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

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Contact Information

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

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Overview of 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.
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?

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?

Psychotomimetics
Mysticomimetics
Psychodysleptics
Misperceptinogens
Eidetics
Phantasticants
Deleriants
Delusionogens
Psychoticants
Psychotaraxics
Schizogens
Etc.
Classical Psychedelics act on 5-HT2A

LSD
Psilocybin
DMT & Ayahuasca
# New Interest in Psychedelic-Assisted Therapies

US and Worldwide Research Currently Underway:

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<th>Classical and Other Psychedelics</th>
<th>Ongoing Research Studies</th>
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<td>Psilocybin</td>
<td>Treatment-resistant depression</td>
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<td>Cluster headaches</td>
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<td>End-of-life anxiety</td>
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<td>Ayahuasca</td>
<td>Alcohol use disorder</td>
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<td>MDMA</td>
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<td>Ibogaine</td>
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<td>Ketamine</td>
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<td>Cannabis</td>
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Historical Context
<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
<th>Details</th>
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<tr>
<td>7000 BC</td>
<td>Rock Paintings</td>
<td>Psychoactive plants and compounds have been in use over 10,000 years.</td>
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<td>3000 BC</td>
<td>Peyote Evidence</td>
<td>Carbon dating shows mescaline-containing peyote collected by indigenous First Peoples</td>
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<td>1500-1800 AD</td>
<td>Catholic Missionaries</td>
<td>Most records were destroyed as Europeans colonized Mexico, Guatemala and beyond, limiting knowledge of the true length of time mushrooms have been in use</td>
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<td>1897</td>
<td>Mescaline Isolated, etc.</td>
<td>Western science “rediscovered” psychedelics in the late 1800s and early 1900s. Scientists first isolated mescaline in 1897, and psilocybin in the 1950s</td>
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<td>1943</td>
<td>LSD Synthesized</td>
<td>Albert Hoffman, a Sandoz research chemist, synthesized LSD. By 1951, over 100 articles on LSD had been published, most in the field of psychiatry</td>
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# The Medical History of Psychedelics

<table>
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<th>Year</th>
<th>Event</th>
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<tr>
<td>1958</td>
<td>LSD for AUD</td>
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<tr>
<td>1953-1965</td>
<td>More Therapy Studies</td>
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<tr>
<td>1968</td>
<td>LSD Prohibition</td>
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<td>1970</td>
<td>Controlled Substances Act</td>
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<tr>
<td>1992-2000</td>
<td>Safety Reconsidered</td>
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**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

**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

Source: Garcia (2018)
Presentation to AAAP

### Pilot Study design

- **Active Treatment (Weeks 1-15)**
  - Meetings 1-4 (weekly)
  - CBT + psiloc prep.

- **Week 5**
  - Psiloc 1
  - Target-Qut.
  - Post-session Integration
  - Support Abstinence

- **Week 7**
  - Psiloc 2

- **Week 13**
  - Psiloc 3 (nailed)

- **Follow-up Period**
  - 8 month followup
  - 12 month followup

### 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.

Source: 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

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 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 “chacruna”
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
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:
- MAPS.org
- Heffter.org
- UsonaInstitute.org
- CompassPathways.org
- ClinicalTrials.gov

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/

How to Change Your Mind
What the New Science of Psychedelics Teaches Us About Consciousness, Dying, Addiction, Depression, and Transcendence

Michael Pollan
Author of The Omnivore's Dilemma
Questions and Discussion
THANK YOU!
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Special Thanks to Dr Dennis McKenna, PhD

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