

The Tripping Cure?: Psychedelic-Assisted Therapies Past, Present and Future

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Agenda

1 Overview of Psychedelics

2 Historical Context

3 Current Research

4 Future Directions

5 Questions

Contact Information

I am happy to discuss any of this information later – don't hesitate to reach out



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Transforming addiction treatment for the 21st Century









Overview of Psychedelics

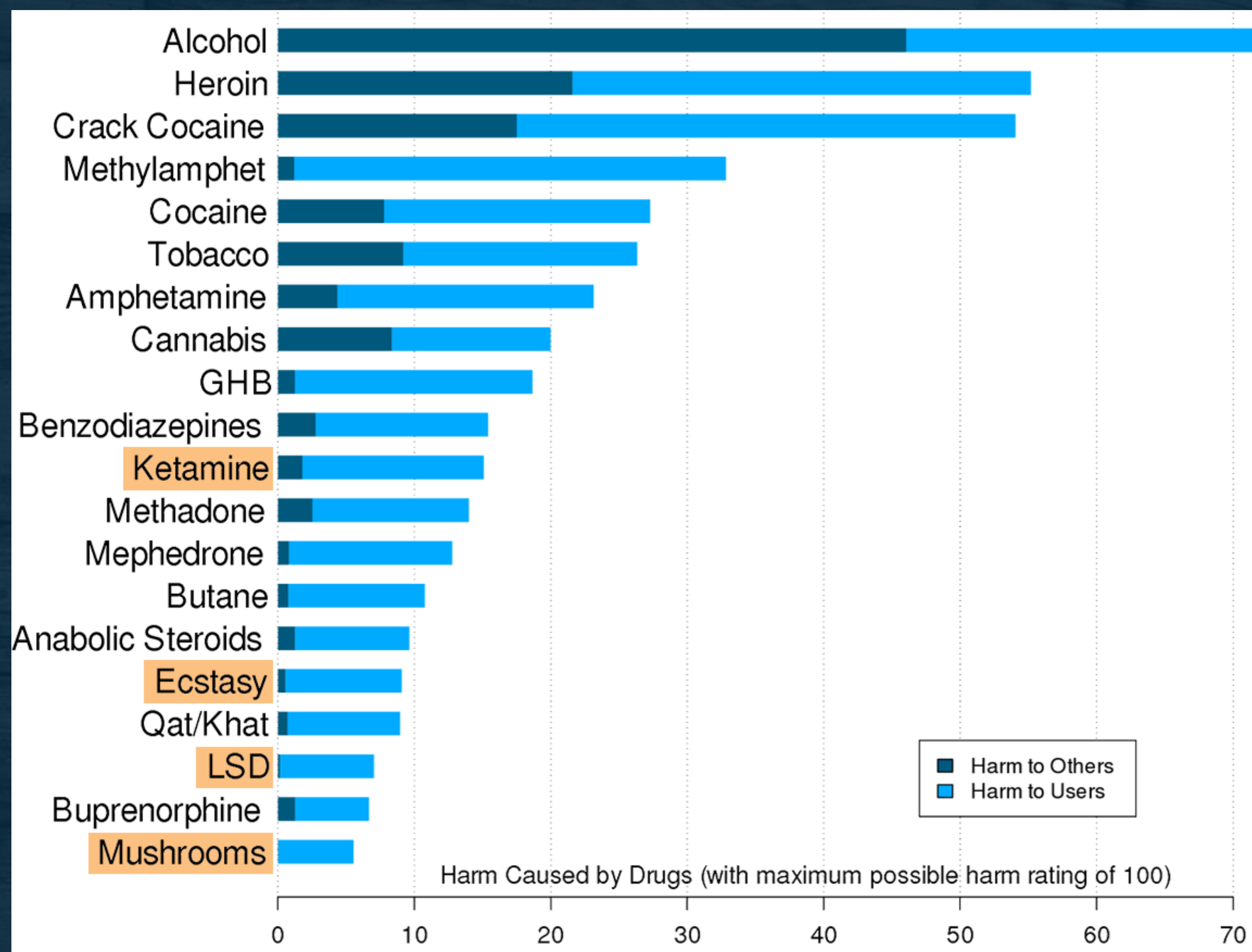
What Are Psychedelics?

Psychedelics are a class of medicine/drug that produce characteristic effects:

-  Sensory distortions: closed-eye imagery, body-image distortions, synesthesia
-  Hypersensitivity to sensory stimuli
-  Dream-like ideation, distorted sense of time, more profound emotions and feelings
-  Introspective reflection and feelings of profound insight

Psychedelic experiences resemble psychosis, and/or “mystical” states of mind; but can’t be equated to either.

What Are Psychedelics?



Source: "Drug harms in the UK" Nutt, et al.

Great Quote

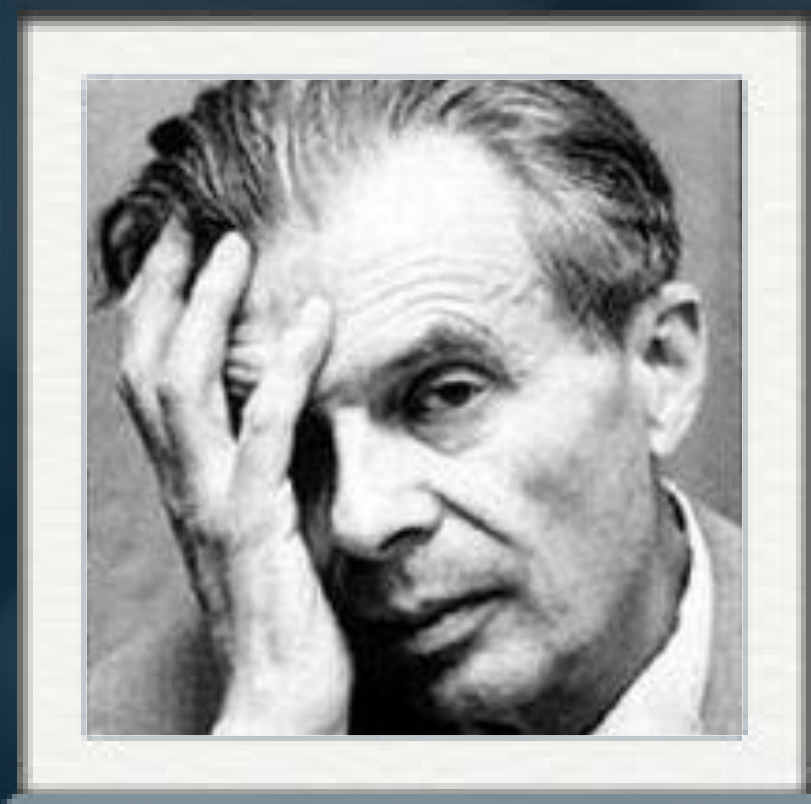
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All experience is a drug experience. Whether it's mediated by our own [endogenous] drugs, or whether it's mediated by substances that we ingest that are found in plants, cognition, consciousness, the working of the brain, it's all a chemically mediated process. Life itself is a drug experience.

Dennis McKenna, PhD

What's in a name?

Psychotomimetics
Mysticomimetics
Psychodysleptics
Misperceptinogens
Eidetics
Phantasticants
Deleriants
Delusionogens
Psychotocants
Psychotaraxics
Schizogens
Etc.



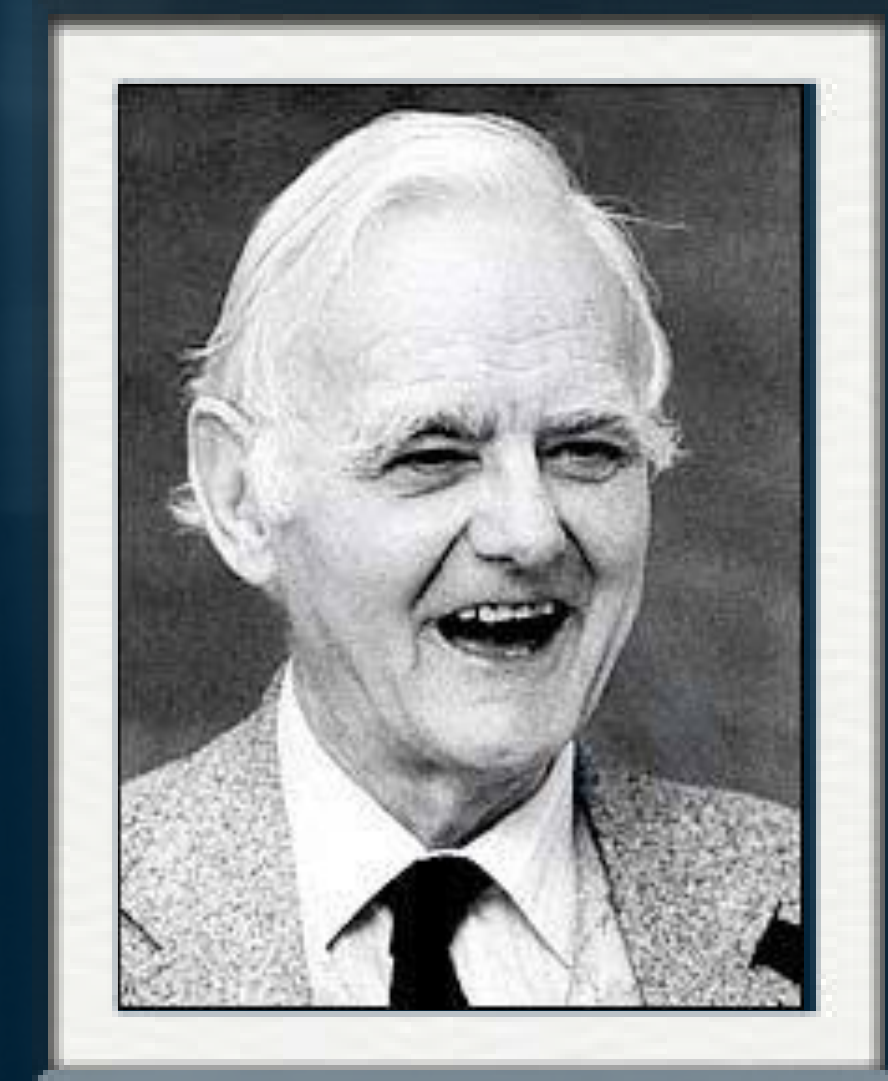
To make this trivial world sublime
Take half a gramme of
Phanerothyme
-- Aldous Huxley, 1956

To fathom hell or soar angelic
Just take a pinch of psychedelic
-- Humphrey Osmond

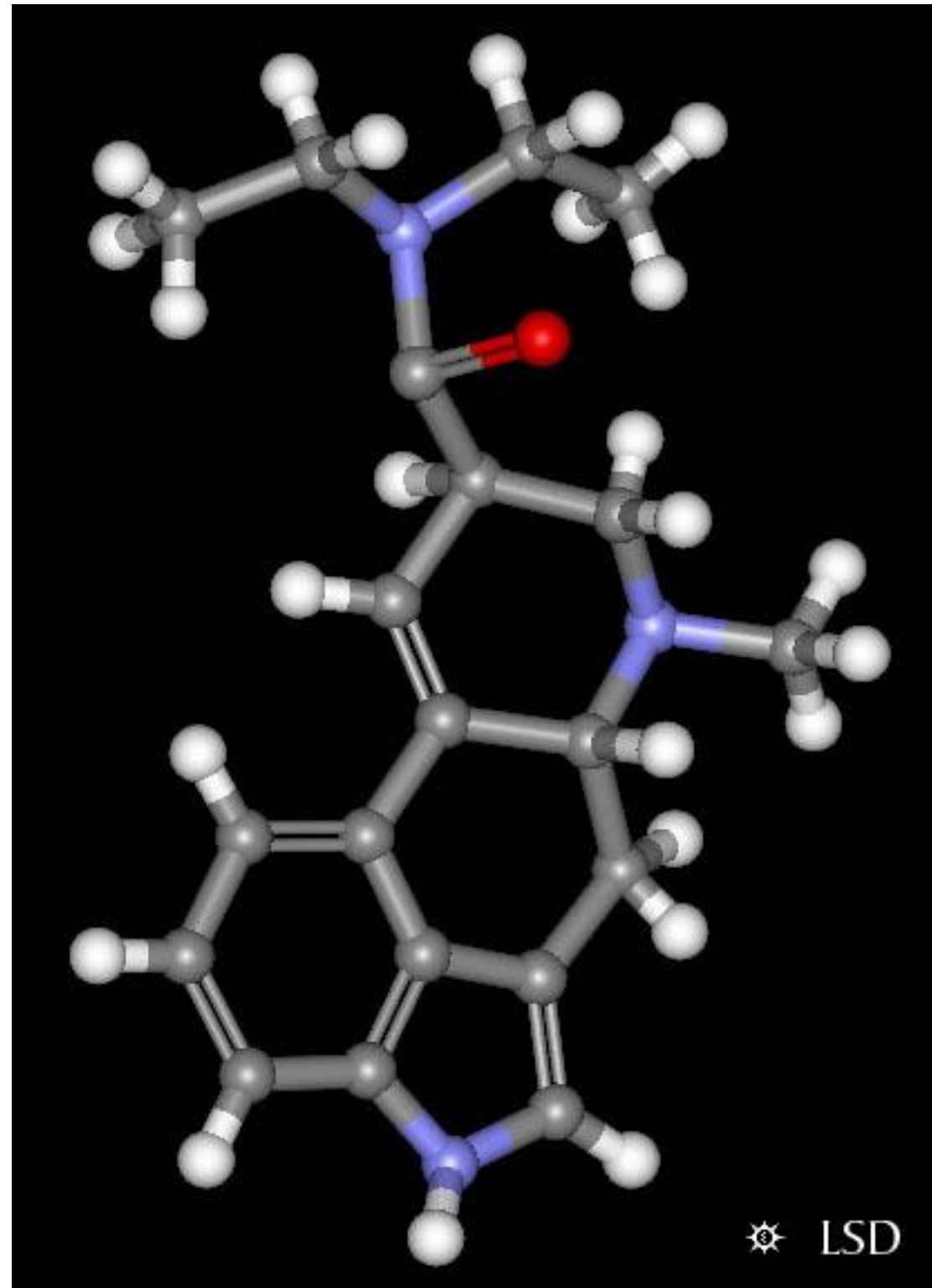
Psychedelic vs Hallucinogen

Entheogen?

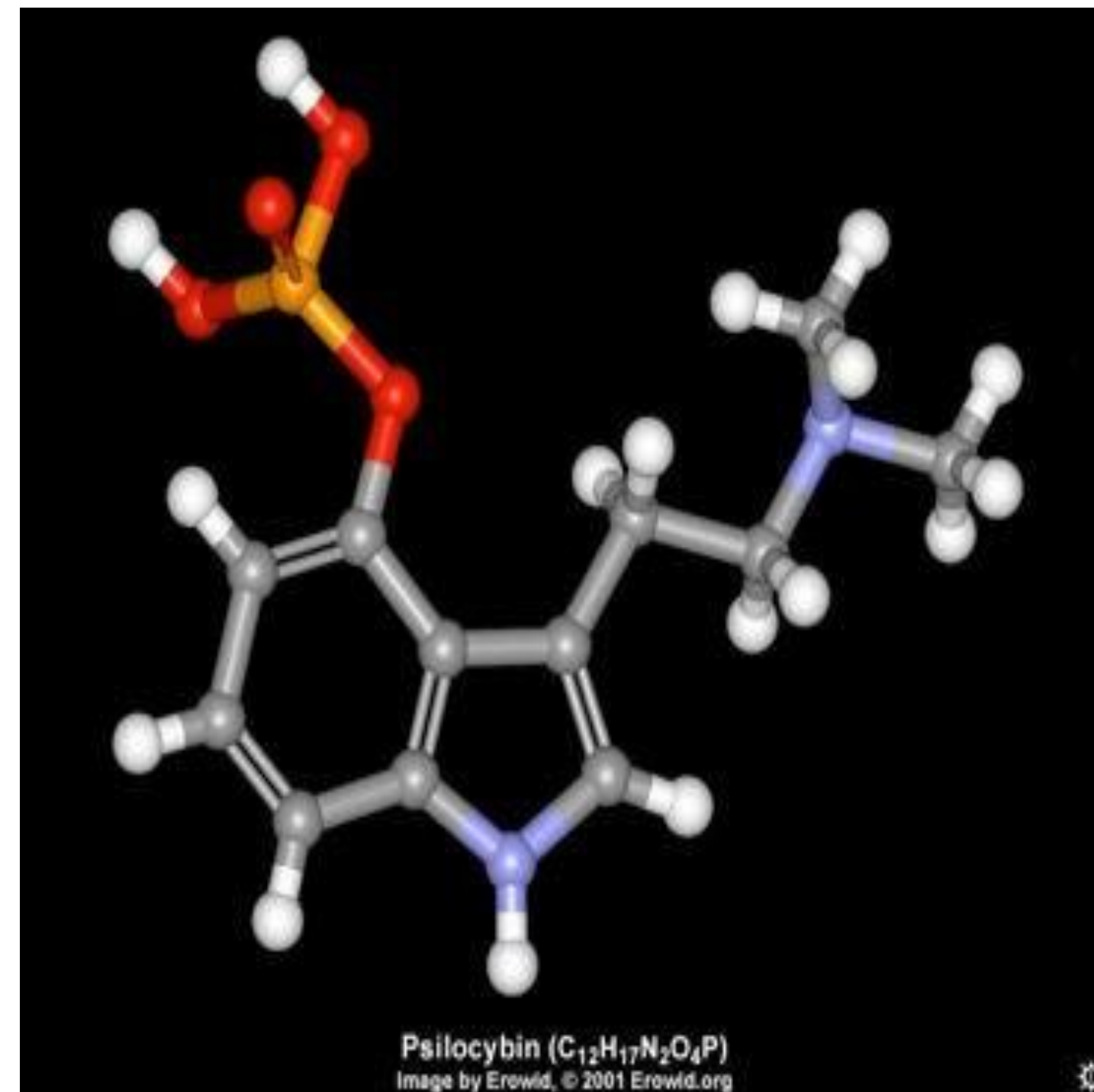
Shamanic Medicine?



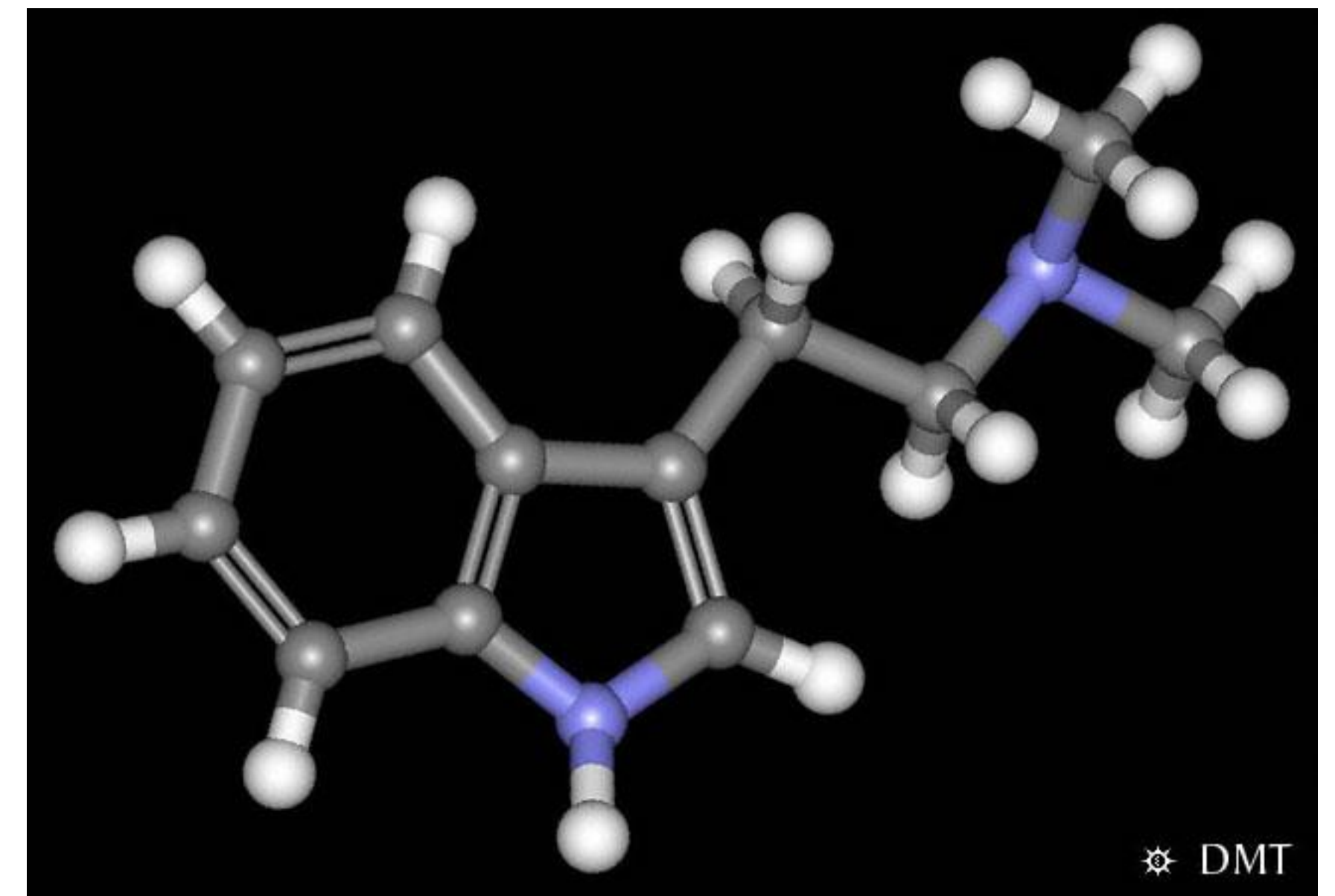
Classical Psychedelics act on 5-HT_{2A}



LSD



Psilocybin



DMT & Ayahuasca

New Interest in Psychedelic-Assisted Therapies

US and Worldwide Research Currently Underway:

Classical and Other Psychedelics

- Psilocybin
- LSD
- DMT
- Ayahuasca
- MDMA
- Ibogaine
- Ketamine
- Cannabis
- Kratom

Ongoing Research Studies

- Treatment-resistant depression
- Cluster headaches
- End-of-life anxiety
- Alcohol use disorder
- Smoking cessation



Historical Context

The Medical History of Psychedelics

[The Medical History of Psychedelic Drugs](#). 2007. Dissertation presented to the University of Cambridge.

7000 BC Rock Paintings

Psychoactive plants and compounds have been in use over 10,000 years. Rock paintings and temples dedicated to mushroom deities in Central America

3000 BC Peyote Evidence

Carbon dating shows mescaline-containing peyote collected by indigenous First Peoples

1500-1800 AD Catholic Missionaries

Most records were destroyed as Europeans colonized Mexico, Guatemala and beyond, limiting knowledge of the true length of time mushrooms have been in use

1897 Mescaline Isolated, etc.

Western science “rediscovered” psychedelics in the late 1800s and early 1900s. Scientists first isolated mescaline in 1897, and psilocybin in the 1950s

1943 LSD Synthesized

Albert Hoffman, a Sandoz research chemist, synthesized LSD. By 1951, over 100 articles on LSD had been published, most in the field of psychiatry

The Medical History of Psychedelics

[The Medical History of Psychedelic Drugs](#). 2007. Dissertation presented to the University of Cambridge.

1958 LSD for AUD

After Osmond and Hoffer theorized that LSD could produce DT-like “rock bottom” experience, the first major study was published with very promising results

1953-1965 More Therapy Studies

Researchers in Canada, Europe and the US study psychedelics in the context of neurosis, intractable pain, mystical states/religious studies. LSD-Serotonin link

1968 LSD Prohibition

In the early 60s FDA granted new powers, additional laws passed restricting clinician access, and research permits revoked. Finally, possession is deemed illegal

1970 Controlled Substances Act

Over the objections of psychiatric scientists, LSD, psilocybin and other psychedelics are put into the most restrictive category C1

Research all but ceased

1992-2000 Safety Reconsidered

20 years into prohibition, US govt panels acknowledge psychedelics are largely safe and likely therapeutic targets



Current Research

Psychedelic Medicines



LSD



Ayahuasca/DMT



Psilocybin

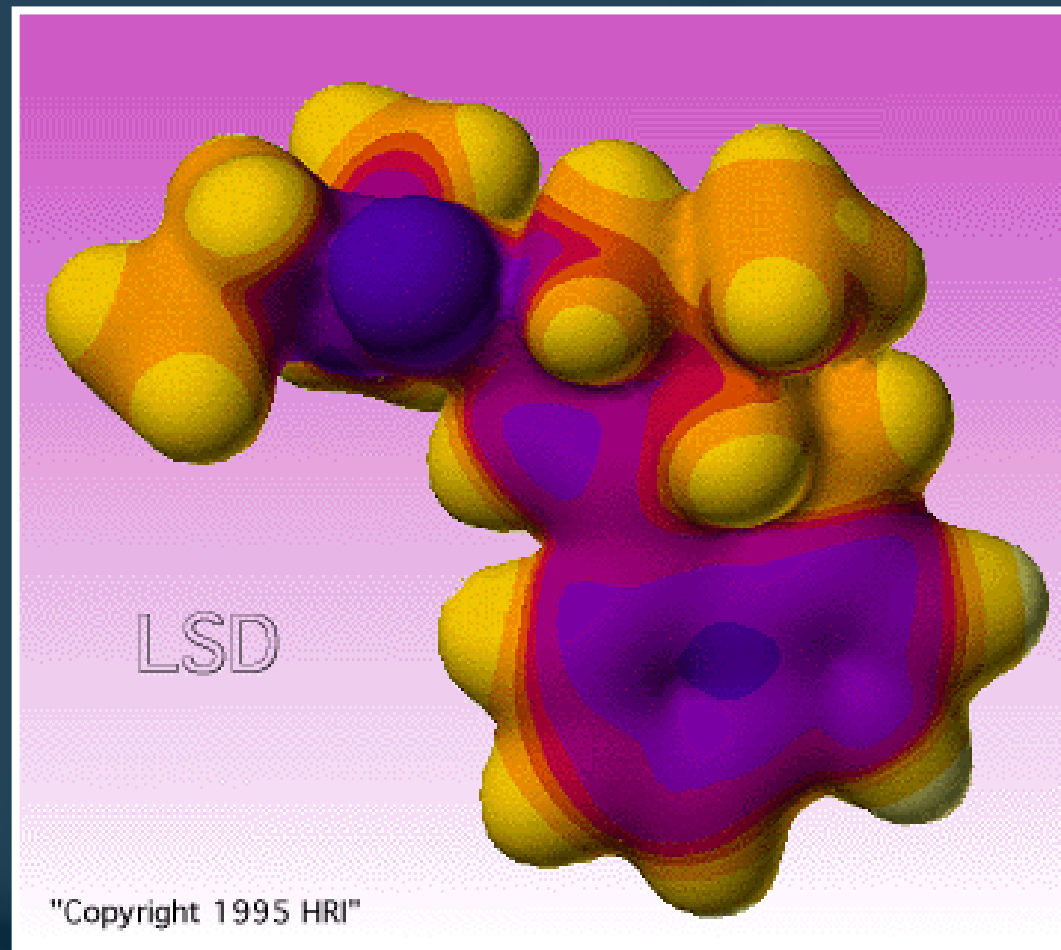


Iboga/Ibogaine

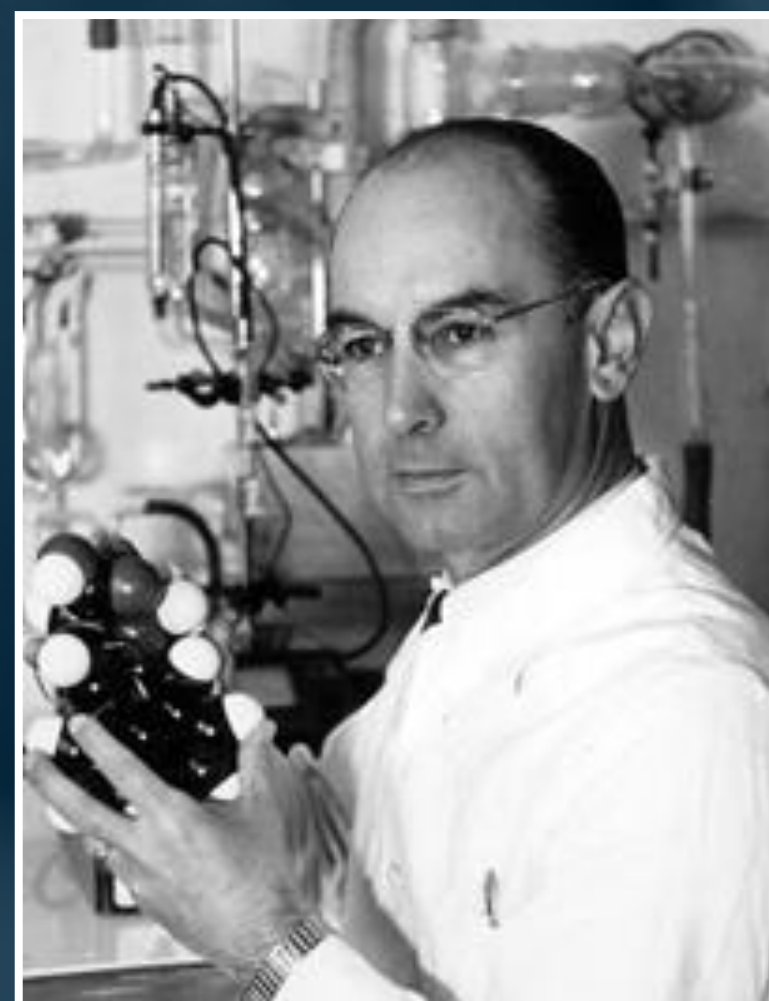


LSD

Lysergic acid diethylamide



- Discovered by Sandoz chemist Albert Hoffman in 1943
- Most potent psychoactive substance then known
- Used in neuroscience research in the 1950s
- Showed promise in treatment of alcoholism and drug addiction
- Bill Wilson (founder of AA) believed LSD could be effective component of the AA program
- Humphrey Osmond used LSD to treat alcoholics from mid-50s to mid-60s
- LSD was banned at the end of the 70s and human research ceased

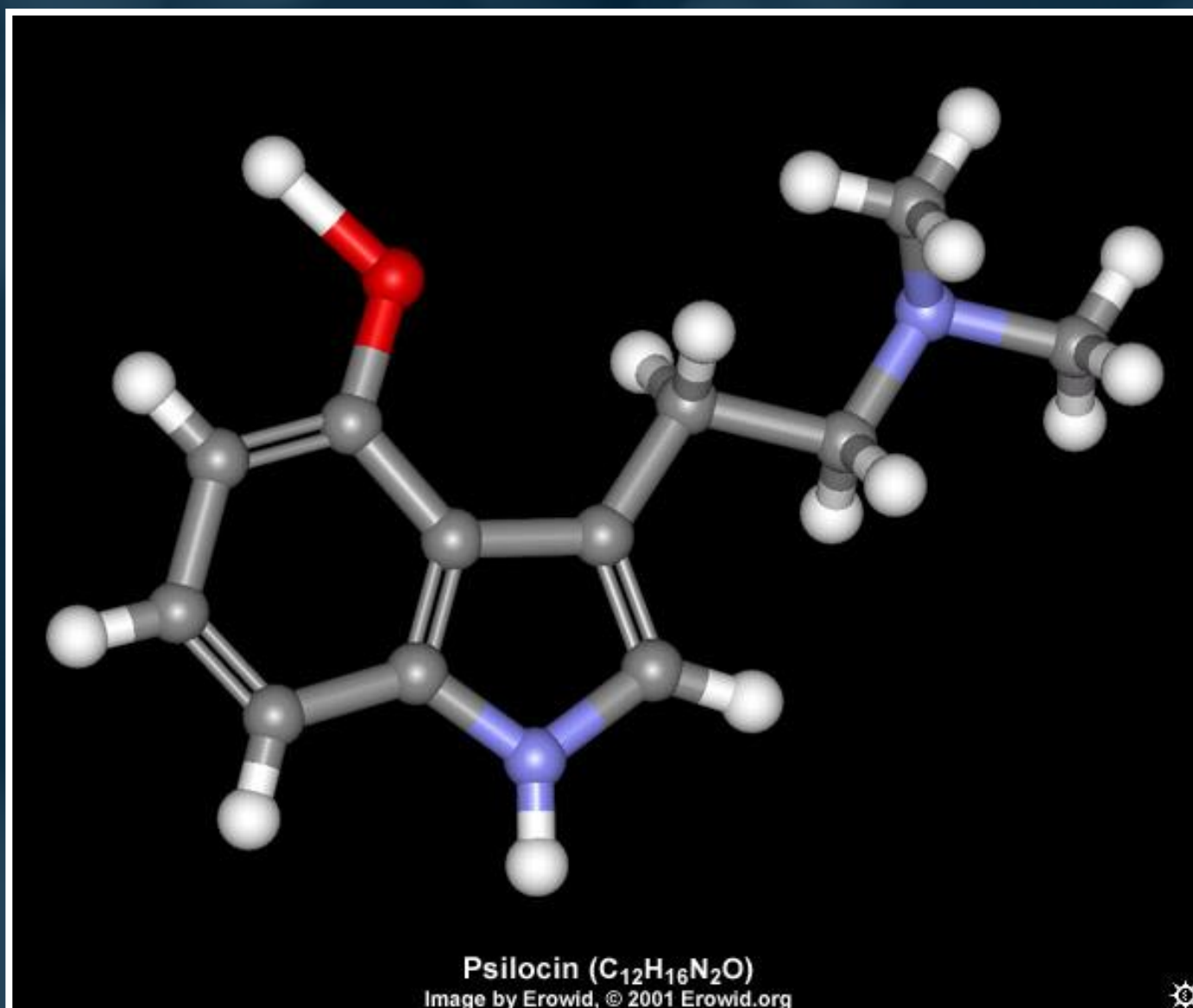
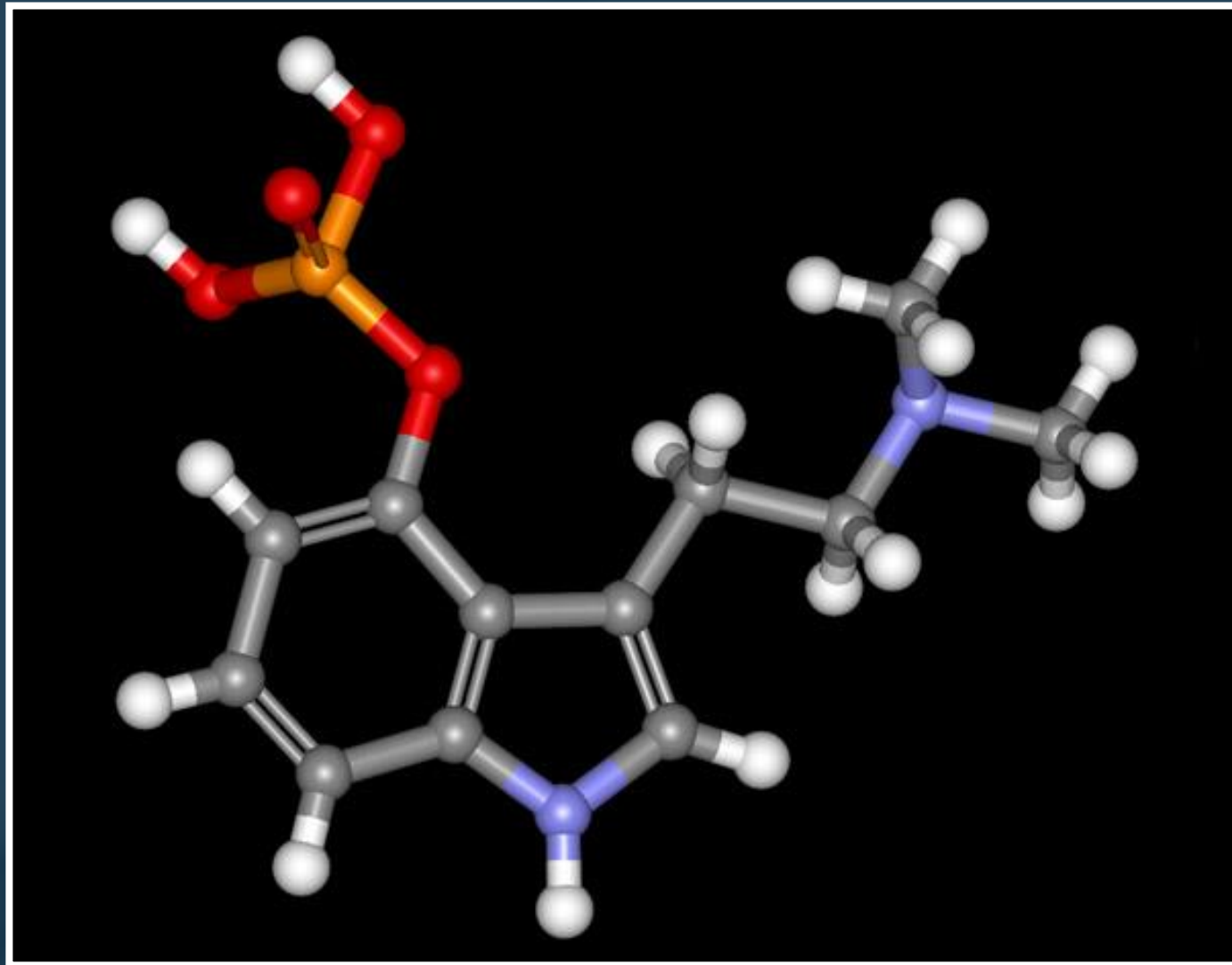


LSD Randomized Controlled Trials

Krebs and Johansen (2012) reviewed 6 RCTs from 1960s:

- Almost all double-blind (at least, until drug administration)
- n=536 Almost all were male inpatients
- All studies used single session
- Doses from 210-800mcg.
- Great variation in preparation, debriefing, support
- Studies showed significant, lasting benefits

Psilocybin



“Magic Mushrooms” - Psilocybin
and Psilocin

~ 200 psilocybian species known

Important in Mazatec
ethnomedicine

Psilocybin

the ‘ideal’ clinical psychedelic?

Non-toxic

Relatively short duration of action

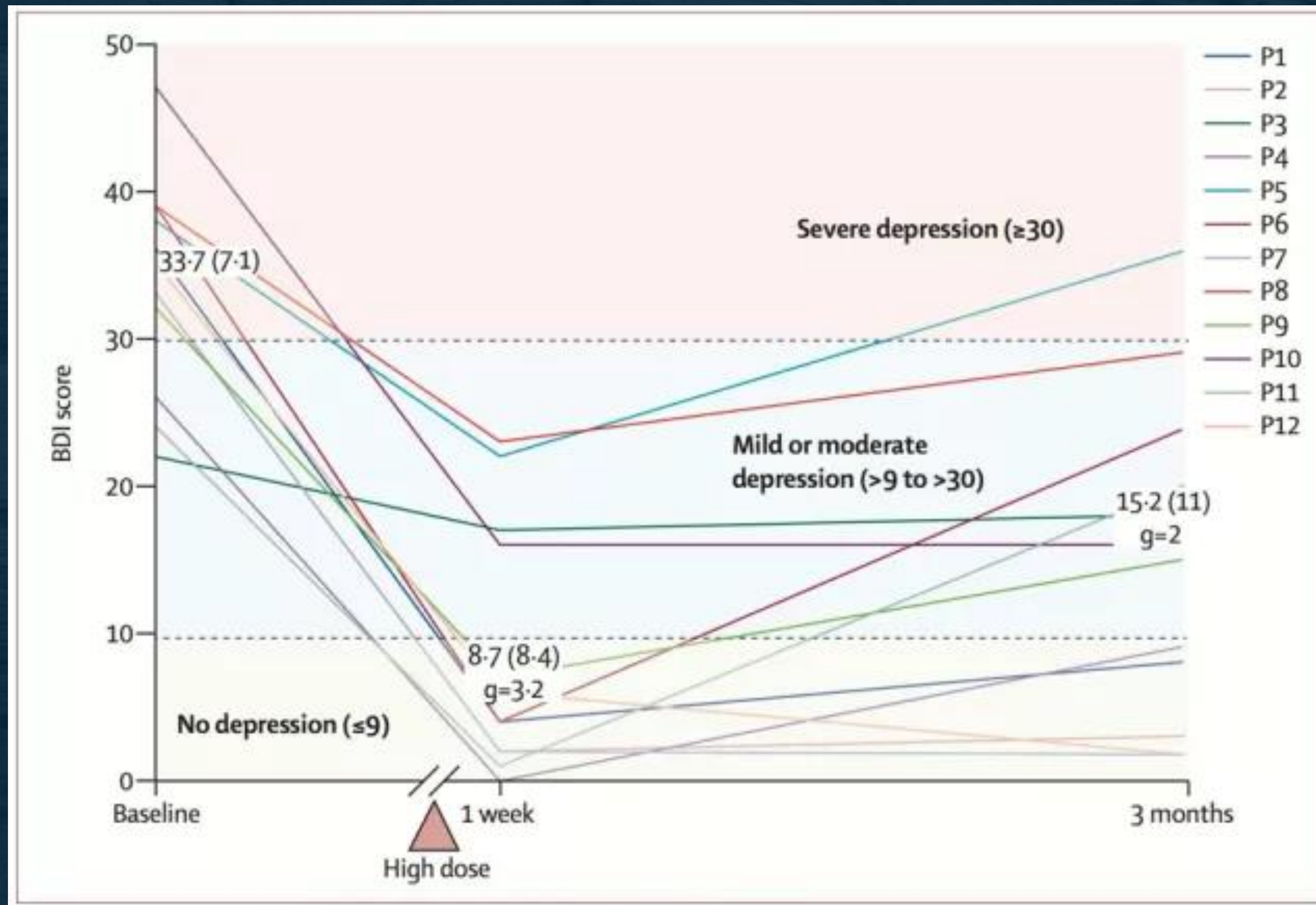
Potent psychedelic effects but rarely unpleasant

As a result psilocybin is being investigated for a variety of therapeutic applications under FDA-approved protocols:

- Existential anxiety at end of life
- Spiritual practices in long-term meditators
- OCD
- Molecular probe in basic neuroscience studies (brain/consciousness)

For more info: heffter.org clinicaltrials.gov

Psilocybin for Depression



Source: Carhart-Harris et al. (2016)

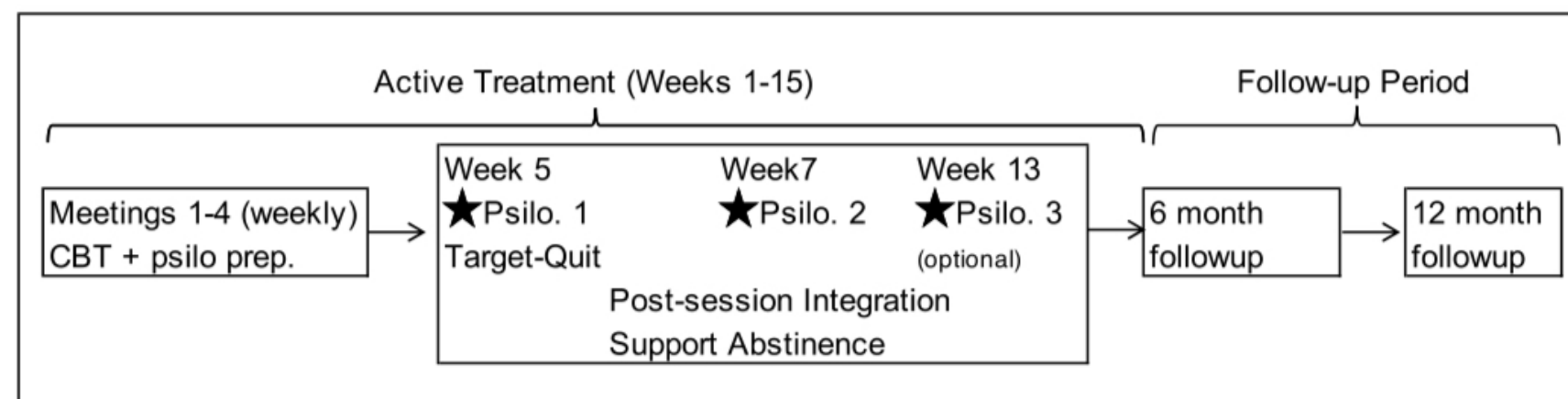
Psilocybin in Substance Use Disorder Treatment

Current or completed SUD trials

- Smoking cessation (Johns Hopkins)
- Cocaine use disorder (University of Alabama)
- Alcohol use disorder (New York University, and University of New Mexico)

Psilocybin for Smoking

Pilot Study design



Results

- Open-label pilot study ($N=15$) of 2-3 doses psilocybin + CBT for smoking cessation
- 12 (80%) abstinent at 6mo.
- 10 (67%) abstinent at 12mo.
- 9 (60%) abstinent at ~30mo.

Johnson et al., 2014, 2016.
Garcia-Romeu et al., 2015

Drug Sessions



- The 8-hr drug sessions are conducted in a living-room-like environment
- Two monitors are present throughout the session
- Participants asked to:
 - lie on the couch
 - wear eye masks and headphones
 - listen to a program of music
 - focus attention inward
 - trust, let go, be open

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Source: Garcia (2018)
Presentation to AAAP

Mystical Experience Questionnaire

“the experience of profound unity with all that exists, a felt sense of sacredness, a sense of the experience of truth and reality at a fundamental level (noetic quality), deeply felt positive mood, transcendence of time and space, and difficulty explaining the experience in words.”

Broken into 4 “Factors”: Mystical, Positive Mood, Transcendence of Time and Space, Ineffability

Ayahuasca



Banisteriopsis caapi
yage, ayahuasca



Psychotria viridis
Chacrana

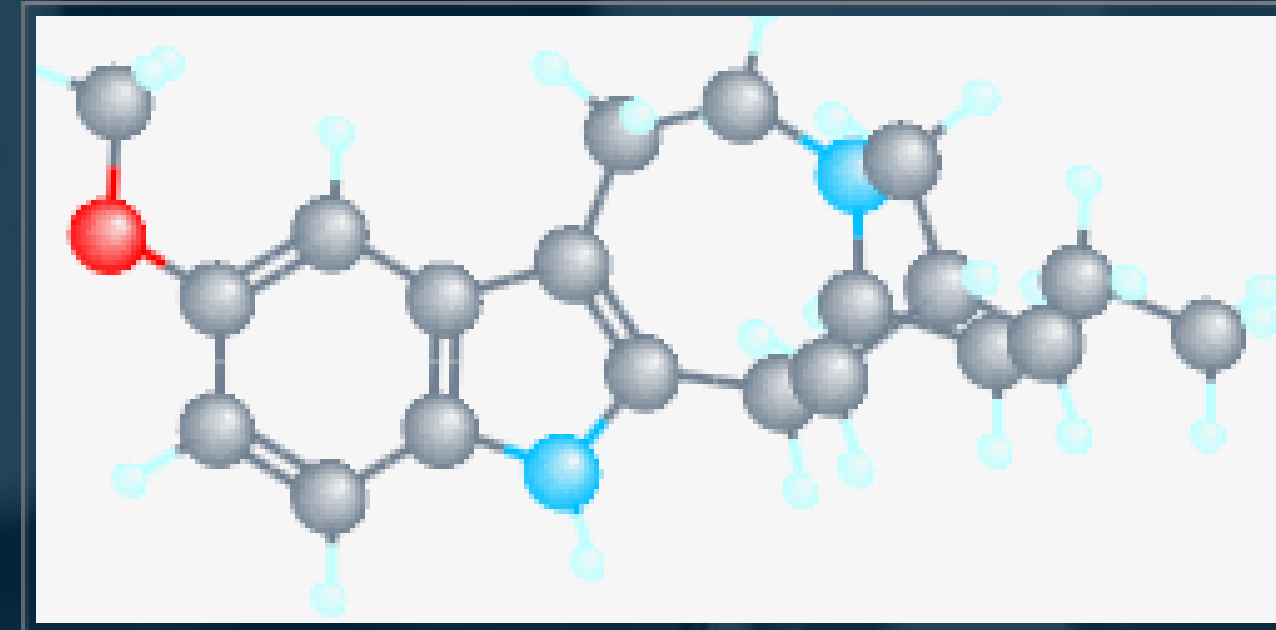
Ayahuasca is an orally active form of DMT. The oral activity is due to peripheral MAO inhibition, triggered by the β -carboline alkaloids in B. caapi; The DMT which supplies the visionary component is derived from the admixture, Psychotria viridis known as “chacrana”

Iboga

- Iboga (*Tabernanthe iboga*, family Apocynaceae)
 - Iboga is an African shrub that is used in initiation ceremonies by the Bwiti tribe of Gabon
 - The roots of Iboga are chewed by young men and women undergoing initiation into adult status
 - It induces a 24-36 hour trance-like state, in which the ancestors appear to the initiate to impart the tribal wisdom and ethics of the tribe.

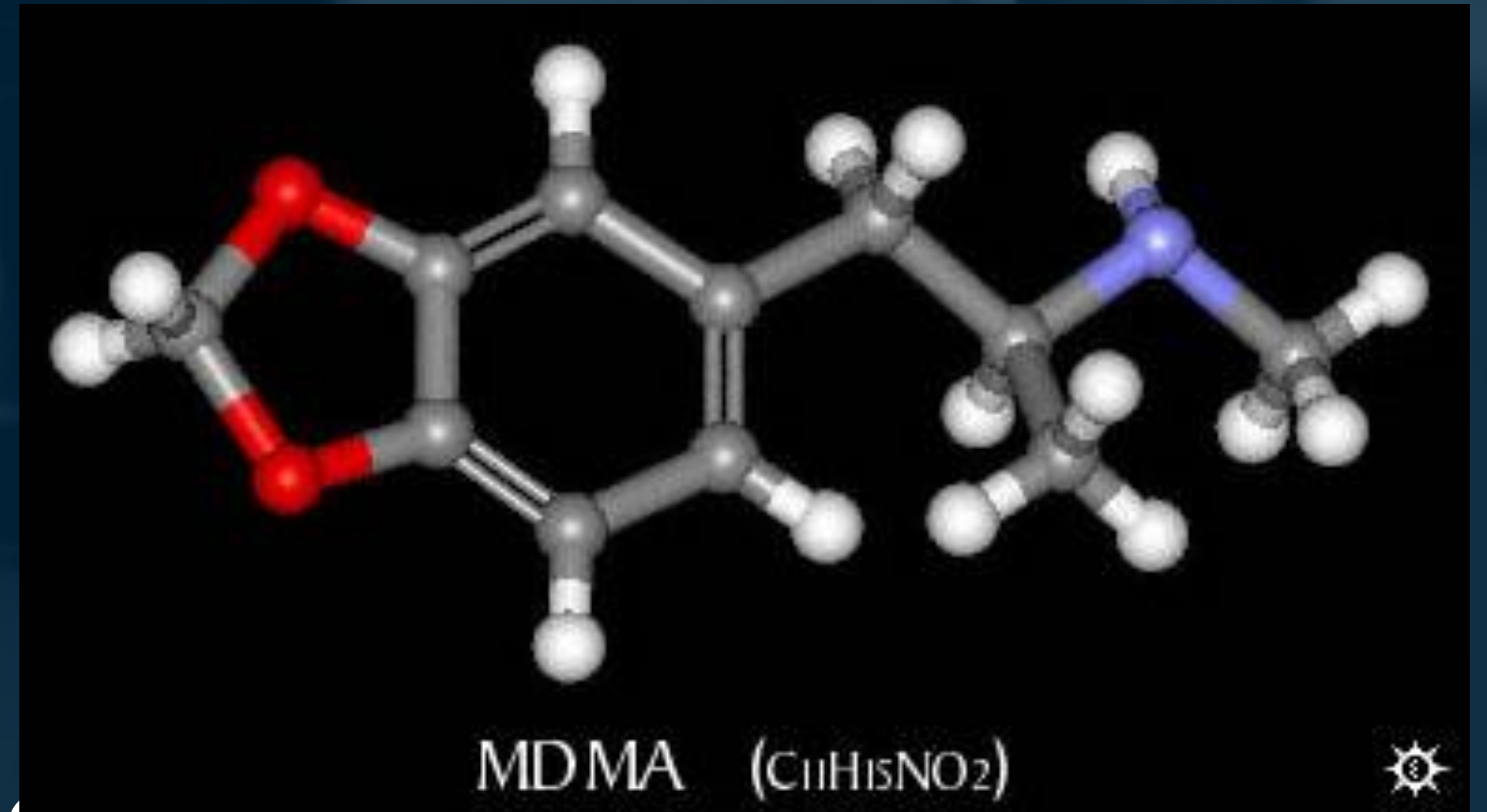


Ibogaine - the major active alkaloid of Iboga



- Ibogaine is the major psychoactive constituent of Iboga root
Other alkaloids include ibogamine, cornaridine, and tabernanthine
- Ibogaine acts on numerous neurotransmitters in brain: serotonin, dopamine, GABA, muscarinic, and nicotinic systems
 - Thus it is not a ‘true psychedelic’; the experience is similar to other psychedelics; but also unique.

MDMA



- First synthesized in 1912 by Merck chemists in Germany
- Used briefly by US Govt (CIA and military) while investigating chemical warfare
- Largely forgotten until 1970s when it was rediscovered by chemist Alexander Shulgin
- Used legally in psychotherapy for a decade, before its prohibition in 1985
- “Ecstasy” becomes a popular club drug and is sold illicitly in pill and powder form

MDMA-Assisted Psychotherapy

- After many attempted proposals, the FDA finally approved a Phase-1 study in 1992
- Since then, MDMA has proven safe and effective psychotherapy tool
- Current research is focused on its use for PTSD
- Results have been so promising, it will likely be an FDA-approved treatment within a few years
- MAPS is now seeking “expanded access” sites

TREATING PTSD WITH MDMA-ASSISTED PSYCHOTHERAPY

Posttraumatic Stress Disorder (PTSD) is a widespread and devastating illness for which we urgently need more effective treatments. **Could non-profit research offer hope?** The controlled use of MDMA in a psychotherapeutic setting is an important step in the treatment of PTSD.

What is PTSD?

Posttraumatic Stress Disorder (PTSD) can be a chronic, devastating illness that severely impacts quality of life. Sufferers often struggle to maintain healthy lives and relationships.

PTSD involves changes in the brain. Patients have decreased activity in the **hippocampus** and **prefrontal cortex** (areas associated with memory and learning) and increased activity in the **amygdala** (associated with fear).

1 in 7 U.S. service members returning from Iraq and Afghanistan suffers from PTSD.

PTSD can be caused by:

- war
- sexual assault
- childhood abuse
- torture
- accidents
- other stressful events





Why Do Psychedelics Work?

- Disrupt the “default-mode network”
 - Provide major perspective shift
- Increase feelings of trust and confidence in therapy
 - Integration
 - ?



Future Directions?



How To Get Involved

National Organizations:



National Research Organizations:

- MAPS.org
- Heffter.org
- UsonaInstitute.org
- CompassPathways.org
- ClinicalTrials.gov

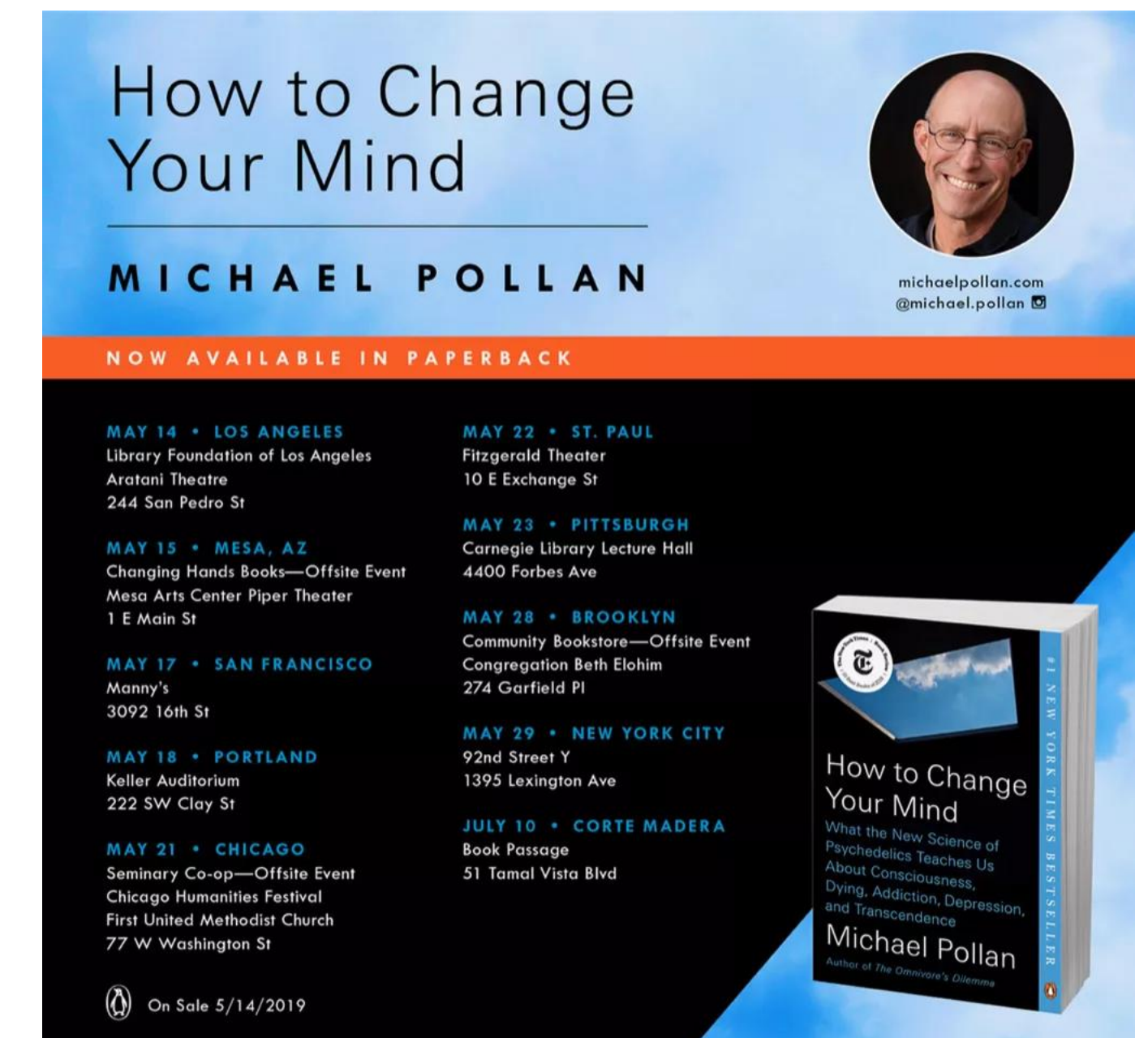
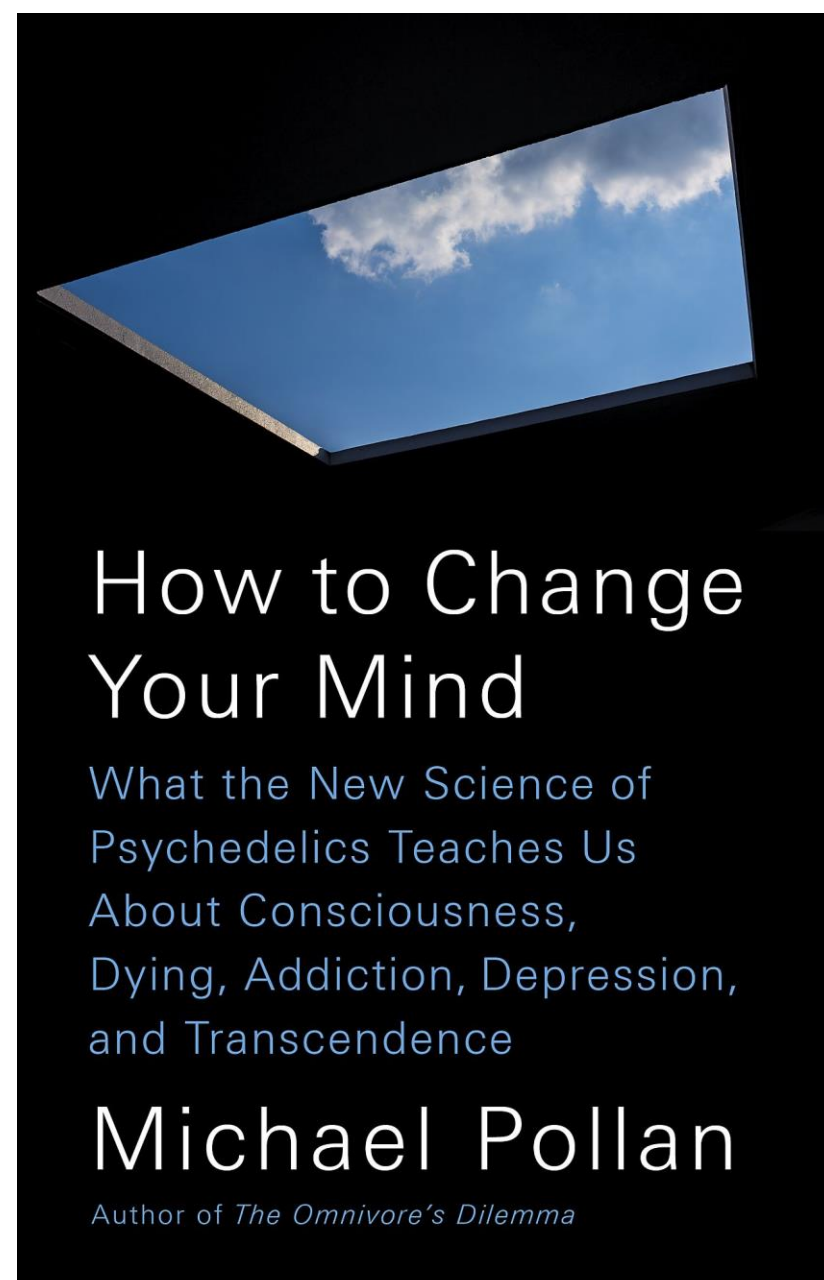
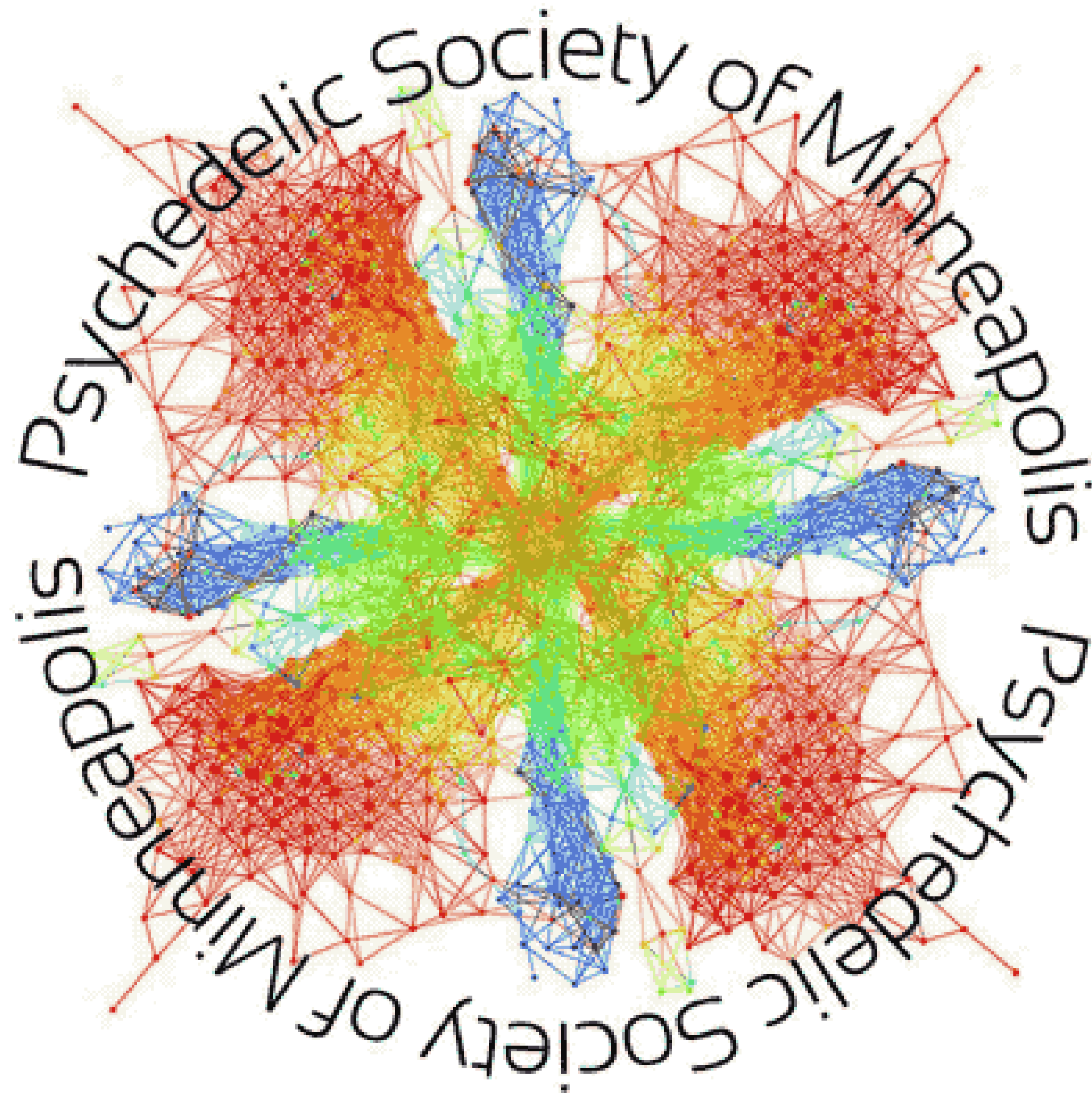
National Therapist Training Organizations:

- CIIS.edu Center for Psychedelic Therapy and Research
- MAPS.org
- @PsychedelicNYC (Twitter) & Psychedelic Program (FaceBook)

Get Involved Locally:

The Psychedelic Society of
Minneapolis MeetUp group:

<https://www.meetup.com/Psychedelic-Society-of-Minneapolis/>





Questions and Discussion



THANK YOU!

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Special Thanks to Dr Dennis McKenna, PhD

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