

I RESPECTFULLY ACKNOWLEDGE THAT THE LAND ON WHICH I LIVE AND AM PRESENTING FROM IS THE UNCEDED TERRITORY OF THE SYILX (OKANAGAN) PEOPLES Disclosure • Have conducted paid clinical work for MAPS. • Member of advisory boards for Numinus, Mycomedica Life Sciences, EntheoTech and MAPS Canada. All of which are developing psychedelic psychotherapy options in Canada. • Advisor to Quantified Citizen • Funders of my research: SSHRCECRSH



OVERVIEW – TODAY 9-9:45 AM • Introduction to the psychedelic renaissance • Current regulatory status • The past 5 years • The next 5 years • Psychedelic History • Indigenous technologies • Mainstream psychiatry • Criminalization • Rensaissance

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OVERVIEW - TODAY 9:45-10:30 AM • Categories and terminology • Classic psychedelics • Psilocybin • LSD

- DMT
- Ayahuasca
- Mescaline
- Peyote







Overview - Today 1:30 – 2:15 PM

- Special topic
 Psychedelics and antisocial behavior
 - Psychedencs and antisocial bena
 Mindfulness-based intervention
- Approaches to psychedelic psychotherapy
 - Psycholytic/ dynamic
 Non-directive/ humanistic
 - Non-directive/ numanistic
 Third wave behaviorist/ mindfulness
 - Ketamine assisted psychotherapy

• Sample protocol

- Preparation
- Psychoeducation, grounding & intention. Creating Optimal Set and Setting
- Role of Ritual & Ceremony
- Integration













































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PSYCHEDELIC HISTORY – INDIGENOUS TECHNOLOGY

• Mazatec people in what is now Mexico have a long tradition of use of psilocybin mushrooms

Great-grandson of María Sabina struggles to rescue her remains



María Sabina died in 1985, at the age of 91 in extreme poverty because she only received things that her patients brought her in exchange for services. He (Bernardino García Martínez)

He (Bernardino Garcia Martinez) asked:

"that the name of my greatgrandmother be given the attention it deserves, a true museum worthy of her; the paving of the road that leads to her house which is now totally abandoned "









• History of LSD

- Ergot Fungus

 Ergotism
 St. Anthony's Fire (Middle Ages)
- Albert Hoffman

 Synthesized lysergic acid compounds
 Tested LSD-25 (1943)
- Studied for Potential Use

 Mental disorders, alcoholism, psychotic behavior, personal insight
- Timothy Leary (1960s) • Turn on, Tune in, Drop out



CATEGORIES AND TERMINOLOGY

• The following is a list of some organisms known to contain hallucinogens

• Plant Psychedelics

- Ayahuasca (contains DMT & harmaline)
- Morning Glory (seeds contain LSA)

• Dissociatives

- ${\scriptstyle \circ}$ Iboga (Tabernanthe iboga) (contains ibogaine)
- Salvia divinorum (contains salvinorin A)
 Datura (contains scopolamine)

• Cacti psychedelics

- Peyote (Lophophora williamsii) (contains mescaline)
 San Pedro (Trichocereus pachanoi) (contains mescaline)
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CATEGORIES AND TERMINOLOGY

• Fungi Psychedelics

- Psilocybe mushrooms (contain psilocybin and psilocin)
- Ergot fungus
- Dissociatives
- Fly Agaric mushroom (Amanita muscaria) (contains muscimol)

• Animals

 Psychoactive psychedelic toads (*Bufo alvarius*) (contain 5-MeO-DMT and bufotenine)

















- Indolamine (serotonin) -like drugs
 - LSD
 - Psilocybin (magic mushrooms)
 - Lysergic acid amide (morning glory seeds)
 - DMT (tree bark in South and Central America...)
 - Bufotenine (plants and venom from backs of toads)
- Catecholamine-like drugs
 - Mescaline is similar to catecholamines dopamine and norepinephrine
 Peyote

Categories and terminology

INDOLAMINE/SEROTONIN PSYCHEDELICS

- o LSD, psilocybin, DMT
- ${\rm \circ}$ Actions on seroton in receptors is unclear – 5HT2a
- Likely a "mixed bag" of serotonin actions.
- ${\color{black}\circ}$ Visual distortions and psychic effects predominate
 - changes in mood
 - thought disruption
 - altered time perception
 - \bullet depersonalization
 - hallucinations
 - suggestibility

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CATEGORIES AND TERMINOLOGY

PSILOCYBIN

- \circ 1/200 as potent as LSD; lasts 6–10 hours
- Well absorbed orally (eaten raw).
- Found in several mushroom species, which differ greatly in the concentration of the active ingredient.
- o Most varieties found in southern U.S., Mexico, Central America.
- Associated with ancient religious practices.
- Hallucinations and sensory distortions resemble LSD.

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CATEGORIES AND TERMINOLOGY

- Effects on the Body
 - LSD: dilation of the pupils
 - Psilocybin & Ayahuasca: nausea
- Neurophysiology
 - Effects on the nervous system are still not clear
 - 5HT receptors
 - Locus coeruleus (LC)
 - Diverse projections
 - Fear, emotion and novelty
 - General suppression and enhanced novelty detection Cortex
 - Default network







· Impairment of problem-solving and cognitive function • Micro dosing

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- *Ololiuqui*: In morning glory seeds contains lysergic acid amide (not LSD).
 - 1/10th as potent as LSD
 - 1/10th as potent as LSD As noted by early Spanish writers: "When the Aztec priests wanted to commune with their gods, and to receive a message from them, they ate this plant to induce delirium, during which time a thousand visions and satanic hallucinations appeared to them." (Lewis, *Medical botany*)



Mescaline

- From Peyote
- Chewed, onset in 30–90 minutes, duration about 10 hours, excreted unchanged
- 5 mg/kg dose causes psychic effects and visual hallucinations; also, anxiety, tremors, sympathomimetic effects, and hyperreflexia.



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MDMA

- Pharmacokinetics
 - Orally
 - Peak level in 2 hrs
 Metabolized to MDA
 Half-life: about 8 hrs
 - 40 hours for full elimination
 - Used socially

 Wakefulness
 - o Endurance
 - Energy
 - Euphoria
 - Sensory perception
 - Extroversion



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MDMA

Neurophysiology

- Increase transmission at synapses that use serotonin, norepinephrine, and dopamine

 Causes the release and blocks reuptake
- Discriminative Stimulus Properties
 - Increased serotonin activity
 - Enhances stimulus properties of LSD
- Hippy flip
- Tolerance
 - Develops rapidly in humans

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- Increase in body temperature, stiffness, loss of appetite, headache, nausea, blurred vision, and insomnia,
 Dehydration?
- Days after • difficulty in concentration, fatigue, and depression







- Veterinary use
- Liquid is colorless and tasteless
- Swallowed or injected
- · Converted to powder, snorted





- Neurophysiology
 Block NMDA receptors for glutamate
 Act as reinforcers
 Endogenous analog unknown
- Behavior and Performance
 - Impairs reaction time and performance on a pursuit rotor task task • Amnesia • NMDA • Thought disorder/ psychosis • Relaxation, warmth, numbness • Euphoric feeling, distortions in body image, floating in space • Mood changes



- Dependence and withdrawal symptoms Physiological and behavioral







Mystical Experience

- Marsh Chapel Experiment / Good Friday Experiment
- "the most powerful cosmic homecoming I have ever experienced" Huston Smith
- In a 25-year follow-up to the experiment in 1986, all of the subjects given psilocybin except for one described their experience as having elements of "a genuine mystical nature and characterized it as one of the high points of their spiritual life
- "[psychedelic] mushroom use may constitute one technology for evoking revelatory experiences that are similar, if not identical, to those that occur through socalled spontaneous alterations of brain chemistry."[William A. Richards

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| Manuscipt Number: Article Type: Keywords: | Comprehensive systematic role understand or destanded as a Manuscript Draft- Manuscript Draft- CRN2-0-21 codds Normanie: Aprensize: Ripclar disorder: Salataron Une: systematic review; meribil head | |
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| | Cella Marcan | Figure 2: Number of publications with search terms ketamine and mental health in PubMed |
| | | per year from 1975 till December 2000. |
| Discussio Substantia robust, ra Evidence generalise effects. A withdrawa | n al evidence from systematic reviews and bid, and transient antidepressant and an of ra anxiety and stress-related indications da anxiety is much less robust but sugge small number of trials also demonstrate la symptoms. Determining optimal dosing | meta-analyses provide support for isuicidal effects of ketamine. such as PTSD, OCD, social and sts similarly positive and short-lived reductions in drug use, craving and and modes of administration, and |











PSYCHEDELIC THERAPY & ANTISOCIAL BEHAVIOR

- Psychedelics and aggression
 - First wave findings
 - Recent developments
- Therapeutic approaches to maximize effectiveness of psychedelic therapy
 - New directions
 - Third wave behavior therapy
 Dialectical Behaviour Therapy (DBT)
 Acceptance and Commitment Therapy (ACT)













| Table 2. Fledictors of supervision faiture. | | | |
|---|----------------|-----------|------------------|
| Predictor | β (SE) | р | OR (95% CI) |
| Any hallucinogen use disorder | -0.49 (0.13) | 0.0002 | 0.60 (0.46-0.79) |
| Age | -0.003 (0.002) | 0.06 | 0.99 (0.99-1.00) |
| Caucasian/white race | -0.24 (0.03) | <0.000001 | 0.78 (0.73-0.84) |
| Employment status | | | |
| Unemployed (reference group) | - | - | - |
| Retired/disabled | -0.22 (0.08) | 0.01 | 0.80 (0.67-0.95) |
| Employed | -0.37 (0.04) | <0.000001 | 0.68 (0.63-0.74) |
| Marital status | | | |
| Never married (reference group) | - | - | - |
| Divorced/separated/widowed | 0.06 (0.04) | 0.11 | 1.06 (0.98-1.16) |
| Married | -0.13 (0.04) | 0.008 | 0.87 (0.79-0.96) |



































DIALECTICAL BEHAVIOR THERAPY

 \boldsymbol{A} blend of three theoretical positions

- Behaviorism principles of behavior change
 Acceptance Zen & Western contemplative practice
- Balanced within the dialectical framework
- Core Components
 - Mindfulness
 - Distress Tolerance
 - Emotion Regulation
 - Interpersonal Effectiveness





DIALECTICAL BEHAVIOR THERAPY

- Stage 1: Attaining Basic Capacities
- Life-Threatening Behaviors
- Therapy-Interfering Behaviors
- Quality-of-Life–Interfering Behaviors
- Stage 2: Posttraumatic Stress Reduction
- Stage 3: Resolving Problems in Living and Increasing Respect for Self
- Stage 4: Attaining the Capacity for Freedom and Sustained Contentment



ACCEPTANCE & COMMITMENT THERAPY (ACT)

Cognitive defusion: Learning methods to reduce the tendency to reify thoughts, images, emotions, and memories.

Acceptance: Allowing unwanted private experiences (thoughts, feelings and urges) to come and go without struggling with them.

Contact with the present moment: Awareness of the here and now, experienced with openness, interest, and receptiveness. (e.g., mindfulness)

The observing self: Accessing a transcendent sense of self, a continuity of consciousness which is unchanging.

Committed action: Setting goals according to values and carrying them out responsibly, in the service of a meaningful life.





















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- What is microdosing?
 - Successive self-administration
 - Within a limited time window
 - Doses that do not impair normal functioning and are predominantly sub-sensorium
- What is being microdosed?
- Predominantly psilocybin and LSD, but others have been noted in observational research
- How much?
 - Typical: 5 20 µg of LSD /0.1 to 0.3g of dried psilocybin
 Several times a week with microdose days
 - alternating with non-microdose days.

(Cameron et al., 2020); Hutten et al., 2019a; Hutten et al., 2019b; Lea et al., 2020a; Lea et al., 2020b; Polito & Stevenson, 2019; Rosenbaum et al., 2020; Kuypers et al., 201

INDIGENOUS TECHNOLOGY

"They consider the mushrooms as doctoring the human body and heart and as such, they rely on its presence even in very small doses to have a direct effect on the well-being of the individual.

Since the Mazatec are skilled in entering and navigating high doses experiences, they are able to tap into the vibration of these previous moments to connect with the healing power of the micro dosing they frequently ingest. "

(Françoise Bourzat, personal communication, 2021)

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STACKING

• Growing interest has focused on combining microdoses of primarily psilocybin-containing mushrooms with other substances such as:

- Cacao
- Chocolate
- Lions Mane mushrooms (Hericium erinaceus)
- Niacin
- Syrian rue (*Peganum harmala*)



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CHARACTERIZING MICRODOSERS

- Substantial increase in the practice of microdosing over the past decade.
 - Microdosers have been identified as generally demographically similar to non-microdosers
 > male
 - o < education</p>
 - \circ > past-year substance use < problematic substance use
- Prominent motivations for microdosing include:
 Reduce anxiety and depression and to improve cognitive
 - performance

(Anderson et al., 2019; Cameron et al., 2020; Hutten et al., 201 Lea et al., 2020a; Lyke & Kuti, 2019; Rosenbaum et al., 202













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 Analysis revealed no significant differences between placebo, half-half or microdose group on any measure at 5 or 9 week follow up.

| Joseph M. Rootman* ¹ , Pamela | a Kryskow ² , Kalin Har | vey ³ , Paul Stamets ⁴ , <u>Eesmya</u> | Santos- |
|--|--|--|-------------|
| Brault ³ , Kim P.C. Kuype | ers ⁵ , Vince Polito ⁶ , Fra | ncoise Bourzat ⁷ & Zach Wal | sh1 |
| | I SD (n = 447) | Poiloaubin $(n = 2.496)$ | |
| Dose | 1.515 (11 = 4447) | 1 shocybin (n = 5466) | |
| High** | 7.6% (34) | 12.5% (435) | |
| Medium** | 40.1% (179) | 71.6% (2497) | |
| Low** | 52.2% (233) | 15.9% (352) | |
| Frequency | | | |
| 5 or more times per week** | 6.5% (29) | 23.0% (800) | |
| 1-4 times per week** | 83.9% (375) | 72.4% (2520) | |
| Combination/stacking* | 26.0% (115) | 54.7% (1890) | |
| Motivation | | | |
| Enhance mindfulness | 84.1% (376) | 82.8% (2888) | |
| Improve mood | 76.3% (341) | 76.1% (2652) | |
| Enhance creativity | 76.1% (340) | 74.0% (2580) | |
| Enhance learning | 57.7% (258) | 58.5% (2038) | |
| Decrease anxiety** | 46.1% (206) | 58.9% (2052) | |
| Improve health habits | 44.7% (200) | 45.6% (1589) | |
| Decrease procrastination | 46.3% (207) | 44.4% (1549) | |
| Increase sociability | 46.1% (206) | 43.1% (1503) | |
| Improve sleen** | 21.5% (96) | 28.8% (1003) | · · · · · · |

| Psychedelic Microdosing: Pra Joseph M. Rootman ^{*1} , Pamela Brault ³ , Kim P.C. Kuyper | etitioner Characteristic Kryskow ² , Kalin Harve s ⁵ , Vince Polito ⁶ , Franc | s, Motivations and Mental Healt y ³ , Paul Stamets ⁴ , Eesmyal Sant oise Bourzat ⁷ & Zach Walsh ¹ | th tos- |
|---|--|---|---------------------|
| | No concerns (n = 2665) | Mental health concerns (n = 1261) | Total (n = 4050) |
| Enhance mindfulness | 82.0% (2184) | 84.9% (1070) | 82.9% (3356) |
| Improve mood** | 70.6% (1882) | 87.3% (1104) | 76.1% (3083) |
| Enhance creativity | 75.3% (2006) | 72.2% (911) | 74.1% (3000) |
| Enhance learning** | 60.0% (1599) | 54.6% (688) | 58.1% (2353) |
| Decrease anxiety** | 47.0% (1252) | 78.0% (984) | 57.4% (2325) |
| Improve health habits** | 41.9% (1116) | 53.0% (668) | 45.6% (1846) |
| Decrease procrastination** | 40.4% (1077) | 53.1% (669) | 44.6% (1807) |
| Increase sociability** | 39.9% (1063) | 51.3% (647) | 43.6% (1767) |
| Improve sleep** | 25.4% (678) | 33.1% (418) | 28.2% (1141) |
| Decrease substance use** | 18.3% (489) | 41.5% (523) | 25.8% (1046) |

HARMS & RISKS

- Harmful Effects
 - Acute psychotic reaction or "freak out"
 - Flashbacks & trailing phenomena ?
- No recorded death from overdose
- Bad Trips?
 - Difficult In & Through
 - Re-traumatization?
- Importance of Set & Setting

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o Withdrawal

- Hangover effects
- Harmful Effects of Ecstasy
 - Depletion in serotonin (reversible?)
 - Sleep disorders, depression, persistent anxiety, impulsiveness, hostility, and selective impairment of memory and attention

 Most effects dissipate after about 6 months once drug is stopped
 - stopped
 Heat regulation: increase in body temperature may lead to heatstroke, muscle tissue damage, kidney failure, seizures
 - heatstroke, muscle tissue damage, kidney failure, seizures o Electrolyte imbalances
 - Quality control
 - o Impure

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TEN GUIDING PRINCIPLES

- o1. Education grounded in evidence-based
- information rather than fear
- o2. Open dialogue that is non-judgmental and use
- interactive approaches
- $^{\circ}3$. Meaningful inclusion
- •4. Delivery by a trained facilitator or peer
- ${\circ}5.$ Starting earlier with age-appropriate content

INCLUDE HARM REDUCTION

- Harm reduction strategies also address the needs of young people who may already be using
- Most effective with older youth (senior high school and above)
- Teaching harm reduction strategies doesn't encourage youth to use, and is an effective approach in a range of ${\rm contexts}^2$

PK, Manhart LE, Lafferty WE. Abstinence-Only and C

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2 Kohlei

ETHICAL CONSIDERATIONS mai of Psychodelic Studies 4(1), pp. 69–71 (2020) DOI: 10.1556/2054.2019.030 First published online December 5, 2019 Considerations for psychedelic therapists when working with Native American people and communities BELINDA ERIACHO Kaalogii, LLC, Tempe, AZ, USA Trust and respect are the keys to building a strong rapport. It is important to understand throughout our history with non-native people that our relationships were typically fraught with deceit and mistrust. As a result, our natural tendency and response to someone offering to help us is skepticism. Therapist and practitioners will need to exercise patience and over time for the relationship will fjourish.

- tiourish. Native American individuals are private by nature and do not typically disclose their personal lives. Growing up in a small community on the reservation where everyone knows each other and should not be taken too lightly. There is often reluctance for a native individual living in a small community to share their personal lives openly, especially with a stranger. There may be fear from the native client's perspective that others in the community will know their business. Therefore, it is important that precutionary messures are taken to ensure each individual's privacy outside of the clinical and thera-peutic settings is maintained.
- peutic settings is maintained. Therapeutic models that allow for Native American traditional practitioners to be a part of treatment plan processes have proven to be beneficial (e.g., Pouchy, 2012). In addition, allowing native clients to use health practices (such as sweat lodge or talking circles) can improve the treatment outcomes.
- The concepts of mental illness and associated disorders have a different causation and remedies in Native American cultures, and this understanding should be included in the treatment plan as much as possible (Juran, Duran, Heart, & Horse-Davis, 1998).
- printality is not separated from our physical. memoianal, and mental bodies. Hence, the treatment plan should be culturally specific(Bassett, 2012). Educating ourselves about the Native American culture(s) for which we will be providing care is fundamental to establishing rapport with clients and cos, and languages (Bureau of Indian Affairs, 2019).

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MAPS MDMA-Assisted Psychotherapy Code of Ethics

SHANNON CLARE CARLIN, M. SARAH SCHELD, M.A.

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SN DOMINIC A. SISTI, PH.D. M.D. KYLEA TAYLOR, M.S., LM MT VERENA WIELOCH, LPC LPC and the generous contribuof many others

Safety

- We ensure that a person is an eligible candidate for treatment before enrolling them, both medically and psychologically. An eligible candidate has the resources necessary to engage in treatment, ideally including supportive people in their life and a stable and safe living environment.
- We conduct thorough and comprehensive preliminary screening and preparation.
- Prior to initiating treatment, we provide participants with clear information about our availability, backup support, and emergency contacts.
- We take measures to prevent physical and psychological harm. We ask participants not to leave during medicine sessions. We inform participants that we will take precautions to ensure their safety, such as preventing falls or injuries.

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Diversity

- We respect the value of diversity, as it is expressed in the various identities and experiences of our participants
- Special Considerations for Non-Ordinary States of Consciousness Participants in non-ordinary states of consciousness may be especially open to suggestion, manipulation, and exploitation; therefore, we acknowledge the need for increased attention to safety and issues of consent.
- We examine our own actions and do not engage in coercive behavior.
- We examine our own actions and do not engage in coercive behavior. In working with non-ordinary states that can evoke unconscious material for both the participant and therapy provider, we acknowledge the potential for stronger, more subtle, and more complicated transference and countertransference, and, with that in mind, we practice self-awareness and self-examination, and seek supervision as needed. We respect the spiritual autonomy of our participants. We practice vigilance in not letting our own attitudes or beliefs discount or pathologize our participants' unique experiences. We hold and cultivate an expanded paradigm, which includes the experiences people have in extraordinary states.
- states.
- We protect our participants' health and safety through careful preparation and orientation to the therapy, as well as thorough integration. We support participants who may experience crisis or spiritual emergency
- related to psychedelic experiences with appropriate medical and psychological care, engaging the support of outside resources as needed.

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