine. Ibogaine also affects not only the CNS, but also the Autonomus Nervous System, responsible for vital vegetative functions. There are controversies related to the registered ibogaine deaths, but one of the well supported theories affirms the cause of death was sudden cardiac death related to autonomic dysfunctions [MAAS, 2006]. More investigation is necessary, but it is known that people with pre-existing cardiovascular diseases or autonomic nervous system dysfunctions such as epilepsy are particularly sensitive to such events, and therefore exclusion criteria must be especially rigorous with ibogaine [*idem*]. Ibogaine must in general be looked at with a greater care in terms of risks, due to these particularities in terms of physical risks, which even though are still reasonably small if we look at the amounts of people that used versus registered deaths and complications, it is still significant and considerable. Also it would be of great interest to perform more in-depth studies of the science behind the traditional complex ceremonial techniques that are used by the Bwitis and the Pygmies to prevent complications during iboga use.

Another area worthy of attention is of medication interactions. In special, in the case of ayahuasca, the β -Carbolines, active components of the drink, are inhibitors of the MAO, enzyme that, besides destroying the other active component DMT, also metabolically break serotonin down. The temporary elevated quantity of serotonin is not, by itself, a problem, but if the IMAOs are used in conjunction with an SSRI antidepressant such as fluoxetine (Prozac®), then it is possible for a Serotonin

Syndrome to occur. This syndrome is characterized by excessive levels of serotonin, causing nausea, tremors, vomiting, and in more extreme cases, convulsions, loss of consciousness, coma and even death. It is very important, therefore, that all those that take ayahuasca are well informed and stay absolutely free of any SSRI for at least two weeks.

In terms of brain and cognitive damage, researches have shown that entheogens do not damage the brain and are not related to cognitive or psychological deficit, even for teenagers or regular long-term users in an appropriate setting, such as the peyote-using native Americans, or the members of ayahuasca using churches in Brazil [HALPERN, 2005; DOERING-SILVEIRA, 2005; GROB, 1996]. In the Hoasca Project, multidisciplinary investigation with researchers from several countries whose results served as scientific base for the legalization of the ritual use of ayahuasca in Brazil, the investigators also noticed the regular users were not suffering from social problems and were highly functioning in social terms (GROB, 1996). Even with these favorable results, new controlled researches in this area are always welcome, whether to confirm the existing data, or to bring new information of possible problems that are yet unknown, so we can then find out how to avoid them.

Lastly, it is important to notice that, even though entheogens do not offer direct physical risks, there is still the possibility of indirect problems and accidents related to the use of these substances. Due to the changes in consciousness and perception, it is possible that those under the influence cannot distinguish during the effects what is the best way of acting in consensual baseline reality, potentially falling down and hurting themselves, for example, or cutting themselves in sharp objects or getting into accidents if attempting to drive or use heavy machinery, or other similar problems. This reinforces the idea that a proper setting is needed (not being next to a cliff is an exaggerated but expressive example of what kinds of locations are not adequate). This also shows the necessity of the presence of the experienced facilitator or therapist that can deal with the situations and prevent accidents.

4.2 Addiction

One of the greatest problems associated with drug use is addiction, which is correlated to psychological suffering, criminality and other negative issues. Entheogens are not, however, known for causing physical dependency and addiction

Most, if not all of the addictive substances affect dopaminergic transmissions, particularly in mesolimbic areas of the brain [NICHOLS, 2004, p.134]. In the behavior level, this translates many times in elevation of mood and euphoria. The entheogens in general do not have affinity for dopaminergic receptors, and neither for the transporters of dopamine uptake, and do not activate directly the reward systems, which are fundamental in the construction of dependency (*idem*). There are none or little publications where animals have been effectively trained into self-administering these substances, which indicates entheogens do not possess the necessary pharmacology for initiating or maintaining addiction. Entheogens also do not cause withdrawal symptoms, another very common manifestation in chemical dependency, and any tolerance, where the user needs bigger doses to obtain the same effect, disappears after 3 or 4 days [STRASSMAN, 1984, p.579]. Furthermore, as we saw earlier, there are indications that, not only do these substances not cause dependency, but they also can potentially be useful for treating dependency with other substances, eliminating therefore the worries at least in this particular area.

4.3 *Flashbacks* (Hallucinogen Persistent Perception Disorder)

The psychiatrist Dr. John Halpern, from Harvard University's Mclean Hospital, has published an extensive literature review on the disorders popularly known as *flashbacks*, and more officially denominated under the number 292.89 as Hallucinogen Persistent Perceptual Disorder (HPPD), according to the diagnostic and statistical manual of mental disorders, DSM-IV. In the psychiatric definition, this disorder consists of the reappearance of perceptual changes experienced during the effect of hallucinogens, such as geometric patterns or halos around objects, a long time after the real pharmacological effects of the substance have subsided.

Amongst the many publications researched by Halpern (2003), it was seen that, firstly, the term *flashbacks* had been defined in so many different ways that it had become essentially useless, preventing any precise data to be known about it.

Halpern focused then on the more tangible definition of HPPD, about which several studies cited very conflicting numbers, from practically no case in thousands of users, to one study that mentioned 77% of the users presented the problem. It is worth mentioning that, according to Halpern, Cohen's study that mentioned the 77% number was done in a hospital in Norway, interviewing hospitalized young people about their drug use and possible perceptual disorders. In Cohen's study, therefore, the healthy people who were not in the hospital were not included in the percentage, and there was also no deep investigation to know if the young users had previous pathologies and perceptual disorders, and neither about their use of other drugs before the HPPD diagnostic. This would therefore invalidate any possibility of generalization about the number indicated.

In a research published in the internet, Matthew Baggott and colleagues from the University of Berkeley reported that 4,1% of the users (107 out of 2,679) affirmed they had HPPD. The number may, nevertheless, be overestimated because those who have HPPD may be more interested in answering the questionnaires than those who do not. Another 16,192 people had seen the information of the study but did not complete the questionnaire. If all those people were users who did not present HPPD, the total percentage would lower to 0,66%. Furthermore, due to this research having been made using internet questionnaires and not a proper diagnostic made by a trained professional, there may have been cases of people that had already pathologies before the use and would not fit in the HPPD classification or other such unaccounted variables.

Dr. Halpern himself had also made a research with around 500 members of the Native American church who had used peyote ritualistically at least 100 times, and did not find a single case of HPPD.

Another interesting fact noted by Halpern is that the prevalence of HPPD in users of LSD is greater amongst recreational users than in users that had ingested in a controlled therapeutic setting, which would suggest that, together with other problems related to the use of entheogens, an adequate setting would diminish considerably the prevalence of negative issues and unwanted side-effects such as HPPD.

Concluding the study, Halpern (2003) affirmed being difficult estimating a number for the prevalence of HPPD, but that it seems to be very low, also because

there have been millions of doses of entheogens consumed, while relatively few confirmed HPPD cases have been found.

In the same way as the prevalence numbers are contradictory and more studies are needed, also the forms of treatment of HPPD are still largely unknown. No controlled study has ever been made to investigate the treatment of this disorder with pharmacological agents, and the only apparent efficient treatments seem to be different forms of psychotherapy (*idem*), or a couple of case studies that suggest the possibility of using benzodiazepines such as Clonazepam for treating HPPD (LERNER, 2001).

In any case, more investigation is needed, but this does not seem to be a serious and very common consequence. However, in the case of entheogens being used in psychotherapy, these data and already published researches, as well as the ones that are published in the future, should definitely be included in the information given to the prospective patient, so that he or she may decide about the treatment knowing about the possible risks.

4.4 Psychotic Disorders

One of the main fears people have about entheogens is certainly in relation to the possibility that they may cause psychotic disorders. There are reports of users demonstrating psychotic symptoms after the use of these substances, so it is important that some considerations are made to better understand the different kinds of possible problems, how they can happen and how to avoid them.

In a revision of the different publications and reports about adverse effects on the use of psychedelics, the psychiatrist Rick Strassman noted that, firstly, we must differentiate between symptoms similar to psychotic disorders while the substance is still pharmacologically active, and the persistent disorders that remain for days or even months after the termination of use of the substance [STRASSMAN, 1984]. The first group we will discuss separately later on, because it cannot be considered real psychotic disorders, but a possible kind of negative experience that only lasts during the pharmacological effects of the substance.

The second category is called Hallucinogen Induced Persistent (or Residual) Psychosis, and is more common with LSD than with other entheogens (FRECSKA and LUNA, 2006, p.194). This disorder is characterized by psychotic symptoms that, as mentioned, persist for days or even months after the termination of use. Amongst the symptoms are: unstable mood and rapid mood changes similar to bipolar disorder, paranoia, delusions and hallucinations. A large part of the cases occur in people with predisposition to mental disorders, but some happen with apparently healthy people (even though most of the times occur after the use in inadequate settings). In terms of prevalence, what one sees is that the number of occurrences is considerably smaller in users in a research or therapeutic controlled setting, being estimated in 0,08% (*idem*). The treatment is, in general, the same as for other psychosis, using medication and psychotherapy. It is of extreme importance to eliminate or at least diminish as much as possible the risk of these disorders, so therefore the controlled use is essential, excluding individuals that have predispositions to psychotic disorders and always administering the substance in a proper setting, as will be seen later on.

4.5 General negative experiences: Bad Trips.

It is possible that, with the intake of entheogens, difficult experiences occur, with the individual facing negative visions, thoughts, emotions and/or sensations. In some of these cases, the symptoms are similar to psychosis (psychotomimetic effects), but are temporary and disappear with the end of the pharmacological action of the substance. Amongst these symptoms are anxiety, paranoia, delusions and others. The so called *bad trips* are part of the phenomenology of the entheogen experience and most of the times are caused or precipitated by negative or badly planned *set and settings*. Below are some examples of these *bad trips*:

[ingesting psilocybe mushrooms] *I panicked. I realized I had to get out of there. I went to the bathroom. All the people around me seemed to be staring at me and talking about me. I finally got to my destination and I made a huge mistake. I looked in the mirror. My face scared me and I almost screamed. I was deathly pale, and there were blotches of colors on my face. I don't know if my face really looked that way in real life or if it was just my twisted mind. So I freaked and pulled out all of my makeup from my purse. I was fumbling around trying to cover up my hideous face* (EROWID EXP 35133)

Here we see some of the common characteristics present in different *bad trips*. First, the person ingested the substance in a public setting, with unknown people around, without any control of the setting. This strongly influences the sensation of losing control, and can bring a feeling of panic and paranoia. Regarding the matter with the mirror and the illusions regarding facial deformations, the person might have, without any preparation or conducive context, been dealing with unconscious fears regarding her own looks, and these fears were exteriorized and projected over her looks during the effects of the substance. Let us take a look at another quote from a negative experience:

[after ingesting psilocybe mushrooms] The world was shrinking and getting darker around me, and it felt like no other living being was left anywhere. In principle, I knew things would return to normal but my body kept telling me otherwise, that I must have done something wrong. (EROWID EXP 17092)

Again we can see some common *bad trip* themes, like the constricting environment, thoughts about death, difficulties with the body and fear of permanent damage. Maybe it would have helped if the person had ingested in a more appropriate setting, with a professional or experienced person to reassure that the difficulties are part of the process (and also with guarantees of the substance's purity, eliminating any fear of intoxication, for example)

Some people report having had experiences where they had a great fear of losing their minds. This fear might be related with a psychological identification of the person with their *ego*, or personality. During an entheogenic experience, specially in high doses, these more superficial layers of the human psyche and the usual psychological defenses can be temporarily removed, leaving the individual, that in his/her life dedicated a lot of psychological energy to these levels of the psyche, with a sensation of loss, losing control, emptiness. It is essential specially with people that are too self-centered or narcissistic, that the therapist helps the subject to go through the process, helping him or her to realize the effects are temporary and that the dissolution of certain psychological barriers can be a source of learning, not offering any real physical risk to the patient.

Other negative experiences can become positive in the end, and the difficulties can be eventually seen as a necessary part of the process. The *bad trips* are described

by some users as a source of learning and growing, as we can see in the following report, where the user also concludes the presence of someone such as an experienced sitter or a therapist could be beneficial.

[Under the effects of an ayahuasca analogue] It is the point of absolute helplessness and despair--the point at which things can get no worse. I was so thoroughly humbled by this experience that I now have a profound appreciation for love and acceptance. Unconditional love is truly a beautiful thing [...] I would not recommend trying ayahuasca (or anything equally intense) for the first time without an experienced sitter. I learned a very hard lesson. (EROWID EXP 58438)

The *bad* trips are also often composed of negative visions and thoughts, that may or may not be associated with the experience of the person and to the *setting* where the substances is consumed. Mistakes and faults of the past can also come to the surface, as we see in the following experience:

[Under the effects of LSD] For the next few hours, every single bad thought that I could ever have come and went through my head tormenting me while the drum and bass pounded my ear drums. I thought back to my childhood and all of the mistakes I had made. I thought of my family and how they had let me down and how I had let them down. I thought of school and all of the shit that had went down before I had left and how I didn't want to go back. I thought of the world and the wars and the violence and all the pollution. What was the point of all this!? I was wasting my time doing nothing while the world was slowly being poisoned by its inhabitants (EROWID EXP 32403)

The symptoms of a *bad trip* are very diverse, such as difficulties related to the body or mind, paranoid experiences, remembering of traumas or past misdoings, negative or dark visions, panic or fear, amongst others. In the next chapter we will see how a researcher or therapist can act to diminish the chances of the previously mentioned symptoms occurring. If *bad trips* do occur, the recommendations serve to mitigate or diminish the effects, or in the very least to help with their integration, so that this integrative work can lead to positive transformations in the long term, even if momentarily they are painful and difficult, as we saw above.

5. Therapeutic practice: How to maximize benefits and diminish risks

In the previous chapter we have analyzed some of the potential problems regarding the utilization of entheogens. While are risks associated with the use, these risks can be diminished or avoided if certain rules and recommendations are followed. Several of these recommendations have been thoroughly defined by the psychiatrist Stanislav Grof, who, with his experience as a facilitator/therapist in hundreds of psychedelic sessions, was able to notice which characteristics are necessary to minimize risks and maximize benefits (GROF, 1979). Other pioneers in the entheogen-based therapies, as well as modern researchers, have also made similar recommendations (BLEWETT, 1959; GROB, 2007).

Due to the nature of entheogens and the strong emotional experiences they often precipitate, these substances are counter-indicated for people for whom strong emotions can be of risk, such as those with different cardiovascular problems (arteriosclerosis, aneurysms, thrombosis, etc.) as well as those in fragile mental states (with personal or family history of schizophrenia and psychosis, borderline disorder or general psychiatric hospitalizations, etc.). As mentioned before, it is essential that there is a control of the medications that the subject is or has utilized, and specially in the case of ayahuasca that the person has not been taking SSRIs or stimulants. A complete anamnesis or general history screening is essential. Knowing the motivation of the individual is also a very significant information for the process.

After the selection process, it is important to make available to the subject all the existing information about the effects and risks of the treatment and substance being used. A thorough term of consent should be signed.

As in every therapy, the figure of the therapist is essential. It is very important that the therapist has adequate training and is prepared for the different possible outcomes that may happen during therapy, as well as having creative skills to deal with unexpected situations in a constructive way. Even more than a normal therapy, the patient will be very vulnerable, with his consciousness exposed, and therefore the influence of the presence and interventions of the professional is of utmost

significance. Lack of interest and distance or a judgemental attitude will most likely be noticed by the patient and affect the experience.

Before the experience, it is necessary that there is a preparation period where there is a certain interaction between the therapist and the patient, which can vary between a few hours or even some days. There is no ready formula for the preparation because it depends on the peculiarities of each situation, but the main idea is to establish a trusting connection between the patient and the professional, inform about the experience to come and create a positive atmosphere. The meal before the ingestion of the entheogen should be light, and fasting for a couple of hours is recommended.

The environment itself is also a fundamental part of the process. In the cases of field researches (for example with participants of ayahuasca sessions), there is no choice of the environment and therefore the professional will do his work wherever the substance is ingested. On the other hand, in a research or therapeutic work in a controlled environment, such as in a psychotherapy clinic or in a hospital room, the place must be adjusted in order to create a comfortable and adequate atmosphere. In Charles Grob's research with psilocybin (2007), for example, the regulatory agencies only authorized it to be performed in a specific hospital room. Grob and his assistants had to improvise in order to transform the sterile and impersonal hospital room. Soft color cloths were hanged on the wall and unnecessary equipment was removed. A good idea that Grob used was to ask the subjects to bring pictures or objects that were personally meaningful for them, customizing the environment and adding to the emotional comfort. In the room used by Grob there was a bathroom, which is a good idea if necessary during the session so that the patient doesn't have to move far.

Depending on the type of therapy, there are clear differences in the procedure recommendations. In the case of psychedelic therapy, such as in Grob's research, it is recommended that the subject closes his eye during the experience and pays attention to his own inner processes and experiences. The therapist is present and paying attention but does not interfere if he isn't called, letting the patient go through the experience undisturbed. Some researchers and therapists recommend the use of instrumental music, which serves as an abstract vehicle to help the patient diving deeper in his unconscious mind, as well as not losing himself and maintaining a

certain connection to the world through the musical patterns. In the case of the ayahuasca-using indigenous cultures, they use *icarus*, or indigenous songs, which are crucial for the navigation of the entheogenic “landscape”, and might also be one of the reasons why there is a smaller incidence of problematic events in indigenous rituals. At the end of the psychedelic therapy is when there is a more thorough communication and interaction between the subject and the therapist. The patient can share his experience and the processes he went through, and the therapist will give his feedback and make comments to help the subject incorporating the experience harmoniously, integrating the experience. In the psycholitic therapy, it is more similar to common therapy, and the patient might keep his eyes open and maintain an interaction with the therapist during the whole process. In any case the recommendation of a comfortable and pleasant environment is still valid.

The guidelines for Buddhist meditation can be of great use for entheogen-based therapy, specially in the psychedeic therapy: It is suggested to the patient that he maintains an open attitude to any mental content or emotion that may arise, without trying to block thoughts or images, no matter how har they are, and without trying to force them to stay or control them, as pleasant as they may be. As in the free association of psychoanalysis, in this way the important and significant content will come up and can be worked on.

The therapist must be prepared to deal with difficult experiences. It can help to remind the patient that other people have passed through similar situations, that there is no physical risk, that 'this too shall pass', and that the effects will eventually subside. One must not argue against the patient, saying what he feels is not real. This might worsen the situation and break the positive relationship between therapist and patient. The experience will be significant to the patient and that is what matters for the moment, even if in terms of consensual reality it isn't true. What matters for the moment is that there is a physical safety and an emotional support. The more tangible integration with consensual reality will occur at the end of the experience and not during, when the unconscious content arise. If something bothers the patient, for example if he or she asks to turn off or on the music or light, or to change a certain object in the environment, the request should be answered, even if rationally to the therapist it doesn't make much sense. It is good to have a bucket in case of vomiting,

and if it does occur, it is important the patient does not lay down face up to avoid breathing in the vomit.

As important as the experience itself is the post experience and the follow up, where all the contents that came up during the session are integrated. This can occur directly after the experience, but also in the following day or days, after restful sleeping, because often insights can come up later. The experience can last from 4 to 12 hours, so consequently, in entheogen based therapy, the therapist must be available all day for the therapy. Some therapists and researchers recommend the person sleeps in the therapy place to guarantee his safety, because the subject might still be under the influence or in a fragile state and might be at risk if he or she goes out to drive or has to interact with things one isn't ready for. In the following day if the subject has slept in the place of the therapy, there could be a healthy breakfast and a conversation, and then the subject can be ready to return home. There are multi-session or one session therapies, but in any case it is important to maintain contact with the subject at least in the weeks that follow, in case there is any eventual need of support or feedback for integration.

Following these and other recommendations thoroughly expressed in the publications mentioned in this chapter, the risks are diminished and the benefits are maximized.

6. Conclusion

When talking about psychoactive substances and their potential benefits and dangers, conclusions cannot be unilateral and one must take in account the different coexisting aspects. In the case of entheogens, this is no different, considering there are significant positive aspects as well as risks and problems, and depending how one makes use of these tools, the risks and the benefits can be increased or diminished.

It is very important to note, first of all, that entheogens by themselves are no universal panaceas. On the contrary, we have seen that in certain contexts and cases there are very significant negative effects and risks. In order for entheogens to have positive effects, it is necessary to establish an appropriate conducive context and

setting,, utilize substances of known purity, make sure the users or patients are informed and fully consent to ingestion or treatment and very importantly, the presence of an experienced person to help conducting the therapeutic process, supporting integration and offering any help necessary.

The use of entheogens presents risks that must be considered and studied thoroughly. The dangers, nonetheless, are not exclusive to entheogens but are present in some form or other when utilizing different substances or tools that are widely used in our society. Pharmaceutical medications, for example, are always accompanied by information which described their side effects, some of which may be very serious. Or even if we don't talk about substances, but rather look at standard therapies, we can also see several cases of worsened symptoms when the psychologist or psychiatrist interventions or treatment in general is inadequate.

Different human phenomenons are connected to positive and negative consequences, and to deal with them in the best manner, we must not unrealistically glorify the positive sides and neither condemn and justify it by only pointing out the negative sides. Entheogens are tools that can be dangerous, as well as be used constructively and for the benefit of humans.

As the scientific researches reviewed in this dissertation have pointed out, there is a considerable therapeutic potential in the use of entheogens. In a careful controlled context, great part of the risks are diminished, and in this sense, entheogens could be used as tools in the clinical context, helping patients and accelerating and deepening the therapeutic process. It is very important to notice that the therapeutic work must be accompanied and facilitated by a professional and that entheogens by themselves will not necessarily have therapeutic effects.

Health profesionals in general, and in special psychologists and psychiatrists, should be attentive to the new discoveries regarding these substances so that in a not-so-distant future, they can be incorporated in the clinical context.

Lastly, we see that entheogens can provide, apart from possible clinical benefits for patients, contributions to psychology and psychiatry in general, as well as for the dominating unsustainable global paradigm in which we are inserted. In times of natural catastrophies made worsened by human action, wars, new psychiatric diseases, unhindered consumerism and selfish individualism, there is a great necessity

for a global change of human attitude. The entheogenic visions can help provide a new point of view where the individual and his actions are not isolated from the environment, but a part of a united whole. In this new vision, each person is even more responsible for his actions because of the realization that every action has consequences to other beings. We cannot anymore just look and blame others for our problems, but rather therapeutically heal ourselves and the world, and following Ghandi's words, “*be the change we want to see in the world*”.

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