



New Approaches,

New Possibilities:

# Psychedelics in Psychotherapy





# PSYCHEDELICS IN PSYCHOTHERAPY

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New Approaches, New Possibilities: Psychedelics in Psychotherapy

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## Preface

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Lenart Motnikar

*»The most compelling insight of that day was that this awesome recall had been brought about by a fraction of a gram of a white solid, but that in no way whatsoever could it be argued that these memories had been contained within the white solid. Everything I had recognized came from the depths of my memory and my psyche. I understood that our entire universe is contained in the mind and the spirit. We may choose not to find access to it, we may even deny its existence, but it is indeed there inside us, and there are chemicals that can catalyse its availability. «*

This is how Alexander Shulgin, mostly known as the man who discovered many psychedelic substances, described his first experience with mescaline. Although he is credited for discovering the majority of substances commonly used as keys to the gates to the psychedelic realm, explorers of this realm were active much earlier in history.

The Homo sapiens' drive to explore the unknown is commonly recognised as the key factor that drove the species towards the achievements it can boast with today. If we think about the development of astronautics as an example of something exceptional brought about by the need to know the outside, then psychonautics is a comparable example of exceptionality brought about by the need to know the inside. However, the general population does not think of psychonautics as prestigious. On the contrary – if they even know of it they find it somewhat sinister. In a way, this is completely rational – psychonautics does not have Neil Armstrong or moonstones to parade around the world and across the screens. Its trophies are a lot subtler and personal.

In contrast to a single outer world, inner worlds are at least as numerous as people are. Because each of them is busy enough with their own inner world, they do not care about other's accomplishments and rather use the term *psychonaut* to refer to marginal examples, usually those that were not that successful in their mission. This type of understanding is similar to imagining a child with broken legs and cardboard wings on her arms and calling her an astronaut. In reality, just like astronautics, psychonautics is a theory that has to be thoughtfully, attentively and thoroughly implemented if we wish to achieve praiseworthy results. Otherwise, we can crash land on Mars, literally or in terms of hallucination.

With this event and the accompanying collection of papers, we wish to present the theory and practice to the public that a psychonautic Apollo 11 team would follow. Our wish is that organization of the first scientific conference of its kind in Slovenia will be at least a small step for mankind and a giant leap for those that decided to participate. At this point, the entire team deserves praise for bringing the idea from conception in China to execution today. It was a pleasure working with you. Despite all the problems, we managed to keep a high level of optimism and wit. I hope that the story does not end here and that we will have a chance to work together again in the future.

# Basics and Toxicology of Psychedelics

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Lucija Peterlin Mašič

Based on their chemical structure, common hallucinogens or psychedelics can be divided into two main groups: indole- and phenylalkylamins. In the group of indole-alkylamins, substances that are structurally similar to serotonin can be classified (for instance: DMT (dimethyltryptamine), psilocin (4-hydroxy DMT), psilocybin (4-phosphoryloxy-DMT)) as well as structurally more complex ergolins, among which the most well-known is Lysergic acid diethylamide (LSD). Mescaline and a variety of synthetic compounds (like DOM (2,5-dimethoxy-4-methylamphetamine) and DOI (4-iodo derivate)) are classified in the group of phenylalkylamins. Psilocybin is the so-called pre-medicament that is converted into active psilocin by hydrolysis once inside the organism. Due to fast metabolism, DMT is ineffective after peroral application, whereas ayahuasca, contains DMT as well as monoamine oxidase inhibitors (MAO) (e.g. harmine, tetrahydroharmine and harmaline), which reduce the metabolism of DMT and thus enable sufficient uptake into the brain.

According to the mechanism of action, psychedelics are rather non-selective compounds that bind to numerous subtypes of serotonergic receptors (5-HT) as well as to other receptor subtypes. The binding profile to specific receptors varies among individual psychedelics, but the assumption is that the effects of psychedelics are primary dependant on partial agonistic action on the 5HT-2A subtype of serotonergic receptors.

The subjective effects of common psychedelics are very similar, depending on the dosage and the way of administration, and vary in intensity and duration of action. Psychedelics differ in terms of lipophilicity, crossing the blood-brain barrier, the onset time of the effects and biological half-life time. All psychedelics are relatively acutely nontoxic; they do not cause dependence and fundamental withdrawal symptoms. Tolerance develops quite rapidly, within 3 to 6 days of repeated use, with cross-tolerance appearing as well. Significant toxic physiological effects are not common at lower dosages, but it is possible for nausea, vomiting, tremor, restlessness, paraesthesia and cold extremities to appear. Mild sympathomimetic activity might result in mildly elevated heart rate and blood pressure. Acute poisoning with psychedelics is very rare with mono-use.

However, application of psychedelics can represent a unique psychological risk for the occurrence of a »bad trip« as well as the occurrence of less common side effects, such as panic attack, psychotic reactions, and hallucinogen persisting perception disorder (flashbacks), which are dosage-independent, but less common under controlled conditions. Based on recreational use of psychedelics, we cannot determine the occurrence incidence of side effects, because we do not have information regarding quality, purity and dosage of substances used.

Psychedelics work as agonists or partial agonists for serotonergic receptors and do not increase the concentration of serotonin in the brain, which is the reason why the occurrence of serotonergic syndrome is very rare with the use of only psychedelic substances. However, simultaneous use of psychedelics with antidepressants or other substances that increase the concentration of serotonin in the brain (e.g. selective serotonin reuptake inhibitors-SSRI and monoamine oxidase inhibitors-MAO (ayahuasca also contains MAO inhibitors)), can present an increased risk for the occurrence of serotonergic syndrome, which can occur up to 4 weeks after the administration of a potential irreversible MAO inhibitor. Additionally, simultaneous use of the opioid analgesics tramadol and pethidine, which increase the level of serotonin in the brain, is also not recommended. Therefore, when using psychedelics in combination with other substances that affect the serotonin level in the brain, caution is recommended. Every other combination of psychedelics with ethanol and other substances represents a higher risk of unpredictable side effects.



## Pharmaceutical and Botanical View of Psychedelics

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### Samo Kreft

Just like all the medicines in the past used to be of natural origin, the same held true for all psychedelics, regardless of whether they were used for medical or other purposes. This paper presents the historical, botanical, phytochemical and pharmaceutical view on psychedelics of natural origin.

Peyote is a cactus (*Lophophora williamsii*) that grows up to 30 cm on desert plateaus of Mexico. Locals used the dried middle part for religious purposes, which was first described by the Spanish priest Sahagun (1499–1590). Peyote contains a number of alkaloids, the most important of which being mescaline. Bogomir Magajna, a Slovenian doctor and psychiatrist, tested mescaline himself and described this in the journal *Modra ptica* in 1936/37.

At least 2000 years ago, in the territory of what is today Guatemala, Aztecs used mushrooms called teonanacatl for religious purposes and divination. These are the mushrooms *Psilocybe mexicana* and *Psilocybe hoogshagenii* and contain the psilocybin alkaloid.

In South America, ayahuasca was used for similar purposes. It is made of several plants – in addition to *Banisteriopsis caapi*, it also contains *Psychotria viridis* or *Diplopterys cabrerana*. The first ingredient contains the psychedelically active dimethyltryptamine and the other two ingredients inhibit the MAO and extend the effect of the first ingredient.

In Africa, iboga was used for ritual purposes. For iboga, bark of the roots of the *Tabernanthe iboga* plant is used, containing the alkaloid ibogaine.

In Europe, people induced hallucinations using the plants of the Solanaceae family, for example *Hyoscyamus niger*, *Atropa belladonna* and *Datura stramonium*, containing tropane alkaloids hyoscyamine and scopolamine. Best known are witch ointments, which were applied to the rectal and vaginal mucosa using a broomstick, which induced the delusion of flying on a broom.

Among the traditional plant psychedelics, we can also mention ololiuqui from the Mexican vine *Ipomea violacea* containing compounds similar to LSD. In certain circumstances, preparations of cannabis can have psychedelic properties as well.

# Psychedelics and Spirituality – Medicinal and Therapeutic Aspects

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Levente Móró

## Background

A growing number of cultural studies and anecdotal evidence indicates that the purposes for psychoactive drug use – both legal and illegal – may also include the pursuit of increased personal well-being. Psychoactive substances, especially psychedelics (e.g. LSD, psilocybin, mescaline, DMT, LSA, and salvinorin-A), have been used in relation to religious and spiritual practices, creative processes, social cohesion, and autognostic purposes (i.e. for increasing self-knowledge).

## Objective

We tested the salutogenesis model of Antonovsky, assuming that a meaningful interpretation of exceptional life events as well as psychedelic experiences may lead to a better psychological functioning and an improved quality of life. We also assessed coping skills and the importance of spirituality among participants.

## Methods

In our online survey study, we assessed 667 drug users and non-users with three psychological instruments regarding their life quality, coping, and spirituality. Our target, the "psychonaut" group – consisting of participants who have previously used or currently use mostly psychedelic drugs with primarily autognostic purposes – was matched against drug user and non-user control groups.

## Results

A cross-table of 23 psychoactive drugs and 14 drug use purposes shows a strong connection between psychedelic drugs and autognostic purposes. We also found support for the initial hypothesis about a positive relationship between autognostic psychedelic use, self-evaluated life quality and spirituality.

## Conclusions

Contradictory to suggestions of previous studies about spirituality as a protective factor against drug use, we also found a positive correlation between spirituality and autognostic purposes of psychedelic drug use. In light of our results, autognostic use of psychedelics may play a role of some kind in mental well-being that cannot be interpreted within the psychopathological or social-deviance models of drug abuse (e.g. in studies on psychonaut culture, patterns of autognostic drug use, health behaviour and quality of life).

## Psychoanalysis as a Choice and One of the Possibilities

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Janja Kaiser-Zupančič

Psychoanalysis is a unique and entirely personal process. It is happening between the analysand (the patient) and the analytic, and is based on transfer, which is the driving force of the analytic process. Transfer enables the transmission of the patient's emotions, feelings and outbursts that are left out in the subconscious to the analyst who can then analyse them.

Psychoanalysis is founded on the discovery, revelation and awareness of subconscious psychological mechanisms and automatisms; it enables access to the subconscious psychological structure and reality, which is always determined by the environment and by the patient's experience from youth and other experience (often traumatic experience, but not limited to such experience).

Psychoanalysis provides the analysand (the subject) with the opportunity to draw nearer to the undiscovered dimensions of his or her subconscious and thus to break out from the repetition of the same failures, conflicts, problems, etc.

Psychoanalysis means deep contemplation of oneself, which is called "work" (travail) in the language of Jacques Lacan. This happens through the gradual disclosure of the mental processes in the subconscious and consequently, in the manifestations of the subconscious in the analytic process (transfer) – through dream analysis, symptoms, missing actions (les actes manqués), unexplainable and unreasonable or misunderstood actions, failures and defeats.

Psychoanalysis means working with a person's distress, worries (anxieties) and problems. It also mobilizes the analysand's creativity and consequently, he or she is capable of deeper and more lasting changes.

Psychoanalysis is a work method inviting to reveal the most personal, intimate and entirely specific things originating from an individual's subconscious.

It is a precious and unique experience.

## Phenomenology of Altered State of Consciousness and Transfer Relationship – Therapeutic and Anti-Therapeutic Implications

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Vid Vanja Vodušek

The phenomenology of altered state of consciousness under the influence of psychedelics can best be outlined somewhere in an intersection between the so-called (i) mystic experience described by people who devote their time to meditation and spiritual growth practice and (ii) the experience of psychotic decompensation, as is often described by people who are suffering from schizophrenic spectrum disorders. It is the sense of reinforced behaviour and understanding of a deeper meaning of the world and the self in it; the feeling of transcendence and connection with “the holy”; and the feeling of softer psychological/epistemological boundaries and the sense of abolishing the difference between the inner and the outer, between mine and yours, between me and the world. The main difference between (i) and (ii) is that in case of (ii), an initially pleasant experience often turns into a terrifying landscape of solipsistic separation and isolation from the entire world. This is accompanied by the feeling of being trapped in this landscape and often by ideas on danger and persecution from the world that is separated as previously described. Moreover, the experience (i) is generally ephemeral and mostly better placed in the wider context of “every-day” experience about the world, which primarily means that in both states, there is a presence of at least implicit awareness about the possibility of a different state of consciousness. In the psychotic experience, this “temporariness” or “non-absolute” of the psychotic/mystic experience can be completely abolished, and as a result, psychiatry uses the term “loss of contact with the reality”.

Although this is rarely talked about, intensive analytic psychotherapies can bring up altered or “regressive” states of consciousness. These states have many of the features mentioned above, with the theoretical assumption that in the context of transfer relationship between an analytic and an analysand, the latter is slowly returning to his or her earlier states of experiencing him- or herself and the world. On the other hand, in this descriptive sphere, the analytic takes part as the analysand’s fantasised significant other (mother, father, etc.), with all the attributes that are present in earlier fantasies about parents (omnipotence, omniscience, etc.). In terms of schematics, the analysand is united with the world in this placement (in good and bad) through an intermediary (the analytic).

In the presentation, I will try to outline the main traits of phenomenology of altered state of consciousness within the three main contexts described above. I will try to do that in terms of both the time as well as the relationship component and I will try to consider possible implications of the phenomenology for therapeutic or anti-therapeutic effects.



# Theoretical and Practical Foundations of Psychedelic Psychotherapy

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Marko Vide

Psychedelic psychotherapy is a form of psychotherapy, in which therapeutic change is achieved by using psychedelic medicine such as LSD, MDMA, DMT, psilocybin, mescaline and other related substances.

In contrast to more traditional forms of psychotherapy that are based primarily on conversation, interpretation and integration of biographical experiences, building-up of ego functions and working in everyday state of consciousness, psychedelic psychotherapy is based on internal, experiential experience of the client in a non-ordinary state of consciousness and achieving transitional ego transcendence. Conversations with the client are limited to the preparation and integration period and to potential critical points during the psychedelic experience itself.

The content of these experiences and the depth of personality changes achieved often surpass the theoretical framework of traditional psychotherapy, therefore it is of paramount importance to be familiar with the so-called extended cartography of the psyche, which consists of the biographical level and additional perinatal and transpersonal levels. These two additional levels are not recognized by the majority of psychotherapeutic schools, although clinical experience shows they represent the very source of the various forms of psychopathology.

These differences demand some adjustments to the psychotherapeutic process, since it is of critical importance for a safe and successful psychedelic psychotherapy that the client and the room are adequately prepared (»set and setting«). It is also very important that the therapist is able to be present in a wide spectre of dramatic experiences, has a good knowledge of the previously mentioned extended cartography as well as of the mechanisms of healing in non-ordinary states of consciousness and knows how these can be activated and supported.

The theoretical and practical foundations of psychedelic psychotherapy are based on the clinical research of psychotherapists and psychiatrists Stanislav Grof, Claudio Naranjo, Leo Zeff, Robert Masters, Jean Houston and others, and on the theoretical framework of analytical, perinatal and transpersonal psychotherapy.

# Comparison of Healing Potential of Ayahuasca with the Process of Psychotherapy: Presentation of Findings of First Research in Slovenia on the Healing Potential of Ayahuasca

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Mina Paš

## Background

Ayahuasca is a brew consisting of two plants that has been used for centuries in indigenous cultures in the Amazon for healing purposes. From the chemical point of view, the plants that are used for preparation of the brew contain a MAO inhibitor and DMT. Active ingredients of the plant and the ceremonial setting in which ayahuasca is used provide the basis for a safe internal environment where healing can take place. Lately, a growing body of evidence suggests that ayahuasca may be useful to treat substance use disorders, anxiety and depression, PTSD and other issues. With the following study, we are trying to outline the similarities between the ayahuasca experience and the psychotherapeutic process and evaluate changes in scores that outline psychopathology.

## Objectives

The primary objective of the study is to assess the subjective and objective efficacy of the healing potential of ayahuasca and the risks related to ayahuasca use, with emphasis on similarities of the process of working with ayahuasca and conventional psychotherapy.

## Methods

40 participants were included in the study. We combined the qualitative and quantitative approach, using CORE-OM questionnaires to evaluate psychopathology before ayahuasca use, with a follow up of 1 month, 3 months, 6 months and 12 months and semi-structured in-depth interviews.

## Results and conclusions

Preliminary findings of our study show that the introspective state induced by ayahuasca promotes reflection on personal issues. The experience usually consists of thoughts, memories, emotions and bodily sensations that can enable the users to relive and integrate this experience on all levels. The participants usually describe that during the ayahuasca experience, they can simultaneously be an observer and relive the traumatic experience. That is exactly the perspective necessary for the therapeutic process to take place and to integrate the traumatic experience in the here and now.

Preliminary results from CORE-OM questionnaires show a sharp decline in CORE-OM scores, which slowly rise toward 12 months after the first ayahuasca experience, but do not reach the starting height. The results are consistent with other similar studies.

## Iboga – Myth and Reality

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Roman Paškulin

Iboga, together with its alkaloid ibogaine, is well known in the West as an addiction interrupter and as a sacrament of transition into adulthood in its traditional homeland. Is not dependence just an infantile way of living?

The main hypotheses of iboga's action in this transformation will be presented along with the author's discoveries regarding its influence on gene expression. We can describe them on an informational, material and energy level, while we can (and should) inevitably include the spiritual aspect as well.

Because of this, the conclusion will focus on the problem of particularization, reductionism, and the threat of medicalization with a need for independent legislation of the field of psychedelics – entheogens.

# Ketamine – Harbinger of a New Age in Treatment of Mental Disorders

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Damjan Marić

Ketamine is a substance with many faces. It has contributed to clinical practice and scientific inquiry in the realms of anaesthesia, analgesia and schizophrenia. With its help, scientists are still discovering new ways of understanding pain, consciousness and the pathophysiology of psychiatric disorders. It is generally used as an agent for inducing and sustaining a state of deep dissociative anaesthesia.

Lately, the mechanism of its action is providing new hope in the search of therapies for treatment-resistant depression and bipolar disorder. In contrast with generally used antidepressants, ketamine works acutely and shows signs of improvement a few hours after ingestion that can last up to three weeks or more. Major depressive disorder with a 17% prevalence and unknown pathogenesis is one of the most common mental disorders in the world.

Complex pharmacology and antagonistic action of ketamine on the NMDA receptor have influenced a part of the scientific community to turn its focus on the glutamate system in hopes of treating disorders where anhedonia is a symptom. The latter does not have an official treatment and therefore the potential of ketamine is most profound in this field. Major depressive disorder is linked to suicidal thoughts and attempts and that is why we must find new, more effective ways of treating these states. A whole new spectrum of medicines is being explored and ketamine is their main representative.



# Psychotherapy with Mind-Altering Drugs

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Peter Gasser

Extensive research and medical use of mind-altering psychoactive substances started only after 1943 when Swiss chemist Albert Hofmann discovered LSD as a semi-synthetic compound of the ergot fungus.

In time, it became clear that substances like LSD do not work in the paradigm of usual intake of medicaments but rather as a kind of catalyst for psychological processes. They should be ingested in a psychotherapeutic setting. The altering of mind facilitates personal regressive experiences with emotional and cognitive insights in biographic material as well as deep encounters with the personal self or transpersonal opening to so-called spiritual experiences.

The aspect of a here and now experience is crucial for this kind of therapy, i.e. the sensual-emotional-cognitive certainty of what happens and the clear reminder of what happened. This is important for talking afterwards and for integrating the whole experience.

Further factors that are important are the constitution of a confidential relationship to the therapist and the ego-strengthening experience of overcoming anxiety in general and the fear of loss of control when facing the unknown.

As a reaction to mass usage of LSD in the 1960s in the counterculture movement, there was a worldwide ban on mind-altering drugs and they were scheduled as narcotic substances without any therapeutic use. This led to a collapse in research and therapy with mind-altering drugs.

After a pause of more than 35 years, I was able to get approval for a study with LSD-assisted psychotherapy. This study was conducted between 2008 and 2012. After 2014, I received individual permissions for treatment with LSD- or MDMA-assisted psychotherapy and in 2017, we started a new study with LSD-assisted therapy.

## Health Risks of Psychedelics in Clinical and Non-Clinical Settings

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Teri Krebs

For thousands of years, people have used psychedelics in religious and healing ceremonies. The evidence of their use is even older than the evidence for the practice of meditation. Only five decades ago, their use was far more acceptable and people from many different cultures used them as a deeply personal and spiritual practice. On the other hand, there were critics, especially from the field of psychiatry, who saw mysticism as a contamination of science. This led to many exaggerated reports of worst-case scenarios of psychedelics use to have been falsely reported as being very common and dangerous.

Nowadays, psychedelic research is making a return with a growing number of articles being published every year on their therapeutic potential and health risks. Now we know that in contrast to alcohol, which is the most commonly used drug in the Western world and causes more harm to individuals and the society than any other drug, psychedelics carry little risk for users and essentially no risk to the general population. Clinical studies were carried out in environments that were therapeutic, safe and supportive for users.

One of the most common misconceptions people have about psychedelics, being schedule I controlled substances, is that they cause addiction. So far, there has not been a single documented case of a person being addicted to the use of psychedelics. There is also very little evidence that the use of psychedelics causes long-term mental health problems. The general mental health of users is virtually the same to the rest of the population. No link was found between psychedelics and psychosis. Lately, some new evidence emerged, suggesting that people who have used psychedelics at least once in their life may even have better mental health. In addition, psychedelics cause relatively little physical harm as most of them have extremely low toxicity.

Today, we have a lot of data about the risks of psychedelics and we can see that laws made half a century ago were not based on the evidence of public health concerns. Psychedelics need to be classified in a more appropriate and less restrictive schedule, which would allow for more clinical trials to be conducted and would protect the human rights of users. Overall, it is difficult to see how prohibition of psychedelics can be justified as a public health measure.

## Medical Prescription of UN Convention Regulated Psychoactive Drugs in Slovenia

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Milan Krek

The control of psychoactive substances in the world and in European states is based on three international conventions of the United Nations from 1961, 1971 and 1988, which have been ratified by most countries, including Slovenia. The Convention provides a method for controlling psychoactive substances. Conventions allow each country to adopt the regulation of drugs to their needs and possibilities. Member states should annually report on how they implement the Convention in daily practice and what was the regulation of use of different controlled psychoactive substances. INCB monitors the implementation of the conventions. Each year, INCB draws up a report on the implementation of the conventions with some suggestions for the future.

The use of psychoactive substances for medical purposes is defined in Article 4 of the Convention from 1961. This Article stipulates that substances, which are placed on the list of psychoactive substances, are exclusively allowed only for scientific purposes and medical treatments. The member states are obliged to establish such conditions that will prevent abuse and use of these substances outside of research areas and medical treatment areas.

Slovenia's legislation states that the substances listed in the Group I may not be used for medical purposes. Production, trafficking and possession of illicit drugs in Group I may be carried out only for scientific research and educational purposes. Only psychoactive substances from Groups II and III can be used for medical purposes. In contrast to the Convention, Slovenia has decided for a more rigorous attitude towards Group I psychoactive substances. Consequently, it is necessary for Group I psychoactive substances, which we would like to use for medical purposes, to be classified in Group II or Group III.

Because of its danger to human health, psilocybin is on the list of narcotic drugs of Group I controlled psychoactive drugs in Slovenia. If we would like to use it for scientific or educational purposes, a prior special administrative procedure is necessary. According to Slovenia's legislation, we could use psilocybin for medical purposes only when the drug is placed in Group II or Group III of controlled psychoactive substances. Only when psilocybin gains the status of a medicament, it can be used for medical purposes in accordance with the Medicinal Products Act.

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# STUDENT SECTION

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# MDMA-Assisted Therapy for Posttraumatic Stress Disorder

Živa Korda

## Background

Posttraumatic stress disorder develops as a result of a traumatic event. Symptoms persist for at least 1 month. PTSD symptoms consist of reliving the traumatic event, avoidance, negative changes in thinking, altered arousal and altered reactivity. Although there already are several effective therapies for PTSD, chronic patients that are unresponsive to different treatments still present a problem. For that reason, there is a growing number of both therapists and patients who are open to trying psychedelics as alternative treatments. Such a treatment is MDMA-assisted therapy, which also seems to be the most promising.

## Goals

Through clinical trials and studies, researchers are trying to establish if MDMA is effective for chronic PTSD treatment and to evaluate potential health risks of the substance. The objectives mentioned above are common to many studies and we can find their overview in the Investigator's Brochure (MAPS 2013).

## Methods

Studies include up to 20 individuals with chronic PTSD. Authors measure the intensity of symptoms, physiological changes during therapy and neurocognitive capabilities before and after the therapy. The data is statistically represented.

## Results

In our review, we focus on the findings of two studies, which showed that participants do not exhibit neurocognitive changes and do not develop addiction, while demonstrating 23.5% to 52% less PTSD symptoms.

## Conclusion

Because of the relatively small samples used in the studies, we currently still cannot give any definite conclusions. However, the results are encouraging – in studies conducted so far, participants exhibit a marked improvement of PTSD symptomatology. In the following years, we can expect a rise in the number of such studies, which will certainly give answers to all the remaining questions about the therapy's effectiveness and safety.

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# LSD-Assisted Psychotherapy

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Ema Špan

## Purpose

Presentation of different types of LSD-assisted psychotherapy and their differences based on alcoholism and brain connectivity.

## Introduction

LSD-assisted psychotherapy started to develop in 1950s. Different types of LSD-assisted psychotherapy differ in dose, the number of sessions, the therapeutic goal, involvement of the therapist and the number of patients present in a session. In treatment of alcohol addiction, we use the psychedelic approach, which includes a high single dose of LSD, which causes a profoundly altered state of consciousness. This state can cause a psychedelic experience accompanied by ego dissolution because of increased inter-network brain connectivity. This experience can lead to a shift in life perspective, resulting in abstinence from alcohol and a change in lifestyle.

LSD-assisted psychotherapy is not suitable for individuals suffering from severe personality disorders, psychoses, bipolar disorder or very unstable life situations.

As mentioned before, types of LSD-assisted psychotherapy differ greatly. Even the same type of therapy can differ in different patients based on their needs, which is a key component in a successful outcome of the therapy. Feelings of comfort and safety in the patient namely increase probability of the desired outcome.

## Method

Review of old and recent literature on LSD-assisted psychotherapy.

## Conclusions

Providing a review of different types of LSD-assisted psychotherapy and their limitations. We present a modern scientific basis for LSD-assisted psychotherapy in light of recent advances in the fields of brain connectivity, alcoholism and study of LSD.

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# Therapeutic Potential of Psilocybin for Treatment of Smoking Addiction

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Anja Cehnar

Psilocybin is categorized among the traditional psychedelics, which have displayed high efficiency and potential for addiction treatment in recent studies and reports. It acts as agonist on serotonin receptors and causes changes in perception, hallucinations and mystical experiences, which some authors link with later positive and beneficial changes in behaviour.

The pilot study was the first to examine safety and effectiveness of psilocybin in the context of treating smoking addiction. In this study, 15 regular smokers (M = 19 cigarettes/day) were included. There were 10 men and 5 women with the average age of 51 years, on average smoking for 31 years. The participants received two to three doses of psilocybin (~0.29 mg/kg and ~0.43 mg/kg) in the 15 weeks of structured treatment in combination with cognitive behavioural therapy.

Biomarkers and self-evaluations for smoking showed that after 6 months, 12 out of 15 participants (80%) abstained from smoking tobacco. After 12 months, 10 participants (67%) abstained and after 16 months, nine participants (60%) abstained. The percentage is notably higher in comparison with the percentages of cognitive-behavioural therapies and/or pharmacological therapies where it is usually lower than 35%. After one year, 13 participants (87%) rated the psilocybin experience among their top five personal and spiritual experiences.

However, a small sample and a lack of control group prevents us from certainly concluding the effectiveness of psilocybin. However, it does present itself as a potentially useful addition to existing treatments for tobacco smoking addiction. This study offers a base for further research on the effectiveness of psychedelics and mechanisms of action for addiction treatments.

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# Psychedelics Used by the Aztecs and Their Potential in Medicine and Psychotherapy

Špela Ocvirk

## Purpose

Overview of psychoactive plants and mushrooms the Aztecs used and their therapeutic potential.

## Introduction

The Aztecs or Mexicas were a Native American tribe from the area of central Mexico or Mesoamerica. In the 14<sup>th</sup> and 15<sup>th</sup> century, before the arrival of Spanish conquerors, they developed an advanced civilisation.

Psychoactive plants and fungi were used on a daily basis during rituals and in medicine. The Aztecs were experts at potentiating their effects using several different techniques.

In order to achieve a hypnotic state, *Rivea* or *Turbina corymbosa* was added into agave wine pulque, but it was also used in medicine. The alkaloid in the plant is called ergin (LSA). It is also present in higher amounts in *Ipomoea violacea*, which Aztecs used for the purposes of achieving a delirium (often in a combination with peyote and *Rivea corymbosa*).

Mescaline buttons of a peyote or *Lophophora williamsii* were in the form of a tea or brew used for the treatment of fever and intoxication with *Datura innoxia*. Due to its strong psychoactive effects and for their potentiation, the peyote was also added into a pulque.

With a combination of honey, pulque or cacao/chocolate, the Aztecs consumed psilocybe mushrooms *Psilocybe mexicana* during rituals. They also served as a medicine in the treatment of various diseases and injuries.

By now, the following substances were therapeutically evaluated: ergine or LSA is an effective agent in the treatment of Cluster headache; mescaline shows potential in psychotherapy, but due to its low effectiveness and negative effects, LSD is more appropriate; psilocybin shows potential in the treatment of cluster headaches, in psychotherapy, in the treatment of strong depression, anxiety (related to terminal disease) and in the treatment of various addictions.

## Method

Review of scientific literature in the fields of history, anthropology, ethnobotanics, pharmacy, psychiatry, neuroscience, psychopharmacology and psychotherapy.

## Conclusions

The Aztecs were experts for psychoactive substances, their dosing and for potentiating their effects. Ergine, mescaline and psilocybin increase brain connectivity, while simultaneously inhibiting those brain systems that are overly activated in neurological and mental disorders. Consequently, they show a great potential for mental disorders where the medicaments are ineffective.

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## Counterparts

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Lucija Peterlin Mašič is a professor of medicinal chemistry and assistant professor of toxicological chemistry at the Faculty of Pharmacy, University of Ljubljana. She graduated at the Faculty of Pharmacy in Ljubljana, where she also received her PhD. She did her post-doctoral studies in Sweden. She has extensive research experiences in the field of medicinal chemistry and toxicology, as she has participated in numerous scientific studies. Additionally, she is also very active in the field of education, being a professor at the uniform master program of pharmacy, the master program of industrial chemistry, the graduate university program of laboratory biomedicine and cosmetology, and the doctoral program of biomedicine. She is a member of numerous international societies (e.g. she is a president of the Section for Medicinal Chemistry at the Slovenian Pharmaceutical Society; a member of the European Federation of Medicinal Chemistry (EFMC); a member of the Slovenian Toxicology Society; a member of EUROTOX). She is also a member of the Committee of Medicinal Products for Veterinary Use and she was also a member of the Committee for Research Equipment at the Faculty of Pharmacy in Ljubljana. She was an editor board member of MedChemWatch and she is still a reviewer of several international journals (the European Journal of Medicinal Chemistry, Chemosphere, and the Journal of Medicinal Chemistry). In her career, she has organized numerous international meetings, and has also attended various international conferences as an invited lecturer. She participated in numerous EU projects as a leader or coordinator. In her extensive and successful career, she has written over 50 scientific articles. In addition to all of this, she is also the owner of two patents.

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Samo Kreft is a professor at the Faculty of Pharmacy where he researches medicinal plants and other natural-origin medicaments, while also giving lectures about previously mentioned topics to students of pharmacy (subjects: Pharmaceutical Biology with Genetics; Nutritional Supplements; and Medicaments in Alternative Medicine) and biochemistry (subject: Plant Biochemistry).

He also has professional functions at the European Medicines Agency in London (where he has been a member of the Committee on Herbal Medicinal Products for 12 years) and the Agency for Medicinal Products in Slovenia (where he is the vice-president of the Committee for Medicinal Products II). In addition to scientific articles, he has also written over 60 non-technical and professional articles in the following journals: *Proteus*, *Pharmaceutical Journal*, *Herbika*, *Delo&Dom*, *Zdravje*, *Kvarkadabra* and *Enciklopedija Slovenije*. Additionally, he is also a regular guest on television and radio talk shows. He was also an editor of numerous books (e.g. an editor of the book *Modern Phytotherapy*, which has sold over 2500 copies, and the book *Food Supplements*, which was published by Elsevier). Since 1987, he has been a member of the Slovenian Natural Science Society, where he was a member and a secretary of an executive committee (between 1999 and 2005). Since 1991, he has also been a member of the Slovenian Pharmaceutical Society, and since 1998, a member of the Botanical Society of Slovenia (since the founding of the general assembly). He is married and has three children.

He was born on 5<sup>th</sup> March 1972 in Ljubljana, where he also finished his primary and secondary education. In high school, he participated in the botanical, mathematical and photography club, while also participating in competitions in the fields of mathematics, physics and chemistry. In 1990, he enrolled in the Faculty of Pharmacy in Ljubljana, where he graduated in 1994 under the supervision of Prof Dr Zoran Grubič. In parallel to his studies at the Faculty of Pharmacy, he was also attending biology classes at the Department of Biology. In 1995, he was employed at the University Department for Pharmaceutical Biology, Faculty of Pharmacy. In 1999, he obtained a PhD under the supervision of Asst Prof Borut Štrukelj, PhD (his PhD dissertation was titled *The Development of Capillary Electrophoretic Methods for Use in Pharmaceutical Biology*). In 1997, he was elected teaching assistant in the field of pharmaceutical biology, becoming Assistant Professor in 2000 and Professor in 2010.

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Levente Móró is a PhD candidate at the Centre for Cognitive Neuroscience at the University of Turku in Finland. His research focuses on the topic of altered states of consciousness (ASC), particularly dreaming, hypnosis, hallucinations and psychedelic drugs. Within the subject of psychedelics, his special areas are online drug-user communities, sacramental and spiritual drug use (entheogens) and psychedelic harm reduction at parties and festivals. Residing in Budapest, he is the current president of the Hungarian MAPS organisation.

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Janja Kaiser Zupančič is a psychoanalyst and psychotherapist who works with children, adolescents, adults and couples in France and Slovenia. In Strasbourg, she is a permanent representative of the European Psychoanalytical Federation F. E. D. E. P. S. Y. (Fédération Européenne de Psychanalyse et Ecole Psychanalytique de Strasbourg). She is also a member of the psychoanalytic school Ecole Psychanalytique de Strasbourg and a member of ASSERC-clinical group at the psychiatric hospital in Strasbourg. She studied at the Faculty of Medicine at the Louis Pasteur University in Strasbourg. She completed her professional training in the clinical field within the framework of permanent formation of the psychoanalytic school in Strasbourg (APERTURA), at Espace analytique, within the association for psychoanalytic training and Freudian researches at the Faculty of Medicine at the Rène Descartes University in Paris, and within the L'École de la cause Freudienne in Strasbourg.

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Vid Vanja Vodusek holds a PhD and is an assistant in the field of medical psychology. He completed his BA studies at the Department of Psychology at the Faculty of Arts in Ljubljana, continuing his studies at the postgraduate level at the Department of Psychiatry, Faculty of Medicine in Ljubljana, and the University Psychiatric Clinic in Ljubljana. During his studies, he received a PhD from biomedical sciences (in the field of neuroscience) and finished the introductory and advanced study of group analysis at the Slovenian Institute of Group Analysis. He has worked as a project manager at the Centre for Autism, as a young researcher at the uniform doctoral study of neuroscience and as a psychologist at the University Psychiatric Clinic in Ljubljana. Currently, he is a registrar of clinical psychology at the University Psychiatric Clinic in Ljubljana. During his education and professional activities, he has released several



scientific publications and has given numerous lectures at various professional meetings, conferences and congresses.

### Marko Vide

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Marko Vide is a psychodynamic psychotherapy registrar. Since 2005, he has been studying altered states of consciousness, the psychotherapeutic use of psychedelic drugs, shaman rituals, mystical experiences and their relationship to the origins of human spirituality. He was born in Novo Mesto in 1980 and graduated at the Sigmund Freud University, Vienna, in 2016.

Since 2008, he has been educating himself in the *Grof Transpersonal Training (GTT)* organisation, especially on the theoretical and practical aspects of transpersonal psychotherapy and holotropic breathwork technique, which was developed by Stanislav Grof.

He is a co-founder of the Slovenian Society for Transpersonal Psychotherapy, which unites psychotherapists who are using different transpersonal techniques and methods in their work. In 2015, he became the chairman of an association, which became a member of the Slovenian Umbrella Association for Psychotherapy (SKZP) in same year.

In 2015, he co-founded Rabbit Hole, an institute for psychotherapy and research of the healing potential of non-ordinary states of consciousness. They are currently conducting research through which they are evaluating the healing potential of ayahuasca and comparing it with psychotherapy. This is the first study of its kind in Slovenia.

In the same year, he became a registrar of psychodynamic psychotherapy at the Institute of Psychodynamic Psychotherapy and became a candidate for a degree at the European Association for Psychotherapy (EAP) and the European Alliance for Psychoanalytic Psychotherapy (ECPA).

At the Sigmund Freud University in Vienna, he graduated from the psychotherapy sciences program with honours.

He has been working in private practice since 2016, mainly specializing in solving difficult anxiety disorders, the integration of heavy psychedelic experience, dealing with the crisis of psychospiritual nature, the accompaniment for the rite of passage and the processing of birth traumas.

Since his theoretical and practical experiential context is broader than traditional psychotherapy, he helps his clients with insights from Western herbalism, Jungian archetypal astrology, techniques of holotropic breathwork and Vipassana meditation (mindfulness).

### Mina Paš

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Mina Paš is an integrative relational psychotherapist and a doctor of medicine who was born on 4<sup>th</sup> July 1976 in Koper. In 1994, she graduated from the Bežigrad High School. Later that year, she continued her education at the Faculty of Medicine in Ljubljana, and became a doctor of medicine in 2002. Three years later, she also received the Social Work Certificate. Between 2009 and 2013, she was training at IPSA (Institute for Integrative Psychotherapy and Counselling) in the field of integrative psychotherapy. In 2015, she received the IIPA (International Integrative Psychotherapy Association) and EPA (European Psychotherapy Association) certificate for integrative relational psychotherapy. In 2015, she became a certificated psychotherapist of Brainspotting.

Since 1999, she has been working at DrogArt, a non-profit organisation with the objective of reducing the harm of alcohol and drug abuse. Between 1999 and 2002, she was a volunteer and a coordinator of voluntary work. Between 2002 and 2006, she was also a leader of a harm reduction program for people who use drugs in nightclubs. Since 2009, she has been the manager of a counselling service for people with a problematic use of drugs, where she offers interviews and psychotherapy. Since 2012, she has also been active in her private psychotherapeutic practice, where she mostly focuses on treatment of traumas with deep psychotherapeutic methods, especially Brainspotting.

Since 2002, she has appeared in publications that mainly deal with drug users in nightclubs, raising their awareness about safe use of psychoactive substances. She is also the authority for responsible reporting on drugs in the media and for sharing the information about drugs to young people.

She is a co-founder of the Rabbit Hole institute where different professionals are dealing with psychotherapy and research on the healing potential of altered states of consciousness. They are conducting the first Slovenian research about the healing potential of ayahuasca.

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In 2002, he graduated from the Faculty of Medicine at the University of Ljubljana, and in 2012, he received his PhD with a dissertation titled *Pharmacodynamics of Entheogenic Drugs – Influence on Gene Expression*. In addition, he expanded his knowledge while on medical expeditions in Africa, South America and Asia, where he became aware of the problem of solving civilizational diseases in other social environments.

In 2005, he founded the OMI Institute, an institute for anthropological medicine ([www.omi.si](http://www.omi.si)) dedicated to the scientific evaluation of traditional healing methods with an emphasis on medicinal plants. The research results are published in numerous local and international scientific publications, the most notable discovery being the effect of the medicinal plant iboga on the cellular metabolism of energy with a subsequent shift of an individual's mode of being.

He is a researcher at the Faculty of Medicine in Ljubljana and head of a counselling service as a therapist who specializes in medical hypnosis. Additionally, he is a member of two professional committees: the ZIMS society (Slovenian Society of Integrative Medicine) and the ICEERS organisation (International Centre for Ethnobotanical Education, Research and Service).

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Damjan Marić is a graduate at the MA Biopsychology program at University of Primorska. In his BA final paper, he studied the latest findings regarding the use of psychedelic substances for therapeutic and research purposes, thus contributing to that field of research in Slovenia. He is a member of the non-profit voluntary association DrogArt, and ICEERS (*International Center for Ethnobotanical Education, Research and Service*), which focuses on reduction of harmful effects of drugs. He is also one of the founding members of the Slovenian Psychedelic Society. He is trained in working with hazardous substances and has collaborated with a company called Bunk Police in the production of reagents for testing psychoactive substances. With this, he helped to reduce the negative consequences, which may be caused by usage of agents that alter the state of consciousness. Currently, he is focusing on newly rediscovered antidepressant properties of some substances that are used as anaesthetics, such as ketamine.

**Peter Gasser**  
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Peter Gasser is a doctor of medicine who was born in 1960, is married and has three children. He is a psychiatrist and psychotherapist, working in private practice in Solothurn, Switzerland. He was trained in psychodynamic methods as well as in therapy with mind-altering drugs, i.e. psycholytic or psychedelic therapy. He has been a member of the Swiss Medical Society for Psycholytic Therapy since 1992 and its president since 1996. He is the only doctor in the world legally allowed to use LSD to treat patients.

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Teri Krebs was a research fellow at the Department of Neuroscience, Faculty of Medicine, Norwegian University of Science and Technology. She has studied mathematics at the Harvey Mudd College and computational neuroscience at the Boston University, and she was a visiting researcher at the Harvard Medical School.

In the academic world, she is mostly known for a meta-analysis of randomized controlled trials of LSD treatment for alcoholism and a population study of mental health in people who have used psychedelics.

Because the results were unexpected to the general public, her research has grabbed the attention of many media sources.

In addition to research, she is also working as a board leader of EmmaSofia, a non-profit organization based in Oslo, Norway, working to increase access to quality-controlled psychedelics.

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Milan Krek is the former director of the ex-Office on drugs, the president of the Koper unit of the National Institute for Public Health and head of the informatics sector at the Institute for Health Protection where he also acts as the Slovenian representative of the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA). He also works as an assistant at the Chair of Public Health at the Medical Faculty of Ljubljana.

In Slovenia, with an emphasis on the Primorska region, he is monitoring the development of legal and illegal psychoactive substances, related punishable offenses and pathologies, as well as their treatment and prevention.



