6-21-2022

The Politics of the Self: Psychedelic Assemblages, Psilocybin, and Subjectivity in the Anthropocene

Joshua Falcon
jfalc020@fiu.edu

FLORIDA INTERNATIONAL UNIVERSITY

Miami, Florida

THE POLITICS OF THE SELF: PSYCHEDELIC ASSEMBLAGES, PSILOCYBIN, AND SUBJECTIVITY IN THE ANTHROPOCENE

A dissertation submitted in partial fulfillment of

the requirements for the degree of

DOCTOR OF PHILOSOPHY

in

GLOBAL AND SOCIOCULTURAL STUDIES

by

Joshua Falcon

2022

To: Dean John F. Stack
Steven J. Green School of International and Public Affairs

This dissertation, written by Joshua Falcon, and entitled The Politics of the Self: Psychedelic Assemblages, Psilocybin, and Subjectivity in the Anthropocene, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this dissertation and recommend that it be approved.

_____
Whitney Bauman

_____
Juliet S. Erazo

_____
Gail Hollander

_____
Roderick P. Neumann

_____
Kevin J. Grove, Major Professor

Date of Defense: June 21, 2022

The dissertation of Joshua Falcon is approved.

_____
Dean John F. Stack
Steven J. Green School of International and Public Affairs

_____
Andrés G. Gil
Vice President for Research and Economic Development
and Dean of the University Graduate School

Florida International University, 2022

DEDICATION

I dedicate this dissertation to my family and wife that are my core.

ACKNOWLEDGMENTS

First, I would like to acknowledge The Source Research Foundation (SRF) for funding my dissertation research and providing me with professional development and networking opportunities. Since research on psychedelic substances continues to be stigmatized, as I have experienced firsthand throughout my graduate studies, SRF is playing a revolutionary role in higher education. I would also like to thank the Extreme Events Institute (EEI) and their collaboration with The Mellon Foundation who funded my final year by providing me with the opportunity to be a predoctoral research assistant for FIU's Race, Risk and Resilience: Building a Local-to-Global "Commons for Justice" Project (2021-2024). I would especially like to recognize Guillermo Grenier, Richard Tardanico, Richard S. Olsen, and Kevin Grove for bringing me onboard the Mellon Project, thereby broadening my research expertise into new domains.

I would also like to sincerely thank my committee members, beginning with Kevin Grove, who has resolutely supported my research from the outset. Beyond providing consistent academic support throughout my graduate career, Kevin has also served as an invaluable mentor, helping me navigate unfamiliar terrains in both my professional and personal life. I would also like to thank my other committee members, Juliet Erazo, Roderick Neumann, Gail Hollander, and Whitney Bauman, who have allowed me the intellectual freedom and creative space required to undertake such a project.

I would like to recognize my research participants for taking the time to be part of my study, and thereby contribute to advancing social scientific research on psychedelics as well. I would also like to thank the administrators and community from the website

Shroomery.org for openly sharing important information about drugs, and for also maintaining a creative commons licensing that allows researchers to utilize their content for educational purposes. Finally, I would like to thank Andrea, Maria, Ricardo, Ricky, Bianca, Sergio, Carmen, Remy, Ollie, and Duke for inspiring and believing in me and my work even in moments of doubt. I am forever grateful.

ABSTRACT OF THE DISSERTATION

THE POLITICS OF THE SELF: PSYCHEDELIC ASSEMBLAGES, PSILOCYBIN, AND SUBJECTIVITY IN THE ANTHROPOCENE

by

Joshua Falcon

Florida International University, 2022

Miami, Florida

Professor Kevin J. Grove, Major Professor

This dissertation examines how psychedelic substances become drawn into particular sociohistorical and political arrangements, and how psychedelic experiences with psilocybin 'magic mushrooms' are used as tools of subjectivation. Guided by literatures in philosophy, critical theory, and the social sciences that focus on subjectivity, assemblage theory, and critical posthumanism, I argue that psychedelics are drawn into variegated assemblages, each of which conceptualizes the nature of psychedelics in highly specific ways that reflect implicit conceptions of the world and the self. In developing the concept of psychedelic assemblages, this research provides a window onto the politics of the self in the Anthropocene. Drawing on mixed and netnographic methods, I conducted 30 semi-structured interviews and acquired 100 experience reports from online forums, using this data to demonstrate how psychedelic mushroom experiences are used as technologies of the self, or practices that individuals engage as a means of changing their subjectivity. Among the changes in subjectivity provoked by psychedelic mushroom experiences, there are sometimes reports of changes in human-environment relations based on an enhanced connection or relationship with nature.

TABLE OF CONTENTS

CHAPTER PAGE

LIST OF ABBREVIATIONS AND ACRONYMS

CSA	Controlled Substances Act
DEA	Drug Enforcement Administration
DMT	Dimethyltryptamine
LSD	Lysergic Acid Diethylamide
MDMA	Methylinedioxymethamphetamine

CHAPTER 1. AN ANTHROPOLOGICAL STUDY ON PSILOCYBIN EXPERIENCES AND CHANGES IN SUBJECTIVITY AND HUMAN-ENVIRONMENT RELATIONS

Introduction

Nearly half a century after being outlawed and stigmatized in the United States as having no medicinal application and a high potential for abuse, the psychoactive plants, fungi, and substances known as the 'classic psychedelics' are currently being reevaluated for their therapeutic value and potential medicalization (Noorani 2020). The paradoxical meanings that are now evoked by the classic psychedelics – which include, lysergic acid diethylamide (LSD), psilocybin, mescaline, and dimethyltryptamine (DMT) – have come in part due to revolutionary clinical studies that have recently attested to their efficacy in treating mental illnesses such as depression, anxiety, and addiction (Johnson, Garcia-Romeu and Griffiths 2017; Noorani et al. 2018; McCorvy, Olsen & Roth 2016; Carhart-Harris et al. 2017; Garcia-Romeu et al. 2019). Along with the resurgence of scientific interest in the medical import of classic psychedelics, there is now evidence that supports decades-old associations made between psychedelic experiences and changes in subjectivity insofar as clinical studies have reported increases in altruism, empathy, openness, morality, and pro-environmental behaviors associated with the use of classic psychedelics (Griffiths et al. 2011; MacLean, Johnson and Griffiths. 2011; Forstmann & Sagioglou 2017; Pokorny et al. 2017; Lyons & Carhart-Harris 2018). These reports tend to coincide with longstanding research on psychedelics, including experience reports written by psychedelic users, both of which have claimed that psychedelic experiences can impart knowledge and promote ecological sensitivity (Schroll & Rothenberg 2009; Krippner &

Luke 2009; Roberts 2013; Falcon 2017). As clinical-based research on the relationship between psychedelic experiences and changes in perception and behavior are projected to be on the rise, the medical treatment of psychedelics tends to constrain the phenomenology of these experiences by delimiting them strictly in terms of health outcomes while marginalizing other aspects of the experiences. As such, there is a need for further social scientific research to be conducted on how cultural contexts influence the effects of psychedelic experiences and the changes in subjectivity they can provoke (Lifshitz, Sheiner, and Kirmayer 2018; Lifshitz et al. 2021).

At the same time, scholars in geography, anthropology and related fields have begun focusing attention on subjectivity and its relation to human-environment relations in the so-called Anthropocene. The devastating effects of climate change, ecological crises, and mass species extinction driven by anthropogenic forces have increasingly impelled scientific disciplines to critically reassess how humans relate to the nonhuman world (Descola 2013, 81). While social theorists have taken an array of stances on the subject of human-nonhuman relations in the Anthropocene, including Marxist (Malm 2018), phenomenological (Van Dooren 2014), and feminist approaches (Head 2016), critical posthuman theory emphasizes the need to change human subjectivity as a means of resolving contemporary issues of social and environmental justice (Braidotti 2016; 2019a; 2019b). Although critical posthuman theory, like related strands of thought such as Actor-Network-Theory (ANT) and new materialism (Latour 1996; 1999; 2005; Bennett 2010; Muniesa 2015), re-envisions human identity and subjectivity as inherently interconnected with nonhuman others based on a materialist, relational ontology, it nevertheless views subjectivity as a politically contested domain necessary for transformative change.

At first glance, these two developments appear to have little in common: the resurgence of scientific research on psychedelics seems far removed from the subject of human-environment relations in the Anthropocene. However, I argue in this dissertation that these topics converge in terms of their connections to the politics of subjectivity in the Anthropocene. Here, I define subjectivity as one's sense of self or experience of oneself, where 'the self' ontologically refers to an embodied and embedded entity that experiences itself within a shared lifeworld constituted by human and nonhuman others. In human social affairs, I maintain that subjectivity is further influenced by cultural discourses and practices that establish certain regimes of truth with regards to what a subject is (Foucault 2007; 2008). Since subjectivity thereby signals one's experience of oneself, including one's social identity in human affairs, I argue that the discourses surrounding psychedelic drugs in contemporary times signal a politics of the self in the Anthropocene. As the nature of psychedelic drugs and the way they are used changes according to different sociocultural contexts, I argue using historical and contemporary scientific literature that different psychedelic assemblages can be seen in the present, each of which posits a particular conception of the self and a certain type of world that this self fits into.

As a way of making sense of the contemporary psychedelic landscape, I draw on assemblage theory to argue that 'psychedelic assemblages' signal particular arrangements of desire (Buchanan 2021, 71), where desire is understood as a creative force. Psychedelic assemblages draw together actors, technologies, discourses, and materials which coalesce on a certain set of relations and associations made about what psychedelics are, how they are to be used, and how they fit into a particular philosophy of life. In this dissertation, I argue that when viewing the contemporary psychedelic landscape, particular assemblages

can be seen such as *entheogenic assemblages*, *psychedelic-medicalization assemblages*, and *psychedelic-capitalist* assemblages. Each of these assemblages embraces a particular understanding of what psychedelics are, which implicitly reflects philosophical assumptions of what the world and self essentially are as well. Since there is now a spectrum of different actors that are using psychedelics towards drastically different ends, the concept of psychedelic assemblages helps to make sense of how particular discourses, materials, and actors are drawn together based around a shared sense of what psychedelics are. Perhaps more importantly, psychedelic assemblages helps to unearth competing understandings of the self at work in the Anthropocene, including reductionistic, spiritual, and economic understandings of the subject. Psychedelic assemblages therefore help to bring this politics of the self in the Anthropocene to the fore through looking at psychedelics from a sociohistorical perspective.

The second contribution this dissertation makes can be found in my phenomenological approach to psychedelic experiences with psilocybin mushrooms. Although new scientific research has begun to shed light on the effects of psychedelic drugs on cognition and behavior, contemporary clinical trials tend to incorporate methods that constrain the phenomenology of psychedelic experiences in terms of therapeutic outcomes, as opposed to focusing directly on how psychedelic experiences affect a person's subjectivity in ways that go beyond their therapeutic effects. While the healing or therapeutic effects of psychedelics certainly signal changes in a person's subjectivity, there are also many other ways that a person's sense and experience of oneself is altered as a result of psychedelic mushroom experiences. As such, I focus my research on the different ways that individuals describe a change in their sense of self, or subjectivity, which may

or may not include changes in health or wellbeing. In addition to capturing the changes in subjectivity that people report occur during or as a result of their experience with psilocybin, my study is guided by literature from philosophy and the environmental humanities which focus on the topics of subjectivity and human-nonhuman relations in the Anthropocene. Using reports drawn from interviews and online experience reports, I illustrate how psychedelic experiences with magic mushrooms are not only used as technologies of the self – a concept developed by Michel Foucault (1988; 2003; 2007; 2008) to signal practices that individuals engage in as a means of influencing a change in their subjectivity – but I also show how among the changes in subjectivity that these experiences provoke, newfound apprehensions of the environment and nonhuman others sometimes occur. In order to demonstrate how psychedelic experiences are used as technologies of the self, and also show how psychedelics are drawn into different assemblages, my dissertation is guided by the following research questions:

1. How does the nature psychedelics change in different sociocultural contexts?
2. How do psychedelic mushroom experiences impact a person's subjectivity?
3. In what ways do psychedelic experiences with psilocybin influence changes in a person's human-environment relations?

I. Research Design and Methods

In this dissertation, I first demonstrate how the nature of psychedelic plants, fungi, and substances changes as they become drawn into unique sociocultural contexts through analyzing historical and contemporary academic literature on the classic psychedelics.

Next, I investigate how psychedelic experiences with psilocybin 'magic mushrooms' which take place outside of clinical settings provoke changes in subjectivity and human-environment relations. I utilized both semi-structured interviews and netnographic methods to collect and analyze experience reports from people in Miami, Florida and from online forum posts. The rationale for choosing to focus on the cultural use of psilocybin stems in part from it being the leading psychedelic substance used in clinical studies, making it the most studied classic psychedelic substance in disciplines such as neuroscience, psychopharmacology, psychology, and psychiatry. Another reason for choosing to focus on psilocybin is because it is arguably the most used psychedelic substance in the wider culture of the United States, given not only how easy it is for a person to learn how to cultivate their own mushrooms, but also because the materials needed to grow them are both inexpensive and easily accessible.

Scientists have also suggested that there is a need for more social scientific research to be conducted on psychedelic experiences that occur outside of clinical settings, providing further rationale to study the use of psilocybin in everyday American cultural contexts. From a social scientific standpoint, there is also a lack of research on the use of psilocybin in the United States given that researchers in anthropology and geography have predominately studied the use of other classic psychedelics such as ayahuasca and peyote, while focusing on their use in either indigenous or touristic settings (See Chapter Three). The final reason I chose to focus on psilocybin mushroom experiences is because each of the classic psychedelics has a unique history as well as a range of effects on a person's biology and psychology, making it difficult to compare experiences with different classic psychedelic substances. In the following sections, I outline the research design and

methods used in this study to answer each of my research questions. I then present the limitations confronted during my research, followed by a chapter outline of the dissertation.

A. The Shifting Nature of Psychedelics

The first aspect of my dissertation involves demonstrating how the nature of psychedelics changes according to different sociohistorical contexts. To answer this research question, I first conducted a review and critical analysis of scholarly literature on each of the classic psychedelic substances. My review highlights a number of the known uses of psychedelics across different societies, in addition to showing how each of the classic psychedelics became introduced into Euro-American cultures. By reviewing historical, social scientific, and contemporary research on the classic psychedelics, I illustrated that as psychedelic substances transitioned into the modern cultures of the Global North, they underwent several transformations as different groups perceived the nature of psychedelics in unique ways. I show how as the nature of psychedelics shifted in different contexts, psychedelics became used towards different ends, such as traditional, scientific, and militaristic settings for instance.

After conducting my analysis of the interdisciplinary literature on the classic psychedelics, I then drew on assemblage theory to introduce the concept of *psychedelic assemblages*; a concept which signals how the nature of psychedelics changes as they become drawn in different sociocultural and political contexts. By using the concept of 'assemblage' developed by philosophers Deleuze and Guattari (1987), I argued that different psychedelic assemblages have formed over time, and that in the contemporary context of the Anthropocene, certain assemblages have emerged such as *entheogenic*,

psychedelic-medicalization, and *psychedelic-capitalist* assemblages. I use assemblage not only to show that the nature of psychedelics shifts in highly specific ways as they become used towards different ends in distinct assemblages, but also to argue that each psychedelic assemblage also implicitly embraces a unique conception of the self. I therefore maintain that since each psychedelic assemblage contains a unique conception of the self, in addition to ontological assumptions regarding the type of world this particular self fits into, that there is a politics of the self that can be found in the Anthropocene which emerges through the analysis of psychedelic assemblages.

B. Semi-structured Interviews in Miami

The second and third components of my dissertation examine how psilocybin mushroom experiences provoke changes in subjectivity and human-environment relations. To investigate these phenomena, I used two sources of data that were acquired through digital means. The first of these data sets includes thirty semi-structured interviews (n = 30) conducted on Zoom with individuals from Miami, Florida, focusing on how their experiences with psilocybin impacted their lives. As my dissertation research took place at the height of the COVID-19 pandemic, the Institutional Review Board (IRB) deemed that my interviews be conducted over Zoom for safety purposes. I chose Miami as a research site because Miami is a place of rich ethnic diversity – something that has heretofore been lacking in psychedelic research (Osto 2016: 5; Michaels et al. 2018). I also decided to conduct my research in Miami due to both study feasibility in terms of recruitment, as well as reduced research costs given that I am based in Miami, Florida. Although this study does not analyze how gender or ethnicity are related to psychedelic use, and therefore does not

intend to produce any findings in relation to gender or ethnicity markers, I nevertheless include age, gender, and ethnicity when available to show the diversity of my research participants, many of which have yet to be fully represented in psychedelic research. Finally, in choosing Miami as a research site, I do not attempt to represent any particular psychedelic community from Miami, nor do I assume that the findings presented here are representative of Miami's diverse psychedelic culture.

To recruit study participants, I shared a study advertisement on Instagram and Facebook pages that are dedicated to psychedelic research and education (see Appendix 1). An email address was provided in the recruitment advertisement, and participants scheduled one-hour interviews with me based on their availability. These methods were used to locate self-identified psychedelic user interviewees without compromising their confidentiality. Following Luborsky & Rubinstein (1995), I followed a form of convenience sampling which purposefully targets a population while remaining flexible to changes in participant availability, access, and willingness to partake in the study. In addition, I also utilized snowball sampling which involved having interviewees recommend additional interviewees who then contacted me to participate in the study. As psychedelic drugs are illegal across virtually the entire United States, I developed my interview questions based on Becker's (1953) social deviance model used to analyze practices that violate sanctioned social norms (Macionis 2010), but which nevertheless may result in "positive derivations" (Heckert 2002). I further draw on an updated version of the social deviance model which has been applied to study medical marijuana users (Athey, Boyd, and Cohen 2017, 216). In doing so, I structured my interview questions around the following topics: 1) previous experience with psychedelics; 2) motivations for using

psychedelics; 3) patterns of use, methods of consumption, frequency of use, quantity used, preferred substances 4) learning processes and informational sources; 5) the process, including issues and challenges, of integrating the psychedelic experience afterward. The interview questions therefore focused primarily on the person's life background and interests, their relationship to psychedelic drugs, how their experience with psychedelics impacted them, and the ways in which psychedelics affected their relationship with the environment or nature at large (See Appendix 2).

The audio from each of my interviews recorded using a laptop and later transcribed by me. The transcriptions were then coded using both open and focused coding methods to the point of data saturation (Strauss and Corbin 1998, 136), which helped me to identity recurring phenomena which were then lumped into categories, or themes, such as entity encounters, bodily sensations, and references to self (Strauss and Corbin 1998, 110). Once recurring themes were established, I then followed Opler (1945) and Ryan and Bernard's (2003) theme theory to suggest that the themes identified serve as "dynamic affirmations" that conceptually link recurring expressions found in the data. By utilizing theme theory, I was able to depict the words used by participants themselves of their own volition (Saldaña 2016). In doing so, I allowed participants to speak from their own positionality as a way of minimizing the tendency to superimpose theoretical concepts over primary source material. Using a grounded theory approach which allowed the data to speak for itself (Strauss and Corbin 1993), I arrived at six recurring themes found in the analysis of both my semi-structured interviews and the one hundred online experience reports I detail in the following section. These themes were ways in which individuals described changes in self or subjectivity as a result of their psychedelic experience with psilocybin mushrooms: 1)

intention; 2) insights or lessons; 3) self-exploration or changes in self; 4) healing or self-care; 5) effects of experience; 6) psychedelics as tools.

C. Netnographic Research and Online Communities

In addition to this project's interview component, this study also includes a netnographic examination of psychedelic user experience reports drawn from the online forum Shroomery.org. Since people who use psychedelics in the United States are at risk of persecution for their use of illegal substances, thousands of individuals have chosen to communicate on online forums to disseminate information about psychedelics. These online forums are used by psychedelic users to share cultivation techniques, consumption methods, and self-generated experience reports, among many other topics. In most instances, the experience reports provided on these sites includes rich detailed information about both the phenomenology of psilocybin experiences and how these experiences impact people's lives. My netnographic data set is meant to complement my semi-structured interviews given that they allow me to analyze the phenomenology of more experience reports in total. Although the netnographic and ethnographic interview data sets are not interchangeable, I nevertheless draw from both data sets in Chapters Six and Seven to provide evidence on reported changes in subjectivity and human-environment relations.

As this dissertation research involves working with members of a community that is at risk of both persecution and negative public reaction given the illegal nature of psychedelics and associations made to drug use, these circumstances have pushed people that use psychedelics onto the internet as a means of seeking out and interacting with like-minded individuals. Beginning approximately around the 1990's until today, online space

has served as a safe haven for psychedelic users who have developed their own forms of community and sources of knowledge on psychedelic-related subjects. These topics may include religious or mystical associations made with psychedelic experiences, links or documents of scholarship written on psychedelics, drug safety and usage guidelines, educational information, cultivation techniques, experience reports, and a number of other topics that are related to psychedelic drugs. The working assumption is that despite some of the issues that arise in conducting netnographic research which I will detail later in this chapter, the reports provided on online forums are extremely valuable insofar as marginalized individuals utilize online spaces as ways to find and communicate with other likeminded people (Gajjala 2004). As such, their experience reports are likely to be veridical since psychedelic users who post their experiences online are volitionally seeking a space in which to write out their own representations of their experiences (Saldaña 2016). In this sense, psychedelic users are engaging in a process of meaning-making that can be captured through online ethnographic methods such as netnography (Wang 2018; Kaya, Argan, and Yetim 2017; Van Hout and Hearne 2016; Pink et al. 2016). Self-written experience reports also provide individuals with the ability to represent themselves in their own words and contexts, and therefore allows them to represent themselves while speaking from their own loci of enunciation (Tlostanova and Mignolo 2012, 43).

Given the illicit nature of psychedelics and how psychedelic communities have formed online, this study also adopts the understanding that traditional ethnographic concepts such as culture and community have become destabilized over time and cannot accurately capture psychedelic user networks of affiliation. Both psychedelic users and online networks should therefore be understood as fluid communities wherein consocial

forms of interaction take place (Kozinets 2015, 11). As online technologies also tend to transform traditional ethnographic practices (Pink et al. 2016, 3), it has been argued that in conducting online ethnography, or an "anthropology of the contemporary" (Markham 2016, 5), researchers must adapt their methodologies to "informational ecosystems" in addition to physical ones. This practice involves directing attention toward flows, processes, and movements and "away from thinking about the field as an object, place, or whole" (Markham 2013, 438).

To investigate the phenomenology and effects of psychedelic experiences on subjectivity and human-environment relations, this component of my dissertation includes a 12-month netnographic study of one hundred self-written psychedelic experience reports drawn from online forums (n = 100). Following Zhang and Hitchcock's (2017) online sampling design used to study blog posts, I drew experience reports from the open-source online forum Shroomery.org. My reason for choosing Shroomery.org is multivalent, beginning with the fact that the site has an open creative commons licensing which allows for its content to be used for educational purposes. The site Shroomery.org was also selected as a fruitful place to conduct research based on the quality assessment of data outlined by Kozinets' (2015) netnographic methods. These methods for ensuring that a site is a productive place to conduct online ethnographic research include: 1) asking if the content is *relevant* to the study aims and research questions; 2) monitoring the level of *activity* and interactions which take place on these forums; 3) investigating if these forums have high levels of *interaction* among those who post; 4) ensuring that there is a *substantial* amount of evidence based on the amount of communication that takes place on the forum; 5) ensuring that the posts on the forums are heterogeneous in character; 6) assessing how

rich the data is in terms of how well-detailed or crafted the posts are; and finally, 7) ensuring that the forum provided me with the ability to attain an *experiential* feel toward the communications taking place online (Kozinets 2015, 168). The site Shroomery.org meets all of these criteria, and as such, served as an excellent website to conduct netnographic research on psychedelic experiences.

Shroomery.org contains hundreds of links dedicated to everything related to magic mushrooms, and sometimes, even to other psychedelics. The site also contains general forum posts which demonstrate a thriving community that engages in discussion on topics unrelated to psychedelics as well. Within the 'Experience Reports' section of Shroomery, there are several forum threads that individuals use to post their experience reports with magic mushrooms and where others can comment on these self-written reports. The threads are separated by 'levels' which are intended to signify the intensity of the trip or experience with magic mushrooms. These levels include:

> "Level 1: This level produces a mild "stoning" effect, with some visual enhancement (i.e. brighter colours, etcetera). Some short term memory anomalies. Left/right brain communication changes causing music to sound "wider".
>
> Level 2: Bright colors, and visuals (i.e. things start to move and breathe), some 2 dimensional patterns become apparent upon shutting eyes. Confused or reminiscent thoughts. Change of short term memory leads to continual distractive thought patterns. Vast increase in creativity becomes apparent as the natural brain filter is bypassed.
>
> Level 3: Very obvious visuals, everything looking curved and/or warped patterns and kaleidoscopes seen on walls, faces etc. Some mild hallucinations such as rivers flowing in wood grained or "mother of pearl" surfaces. Closed eye hallucinations become 3 dimensional. There is some confusion of the senses (i.e. seeing sounds as colors, etcetera). Time distortions and "moments of eternity".

> Level 4: Strong hallucinations, i.e. objects morphing into other objects. Destruction or multiple splitting of the ego. (Things start talking to you, or you find that you are feeling contradictory things simultaneously). Some loss of reality. Time becomes meaningless. Out of body experiences and e.s.p. type phenomena. Blending of the senses.
>
> Level 5: Total loss of visual connection with reality. The senses cease to function in the normal way. Total loss of ego. Merging with space, other objects, or the universe. The loss of reality becomes so severe that it defies explanation. The earlier levels are relatively easy to explain in terms of measureable changes in perception and thought patterns. This level is different in that the actual universe within which things are normally perceived, ceases to exist! Satori enlightenment (and other such labels)" (Shoomery.org 2022).

I selected the twenty most recent posts for each experience level (1-5), totaling one hundred experience reports in total. If there was a post within the twenty most recent that was not about psilocybin mushrooms, or which contained less than a paragraph of information, these posts were automatically excluded from the twenty sampled from each level. The total time range included across the one hundred experience report posts ranges from July 2016 to October 2020.

As was the case with my semi-structured interview component, my netnographic data set was coded using both open and focused coding methods utilizing NVivo qualitative software. Themes were identified and lumped together to stand as categories for recurring phenomena (Strauss and Corbin 1998, 110). The themes which emerged through the online experiences included entity encounters, experiences of the universe, and seeing changes in one's visual perception among many others. The most recurring themes with relation to how the experiences impacted a person's subjectivity – the most predominant overarching theme throughout both data sets – were: 1) intention; 2) insights or lessons; 3) self-exploration or changes in self; 4) healing or self-care; 5) effects of experience; 6) psychedelics as tools.

D. Challenges and Research Limitations

I confronted several limitations in terms of data acquisition and analysis while completing this project. The first limitation involved assessing how contextual factors affected the experiences and outcomes reported by participants. In part, this was due to the nature of psychedelic experiences insofar as they are influenced by a range of factors, including at minimum one's environment, intention, expectation, psychological state of mind, cultural conditioning, and objects used during the experience to name a few. Researchers often refer to these contextual factors as the 'set' and the 'setting' (Leary, Litwin, and Metzner 1963; Hartogsohn 2014; 2017), and argue that these greatly impact the nature of a person's experience while under the effects of psychedelic drugs (Carhart-Harris et al. 2018a). During my research, I discovered that I could not generate any correlations between a person's upbringing, introduction to psychedelics, or even the setting of the experience itself and the effects of a person's psychedelic experience on their subjectivity or human-environment relations. Moreover, many of these contextual elements were left out by both interviewees and users on online forums. As such, my analysis primarily rests on a phenomenological analysis of a person's experience, as well as their interpretation of how this experience impacted them. Beyond the set and setting, psychedelics are also known to increase suggestibility which makes analyzing how psychedelic experiences produce their effects more difficult (Carhart-Harris et al. 2015). As I was not able to be with my participants during their experience, nor was I able to acquire full details regarding their previous knowledge or experience with psychedelics, I could not assess how suggestibility played a role in the outcome of these experiences.

Conducting netnography from a non-participatory standpoint, however, is also fraught with challenges such as not having access to key identity markers and non-verbal ques (Kozinets 2002; 2006). In addition, there are issues related to the authenticity of these experiences which could not be verified by a third party or through any other means, opening the possibility for people to be hyperbolic in their accounts (Dwivedi 2009; Schmallegger and Carson 2009; Woodside et al. 2007; Mkono 2012). Granted that online user reports are a limited data set given issues with online research such as deception, exaggeration, and the time-lapse between the reports and the experiences, these issues were somewhat mitigated by focusing only on those experiences which contain the most information about the individuals themselves, the contexts in which the psychedelic substances were used, and how these experiences impacted individuals' environmental perception and values.

Another challenge that arose during my research was that people sometimes reported similar experiences despite being in radically distinct settings and consuming drastically different doses of psilocybin mushrooms. For instance, whereas some individuals took mushrooms in a safe and controlled environment, they nevertheless had feelings of anxiousness and paranoia, and while others had no preparation, intention or expectation, they reported having transformative experiences in certain cases. Similarly, whereas the higher dose experiences certainly showed evidence of more intense experiences and visuals, it was not clear that the higher dose experiences contributed to more reports of changes in one's subjectivity than the lower doses did. This issue became clear in analyzing the different report levels contained on Shroomery, as I could not be certain if individuals posted their experience reports in a particular level on the forum on

purpose, or if they indeed read the description of the experience levels posted on Shroomery. Either way, there is no way of knowing if these individuals either read the descriptions of what these levels signify in terms of the phenomenology of the experience, nor is there any evidence of whether they consciously chose the level where they posted their experience or if it was chosen at random.

Notwithstanding these issues, I feel it is nevertheless important to provide a reference to where the experience was posted on Shroomery for each of the excerpts I present in Chapters Six and Seven as a general frame of reference. In order to represent the level that each individual posted their experience report under, I utilize the following method of identification: For example, the fourth report drawn from the level one data set will read (1.4), the fifth from the second data set (2.5), and so forth, with the first digit representing the "level" and the second digit representing the report number. For my ethnographic interviews, I have simply categorized them numerically, and they therefore read (R-1) for experience report number one, and so on.

II. Chapter Outline

In this first chapter, I presented my project's research methods and design, detailing my project's contributions, research questions, and methods. By first demonstrating how changes in subjectivity are well-known aspects of psychedelic experiences in both anecdotal and scientific contexts, I proceed to lay out the way in which I investigated how experiences with psilocybin impact subjectivity and human-environment relations. To answer my research questions, I used two data sets that were acquired by using netnographic methods. The former involved conducting thirty semi-structured interviews

with research participants from Miami, Florida, while the latter entailed gathering and analyzing one hundred experience reports drawn from the online forum Shroomery.org. The experiences were then analyzed using grounded and theme theory to uncover emergent themes that psychedelic users frequently reported.

Chapter Two proceeds by introducing three distinct bodies of theory that help to frame my study, and to which my study contributes. To provide a theoretical foundation for my analysis of 'subjectivity', I draw on philosophy and critical theory, and in particular on Foucault's (1988) conception of 'technologies of the self' as a way of approaching how psychedelic substances are used today. I then explain how critical posthuman theory helps to provide a correction to the concept of the Anthropocene, while it also critically foregrounds various ethico-political issues that characterize the present moment on Earth. Lastly, I showed how assemblage theory helps to analyze the psychedelic landscape as it evolves, drawing out how different *psychedelic assemblages* have formed, each with their own implicit philosophical commitments. I argue that each psychedelic assemblage maintains certain philosophical precepts, including an implicit conception of self that derives from its philosophical commitments.

In Chapter Three, I survey anthropological and geographical research on both drugs and psychedelics, arguing that there has been limited social scientific engagement on practices and experiences involving psychedelics in the United States, and in particular, ethnographic research on the use of the classic psychedelics psilocybin, LSD, and DMT. Anthropological research is predominantly focused on either indigenous use of psychedelics in traditional contexts, or touristic engagements with psychedelics wherein foreigners, often from the Global North, travel to the Global South to experience

psychedelics such as ayahuasca. In addition, I show how anthropologists played a key role in characterizing psychedelics as medicines, thereby indirectly paving the way for the medicalization trajectory that psychedelics are currently on.

The fourth chapter in this dissertation offered a brief history of each of the classic psychedelics, including their main psychoactive compounds, some of their traditional uses, and their ingression into Euro-American societies. I also include a discussion on the association that has been established between psychedelic, mystical, and religious experiences that also extends to present scientific research. The chapter also includes a discussion on the legal regimes that psychedelic substances, and those who use them, have been subjected to in the United States. In drawing on assemblage theory, I then argue that despite being presented from the perspective of the Global North, the history of psychedelics included in this chapter demonstrates how psychedelics have been used in a panoply of different ways over time and by different communities. I argue that different psychedelic assemblages have formed over time, each with their own philosophical commitments that dictate what a psychedelic drug is, what kind of world this conception of psychedelic drugs fits into, and what type of self is implicitly assumed in each assemblage. By arguing that *entheogenic*, *medicalization*, and *capitalist* assemblages represent three psychedelic assemblages that have emerged in the contemporary context, I maintain that a politics of the self can be seen in the Anthropocene through the examination of psychedelic assemblages.

Chapter Five focuses on contemporary perspectives on psychedelics, or what has been referred to as the 'Psychedelic Renaissance'. The purpose for reviewing contemporary research is because from one perspective, the scientific research adds

legitimacy to the claims made by participants regarding changes in subjectivity in human-environment relations. From another perspective, it helps to illustrate how psychedelics are currently being drawn into new assemblages. I survey contemporary scientific research drawn from the neurosciences, psychiatry, and psychopharmacology, illustrating how the new science of psychedelics has unearthed remarkable findings on both the physiological and psychological effects of classic psychedelic substances. The chapter then provides a critical perspective on the legal status of psychedelics based on current scientific evidence, and moves into contempoary responses to the illegalization of psychedelics that have come from different social movements. I end the chapter by showing how the psychedelic landscape continues to shift, with capitalist interests merging evermore with universities and research institutions, reflecting the commodification of psychedelic drugs in the neoliberal era of governance. I review assemblage theory in the contemporary context to reinforce the argument made in the previous chapter regarding how *entheogenic*, *medicalization*, and *capitalist* assemblages can be seen in the present, and which may sometimes merge and overlap with one another in certain situations.

In Chapter Six, I focus on how psychedelic experiences provoked by psilocybin constitute technologies of the self in a contemporary context. I draw on Michel Foucault's (1988) theorizations on technologies of the self, which signal practices individuals engage in as a means of affecting a change in themselves, to argue that people utilize psychedelic mushroom experiences as a means of changing their subjectivity. In using excerpts drawn from both my ethnographic and netnographic data sets, I support this argument by focusing on six major themes that exemplify how psychedelics are used as technologies of the self: *intentions*, *insights/lessons*, *changes in self*, *healing/self-care*, *effects*, and *tools*. I maintain

that in each of these themes which prominently emerged in the analysis of psilocybin experience reports using methods detailed in this chapter, there is evidence supporting the idea that people, whether intentionally or not, report being transformed in some way through their psilocybin experiences. As such, these experiences show that remarkable changes in subjectivity, or one's sense of self, commonly result from experiences with magic mushrooms.

In Chapter Seven, I argue that psychedelic experiences with psilocybin can lead to newfound perceptions of, or relations with, the environment and nature at large. Following the previous chapter, I draw out excerpts from the interviews and online experience reports I gathered to demonstrate that while changes in human-environment relations was not a prominent theme, it nevertheless occurred enough for it to warrant further investigation. Among the reported changes in human-environment relations, I show how people often claim that they feel more connected to nature, or that their relationship with nature has been enhanced, through their psychedelic experiences with magic mushrooms. Moreover, these changes in human-environment relations are sometimes regarded as being felt rather than known, reflecting possible changes in people's capacity to be affected by their environment and nonhuman others. Lastly, I argue that the illegalization of psychedelics has placed constraints on people's ability to forge new relations with their wider environment and nonhuman others, given that people can be persecuted for their use of psychedelics in addition to them continuing to carry social stigma across most geographies in the United States.

The concluding chapter of the dissertation outlines the need for further research on the effects of psychedelic experiences in everyday contexts in the United States. It argues

that the shifting psychedelic landscape is creating new types of psychedelic practice and discourse, and that scholars should focus their attention on the ways in which psychedelics are being drawn into evermore assemblages. In geographies where legalization or decriminalization efforts have succeeded, there are new forms of psychedelic community that are forming in places such as California and Oregon. At times, these psychedelic communities are engaged in non-capitalist forms of exchange, emphasis on self-sustainability, and interest in permaculture. There are also new actors that are bringing psychedelics into novel political and economic arenas, with psychedelic psychotherapy beginning to become more integrated into university courses and clinical practices. The professionalization of psychedelic psychotherapy comes with issues of its own regarding research ethics, practices, and issues related to equitable accessibility for all communities. There are also new issues related to patenting, biopiracy, and intellectual property rights that psychedelic substances are currently enmeshed within that deserve further attention by researchers. Finally, given the dire ecological catastrophes at stake in the Anthropocene, I maintain that all avenues of research that show a potential for shifting human-environment relations towards more sustainable practices, including experiences provoked by classic psychedelic substances, should be explored to their fullest potential.

CHAPTER 2. THEORY: SUBJECTIVITY, THE ANTHROPOCENE, AND ASSEMBLAGE

> The question of the subject and the living 'who' is at the heart of the most pressing concerns of modern societies (Derrida 1991, 115).

Introduction

In this chapter I introduce three broad theoretical literatures that inform my dissertation. Since psychedelic experiences reliably produce significant changes in a person's experience of self and world, there are often lasting effects on an individual's personality and worldview as a result. To help better understand what kinds of changes in personhood are brought about through psychedelic experiences, I first rely on literature from philosophy and critical theory centered on 'subjectivity'. I take *subjectivity* to mean the activity of an experiencing subject; a subject that is embodied and embedded entity who co-develops alongside human and nonhuman others in a shared world. In focusing more precisely on how one's subjectivity or experience of oneself as a 'self' is developed, I take psychedelic experiences as my object of study, analyzing how one's subjectivity is continually made through certain practices and discourses, and in this case through the experiences occasioned by psilocybin mushrooms. As current practices surrounding psychedelics are taking place at a time that many social theorists and scientists have characterized as the 'Anthropocene', I engage with critical posthuman literature which conceives of the Anthropocene as a convergence between non-anthropocentrism on the one hand, and the dismantling of the nature-culture divide on the other (Braidotti 2016; 2019a; 2019b). Critical posthumanism posits the need for a shift in subjectivity as a means of

ameliorating the destructive forces of capitalism, speciesism, and climate change, and its theoretical contributions appear to resonate with how individuals' relations with the environment are sometimes transformed through their psilocybin experiences. Lastly, I utilize assemblage thinking drawn from the philosophers Gilles Deleuze and Félix Guattari as a means of analyzing how different sociohistorical conceptions of psychedelics implicitly carry with them competing views of 'the self' and its relation to the world.

I begin with a section on subjectivity, including a discussion on *technologies of the self* and how this concept applies to current psychedelic practices in the United States. Following this, I provide a brief introduction on the concept of the Anthropocene and field of critical posthumanism, demonstrating how scholars within the environmental humanities have called for the need to change human subjectivity as a means of ameliorating destructive human-environment relations. In the final section, I discuss assemblage thought, bringing it into conversation with the history of psychedelics to show how different reifications of psychedelics have emerged over time, each of which posit a competing understanding of subjectivity. By drawing on these theoretical frameworks, I not only aim to contribute novel understandings of how psychedelic experiences play a role in shaping human-environment relations, but further work to demonstrate how individuals use psychedelics of their own volition as a technique to change their subjectivity.

I. Subjectivity and Technologies of the Self

The terms 'self', 'subject', and 'subjectivity' all refer to concepts that philosophers and critical theorists have attributed distinct meanings to over time. Upon examination,

these concepts appear inextricable from yet additional concepts such as ‘experience’, ‘consciousness’, ‘self-awareness’, ‘identity’, the ‘individual’, and ‘agency’, each of which requires a conceptual unpacking of its own. It is crucial to understand what a ‘subject’ in fact refers to, however, insofar as it “performs an essential and foundational role in all social theory and philosophy” (Blunden 2005, 2). A subject is not simply a “subject to itself,” but it is also a subject to and for others (Gagnier 1991, 8). From a genealogical perspective, there are four broad ways that the subject has been theoretically approached: as the subject of grammar, the politico-legal subject, the philosophical subject, and the subject of experience (Mansfield 2000, 4). Whereas the grammatical subject relates to analyses of language and logic, and the politico-legal subject entails investigations of agency, power, and governance, the philosophical subject is concerned with the nature of knowledge, experience, and truth while the experiential subject speaks to first-person experience of oneself and one’s identity. The subject not only denotes that which can be attributed praise or blame in an agential sense, but it also signals one’s sense of identity as well as one’s first-person experience. As there are clear overlaps in the multidimensionality of the subject, it is difficult to tease one sense of the subject apart from another.

‘Subjectivity', or what I refer to as *the activity of a subject*, therefore hinges entirely on certain epistemological and ontological assumptions of what a subject essentially is, which itself will then have certain ethical implications stemming thereof. It matters whether the subject is conceived of primarily as a body, a disincarnate mental entity, or a subject of power, for each conception presumes a certain state of the world, the types of entities who reside in it, and the relations which obtain among them. While acknowledging that all conceptions of ‘subjectivity’ are sociohistorically and geographically contingent, I

nevertheless take *subjectivity* to refer to one's experience of oneself, which is closely tied to one's identity in terms of how one understands oneself. In foregrounding the experience and understanding of oneself in my approach to subjectivity, I acknowledge that the experience of self is inherently tied to that which is outside it in terms of the cultural and the social (Blunden 2005). Since experience itself, including one's experience of oneself, is made meaningful through linguistical and cultural mediation, it would be "a serious mistake to reduce subjectivity to that which is only accessible from the first-person perspective, as if it was something exclusively inner, something visible to only one person and invisible to everyone else" (Zahavi 2007, 71). Insofar as "the subject is always linked to something outside" of itself, one's inner experience of oneself or one's identity – again, what I refer to as subjectivity – is necessarily and "always already caught up in complex political, social, and philosophical" concerns (Mansfield 2000, 3). So, while I maintain that "subjectivity is primarily an experience, and remains permanently open to inconsistency, contradiction, and unself-consciousness" (Mansfield 2000, 6), I nevertheless fall in line with the phenomenological tradition, which maintains resonances with the 'posthuman subject' I will discuss later, in my conception of the subject "as an embodied and socially and culturally embedded being-in-the-world" whose activity involves experience (Zahavi 2019a, 1).

In ontologically positing a subject that is an embodied and embedded entity whose activity includes experiencing itself as a subject, my intention is not to disregard that all living beings inherently possess their own forms of subjectivity (Weber 2016, 3; Sjöstedt-Hughes 2021, 9), but instead to focus more precisely on how subjectivity is negotiated in human cultural affairs. Since my study looks predominately at American culture in the

Anthropocene, examining the practices that individuals engage in to work on themselves in addition to the discourses and meanings that they associate with the self, an additional theoretical layer must be added to my conception of subjectivity to help capture its social dimensions. To better analyze the sociocultural and political dimensions in which subjectivity is cultivated, I follow Foucault's (2017, 11) formulation of the subject as historically and discursively constructed:

> Probably in every culture, every civilization, every society, at any rate in our culture, our civilization, our society there are a certain number of true discourses concerning the subject that, independently of their universal truth value, function, circulate, have the weight of truth, and are accepted as such.

On this view, there can be "no theory of the subject independent of the relationship to truth," where truth is understood as a "system of obligations" that a person must either produce, accept, or submit to as true (Foucault 2017, 12-13). Foucault's approach to subjectivity has been described as being directed towards "the relationships that form the human context," including the relations of power that exist between persons, governments, and institutions (Mansfield 2000, 52). The subject, therefore, "does not exist as a naturally occurring thing, but is contrived by the double work of power and knowledge" (Mansfield 2000, 59). By tracing the relationship between subjectivity and truth, Foucault (2017, 293) not only helps shed light on "instituted modes of self-knowledge and their history," but also helps bring "techniques of the self" into focus which signal procedures that "are recommended or prescribed to individuals for fixing, maintaining, or transforming their identity in terms of certain aims and thanks to relations of self-mastery or self-knowledge." This effort to produce a "history of the 'care' and 'techniques' of the self would be a way of undertaking the history of subjectivity," one that approaches the question of

governmentality “from a different viewpoint: the government of self by self in its connection with relations of others.” (Foucault 2017, 295).

This change in his historical analysis of ‘the subject’ is a marked shift in how Foucault (1988, 19) had approached the subject in his previous works, with Foucault admitting that:

> perhaps I’ve insisted too much on the technology of domination and power. I am more and more interested in the interaction between oneself and others in the technologies of individual domination, the history of how an individual acts upon himself, in the technology of the self.

Foucault’s theorizations on technologies of the self thereby signal practices of subjectivation that are aimed at the transformation of one’s own subjectivity. Technologies of the self, according to Foucault (1988, 18), are practices individuals either solely or collectively engage in to enact “a certain number of operations on their own bodies and souls, thoughts, conduct, and way of being, so as to transform themselves in order to attain a certain state of happiness, purity, wisdom, perfection, or immortality.” In Foucault’s historical approach to the subject (1988; 2001; 2017), one finds references to disparate sets of practices that were operative in different sociohistorical milieus, from the ancient Delphic precept to ‘know oneself’, and its inextricability from the command to ‘care for oneself’, to practices found in Stoic, Greco-Roman, and Christian ascetic writings. What Foucault (1983, 3) finds are different practices and techniques through which individuals intend to affect a change in themselves, and these may include practices such as memorizations, abstinences, self-examinations, letter writing, and periods of silence to name a few (1983; 3). Letter writing practices, for instance, are understood by Foucault as technologies of the self which work to externalize one’s thought for purposes of self-

examination to affect a change in one's selfhood. This late-Foucauldian approach to subjectivity not only helps to analyze the sociohistorical "truth games" through which a person's subjectivity is constructed, but it also foregrounds the practices and "specific techniques" that subjects engage in as ways of either working on, or understanding themselves (Foucault 1988, 18).

As this dissertation focuses on how psychedelic experiences with psilocybin mushrooms (or 'magic mushrooms') influence a person's subjectivity and human-environment relations, I approach these practices from the perspective that they function as technologies of the self in a Foucauldian sense. Individuals often report undergoing momentous experiences which impact their sense of self or subjectivity in remarkable ways, with reports frequently containing references to lessons or insights about oneself that were gained through the experience. In addition, as my second ethnographic sample examines self-written experience reports completed by individuals of their own volition and posted onto online forums, these experience reports themselves maintain resonances with letter writing technologies of the self. Insofar as individuals take to online forums to articulate their psychedelic experiences, these reports can be seen as a way of individuals making meaning of their experiences through the externalization of their thoughts in written form. Not only are the experience reports written in such a way that helps the individual make meaning of their experience, but they also contain references to certain understandings of 'the self' that reflect 'truth games' that are operative in a wider cultural context.

Psychedelic experience reports maintain resonances with Foucault's remarks on notebook writing forms of technologies of the self as well. Since practices associated with

notebook writing work to externalize "important aspects of the subject's life," functioning as "knowledge-network[s] of truth, or at least statements recognized as true" that aim to "construct a unified self," psychedelic experience reports meet this criterion insofar as they are essentially discourses individuals create about themselves (Nielsen 2014: 192). Through writing these experience reports, individuals not only reflect on the insights and lessons they gleaned from their experiences, but they materialize and externalize their thoughts into a written discourse that is used to inscribe these truths unto themselves. Since my dissertation is analyzing psychedelic experiences that take place during an era that many theorists have referred to as 'the Anthropocene', I will further contextualize how these practices involving psychedelics speak to issues of human-environment relations and subjectivity in the following section.

II. Critical Posthumanism, Subjectivity, and Human-Nonhuman Relations in the Anthropocene

> The Anthropocene is a volatile and potentially catastrophic age demanding new ways of thinking about relations between humans and the non-human world (Head 2016).

As the environmental stakes on planet Earth become a matter of ever-increasing concern, the topics of human-nonhuman relations and subjectivity have become more significant within academic deliberations on the Anthropocene. Since the concept of the Anthropocene elicits a conceptual blurring of the human-environment and nature-culture divide, it has invited numerous critiques of naturalized beliefs regarding the nature of 'the human', subjectivity, and the agency of nonhumans. Given that the present dissertation investigates how experiences with psilocybin mushrooms influence subjectivity and human-environment relations, it offers a window into the practices and technologies of

subjectivation that certain individuals engage in to produce novel apprehensions of the self and the nonhuman in the Anthropocene. Also, as the subsequent section in this chapter will make clear, there appears to be a 'politics of the self' at work in the Anthropocene, one that can be made visible through analyzing the history of psychedelics and their current trajectory in the United States. First, however, the concept of the Anthropocene itself must be unpacked to see what advantages it may provide through its contextualization of the present moment on our planet.

The 'Anthropocene' is a concept coined by scientists Will Steffen, Paul J. Crutzen, and John R. McNeill (2007, 614), who intended for the term to signify "the current epoch in which humans and our societies have become a global geophysical force." Since their publication, the concept has been used in countless ways across the humanities and social sciences, with many renditions emphasizing how the current epoch is fraught by an increasing risk of disasters, both natural and socioeconomic, stemming from human impact that has begun altering the functioning of earth systems. The concept of the Anthropocene has not come without critique, with a popular line of argument maintaining that while the current planetary crises are certainly caused by anthropogenic forces, responsibility cannot be attributable to all groups of humans equally (Malm and Hornborg 2014; Davis and Todd 2017). Moreover, those societies that have contributed the least to destabilizing planetary processes through industrialization, habitat decimation, and fossil capital are also the most vulnerable to the negative effects reverberating from these processes (Malm 2018; Davis et al. 2019). Finally, as the 'Anthropocene' concept lends itself to doom and gloom images in its apocalyptic forms, it has come under fire for limiting future possibilities through

perpetuating a narrative that silences creative and experimental approaches to the present moment (Wakefield 2020, 11).

A more recent approach to the Anthropocene has come from critical posthuman theory, a philosophical framework situated within the broader field of 'posthumanism' which itself lends itself to contradictory interpretations. Whereas some variations emphasize "post-humanism" in an epochal sense, embracing transhumanist refrains that rest on assumptions of human perfectibility and transcending human limitations through science and technology (Ferrando 2013, 27), other posthumanist trends reject transhumanism's embracing of anthropocentrism and humanism and its inability to address racial and socioeconomic inequalities, while they also offer critiques of the modern naturalized conception of 'the human' (Ferrando 2013, 26). Critical posthumanism, as promulgated by philosopher Rosi Braidotti (2016; 2019a, 31), resonates with the latter forms of posthumanism and provides a conceptual framework that challenges the mainstream Anthropocene narrative by highlighting its incapacity to capture socioeconomic inequalities and ever-accelerating advances in technology and capitalism. The Anthropocene on this view is seen "as a multi-layered posthuman predicament that includes environmental, socio-economic, and affective and psychic dimensions of our ecologies of belonging" (Braidotti 2019a, 32). In addition to drawing attention to both historical and current socioeconomic, racial, and species inequalities, critical posthumanism also takes an affirmative approach to the present moment by seeing it as "the posthuman predicament [which] enforces the necessity to think again and to think harder about the status of human subjectivity and the ethical relations, norms and values that may be worthy of the complexity of our times" (Braidotti 2016, 13). In developing a

coherent and robust philosophical framework, critical posthumanism also reimagines 'the subject' as a materially embedded and embodied transversal entity that is inherently entangled in a network of nonhuman relations within a shared lifeworld (Braidotti 2016, 26). Apart from ontologically grounding epistemic claims through its conception of the subject, critical posthumanism also embraces an ethical imperative that promulgates the creation of transversal cross-species "alliances with the productive and immanent forces of *zoe*" (Braidotti 2016, 23). This involves actualizing "the cognitive, affective, and sensorial means to cultivate higher degrees of empowerment and affirmation of one's interconnections to others in their multiplicity" (Braidotti 2016, 26).

By providing a critical corrective to the dominant Anthropocene narrative, critical posthumanism at once highlights key issues such as advanced capitalist systems, socioeconomic, racial, gendered, abled, and species inequalities and injustices, climate change, and new forms of technology in the present moment, while nevertheless maintaining an affirmative approach to the contradictions of our time, calling for both intellectual and affective responses (Braidotti 2019b, 3). In approaching this dissertation research through a critical posthumanist lens, I not only embrace an ontological subject that is embodied and embedded, but I also draw on critical posthumanism for its approach to contextualizing the stakes of the present. Generally speaking, for individuals from the United States, the current sociocultural and political atmosphere is one of climate disaster, species extinction, socioeconomic and racial, gender, and species inequalities, an ongoing pandemic, and now the threat of potential global warfare. Since critical posthumanism brings attention to most of these issues as part of the Anthropocene or posthuman predicament, yet still emphasizes an affirmative approach that calls for experimentation

and creativity to these circumstances, it offers a way to characterize 'the present' moment on our planet from the perspective of individuals from the United States and potentially the wider Global North. It is in this present context that posthumanism helps capture that individuals are engaging in practices involving psychedelic drugs. This context is significant since the practices and experiences involving psychedelics often lead to changes in how individuals are experiencing both themselves and their relationship to the world. Given that this dissertation approaches psychedelic mushroom experiences (and experience-writing practices) as technologies of the self aimed at resubjectivation, those experiences which refer to changes in human-environment relations appear to fit the critical posthumanism call for changing human-nonhuman relations through affective means.

III. Assemblage Thought and Psychedelics

> Assemblages are not defined by their components; they are defined, rather, by what they produce, and what they produce, ultimately, are the complex forms and objects that populate contemporary society (Buchanan 2021, 47).

'Assemblage' is a concept found in the philosophy of Gilles Deleuze and Félix Guattari which emerges throughout their rich body of works. The term is closely translated as *agencement* – roughly meaning to arrange or to lay out – and maintains resonances with the Freudian notion of *Komplex* (Phillips 2006; Buchanan 2015, 383); however, assemblage should not be understood as a stand-alone concept (Buchanan 2021, 5). It is suggested the assemblage is inextricable from the concepts of 'the body without organs' and 'the abstract machine' insofar as each of these concepts are inoperable "in the absence of the other" (Buchanan 2021, 67). In its multidimensionality, an assemblage has both

material and virtual dimensions; the former is known as the form of content and the latter as the form of expression (Buchanan 2021, 121). An assemblage also has "a principle of unity (abstract machine)" and "rests upon a condition of possibility" or body without organs (plane of immanence) (Ibid.). Lastly, assemblages are intersected by lines of flight , or lines of de- and reterritorialization which may be relative, negative, or absolute (Buchanan 2021, 89). Moreover, since assemblages cannot be divorced from the quasi-neo-Spinozist philosophy that Deleuze and Guattari develop (Deleuze and Guattari 1987), the concept of 'desire' plays a central role in understanding an assemblage, where desire is seen a productive "organizing force" of nature (Buchanan 2021, 62).

In contrast to the psychoanalytic view of desire in the negative as a lack of something, desire in Deleuze and Guattari's work appears to have a metaphysical or arguably even an ontogenic function – although Deleuze and Guattari developed the concepts of the actual and the virtual as a way of avoiding metaphysics and ontology – as something which creates amalgamations of matter (Buchanan 2021, 59). As Buchanan (2021, 38) writes, "Desire is a free-flowing stream of intensities subject to process of capture and coagulation which give rise to and constitute the entire world." Desire in its free state, or chaos (Buchanan 2021, 14), is not just the source of all creativity, but is subject to *stratification*: a process which operates differently on different orders of magnitude (geological, biological, and techno-semiological) and not only selects and orders particles, but further transforms them into stable structures (Buchanan 2021, 43). Viewed from this productive perspective, desire "creates by creating assemblages" (Buchanan 2021, 38), where assemblages are "particular arrangements of desire" that may or may not be actualized through physical things (Buchanan 2021, 65).

The inherent complexity in trying to understand the assemblage lies in the fact that "The assemblage is intended to answer several types of question, 'how?,' 'why?', 'when?' and not just a 'what?' question (Buchanan 2021, 13). Analyzing with assemblage therefore involves investigating what it takes to make its dimensions – chiefly its form of content (bodies, things, and actions) and form of expression (ideas, words, and affects) – yoke together (Buchanan 2015, 390; Buchanan 2017, 473). A rough reference to an assemblage may help to illustrate how an assemblage works. Using *the phalanx* – a strategic Roman military formation – Ian Buchanan (2021, 31) draws attention to its form of content (the interdependent material components such as a dagger, spear, shield, chest plate, soldier, and the class of the phalanx itself), and the relations obtained among these components. Since the relations among the physical components are "anything but accidental," the phalanx can be viewed as a performative insofar as it expresses and represents several overlapping events as it folds together a series of choices at once (Buchanan 2021, 32). However, the phalanx also signals another dimension, or a form of expression, insofar as there is particular type of society with particular kinds of needs out of which the phalanx emerged, and which influences the choices that went into its formation. Assemblage draws attention to these two dimensions, but also to the conditions of possibility and a unifying principle that brings together the "bodies and weapons on the one hand," and "imperial ambition and militaristic society on the other" (Buchanan 2021, 32). Insofar as the assemblage is therefore "first of all a problem of consistency" (Buchanan 2021, 13), the example of the phalanx helps to demonstrate how "assemblages have a beating heart" that arranges desire in a particular way, even in the absence of its material components (Buchanan 2021, 60).

One may wonder what such a complex concept brings to the study of psychedelic mushroom experiences, but working assemblage creates a useful way of thinking through the different societal formations that psychedelics are drawn into. For example, in early US research contexts, psychedelics have been referred to as psychotomimetic drugs and used in clinical trials to study psychosis; they have been used in military contexts as "weapons of psychochemical warfare" and used for interrogation and torture (Price 2007a; 2007b); and in particular indigenous contexts, they have been valorized as entheogens with healing and psychosomatic qualities. These examples help illustrate that what is commonly classified today as a 'psychedelic' has actually taken on countless formations over time, each with particular practices and ideas associated with them, in addition to currently being drawn into ever new assemblages given their resurgence into popular culture and scientific research. Within psychiatry and psychology, psychedelics are now being rebranded as medicines or psychotherapeutic adjuncts that assist in treating an array of mental illnesses. From a neoliberal economic perspective, psychedelics are being used as smart drugs that can potentially increase an individual's productivity, as seen in Silicon Valley microdosing trends[1-2]. Moreover, psychedelics are projected to potentially become a $100 billion dollar industry[3-4], with venture capitalists and entrepreneurs developing patents around drug delivery methods and synthetization techniques which act to extract value from

[1] Forbes. 2020. Available at https://www.forbes.com/sites/jackkelly/2020/01/17/silicon-valley-is-micro-dosing-magic-mushrooms-to-boost-their-careers/?sh=63b8c1c25822 (accessed 24 March 2022).

[2] GQ. 2019. Available at https://www.gq-magazine.co.uk/lifestyle/article/microdosing-lsd (accessed 24 March 2022).

[3] Business Insider. 2022. Available at https://www.businessinsider.com/psychedelics-industry-growth-pitch-deck-ipo-ceo-interviews (accessed 24 March 2022).

[4] Stockhouse. 2020. Available online at https://stockhouse.com/news/press-releases/2020/12/15/psychedelic-drugs-could-create-a-100-billion-investment-opportunity (accessed 24 March 2022).

psychedelics as products.[5] While all of this is happening, there are also individuals and collectives, indigenous and nonindigenous alike, from the Global South to the Global North, that use psychedelics in ritualistic and sacramental ways and refer to them as plant medicines or entheogens in some instances. Decriminalization social movements in the United States, for example, draw on the language and history of traditional entheogen use to argue for progressive changes in drug policy.

I therefore use the assemblage to help me understand how psychedelics become drawn into disparate sociocultural, political, and economic milieus, which I understand as *psychedelic assemblages*. There is a unifying principle (abstract machine) that draws together ideas surrounding private ownership of the means of production, free market competition, and maximization of capital on the one hand, and technologies, enterprises, and individuals, and nonhumans on the other, within certain conditions of possibility (plane of immanence), which the concept of assemblage helps to draw out. Looking at the unfolding cultural impact of psychedelics in the US in such a way helps me to argue that there are several types of assemblages operating in the Anthropocene: a *psychedelic capitalism* assemblage, an *entheogenic* assemblage, and a *psychedelic medicine* assemblage to name a few. Each of these assemblages draws psychedelics into particular forms of use or practice, each has its own way of articulating what the nature of psychedelics is, and most importantly for my purposes, each assemblage can be found to contain a particular notion of *self* that represents a particular conception of the world as well. In entheogenic assemblages – with entheogens being a catchall phrase for myriad

[5] Psilocybin Alpha. 2021. 'Psychedelic Sector Data Bank'. Available online at https://psilocybinalpha.com/data (accessed 10 March 2021).

traditional names given to psychedelics throughout time – psychedelics are intended to provoke divine or spiritual experiences, reflecting a particular view of the self as divine in nature, within a world that is imbued with a spiritual dimension. Within a *psychedelic medicine* assemblage, a 'psychedelic' is an interesting type of psychoactive chemical – or psychoplastogen[6] – that causes fascinating changes in human neurochemistry and behavior while it also shows remarkable medicinal import. The self here viewed through a physicalist lens, and is thereby reduced to a biological mechanism whose consciousness or subjectivity is illusory or epiphenomenal. Finally, from a neoliberal capitalist perspective, the self is viewed as an economic unit, *homo economicus*, which represents a human agent that makes rational decisions based out of self-interest.

By using assemblage, I aim to bring attention to how there appears to be a 'politics of the self' at work in the Anthropocene that can be gleaned through analyzing both the history of psychedelics and their contemporary manifestations. In demonstrating how psychedelics have historically and contemporaneously been drawn into unique sociohistorical milieus, I work to show that each of the three assemblages presented here as examples implicitly maintains certain presuppositions of what the self is and how this relates to its wider context whether environment, world, or reality at large. These different conceptions and approaches to psychedelics will be evident throughout the following chapters in this dissertation, including the history chapter and the chapter on psychedelics in the social sciences. Thinking through these different psychedelic assemblages shows

[6] See debate between Griffiths and Olsen in Chapter 4's section on psychedelics, mysticism, and religiosity

how psychedelics become reified in particular ways, and how they become drawn into different practices, behaviors, and discourses.

Conclusions

This chapter introduced and summarized three distinct bodies of theory that I draw on to help make sense of psychedelic practices and discourses in contemporary times. Given that psychedelic experiences have significant effects on one's sense of self and identity, I incorporated literature from philosophy and critical theory to establish a theory of the subject and subjectivity. I went on to demonstrate how subjectivity, in its societal dimensions, is inevitably caught up in particular 'truth' games that are sociohistorically and geographically contingent. Beyond this, however, I drew on Foucault's theorizations on the subject from the perspective of technologies of the self. The concept of technologies of the self, as described by Foucault, helps me to capture how it is that individuals enact changes in themselves and their subjectivity through psychedelic experiences. Given that the present context in which psychedelics are being consumed needs to be analytically framed, I then drew on the concept of the Anthropocene as a way of situating my study in this present context. After explaining some of the limitations of the Anthropocene narrative, I proceeded to show how critical posthuman theory offers a way of contextualizing the present in a manner that is critical yet affirmative. Critical posthuman theory helps to lay out the sociocultural atmosphere in the Global North, and in particular, in the United States, given its foregrounding of climate change, socioeconomic inequalities, and the political nature of subjectivity.

In the final section of this chapter, I proceeded by elucidating on how the concept of 'assemblage' drawn from the philosophy of Deleuze and Guattari and expounded upon by Ian Buchanan, assists in analyzing dominant trends within the psychedelic sphere. Both historically and contemporaneously, psychedelics are reified in unique ways, and thereby become associated with particular practices, discourses, and materials which form around their unique understandings. I use assemblage to show how there are several psychedelic assemblages that are currently operating, such as the *psychedelic capitalism assemblage*, the *entheogenic assemblage*, and the *psychedelic medicine assemblage*. I maintain that each of these assemblages maintains an implicit theory of the subject and by extension, subjectivity, which rest on unique philosophical presuppositions about the nature of experience and reality itself. By thinking with assemblage, my aim is to write the subsequent chapters in a way that reflects this understanding of how particular assemblages form around psychedelics, each with their forms of content and forms of expression, developed within a limited field of potential, and with a unifying principle that brings it all together.

CHAPTER 3. PSYCHEDELICS AND THE SOCIAL SCIENCES

Introduction

The momentous attention that classic psychedelic substances now command has chiefly come by way of the revolutionary efficacy they exhibit in the treatment of mental illnesses (Belouin and Henningfield 2018; Johnson et al. 2019). Apart from these novel findings, contemporary research on psychedelics has proven limited in the sense that it predominately focuses on the medicinal import of psychedelics in clinical settings, while therapeutic investigations also tend to constrain the complex phenomenology of psychedelic experiences by rendering them in terms of measurable health outcomes. Moreover, researchers have observed that psychedelic experiences are influenced by a number of environmental, physiological, psychological, and sociocultural factors that inherently make them context dependent (Apud 2015; Hartogsohn 2017; Carhart-Harris et al. 2018). As such, researchers investigating the therapeutic potential of psychedelics have called for more social scientific research to be conducted on the extra-cognitive factors that influence psychedelic experiences and their enduring effects (Lifshitz, Sheiner, and Kirmayer 2018; Langlitz et al. 2021). Upon examining the existing literature drawn from the disciplines of anthropology and geography, it becomes evident that research on psychedelics is also culturally and geographically limited in a number of ways within the social sciences. In this chapter, I first work to show how this dissertation's investigation of psilocybin experiences contributes to social theory by providing a unique contribution to existing debates on human-nonhuman relations and subjectivity in the Anthropocene.

Secondly, I review anthropological and geographical engagements with psychedelics as a means of situating this dissertation within the wider social scientific literature.

In the following sections, I begin with a brief review of existing debates on human-environment relations in the Anthropocene, followed by a focused survey on subjectivity through the lens of posthuman thought. I continue the chapter by providing a review of how anthropologists and geographers have engaged with the study of psychedelic drugs and experiences. Through this review of social scientific engagements with psychedelics, three key findings emerge: 1) the need for further ethnographic studies on the use of psychedelic substances in non-clinical and non-indigenous settings; 2) the lack of ethnographic research on psychedelic use in the United States; 3) the disproportionate representation of certain psychedelic substances in anthropological literature. The sections in this chapter follow the same pharmacological categories for each of the classic psychedelics that will be used in chapter 3, insofar as they assist in analyzing how anthropologists and geographers have engaged with distinct classic psychedelic substances in their studies.

I. Drug Studies in Anthropology

Anthropologists have long stood at the forefront of cultural alterity given their encounters with alternative forms of human social organization and ways of being in the world (Leistle 2016). As such, the discipline of anthropology has generated comprehensive accounts of variegated traditions and practices that involve the use of psychoactive drugs (Efron, Holmstedt, and Kline 1967; Rätsch 2005; Prance et al. 2017). Throughout the course of these accounts, anthropologists have brought awareness to the cultural relativity

of drug use throughout human societies across the world (DeRios 1977; Rätsch 2005; Klein 2008). Apart from documenting the geographic variances in psychoactive drug consumption across regions, anthropologists have also recognized that drugs may be utilized for entirely different ends depending on the sociohistorical contexts in which they are used (Blätter 1994; Goodman, Sherratt, and Lovejoy 2014). This critical awareness of the cultural relativity of drug use has ultimately led some social theorists and anthropologists to challenge both the naturalization and stigmatization of those psychoactive drugs that have either been integrated or illegalized within European and American societies (Mintz 1986; Szasz 1974; 1996; Curra 2019: 353).

Although not all ethnographic engagements with drug use have sought to challenge the rationales which undergird national drug sanctions, there is a sense of criticality that has nevertheless remained central to many anthropological drug studies that investigate the relationship between drug regulation, systemic violence, and geopolitics. While diverse, a wide range of anthropological investigations have brought a critical lens to bear on systemic issues such as drug trafficking (Schneider and Schneider 2008; Penglase 2009; 2010), the war on drugs (Gilliam 1992; Zigon 2015; Campbell 2014; Syvertsen, Bazzi, and Mittal 2017; Hernández Castillo 2019), the link between drugs and socioeconomic inequalities (Singer 2008: 235), and the relationship between drug regulation and mechanisms of security (Griffith 2010; Hornberger 2018). Whereas many anthropological drug studies tend to center on systemic and geopolitical aspects of drugs, medical anthropologists have long stood as vanguards of work that centers on the use of drugs by individuals. Given their association to medicine, many of these medical anthropological studies have been conducted as a means of gaining insight into the processes through which

individuals acquire and transmit diseases. Following this line of thought, a large number of medical anthropological work has been dedicated to investigating the relationship between intravenous drug use and the human immunodeficiency virus (HIV), for instance (Page 1990; Pivnik 1991; Gamella 1994; Carlson 1996; McCoy et al 1996; Singer 1997; Sterk and Elifson 2000; Dickson-Gomez 2010).

Notwithstanding the diversity that exists across anthropological drug studies, more often than not, analytical focus has tended to remain on either the adverse effects of drugs or other negative dimensions of drug use. This is not at all to say that these studies are devoid of value, however, for they have undoubtedly contributed invaluable knowledge with applied utility that can help inform public health officials, policies and procedures, in addition to helping combat the stigmatization of drug users by highlighting the affirmative potentials of drug use (Singer 2012). Within this body of anthropological work on drugs, then, the central research themes which tend to recur are studies on addiction (Lende 2005; Singer 2005; Glasser 2011; Harris 2015; Mendoza, Rivera, and Hansen 2019), alcohol (Heath 1987a; 1987b; Hunt and Barker 2001; Singer et al. 2006), and pharmaceuticals (Van der Geest 1984; 1988; Nichter and Vuckovic 1994; Van der Geest, Whyte, and Hardon 1996; Petryna, Lakoff, and Kleinman 2006; Dumit 2012). Studies on the anthropology of pharmaceuticals are particularly illuminating insofar as anthropologists have shown how people's experiences of the effects of pharmaceutical drugs have largely been shaped by marketing, advertisement, and medical institutions and rhetoric (Etkin 1992; Ecks 2013). Beyond this point, Hardon and Sanabria (2017, 117) have highlighted not only how pharmaceutical drug effects are individually tailored to suit culturally specific contexts, but

also how regulatory institutions create, dismantle, and refabricate pharmaceutical drugs to meet everchanging sociocultural circumstances.

II. Drug Studies in Geography

Moving on to the discipline of human geography and its analyses of drugs, one finds that while the literature is far more limited in geography than it is in anthropology, the themes which emerge are nevertheless mostly consistent with those found in anthropological drug studies. Granted that their attention has largely been directed towards the spatial dimensions of drug use, geographers have generated significant social scientific understandings of drugs through their investigations on addiction (Thomas, Richardson, and Cheung 2008; Proudfoot 2017) and the pharmaceutical industry (Kedron and Bagchi-Sen 2011; Zeller 2004; Horner 2016). Like anthropological studies on drugs, geographers have similarly explored the relationship between drugs, sexual activity, and health (Brouwer et al. 2012; Del Casino Jr. 2012), while they have also put forth critical assessments of the war on drugs (Corva 2008; King 2008; Walker 2015). As was the case with medical anthropology, geographers have also studied drugs in terms of health and healthcare by studying the geographic differences in approaches to drug use and drug treatment (McLafferty 2008; Mennis, Stahler, and Baron 2012), as well as providing aids to understanding particular patterns and effects of drug use in specific sociohistorical and geographical contexts (Kwan et al. 2008). Given human geography's thorough engagements with urban space, geographers have correspondingly studied the role of drugs in urban environments as well, whether it be in terms of the effects of drugs on public

policies (McCann 2008) and urban planning (Punch 2005), or the use of drugs by individuals who reside in urban spaces (Yang and Luo 2009; Garmany 2011).

When it comes to the study of specific psychoactive drugs, geographers have developed assessments of opium cultivation in terms of its effects on the environment (Hobbs 1998), national economies (Chouvy and Laniel 2007), and everyday life in Southeast Asia (Crooker 1988; 2005; Chouvy 2010). In addition to these studies, historical geographies of cannabis have been produced (Warf 2014), as have analyses on the effects of cannabis cultivation on rural communities in New Zealand (Cocklin, Walker, and Blunden 1999), the production of hashish and cannabis in Morocco (Chouvy 2005a; 2005b; Chouvy and Afsahi 2014; Chouvy and Marfarlane 2018), and the prevalence of marijuana use in Amsterdam (Jansen 1991). The wide-ranging impacts of coca agriculture is another area of drug research that geographers have investigated, as is the study of the detrimental social and ecological impacts of cocaine production in Latin American countries (Young 1996;2004a; 2004b; Bradley and Millington 2008; Matthewson 2008; Rincón-Ruiz and Kallis 2013; McSweeney et al. 2018). By far, the psychoactive substance which has received the most attention in geography to date is alcohol (Smith and Hanham 1982; Jayne, Valentine, and Holloway 2008; 2012; Wilton and Moreno 2012). This should come as no surprise given alcohol's integration as the psychoactive drug of choice in most societies across the globe, and geographic studies on alcohol have examined its relationship to masculinity (Gillen 2016), embodiment and affect (Valentine and Holloway 2010), and its use in urban spaces (Jayne, Holloway, and Valentine 2006; Wilkinson 2015).

In their review of drug studies within human geography, Taylor, Jasparro, and Mattson (2013) have recognized that that the term 'drugs' is usually associated with illicit

drugs and is therefore often evoked in a pejorative sense (415). Furthermore, they maintain that geographical analyses of drugs are much needed given the relationship between drugs and society, in combination with the relationship of drugs to other disciplines such as political science, criminal justice, and sociology (416). Aside from illustrating how geography's engagements with drugs have often focused on agriculture, geopolitics, and political economy, Taylor, Jasparro, and Mattson also point out that "very little research has been conducted on subjective aspects of the experience of drug consumption" (424). In their overall assessment of geography's fragmented engagements with drug use, these authors assert that while geography has excelled in researching themes such as drug-crop production and its multivalent effects on ecology, economy, society, and geopolitics (425), the discipline has missed significant opportunities to engage with prominent dimensions of drug use such as drug commodities, the relationship between drug use and social practices, and communities and subcultures of drug consumption (427). Some geographers, however, have already begun filling these voids within geographical drug studies, such as Dilkes-Frayne and Duff (2017) who have explored how subjectivities are produced during events of drug consumption. While few in number, studies like this are sure to be on the rise and stand as testament to the fact that geographical engagements with drugs present a field that is ripe for further research.

III. Classic Psychedelics in Anthropology

Notwithstanding the fact that drug studies within both anthropology and geography have explored the multivalent phenomenon of drug use in the United States and Europe, their engagements with classic psychedelic plants, fungi, and substances have tended to

focus either on how these drugs are used in contexts outside of these countries, or how they are used within indigenous communities, if not both. As such, anthropological and geographical inquiries on psychedelic substances have therefore generally taken the following forms , which more often than not, overlap: 1) investigating the relationship between psychedelic drugs on the one hand, and rituals, spirituality, religion, and cosmology on the other (anthropology of religion; cultural anthropology; ethnopharmacology); 2) exploring the relationship between psychedelic substances and medicine, including alternative conceptions of health and wellbeing (ethnomedicine; medical anthropology); and 3) studying the alternative states of consciousness that are provoked through plant hallucinogens as well as the cultural practices which surround them (psychological anthropology; anthropology of consciousness). In considering the anthropological literature on psychedelic substances, one finds that studies vary according to each anthropologist's approach and background, leading to the use of multiple terms and paradigms through which psychedelic drugs and experiences are understood. To further complicate matters, disciplines which thematically or methodologically intersect with anthropology have also developed some of the most informative accounts of psychedelic drug use through the lenses of ethnomedicine (Schultes and Farnsworth 1980; Winkelman 2007) and ethnopharmacology (Ott and Hofmann 1997; McKenna, Callaway, and Grob 1998; Rätsch 2005). Strictly within the discipline of anthropology itself, however, exist a number of pioneering studies that have tended to focus on investigating the use of psychedelic drugs within indigenous communities.

A. Mescaline

Beginning with the psychedelic substance ‘mescaline’ which endogenously occurs in certain species of cacti generally referred to as ‘peyote’ (Lophophora williamsii) and ‘San Pedro’ (Trichocereus pachanoi), archaeological evidence suggests these cacti have been used by humans for several millennia. Whereas the oldest graphic evidence for San Pedro dates back between 1500-1200 BC (Jay 2019: 15; Sharon 2019), it has been estimated that peyote usage dates to 5700 BC (Bruhn et al. 2002; Terry et al. 2006). When considering anthropological studies on peyote, these date to the early nineteenth century with the work of anthropologists such as Ruth Shonle. In providing one of the earliest accounts of traditional peyote use in the discipline of anthropology, Shonle (1925) charted the diffusion of peyote use among the Huichol indigenous communities of Mexico to its adoption by Native American tribes such as the Kiowa and Comanche in North America. In addition to tracing the diffusion of peyote across indigenous groups, Shonle (1925) also offered depictions of peyote ceremonies, noted how peyote has been used for sacramental and healing purposes, and provided one of the earliest descriptions of the phenomenology of peyote visions. Shonle also maintained that part of the reason why peyote was easily integrated into Native American traditional practices was because visions were already revered and sought after among indigenous peoples of the plains, with rituals, ceremonies, and practices such as fasting being designed as a means of provoking visionary experiences.

Several years later, the now-renowned ethnobotanist Richard Evan Schultes (1938, 712), would come to downplay the visionary aspects of peyote that were highlighted by Shonle, and instead foreground their tonic and medicinal properties as fundamental.

Schultes' remarks on peyote would spark an immediate response from the anthropologist Weston la Barre (1939, 341), who critiqued Schultes for conflating the ambiguous term "medicine-power" used by Plains indigenous groups with a Western notion "medicinal-power." La Barre (1938) had elsewhere substantiated these claims in demonstrating how "medicine-power" may be applied in any number of ways by Native American tribes, ranging from provoking clairvoyant experiences and assisting in the recovery of lost items, to preventing illnesses and granting power over enemies in times of warfare. La Barre's response to Schultes is significant insofar as the compartmentalization of everyday life into modern categorical units such as work, religion, recreation, and medicine have had a significant impact on how psychedelic drugs and experiences are categorized and studied (Wiedman 1991). La Barre (1960) also conducted a significant twenty-year review of peyote research in which he brought attention to internal controversies among peyote scholars on issues such as diffusion and terminology, reviewed how peyote has been understood in popular media, art, and music, and outlined a vision for the future of peyote research. In doing so, La Barre also argued that while some anthropologists have utilized the term 'narcotic' to categorize peyote (Barber 1959, 54), the term 'psychotropic' is more aptly suited for ethnographic research purposes.

Beginning early on, anthropological research on peyote has largely emphasized the centrality of the plant as an integral component of Native American rituals and ceremonies (Opler 1940; Howard 1956; Merriam and d'Azevedo 1957; Collins 1968). Whereas some anthropologists have reduced peyote ceremonies and rituals into functional terms by describing them as serving "a path to social advancement" (Barber 1941), a number of anthropologists have ultimately described the traditional usage of peyote by Native

American groups largely in terms of religion (Stewart 1974; 1987). Although there is broad acknowledgement of the fact that indigenous and non-indigenous conceptions of 'religion' each encompass diverse domains of life (Beaman 2002; King 2013; Wenger 2011; Fonda 2011; Caroll 2020), given the United States government's illegalization of psychedelic plants, fungi, and substances such as peyote (Terry and Trout 2017), this stance is understandable insofar as it has allowed Native American tribes to continue their traditional practices, albeit under the veil of religious freedom. Anthropologist Dennis Wiedman (2012) has documented the contested political history of peyote within the United States, noting that while Native American were only granted rights to religious freedom in 1978, peyotists were not protected under law until 1994, and further, the United Nations did not recognize indigenous medicines and health practices until 2007 (216). While these laws arose during the late twentieth century, Wiedman has argued that the state of Oklahoma was an exception insofar as the use of peyote for religious purposes was acknowledged by legislators at the 1906-8 Oklahoma Constitutional Convention, before the chartering of the Native American Church (215).

Anthropological studies on peyote have also examined how the plant has been applied in a vast range of contexts including its role in healing and spirituality (Myerhoff 1970; 1976; Schaefer and Furst 1996; Kracht 2018). This intimate relationship between spirituality and healing brings us to another major theme among anthropological research on peyote which is its use in therapeutic contexts (Jones 2007). In terms of the spiritual-medicinal-healing interface, Calabrese (1994) has maintained that peyote is both a medicine and a spirit, and that Navajo conceptions of healing extend beyond just their efficacy in treating physical ailments to also encompass healing at a symbolic level. Some

anthropologists have followed this line of thought and argued that indigenous peyote ceremonies qualify as health care systems in their own right (Wiedman 1990), while still others have attempted to investigate the medicinal import of peyote ceremonies for treating particular illnesses such as alcoholism (Garrity 2000; Webb 2011). Research on peyote has largely declined within anthropology throughout the twenty-first century, and perhaps this is due to the fact that its supply within the United States is severely threatened, even for members of the Native American Church (Feeny 2017). Aside from peyote, the mescaline-bearing cactus San Pedro has also been studied by anthropologists within Peruvian traditional contexts wherein the cactus is revered and sacralized for its healing and visionary properties (De Rios 1968; 1969; Glass-Coffin 2010).

B. Ayahuasca

More recently, anthropological work on psychedelics has tended to gravitate towards studying the more commercialized psychedelic brew commonly referred to as 'ayahuasca'. Despite having major geographical and sociohistorical differences from peyote, ayahuasca has nevertheless been explored through similar vantage points as peyote in anthropological research. The psychedelic substance known as ayahuasca, or yagé, refers to a visionary concoction which contains the psychedelic compound dimethyltryptamine (DMT). Aside from ayahuasca, archaeological evidence has shown that the traditional uses of DMT have taken the form of snuff as well (Torres and Repke 2006). While ayahuasca's origins remain unknown, and despite the global popularization of one ayahuasca recipe that is prepared by combining and cooking the bark of the Banisteriopsis caapi tree with the leaves from the Psychotria viridis bush, there is evidence

that myriad forms of ayahuasca likely preexisted this now widely standardized formulation (Torres 2017). One of the leading experts on ayahuasca within anthropology has been the cultural and medical anthropologist Marlene Dobkin de Rios, whose expansive body of work on psychoactive drugs spans over forty years and ranges from studies on the use of ayahuasca in both traditional (1972; 1980; 1984) and urban contexts (1970; 1989), to defenses of the fundamental biological drive of humans to alter their consciousness through drugs and rituals (1977a). De Rios was a prolific writer who not only developed groundbreaking cross-cultural perspectives on drug use (De Rios and Smith 1977b; De Rios 1993; 2005), but also advanced significant understandings of ayahuasca in terms of its pharmacology (1996), legal status (2008), ritual and healing properties (1972), and its involvement in drug tourism (1994; 2006).

During the late twentieth century, yet another one of the foremost authorities on ayahuasca, anthropologist Luis Eduardo Luna (1986a), would compile and analyze all available scientific knowledge on ayahuasca at the time. In the process, Luna (1986b) came to realize that ayahuasca had maintained a history of usage by more than seventy Amazonian groups across Latin America, and further, that the visionary drink was signified by over forty different names. Luna's (1984a; 1984b) own ethnographic research among shamans in Northeastern Peru led him to develop the concept of 'plant teachers' as a way of referring to certain psychedelic plants such as ayahuasca. According to Luna (1984a), plants that teach (vegetales que enseñan, or doctores) may contain some of all of the following characteristics: 1) induce hallucinations; 2) modify effects of ayahuasca; 3) "produce dizziness"; 4) possess strong cathartic and/or emetic properties; 5) provoke remarkably vivid dreams (140). Throughout his extensive work on shamanic healing, Luna

(2011) has shown how the experiences brought on by the consumption of ayahuasca are influenced by a range of factors that include diets, rituals, songs, the maintenance of relationships with plants and animals, and knowledge of spiritual realms. Luna's portrayals of ayahuasca and shamanic healing have largely been corroborated by other anthropologists who have done extensive fieldwork throughout Latin America as well (De Rios 1971; Harner 1973; Harner, Mishlove, and Bloch 1990; Fotiou 2012; Apud 2015; Fotiou and Gearin 2019).

On the topic of ayahuasca tourism, however, whereas some anthropologists and ethnobotanists have emphasized its negative impact on indigenous traditions (De Rios 1994; Ott 1994), Luna and White (2016) have maintained that Amazonian indigenous peoples have historically proven their resilience and their ability to constructively utilize these encounters to their advantage (35). Despite this positive impression of ayahuasca tourism, others have noted how it is driven by distorted Western conceptualizations of indigenous peoples. These anthropologists argue that Western ayahuasca tourists often idealize and romanticize indigenous peoples by downplaying or ignoring certain aspects of their traditions while selectively foregrounding others which relate to spiritual growth, healing, and authenticity (Davidov 2010; Labate and Cavnar 2014: xx; Fotiou 2014; 2016; Erazo and Jarret 2018). On this same token, however, a number of anthropologists have also argued that indigenous and non-indigenous interactions in these environments can sometimes lead to mutually beneficial cultural exchanges insofar as these encounters are multidirectional and can potentially help revitalize traditional practices and rituals (Labate 2014: 199; De Mori 2014: 225). Brazilian anthropologist Beatriz C. Labate has facilitated many of the contemporary discussions on the politics of ayahuasca (Labate and Cavnar

2014; Tupper and Labate 2014), namely throughout her deliberations on the internationalization (Labate and Jungaberle 2011; Labate, Cavnar, and Gearin 2016), therapeutic value (Labate et al. 2011; Labate and Bouso 2013; Labate and Cavnar 2013), religious import (Labate, Rose, and Dos Santos 2008; Labate and MacRae 2016), and legality of ayahuasca (Labate and Feeny 2012).

In reviewing the history of anthropological engagements with ayahuasca, one finds that the majority of research has ultimately tended to focus on one, if not all, of the following themes: the healing properties of ayahuasca, its spiritual or religious import, shamanism, or its role in encounters between Western and indigenous cultures. These trends have continued well throughout the twenty-first century insofar as anthropologists have continued to focus on ayahuasca's capacity to generate spiritual experiences (Lewis 2008; Callicott 2016), heal maladies such as drug addiction and depression (Anderson 2012; Apud and Romaní 2017; Horák, Hasíková, and Verter 2018), and transmit knowledge (Shanon 2010; Doyle 2012). In addition, ayahuasca's commercialization (Ray and Lassiter 2016) and entanglements with the law have become an object of study for anthropologists as well (Blainey 2015). More recent work on ayahuasca has investigated its usage in countries outside of Latin America such as Australia, with some anthropologists arguing not only that Western forms of individualism undergird the desire to drink ayahuasca (Gearin 2015), but further, that ayahuasca consumption by Westerners can be viewed as a form of escapism which tends to reproduce narcissistic tendencies (Rodd 2018). What is severely lacking across anthropological engagements with the classic psychedelic ayahuasca, then, is how Euro-American cultures engage in the use of psychedelics and what contexts they are used in.

C. LSD

The remaining two classic psychedelic substances—namely, lysergic acid diethylamide (LSD) and psilocybin—have received significantly less analytic attention by anthropologists and human geographers in general. LSD is a psychedelic drug that is derived from the fungus ergot (Claviceps purpurea), and while it is chemically similar to lysergic acid amide, a psychoactive substance that has documented usage by indigenous groups (Ott 1997: 119), there is no clear evidence which suggests that LSD was utilized in any traditions of the past, except for some speculation that it was consumed as a sacrament in the ancient Greek Eleusinian Mystery rituals (Wasson, Hofmann, and Ruck 1978). Although over a thousand scientific studies had been published on the biological and therapeutic effects LSD before its prohibition in the 1960s (Grinspoon and Bakalar 1979: 61; Doblin et al. 1999), a few anthropologists investigated LSD from a social scientific perspective during the mid to late twentieth century. Among them was, again, Marlene Dobkin De Rios, whose collaboration with a clinical psychiatrist named Oscar Janiger would lead to book devoted to the potential of LSD to provoke spiritual experiences and enhance one's creativity (De Rios and Janiger 2003). Aside from this work, Maura Lucas (2005) has conducted an ethnographic study on the use of LSD and the role of bad psychedelic experiences, remarking that negative trips should be valued as significant, especially when viewed from a "shamanic perspective" (26). According to Lucas, during many shamanic practices one may encounter a range of difficult or unwanted experiences which may range from: being sapped of one's power, dismemberment, spiritual intrusion, sorcery, and the loss of one's soul (27). Lucas argues that shamans have developed methods

for navigating these difficult experiences, and that the use of psychedelics in shamanic contexts is purposeful insofar as they are used either to acquire knowledge or for healing purposes that will contribute to betterment of their communities (28). Although Lucas brings an important point up regarding how "bad trips" are considered in negative terms in non-indigenous contexts, he nevertheless runs the risk of homogenizing the diversity across shamanic practices, including those within which psychedelics are used.

D. Psilocybin & General Psychedelics

The psychedelic mushrooms generally referred to today as 'magic mushrooms' have a history of traditional usage in Mesoamerica which dates back to prehistory (Guerra-Doce 2015: 92). While these substances were demonized and banned during the Spanish conquests, evidence of their continued traditional use in Mexico has also been recorded after the colonial period (Ott 1993: 276). In the Náhuatl language, the mushroom classified as psilocybe mexicana went by the name 'teonanácatl' which anthropologists have argued denotes "divine mushroom" or "flesh of the gods" (Rätsch 2005, 669). These psychedelic mushrooms are categorized as classic psychedelics due to the endogenously occurring psychoactive tryptamine alkaloid known as psilocin that endogenously occurs within the Psilocybe genus of mushrooms (Guzmán 1983). Richard Evan Schultes (1940) was among the early anthropologists to document cultural practices involving these mushrooms, and although he characterized them as narcotics and used an earlier scientific classification for them known as Paneolus, he was nevertheless the first anthropologist in the United States to summarize all existing knowledge on the mushrooms at the time. Schultes' findings would draw a retort from Johnson (1940), who claimed that it was not Schultes, but R. J.

Weitlaner who first ‘discovered’ the psychedelic mushrooms in 1936 (Davis 2014: 499). Surprisingly, aside from this controversy, and at odds with the widespread usage of psilocybin mushrooms (Winstock 2019: 93), only a few anthropological investigations have ever been conducted on psilocybin since its discovery. While significant studies on psychedelic mushrooms have been produced, such as Letcher’s (2007) discourse analysis of the study of psychedelic consciousness, there is a void within anthropological studies on the use of psilocybin within the United States.

Notwithstanding the state of psychedelic studies within anthropology, several important studies have been conducted on psychedelic use in general which tangentially include the study of psilocybin use alongside other psychedelics. Krieg, Berning, and Hardon (2017), for example, have produced a digital analysis of ‘trip reports’ from online forums and social media platforms. In their analysis, these authors demonstrate the value of digital methods for drug studies insofar as drugs are frequently discussed and purchased online, digital technologies and communications are becoming ever more pervasive in daily life, and online ethnography offers “glimpses into worlds of meaning and practice” that anthropologists can draw on to supplement findings from in-person fieldwork (43). Finally, this brings us to one last anthropologist, Michael J. Winkelman, who remains a leading figure in psychedelic research within anthropology. Although Winkelman is well known for his discussions on the therapeutic effects psychedelics (1991; 2001; 2005; 2014; Winkelman and Sessa 2019) and altered states of consciousness (1986; 2004; 2013b; Cardeña and Winkelman 2011), what sets his work apart is how Winkelman draws on findings from archaeology, evolutionary biology, and neuroscience to argue that psychedelic substances have ‘psychointegrative’ effects (1995; 2003; 2007).

For Winkelman (2013b), psychedelic plants and fungi, such as psilocybin mushrooms, are considered to be 'exogenous neurotransmitters' that have the capacity to augment functions in the paleomammalian brain and provoke primordial modes of knowing that are biologically based. Psychedelic substances allow for "unconscious processes and potentials" to be integrated into waking consciousness, and this, according to Winkelman, stimulated human evolution by way of provoking experiences that conferred adaptive potentials (45). Psychedelic substances and the role they play in shamanism, then, have been understood by Winkelman not only as playing an indispensable role in human evolution through the enhancement of fitness and cognitive capacities (1989; 2000; 2002a; 2002b; 2010a; 2010b; 2011; 2013; 2015; 2017; 2018), but also due to the central role psychedelic experiences play in the origins of religion (2006; 2019). Whereas Winkelman has inclined to place his emphases on the medicinal import of psychedelics, contemporary researchers have begun to situate the medicalization of psychedelics in a broader cultural, economic, and political context in order to better understand its reverberatory effects and underlying logics (Hartogsohn 2014; Noorani 2020).

IV. Classic Psychedelics in Geography

Notwithstanding the numerous angles human geographers have taken in their studies of drugs, the literature on psychedelic use within geography is nearly nonexistent. While scholars not formally trained in geography have produced geographic studies on the globalization of ayahuasca (Tupper 2009) and the role of geography in the development of psychedelic therapy (Dyck 2009), geographers have only written about psychedelics in

extremely limited and pejorative ways. The first instance of this can be found in Rycroft's (2007) analysis of 'the countercultural subject' of the 1960s, wherein Rycroft argues that psychedelic drug use and underground cinema created an environment out of which non-representational theory emerged. While Rycroft provides a robust historical analysis to support his thesis and an insightful depiction of the common characteristics of the countercultural subject, he ultimately drags psychedelics into his critique of nonrepresentational theory without elucidating on their history, pharmacology, effects, or continued use outside of this particular context. In doing so, Rycroft's selectively mobilizes psychedelic substances merely to serve as a cog in the construction of his 'countercultural subject'.

A second example of how psychedelic drugs have been portrayed in geographic contexts comes from Arun Saldanha's (2006; 2007) much referenced work on rave tourism in Goa, India. Here, Saldanha (2006) provides an excellent analysis of how "psychedelic transformations of self go hand in hand with the erection of new boundaries," or what Saldanha refers to as Deleuze and Guattarian 'microfascisms.' Saldanha (2006, 191) skillfully illustrates his thesis with ethnographic fieldwork which exemplifies his argument on how white tourists experience "psychedelic bliss" in the absence of dark Indian bodies. On the same token, however, Saldanha only refers to a drug known as 'MDMA' (3,4-Methylenedioxymethamphetamine) which is not a 'classic psychedelic' substance given its chemical structure and physiological effects. Furthermore, the substance is used in a very particular setting which likely involves the consumption of alcohol, dancing, and other activities. What Saldanha has studied, therefore, can be understood as a particular type of drug assemblage insofar as it is a particular site where multiple trajectories meet and work

together to produce certain types of experiences. Understood as an assemblage, the "rave tourism scene of Goa in Southern India" is but one type of drug assemblage involving the use of MDMA, and it is displayed by Saldanha through the lens of a limited number of individuals (172). While Saldanha has insightfully drawn out some of the contextual elements that are at work in this assemblage, his work runs the greater risk of portraying psychedelic drugs in a pejorative manner while not paying close enough attention to the intentions, expectations, and preconceptions of his participants. Furthermore, not only does Saldanha fail to address the psychopharmacological effects of MDMA, which also differ from other those of 'classic psychedelics', but he also refers to all of 'psychedelic culture' as "Goa freaks" which are white Westerners who are seek to reinvent themselves through travelling to India, consuming psychedelics, and dancing at raves. Although Saldanha does not recognize the history and complexity of psychedelics, including contemporary studies on their physiological and phenomenological effects, he may still be forgiven insofar as they may or may not contribute more to the particular type of drug assemblage he is studying. What is arguably more problematic in Saldanha's work is his depiction of psychedelic drug use as a predominately white hedonistic fantasy, therefore reinforcing the negative stigma that unjustifiably surrounds the subject of psychedelic substances.

Taking an alternate and affirmative approach to psychedelic drug use, Dilkes-Frayne and Duff (2017) have outlined a posthumanist framework through which drug experiences can be understood as being generative of subjectivity. To substantiate this assertion, Dilkes-Frayne and Duff draw on their ethnographic research on the use of MDMA in Melbourne, Australia to show how processes of subjectivation are not incompatible with posthuman theory. Through their development of the concepts

‘tendencies’ and ‘trajectories’, Dilkes-Frayne and Duff illustrate that while posthumanist approaches to drug consumption tend to decenter the subject in analytically productive ways, these works have also missed fertile opportunities to investigate how subjects are temporally extended beyond their emergence in an event, and how subjects endure “processes of subjectivation within and beyond such events” (953). According to Dilkes-Frayne and Duff, tendencies can be understood as habitual inclinations that are not rigidly fixed or predetermined (958), while trajectories refer to potential lines of flight which may disrupt the current flow of an event and produce new outcomes (959). For Dilkes-Frayne and Duff, what these concepts afford is a novel way of describing both enduring and emergent elements of subjectivation processes (962). Although their work, like Saldanha’s, does not focus on the ‘classic psychedelic’ substances, it nevertheless provides an alternative perspective on drug use than what has been proposed thus far within geography. More importantly, however, this approach to understanding drug consumption as a form of subjectivation has applicability for psychedelic studies within the social sciences at large, and therefore works as a useful framework to draw on in ethnographic studies on the use of psychedelics within the United States.

Conclusion

In the previous sections, I have demonstrated how anthropological and geographical works on psychedelic drug use have generally focused on a foreign culture or social group and their relationship with psychedelic drugs. In both geography and anthropology, analytical attention has often been either directed at the other culture’s use of, and relationship to, psychedelic substances, or alternatively, the impacts of psychedelic

tourism on foreign places, people, and experience. By drawing attention to this tendency within social scientific research on psychedelics to focus on cultural alterity, it not only helps situate the study I am proposing as providing a novel contribution to existing social scientific literature given its focus on the use of psychedelics within the United States by US citizens, but it also allows me to fill a significant lacuna the interdisciplinary study of psychedelics insofar as I am investigating psychedelic experiences in non-indigenous, non-clinical, and non-touristic settings and contexts. Furthermore, given the explosive rise in clinical research on LSD and psilocybin in recent years, it incumbent upon social scientific researchers to supply ethnographic accounts of psychedelic drug events to enhance our understandings of the therapeutic, contextual, and subjective dimensions of psychedelic experiences.

CHAPTER 4. PSYCHEDELICS IN HISTORICAL PERSPECTIVE

Introduction

As the subject of psychedelic drugs lends itself to myriad forms of inquiry, a coherent story cannot be told about psychedelic plants, fungi, and substances without integrating ethnological, botanical, chemical, historical, pharmacological, religious, therapeutic, and neuroscientific perspectives. As world renown chemist David Nichols (2016, 268) states, "psychedelics are a class of drug that cannot be fully understood without reference to a number of other fields of research, including anthropology, ethnopharmacology, psychiatry, psychology, sociology, and others." Not only are psychedelics and the traditional practices associated with them present in regions all across the globe (Schultes, Hoffman and Rätsch 1998, 29), but since the human relationship to psychoactive drugs, including psychedelics, predates the historical record (Bruhn et al. 2002; El-Seedi et al. 2005), a comprehensive history of psychedelics and their relationship to humans is ultimately beyond the scope of what can be offered in this dissertation. Instead, my aim in this chapter is to provide a partial history of the substances that are better known today as the classic psychedelics, which include dimethyltryptamine (DMT), lysergic acid diethylamide (LSD), mescaline, and psilocybin.

In tracing the brief hisory of each of the classic psychedelics, this chapter will demonstrate how the meanings attributed to psychedelics and the purposes towards which they are used not only shift according to different sociohistorical and political milieus, but also how they are contested within them. Each of the brief history sections is titled

according to the pharmacological rendering of the classic psychedelics only insofar it helps to contain literature that would otherwise be difficult to integrate due to the many different names psychedelics have taken over time in different sociocultural contexts. While inherently interdisciplinary, the history that is surveyed here can nevertheless be understood as a Euro-American perspective on psychedelics that emanates from the Global North. As such, it is helpful to keep in mind that there are countless histories and perspectives from which a history of psychedelics can be told, the majority of which cannot be represented here.

This chapter begins by examing the psychoactive substance known as mescaline, detailing the plants it endogenously occurs in, some of the traditions and geographies associated with its use, and its ingression into modern science and culture. I then move on to examine LSD, demonstrating how it is derived from a fungus, namely ergot, whose medicinal properties have been recognized since at least antiquity. I also show how LSD was inititally created in a laboratory in the early twentieth century, and how its use spread from the laboratory into medical and cultural contexts. The next classic psychedelic I provide an overview of is DMT, presenting the different varieties of DMT that exist, including arguably its most popular form in ayahuasca, as well as the practices associated with them that have been found across the globe. Finally, I examine psilocybin which is the classic psychedelic I focus on in this dissertation. I demonstrate how psilocybin was first discovered through its use in indigenous contexts, followed by showing how it transitioned from its Mesoamerican context into the cultures of the Global North. In the next section, I show how psychedelics have been associated with quasi-religious or mystical phenomena or experiences since their ingression into the cultures of Europe and

the United States, and how this association continues to be made in contemporary scientific research. The next section provides a concise survey of changes in drug policy in the United States, highlighting the political nature of psychedelic drugs. Lastly, I analyze the brief history of psychedelics provided in this chapter by using assemblage theory, arguing that that different psychedelic assemblages have formed over time and continue to emerge, each with their own styles of reification that draw together unique meanings, practices, materials, and actors based on a particular arrangement or understanding of what psychedelics are.

I. Classic Psychedelics in Historical Perspective

A. Mescaline[7]

The isolated psychedelic alkaloid known as 'mescaline' is primarily derived from two species of cacti that have a long and variegated relationship with humanity that spans to pre-recorded history. Mescaline (chemically 3,4,5-trimethoxyphenethylamine) is one of multiple alkaloid compounds found to endogenously occur in the species of cacti popularly known as peyote and San Pedro, both of which maintain millennia of traditional usage across the Americas.[8] Whereas the oldest graphic evidence for San Pedro dates between 1500-1200 BCE (Jay 2019: 15; Sharon 2019), it has been estimated that peyote usage dates to 5700 BCE (Bruhn et al. 2002; El-Seedi et al. 2005; Terry et al. 2006). Although the taxonomy of San Pedro is debated, the family of cacti is thought to have evolved

[7] For a global history of mescaline, see Jay (2019).

[8] For a comprehensive account of the botanical, chemical, historical, and ethnological dimensions of the mescaline-containing cacti San Pedro and peyote, see Rätsch (2005).

approximately 30 to 40 million years ago in elevations above 2,000 meters across the Andes (Jay 2019, 17). *Trichocereus pachanoi* is considered to be the classic exemplar of the San Pedro cactus; however, an unknown number of varieties of San Pedro now exist worldwide due to the ease of cacti hybridization and transplantability (Jay 2019, 21). While San Pedro is the name typically used along the northern coastal communities of Peru, it is referred to as *Huachuma* in northern Andean regions and *Achuma* in many Bolivian communities (Schultes, Hoffman and Rätsch 1998, 168).

The oldest graphic depictions of San Pedro can be found at the archaeological sites of the Chavín culture located 3,200 meters above sea level in the Peruvian Andes.[9] The evidence found at Chavín indicates the central importance of mescaline-containing cacti and other psychoactive drugs at the genesis "of South America's first monumental culture" (Jay 2019, 23). There is consensus among contemporary archaeologists that Chavín "was a temple built for large-scale ceremonies, and that hallucinogenic plant preparations were an important component of the rituals that took place there" (Ibid.). While scholars can only speculate on the methods of consumption and ritual activities that were engaged in during the Chavín period, it is clear that San Pedro's centrality was momentous as its use would also be integrated into the pre-Hispanic cultures where it played a significant role in shamanism, sexual magic, and oracle practices (Ratsch 2008, 507). Today, the cactus is used primarily in Peruvian folk medicine which, according to Rätsch (2005, 407), has increasingly become more symbolic than shamanic. It has been observed that San Pedro also continues to be used in traditional healing practices among the Tiwanaku and Wari

[9] For a detailed account of the iconography found at Chavín, see Torres (2008).

cultures located in the highlands of Bolivia and southern Peru (Jay 2019, 25), not to mention in urban environments wherein the cactus is revered and sacralized for its healing and visionary properties (De Rios 1968; 1969; Glass-Coffin 2010).

Peyote is another of the two best-known mescaline-containing cacti with a history of traditional usage that dates back several millennia (Bruhn et al. 2002; El-Seedi et al. 2005; Terry et al. 2006). Peyote's ritual use throughout the prehistoric period in Mexico is well established (Guerra-Doce 2015), as is its transcultural diffusion among other native groups across Mexico and North America (Shonle 1925; La Barre 1938; Opler 1938; Ott 1993, 85). Under its first botanical description in 1845, peyote went under the name *Echinocactus Williamsii*, but later in 1894, it was "placed in the monotypic genus *Lophophora*" (Schultes 1970, 254). While the classic peyote cactus, *Lophophora williamsii*, is also taxonomically debated as one variation among many within the *Lophophora* genus, it is nevertheless agreed upon that its geographic distribution is located in desert environments that span from central Mexico to Texas (Ratsch 2008, 327). Similar to San Pedro, peyote contains over 60 alkaloids of which mescaline is but one (Carod-Artal 2015). In the Náhuatl family of languages spoken by the Nahuas, an ethnic enclave that included the Aztecs, peyote was referred to as *peiotl* or *péyotl* (Ott 1993, 83).

The earliest recorded account of peyote use can be found in what is referred to today as the *Florentine Codex*, originally titled, *The General History of the Things of New Spain*, written in the mid-sixteenth century by the Franciscan priest Bernardino de Sahagún. In the words of Sahagún written in 1560,

> There is another herb like mountain prickly pear, named peiotl, which is white and can be found in the north. Those who eat or drink of it see

> terrifying or absurd visions; this inebriation lasts two or three days and then subsides. It is a delicacy often enjoyed by the Chichimeca, for it is sustaining and spurs them to fight with no thought of fear, thirst, or hunger, and they say that it protects them from all danger (Carod-Artal 2015, 46).

The fearful and curious, yet negative depiction of peyote found in Sahagún's account and other early missionary writings reflects the more widespread European perception of New World psychedelics during the early colonial era (Jay 2019, 39). Although late sixteenth-century missionaries did in fact recognize peyote as having medicinal and divinatory uses, this attitude was ultimately short-lived (Breen 2021, 11). The prevailing perception of the psychedelic-containing plants and fungi of Mesoamerica, which included peyote and psilocybin, would be disparaging insofar as associations were made between them and Satan, leading to their eventual banning in 1620 by the Mexican Inquisition (Breen 2021, 12). The grounds for the prohibition of peyote stemmed from religious reasons insofar as the 'devilish root', or *raiz diabolica*, was interpreted as contaminating the integrity and purity of Catholicism (Jay 2021, 40).

Despite the suppression of the use of peyote and the belief systems associated with it, accounts of peyote's healing and visionary dimensions were never fully eradicated, presenting "the Spanish with profound problems of interpretation" (Jay 2019, 36). Recently, historians have also complicated the notion that all new world psychedelics were indiscriminately demonized, suggesting instead that psychedelics maintained an ambiguity about them across many writings throughout the colonial period (Breen 2021, 13). On this view, the initial interest in peyote was not due to its perception as a hazardous or sacrilegious intoxicant, but as a potential medicine, as evidenced in the writings of Francisco Hernández in 1570 and Gregorio Lopez in 1590, both of whom recognized the

plant's medicinal and divinatory potentials (Breen 2021, 11). Following historian Benjamin Breen (2021, 13), early letters written about peyote's medicinal use and potential for abuse were often worded in ambiguous language that allowed for the "repurposing of peyote and related drugs by medical authorities." This idea of "repurposing" drugs is a refrain that will resurface throughout the centuries to come, especially in the nineteenth century when mescaline and cocaine are isolated from their naturally occurring sources, thereby decontextualizing and recontextualizing them in the process. (Breen 2019, 17). The eventual persecution of peyote rituals led some groups, such as the Tarahumara of the northern Sierra Madre, and the Huichol of the western Sierra Madre, to relocate to mountainous areas that were nearly inaccessible to the Spanish (Jay 2019, 42).[10]

In tracing peyote's diffusion northward, the earliest accounts of peyote use in what is now Texas are from 1760 (Rätsch 2005, 327). By the time of the civil war, peyote's use was well established among American Indians such as the Kiowa, Comanche and Plains tribes (Schultes 1970, 30). The spread of peyote across indigenous tribes in the United States led to its first banning in the state of Oklahoma in 1886 (Jay 2019, 119). Toward the end of the nineteenth century, many peyotists would officially organize themselves in what would later become the Native American Church (NAC), and with their religious sacrament peyote, eventually spread throughout the United States and even into Canada (Ibid.). The adoption of peyote in this context has been understood by some as a response to the violent suppression of traditional practices, in addition to restrictions placed on the

[10] For a comprehensive account of the Huichol and their relationship to peyote, see Schaefer and Furst (1996).

mobility of Native Americans through their confinement to reservations (Pollan 2021, 171). As Jonathan Ott (1996, 85) observes,

> In self-defense, and in an attempt to salvage something uniquely Indian from the onslaught of white acculturation, Indian *péyotl* users allied with anthropologists and civil libertarians to seek protection under the Constitutional guarantees of religious freedom.

Before the charting of the NAC in 1918, however, government agents were dispatched to confiscate and destroy peyote buttons, with one report claiming that one sole officer burned nearly 100,000 (Jay 2019, 122). Increased pressure from Christian groups and other citizens claiming that peyote addiction was spreading, led to peyote being categorized as a narcotic under the Harrison Act of 1914 (Jay 2019, 119). The state of Oklahoma was an exception insofar as the use of peyote for religious purposes was acknowledged by legislators at the 1906-1908 Oklahoma Constitutional Convention, before the chartering of the Native American Church (Wiedman 2012, 215). By 1918, peyote was facing its first potential federal ban in a bill that was prohibiting alcohol, but where the House passed the bill, the Senate rejected it, and the federal ban never ultimately materialized (Jay 2019, 122). Nevertheless, countless efforts by anti-peyotists continued between the 1930s and 1960s, most of which went unsuccessful, and in the 1990s, the NAC was rescinded of its First Amendment rights, leading to turmoil that would eventually be rectified in 1994 with the passing of the American Indian Religious Freedom Act Amendments (Jay 2019, 128).

American Indians across the US were therefore not granted rights to religious freedom until 1978, nor were they allowed to legally consume peyote until 1994 (Wiedman 2012, 216; Pollan 2021, 174). In spite of gaining the legal right to consume peyote toward the end of the twentieth century, it would take more than two decades for indigenous

practices and medicines to be recognized by the United Nations in 2007 (Wiedman 2012, 216). Today, there is a severe shortage of peyote that is thought to be driven by both inefficient harvesting practices and increased demand. Organizations, such as the Indigenous Peyote Conservation Initiative (IPCI), have since sprung up in an attempt to safeguard lands where the cactus naturally grows, with the hopes that American Indians will neither have to purchase peyote from state-licensed *peyoteros*, nor sacrifice the sacred pilgrimages that traditionally accompany the peyote hunt for many groups (Pollan 2021, 185). In March of 2020, an official joint statement was drafted by the National Council of Native American Churches (NCNAC) and the IPCI which asked "decriminalization" efforts – a recent trend where city councils are decriminalizing entheogens – to not include peyote among the psychoactive substances they attempt to have rescheduled insofar as this may exacerbate the scarcity of peyote available to members of the Native American Church (Benally et al. 2020).

The story of mescaline's ingression into European and American schools of medicine and pharmacology is often associated with the work of German physician and proto-ethnopharmacologist Louis Lewin who provided the first pharmacological assessment of peyote in 1886 (Hagenbach and Werthmüller 2011, 58). In his 1924 publication considered to be a pioneering work of ethnopharmacology, *Phantastica: Use and Abuse of Mind-Altering Plants*, Lewin (1998, 82) details how he isolated "a crystallized alkaloid called by me anhalonine" from dried peyote samples he obtained toward the late 1880s. Lewin wrote a brief account of the history, uses, and effects peyote, while he also provided a description of the phenomenology of the anhalonium experience:

> Like the poppy, this anhalonium towers above the rest of known plants on account of the special character of its effects on man. No other plant brings about such marvelous functional modifications of the brain…anhalonium procures for those who make use of it, by its peculiar excitation, pleasures of a special kind. Even if those sensations merely take the form of sensorial phantasms, or of an extreme concentration on the inner life, they are of such a special nature and so superior to reality, so unimaginable, that the victim believes himself transported to a new world of sensibility and intelligence. It is easy to understand why the Indians of old time venerated this plant as a god and looked on it as the vegetable incarnation of divinity (Lewin 1998, 82).

Although today, anhalonium is thought to have likely been a mixture of chemical alkaloids rather than pure mescaline, Lewin would be the first to mention anhalonium in an 1888 paper that would bring psychedelic substances to the attention of European scientists (Lewin 1888; Ott 1996, 86). Despite his achievements, Lewin was never able to isolate mescaline, and it would not be until further phytochemical analyses were undertaken by German chemist Arthur Heffter in 1895-1896, that four pure alkaloids would be isolated from peyote, one of which he called *Mezcalin* (Ott 1996, 86). In 1897, Heffter would conduct a series of self-experiments with the isolated alkaloids, including mescaline, and report their effects in an event later recognized as the first scientific experiment with an isolated and purified entheogenic substance. Heffter's method of self-experimentation used to test the effects of unknown psychoactive substances would come to be known as the 'Heffter Technique', and has since inspired later chemists experimenting with novel psychoactive drugs (Ott 1996, 86). Around the time of Heffter's experiments with mescaline, British and American physicians Havelock Ellis and Silas Weir Mitchell had also become interested in, experimented with, and ultimately wrote about peyote's effects in prestigious medical journals, bringing further attention to both peyote and mescaline. By 1919, chemist Ernst Späth would be the first to synthesize mescaline and provide its

chemical structure, marking a momentous achievement the history of organic chemistry (Soukup 2019). As experiments with pure mescaline and peyote began to rise throughout Europe during the early twentieth century, two observations were commonly reported: first, mescaline displayed a chemical structure that was closely related to neurotransmitters like norepinephrine and dopamine; second, mescaline's effects, particularly its ability to provoke hallucinations, were increasingly associated with schizophrenia, leading many scientists to consider mescaline as a 'psychotomimetic' agent given its purported potential to produce a model of psychosis (Miller 2015, 59).

While the isolation of mescaline revolutionized European psychiatry by the end of the nineteenth century, in the 1900s, it began being used in artistic and occultist circles (Rätsch 2005, 327). Knowledge of mescaline in the wider American and European culture also started to increase in popularity as poets such as Allen Ginsberg, William Butler Yeats, and Arthur Symons, and American novelist William Burroughs began to experiment with peyote and report on its effects (Ott 1996, 94). Philosophers such as John Paul Sartre, William James, and Walter Benjamin are also reported to have experimented with peyote and mescaline (Jay 2019, 157). In 1931, when Lewin's *Phantastica* was translated into English, the philosopher and writer Aldous Huxley became so enthralled with Lewin's account of mescaline that he arranged to experience it for himself. Psychiatrist Humphry Osmond, who at the time was working in a Canadian hospital where he administered mescaline to patients for treatment of mental disorders, provided Huxley with a 400mg dose of mescaline in 1953, the experience of which Huxley went on to detail in *The Doors of Perception* in 1954 (Ott 1996, 95). Granted that other works, such as Rouhier's (1926) *Le peyotl*, increasingly brought mescaline into the public eye throughout Europe, it was

Huxley's book that catapulted peyote and mescaline onto the mainstream stage of European and American culture. As Mike Jay (2019, 94) has noted, as peyote transitioned into western contexts, it also underwent a filtering through a western gaze: an occularcentric and individualistic gaze which focused on the visual effects and the inner, personal imagery provoked by peyote, rather than the communal and ritual elements from which it originated – an apparent point of contention between early thinkers (Ibid.). From yet another angle, peyote had also been decontextualized in a different way, for in its transition into mescaline it "crossed another great divide into modernity: from plant spirit to chemical compound" (Jay 2019, 99).

Up until the mid-1930's, mescaline was readily obtainable from pharmacies for purchase, while peyote was commonly sold in sacks by the thousand (Ott 1996, 95). In 1936, however, pharmaceutical regulators would urge the League of Nations Advisory Committee on the Traffic in Opium and other Dangerous Drugs, organized roughly a decade earlier, to restrict the availability of mescaline to only scientists and doctors (Jay 2019, 145). Nevertheless, the use of peyote in the wider American culture persisted, and scientific experiments with mescaline continued throughout the 1930s. During this time, although studies on mescaline continued to yield inconsistent results across populations, it still attracted the attention of The Rockefeller Foundation which funded a variety of investigations on the effects of mescaline on psychiatric patients (Jay 2019, 178). Psychiatrists Eric Guttman and Walter Maclay were among the scientists who received Rockefeller Funding for research with mescaline, and after a series of experiments, went on to make an association between mescaline and schizophrenia based on the assumption that the phenomenology of the mescaline experience, such as hallucinatory effects or

perceptual distortions, were remarkably similar to the symptoms of psychosis (Jay 2019, 179). This assumption would establish itself as a dominant psychotomimetic model in psychiatry for years to come, based on the idea that psychosis must be caused by some endogenous toxin that has a chemical similarity to mescaline (Miller 2015, 59; Jay 2019, 184).

As the research on mescaline and psychosis continued, a number of parallel studies conducted during the 1930s and 1940s were designed to test the effectiveness of psychoactive drugs such as mescaline, LSD, and psilocybin as potential 'truth serums' (Jay 2019, 184; Falcon 2021a, 10). The studies were part of a much larger US government-backed initiative concerned with the possibility of psychochemical warfare and techniques of 'drug-assisted interrogation and behavior manipulation' (Smith, Raswyck, and Davidson 2014, 4; Passie and Benzenhöfer, 2018, 1). The geopolitical paranoia was, in part, driven by the US and Britain falling behind Germany in the science of chemistry, resulting in Germany rising to the forefront of pharmacology and the pharmaceutical industry during the middle to late-nineteenth century until the rise of the Nazi regime (Miller 2015, 83, 94). In 1942, the United States commissioned a Truth Drug Committee to study mescaline's potential import for interrogation, but it was swiftly rejected due to causing severe nausea (Jay 2019, 184). The US Central Intelligence Agency (CIA) would continue its experiments and later usher in a series of research programs starting with Project BLUEBIRD in 1950, followed by the now-infamous Project MK-ULTRA in 1953, to further investigate the effectiveness of different techniques of interrogation and behavior

manipulation, including the use of psychoactive drugs (Jay 2019, 185).[11] A multitude of interdisciplinary studies were subsequently commissioned, either directly or indirectly, by the CIA through several fronts, including investigations from fields such as psychiatry, psychology, sociology, and anthropology (Price 2007, 9).

In 1938, Swiss chemist Albert Hofmann synthesized the novel compound LSD-25 (LSD), which never initially aroused interest until its resynthesis by Hofmann in 1943 (Smith, Raswyck, and Davidson 2014, 3). Since its effects purportedly resembled those of mescaline according to Hofmann and others, LSD was also considered to be a psychotomimetic (Jay 2019, 189). However, given that LSD outperformed mescaline in clinical trials due to its greater potency, reduced duration, and smaller dosage among other reasons, mescaline was soon phased out of research (Jay 2019, 237). As Jay (2019, 7) observes, "Mescaline launched the psychedelic era but would play little part in its future." The use of pure, isolated mescaline by the wider American population is not supported by much evidence, and as it turns out, what many thought was mescaline actually turned out to be LSD (Ott 1996, 98). This is consistent with other claims that pure mescaline has nearly vanished in the twenty-first century (Jay 2019, 250). Ott (1996, 98) further maintains that the "natural versus synthetic" confusion also spawned out of these circumstances insofar as propaganda depicting LSD in a negative light made people believe that its synthetic nature was part of the problem, and that mescaline in turn was better because it was natural. This, in combination with various texts which brought peyote culture into the

[11] See Chapter 3 for more on this topic

popular imagination, led to a growing fanaticism with indigenous cultures and altered states of consciousness among the general public.

Despite LSD and mescaline being outlawed in the United States in 1965 by the Drug Abuse Control Amendments, except in select cases where governmental approval was granted, there was nevertheless a growing and persistent desire to experience psychedelics in much of American culture (Jay 2019, 238). These experiences took place outside of laboratories and clinical settings, and throughout the 1960s and 1970s, there was a growing longing to participate in 'authentic' psychedelic ceremonies facilitated by indigenous cultures. The 1960 publication of Carlos Castañeda's *The Teachings of Don Juan* was one of the major catalysts in this regard as it drove many westerners to search for peyote experiences in Huichol territory (Jay 2019, 232). Soon after its publication, Castañeda's work was discredited as being part-fabricated and part-plagiarized from various anthropological writings on peyote culture such as those of Furst, Harner, and Myerhoff (Ibid.). While certain anthropologists launched lawsuits and publicly denounced the text, Myerhoff viewed the effects of its cultural reception in a positive light for it was "popularizing a new sensibility that took indigenous beliefs seriously" (Jay 2019, 234). Although anthropologists from early on, such as Weston La Barre (1938), noted their disapproval of what they saw as the beginning stages of psychedelic tourism, by the 1980's, the emergence of "Mexican *péyotl* tours" had converged with eco- and nature tourism, bringing floods of Americans and Europeans to indigenous territories to participate in 'authentic' psychedelic sessions – a trend which continues today and has been written on extensively by anthropologists (Ott 1996, 99).

B. D-Lysergic Acid Diethylamide (LSD)

The story of LSD can be told from many angles. While most accounts begin with Albert Hofmann's dual syntheses of LSD-25 in 1938 and 1943, it is helpful to first discuss the psychoactive fungi, namely ergot, from which LSD is derived. Ergot is a parasitic fungus, scientifically classified as *Claviceps purpurea*, that infects wheat, rye, barley, and other wild grasses (Ott 1996, 121). Poisoning from ergot was common throughout the Middle Ages, especially among the poor, given their lack of access to foods other than bread (Ibid.). There were two major ways ergot poisoning manifested itself: the first was *convulsive*, characterized by seizures; the second, *gangrenous*, distinguished by gangreneous infections of the extremities and sometimes referred to as 'St. Anthony's Fire' or 'holy fire.' (Ott 1996, 122; Miller 2015, 40). Ergot's medicinal properties were known in antiquity since at least 1000 BCE when it was utilized in obstetrics (Miller 2015, 38). Hippocrates (c. 370—470 BCE) had also recognized ergot's ability to assist in the suppression of postpartum hemorrhaging (Hatsis 2021, 16). In the absence of knowledge of either its medicinal or poisonous properties, however, symptoms of ergotism were sometimes associated with witchcraft and signs of religious transgressions (Hatsis 2021, 17). Once the connection between ergot poisoning and infected grain was discovered in the seventeenth century, cases of ergotism diminished throughout many parts of the world (Ott 1996, 122).

The first modern description of ergot was recorded by German botanist and physician Adam Lonitzer in 1582 (Miller 2015, 39). Lonitzer recognized ergot's medicinal import insofar as it has a history of ethnomedical uses in Europe since antiquity, particularly as an ecbolic used by midwives or "white witches" to help precipitate

childbirth (Ott 1996, 122). In 1808, ergot's uterine-constricting properties had been scientifically established, but by the mid-1820s, it was deemed too dangerous to use on the grounds that the contractions it caused could potentially put the unborn child's life in danger (Ibid.). Although chemical investigations on ergot commenced in the 1800s, it would not be until 1907 that researchers isolated an alkaloid mixture believed to contain ergot's toxic properties, referred to as *ergotoxine* (Ott 1996, 123). The first isolation of a pure ergot alkaloid occurred in 1917 by Arthur Stoll, a chemist who named the isolated compound 'ergotamine' and would later become Albert Hofmann's superior at Sandoz Laboratory in Basel, Switzerland (Miller 2015, 42). *Ergonovine*, the name given to the alkaloids responsible for the uterotonic and hemostatic properties of ergot, was then isolated in 1935 by four independent laboraties (Ott 1996, 123). This was followed by what is thought to be "the first synthesis of an ergot alkaloid" in history, performed by Albert Hofmann in 1937, who synthetically prepared ergonovine (Ibid.). It is after this chain of discoveries related to ergot that Albert Hofmann would come to synthesize LSD for the first time in history.

Hofmann continued working with ergot alkaloid derivatives in an attempt to discover either novel compounds, or substances with enhanced pharmacological properties (Ibid.). In 1938, on his twenty-fifth synthesis of lysergic acid derivatives, Hofmann produced *d-lysergic acid diethylamide* (LSD-25) in hopes that it could serve as a potential cardiovascular stimulant (Hagenbach and Werthmüller 2011, 41). LSD was then tested in a series of animal experiments conducted at Sandoz, where it was ultimately determined that LSD was not worth exploring further given that it was less potent than ergobasine and caused restlessness in animals (Ibid.). Hoffman, however, had a feeling that LSD had

impacts beyond what was exhibited in early trials, leading him to resynthesize it in 1943 without his laboratory's consent (Hagenbach and Werthmüller 2011, 42). The same day he resynthesized LSD, Hofmann accidentally dosed himself with an unknown quantity thought to be absorbed through his hands, and left the laboratory early due to feeling dizzy and restless. He described his experience in a report addressed to Stoll:

> At home I lay down and sank into a not unpleasant intoxicated-like condition, characterized by an extremely stimulated imagination. In a dreamlike state, with eyes closed (I found the daylight to be unpleasantly glaring), I perceived an uninterrupted stream of fantastic pictures, extraordinary shapes with intense, kaleidoscopic play of colors. After some two hours this condition faded away.
>
> This was, altogether, a remarkable experience—both in its sudden onset and its extraordinary course. It seemed to have resulted from some external toxic influence; I surmised a connection with the substance I had been working with at the time, lysergic acid diethylamide tartrate.[12]

Three days after this initial experience, Hofmann would intentionally consume a 250 microgram (0.25 mg) dose of LSD-tartrate, assumed to be roughly 5-10 times the minimum needed for an effect (Miller 2015, 37). For perspective, it is thought that "Hofmann's LSD was approximately 4,000 times the potency of mescaline" (Ott 1996, 120). To say the least, Hofmann's experience was terrifying yet curious. It was replete with bouts of anxiety, perceptual distortions, and thoughts of being possessed and even dying; however, it also was also remarkably fascinating with moments of amazement, including experiences with his eyes closed wherein there was "a wonderful play of color and forms" (Hagenbach and Werthmüller 2011, 44). The following morning, he felt himself and the world anew along with a great sense of vibrancy and well-being (Ibid.).

In 1947, the first medical article on LSD was published by Arthur Stoll's son and phyisician, Werner Stoll, who performed his research at the University of Zurich's

[12] See Albert Hoffman, LSD: My Problem Child. MAPS (Multidisciplinary Association for Psychedelic Studies), https://maps.org/images/pdf/books/lsdmyproblemchild.pdf

psychiatric clinic. After conducting the earliest experiments with LSD on both healthy subjects and psychiatric patients, Stoll suggested that LSD potentially had therapeutic import (Hagenbach and Werthmüller 2011, 64). His paper would mark the first of over one thousand medical studies on LSD published throughout the following decade (Dyck 2005, 383). In 1949, however, psychiatrist Gion Condrau would suggest that LSD's value lied in its potential as a psychotomimetic (Hatsis 2021, 36). This wasn't necessarily a new idea insofar as the notion that psychedelics such as LSD and mescaline could cause temporary psychosis or schizophrenia had already circulated in the medical and psychopharmacological literature for quite some time (Osmond 1957, 418; Hagenbach and Werthmüller 2011, 65). By the 1950s, LSD was being manufactured and distributed by Sandoz Laboratory under the name *Delysid*, and early reports showed that it exhibited promise as a therapeutic aid in clinical psychiatry (Ott 1996, 120). The significance of LSD for brain science, psychiatry, and pharmacology was unrivaled, leading some to maintain that LSD arguably catalyzed the study of serotonin neuroscience (Nichols 2016, 267). Throughout the 1950s and into the 1960s, the CIA would perform experiments on vulnerable populations using LSD, mescaline, psilocybin, and DMT to test the potential of psychedelics in interrogation and chemical warfare (Price 2007a, 9; Price 2007b; Smith, Raswyck and Davidson 2014, 4). At a New York Academy of Sciences meeting in 1957, British psychiatrist Humphry Osmond would propose the term 'psychedelic' as a replacement for 'psychotomimetic' with regards to LSD and mescaline, ultimately based on his years of experience working with these substances in a Canadian psychiatric hospital (Tanne 2004).

The 1960s would be a period of upheaval in the United States; protests against the Vietnam War, social movements for racial justice, Malcom X's assassination, the rejection of inherited cultural norms, and the widespread use of psychedelics would all converge to create a climate of political conflict (Miller 2015, 69). By the mid-1960's, Harvard psychologist Timothy Leary would be unforgivingly proselytizing about the virtues of psychedelics, while Ken Kesey, a writer that initially tried LSD through CIA-sponsored research, was "democratizing the use of LSD" through festivities and concerts (Miller 2015, 68). Between the mid-to-late 1960s, a series of anti-drug measures were enacted in the United States, and Sandoz Laboratories stopped manufacturing LSD (Ott 1996, 132; Dyck 2005, 386). More direct measures were taken in California and Nevada in 1966, when the sale, possession, and manufacture of LSD were made illegal (Hatsis 2021, 266). It should be mentioned that in other parts of the globe, such as in Czechoslovakia, LSD continued to be manufactured and recognized for its therapeutic potential in 1967 (Grof 2009, xviii). As the use of LSD continued to surge in the American population by the end of the 60s, the US government and media would respond in a way that some have described as "a smear campaign blaming LSD for everything from psychotic behavior in young people to chromosomal damage, and whipped the general public into a frenzy" (Miller 2015, 69). It is commonly held that LSD was used as a scapegoat, as many drugs have been targeted in the past (Szasz 1974), to persecute certain groups who, in this context, were antiwar demonstrators, student protestors, and countercultural types among others seen as cultural dissidents (Dyck 2005, 381; Nichols 2016, 267). While the massive use of LSD certainly led to problems mostly due to the powerful nature of the drug and some of the contexts in which it was used, the media sensationalized damaging stories about LSD

during the mid-to-late 60s, and by 1968, it was deemed illegal to conduct research on LSD in North America (Dyck 2005, 386).

With the passing of the Controlled Substances Act of 1970, LSD and other psychedelics were categorized under a Schedule 1 classification that was reserved for drugs that had no known medical application and also had a high potential for abuse (Falcon 2021b, 157). Medical research investigating the therapeutic import of LSD, often conducted by "psychiatrists who were in no sense cultural rebels or especially radical in their attitudes" (Grinspoon and Bakalar (1979, 192), was effectively terminated due to lack of drug accessibility and sources of funding. These measures would essentially stultify scientific research on psychedelics over the next half century until today. By the 1970's, a full fledged war would be waged by president Nixon against "America's public enemy number one," drug abuse (Niesen 2011, 872). A multidimensional "war on drugs" campaign was subsequently launched by Nixon as a matter of both morality and national security; it was a crisis that required massive amounts of funding from Congress to expand anti-drug law enforcement and create educational campaigns against drugs. These anti-drug measures would be further fortified during the Reagan presidency, and the incarceration of citizens for non-violent drug offenses would significantly contribute to the United States becoming the world leader in incarceration (Kuzmarov 2018; Falcon 2021b, 157). Today, scientific research on LSD and other psychedeics is gaining significant momentum; however, the classic psychedelics continue to be classified as Schedule 1 substances and only a handful of studies on psychedelics have been funded by the NIH over the past half century.

C. N,N-Dimethyltryptamine (DMT), 5-MeO-Dimethyltryptamine, and Ayahuasca

N,N-Dimethyltryptamine (DMT) is a psychoactive alkaloid that has been found to naturally occur in many species of plants and animals, including humans (Christian et al. 1977; Carbonaro and Gatch 2016; Barker 2018; Dean et al. 2019). Although the traditional use of DMT derived from plant sources spans hundreds of years to possibly 3000 BCE in the Americas, (Torres et al. 1991, 645), DMT in its isolated form only became an object of scientific knowledge in the United States and Europe in 1931 through British chemist Richard Manske's synthesis of the drug (Manske 1931). Fifteen years later, Brazilian biologist Oswaldo Gonçalves de Lima would discover that DMT naturally occurred in plants (Gonçalves de Lima 1946). Nearly a quarter-century after Manske's original synthesis, 5-MeO-DMT was discovered as one psychoactive compontent among several contained in the seeds and pods of the *Anadenanthera peregrina* tree, which according to early colonial accounts, were used by native groups in South America and the Caribbean to make hallucinogenic snuffs (Fish et al. 1955). The earliest accounts of the cultural use of 5-MeO-DMT are from Ramón Pané, a friar commissioned by Christopher Columbus, who wrote of the use of snuffs known as *cohoba* by the Taíno Indians of Hispaniola (Torres 1988; Ott 1996, 165). The snuffed form of 5-MeO-DMT is thought to date back over four thousand years (Pagán-Jiménez and Carlson 2014). After Manske and Gonçalves' discoveries of natural sources of DMT, chemist and psychiatrist Stephen I. Szára would self-experiment with the N,N-DMT (henceforth DMT) along with his colleagues in 1956, and in the spirit of the times, report that DMT produced psychotic effects (Szára 1956).

After Szara's experiments, however, there was little to no evidence of DMT use outside of laboratory settings (Ott 1997, 183).

Although DMT continued to be considered a psychotomimetic agent throughout the 1950s (Ott 1996, 185), scientific perception of DMT started to shift when Timothy Leary and Ralph Metzner began experimenting with the drug at Harvard. Whereas Metzner casted some doubt on the psychotomimetic paradigm in his early review of psychedelic drugs (Metzner 1963), Leary further suggested that psychedelics including DMT had religious import (Leary 1964, 342). A few years later, Leary would be interviewed for an article appearing in *Playboy* magazine wherein he would call LSD "the most powerful aphrodisiac ever discovered by man," while also suggesting that DMT's short duration could lead to the possibility of a "lunch-hour psychedelic session" (Leary 1966). Bigwood and Ott (1977) later obsvered that Leary's remarks led to DMT being regarded as the "businessman's trip" in certain circles. Thereafter, DMT and related compounds were "swept up in the wave of state and federal illegalization of LSD" between 1966 and 1969, and by 1970, DMT was categorized as a Schedule 1 substance that some regarded as having the highest potential for abuse among all psychedelics (Ott 1996, 186). Despite its illegalization, a number of writings began to emerge throughout the late 1960s and into the 1970s detailing the methods for synthesizing DMT in both laboratory and at-home settings (Ott 1996, 187-8). The underground production of DMT created a small niche in the black market of psychedelic drugs; however, it is thought that DMT never became extremely popular in part because of the special reagants required to synthesize DMT that are closely monitored by the US Drug Enforcement Administration (DEA), in addition to the 'organic' versus 'synthetic' prejudices that became popular after the 1960s (Ott 1996, 188). While

there are a number of forms of DMT, such as 5-MeO-DMT and other analogues which may or may not fall under federal illegalization laws, the most popular source of *N,N-Dimethyltryptamine* comes from an entheogenic beverage whose use is thought to be endogenous to Amazonia.

The earliest European records of *ayahuasca*, an entheogenic drink from South America sometimes translated as "vine of the soul" (Schultes, Hofmann, and Rätsch 1998, 124), are thought to come from three primary sources. The first is Spanish Jesuit Juan Lucero's 1681 account of a Xibaro healer who, according to Lucero, was a sorcerer that communed with the devil (Breen 2021, 10). The second account is derived from British botanist Richard Spruce's observations of the use of entheogenic potions by indigenous tribes found across Colombia, Brazil, and Ecuador during the 1850s (Ott 1996, 199). The last of these early accounts is from Manuel Villavicencio, an Ecuadorian civil servant, who in 1858 described the effects of ayahuasca after consuming a potion that was prepared by the Angatero, Záparo, and Mazán indigneous groups that reside along Ecuardorian Río Napo basin (Ibid.). The compontents found in ayahuasca potions may differ significantly in different sociocultural and geographical contexts, and recipes vary greatly in part due to the plants endogenous to each region. Anthropologist Luis Eduardo Luna (1986a; 1986b) has documented that ayahuasca is ritually consumed by more than seventy indigenous groups in South America and that it maintains over forty distinct designations (Ott, 1996, 207). Some thinkers have posited that the use of ayahuasca originated in Eastern Brazil and was diffused westward across indigenous groups, eventually reaching the Pacific coasts of Ecuador, Colombia, and Panama, while its use also spread southward as far as Peru and Bolivia (see Ott 1996, 206). More recent perspectives, however, suggest that when taking

pre-Columbian practices into accout with events which occurred after colonial encounters, "the evidence suggests multiple origin locations for *ayahuasca*, *yagé*, and analogous potions," rather than a single point of origin from which a sole recipe was diffused (Torres 2017, 48).

Ethnographic and ethnobotanical reports from the mid-nineteenth to the twentieth century suggest that there exists a great diversity of plant additives and preparation methods across the known variation of *caapi, ayahuasca,* and *yagé* potions[13] (Ott 1997, 207). In total, it is estimated that there are approximately 38 plant families and 100 species of plants that are used as admixtures in ayahuasca, with about a quarter of these being entheogenic plants in their own right (Ott 1996, 221; Narby and Chanchari Pizuri 2021, 62). Despite the variety that exists across ayahuasca potions and recipes, the most studied and popular plant admixtures for ayahuasca are those which contain tryptamines, especially *N,N-Dimethyltryptamine* (McKenna and Towers 1984; McKenna, Luna, and Towers 1986; Ott 1994). In these cases, the leaves of either c*hacruna*, *Diplopterys caberana*, or *Psychotria viridis* – all of which contain DMT – are infused into the ayahuasca brews as a means of prolonging and enhancing the visionary effects of the drink (Schultes and Hofmann 1980; Ott 1996, 218). *Psychotria viridis* is a common admixture plant used in Peruvian, Ecuadorian, and Brazilian Amazonian regions, and it is suggested that the leaves are used to strengthen ayahuasca's visionary potency (Ott 1996, 219). Apart from plants with psychoactive effects, many of the plant additives in ayahuasca may also serve medicinal purposes (Ott 1996, 222). While chemical analyses would later suggest exactly which

[13] Ott (1996, 208) includes a detailed reference list of extensive reviews of the ayahuasca complex. He also provides a comprehensive review of the different ayahuasca admixtures, see pp. 212- 223.

combination of plant admixtures lead to an orally-active form of DMT, and therefore produce a psychedelic experience, the first association made between the *Banisteriopsis caapi* tree and DMT was recorded in 1957 (Hochstein and Paradies 1957). Despite the scientific confidence in DMT as the sole compound responsible for inducing visions or psychedelic experiences, this view has been recently challenged on the grounds that it is not only occularcentric in ignoring other forms of perception that go beyond visual such as somatic, but also because other plant additives in ayahuasca have shown to produce psychedelic effects in their own right (Narby and Chanchari Pizuri 2021, 61).

Granted that ayahuasca recipes and consumption practices differ between Amazonian indigenous communities, there nevertheless remain similarities in the purposes for consuming ayahuasca which range from medicine and prophecy to sorcery and divination (Schultes, Hoffman and Rätsch 1998, 124). Since tobacco[14] is considered to be 'the master plant' in many lowland indigenous communities in Latin America, it is always incorporated into ayahuasca rituals and has even been shown to have ethnomedicinal uses (Russell and Rahman 2016). Ayahuasca is popularly known for the profound visions it facilitates; however, vomiting, sometimes referred to as 'purging', is normally one of the effects of consuming the drink. The phenomenon of purging is interesting insofar as scientists have tended to treat it as an unwanted side effect of ayahuasca, whereas many indigenous communities believe that it extracts toxins from the body and therefore has psychosomatic healing properties (Narby and Chanchari Pizuri 2021). Anthropologists have noted that while groups such as the Tukano and Yekwana often report encounters

[14] For a detailed account on the significance of tobacco in shamanic practices in Latin America, as well as its traditional inextricability from ayahuasca rituals, see Narby and Pizuri (2021).

with feline and snake spirits during their ayahuasca visions, the Conibo-Shipibo have been known to report acquiring power from animal spirits that assist them in "supernatural battles against other powerful shamans" (Schultes, Hoffman and Rätsch 1998, 126). During ayahuasca rituals, participants' experiences are usually guided by way of magical songs, or *icaros*, that are performed by the shaman who acquired these songs through previous experiences with ayahuasca (Luna 1984a; 1984b). Most anthropologists who have studied ayahuasca maintain that the visions provoked by ayahuasca are so revered by the Amazonian groups who ritually consume it that it not only holds a fundamental place in their worldviews and identities, but it is also reflected in various forms of cultural expression and everyday life (Ott 1996, 211; Rätsch 2005, 9; Londoño 2012, 95; Torres 2017, 39). Indeed, it has been maintained that "any attempt to understand Amerindian cosmology, spirituality, and artistic manifestations must include a knowledge of shamanism in addition to the central importance given to the ritual use of psychotropic plants" (Luna and White 2016, vii). Furthermore, as was the case with peyote, many indigenous communities have adopted the use of ayahuasca as a significant element in strengthening and maintaining their indigenous identities (Rose 2010; Langdon and Rose 2014; Pantoja 2014; Luna and White 2016, v).

Scientific investigations on ayahuasca would eventually confirm the association first made by Hochstein and Paradies in 1957, demonstrating that the unique combination of ß-carboline and DMT-containing plants found in many ayahuasca recipes produces profound visionary effects. With regard to the former, it would not be until the late 1920s that compounds previously isolated from *Banisteriopsis caapi* as *telepathine, yajeine,* and *banesterine* were all discovered to be identical to harmine, a psychoactive alkaloid first

isolated in the 1840s (Ott 1996, 223). In 1958, harmine, along with harmaline and other ß-carbolines were discovered to have monoamine oxidase (MAO) inhibiting properties, meaning that they worked to inactivate an abundant enzyme found throughout bodily tissue that regulates neurotransmitters such as serotonin and dopamine (Udenfriend et al. 1958; Ott 1996, 224). Ten years later, two research teams suggested that ayahuasca produced its visionary effects due to the MAO-inhibiting properties of the ß-carbolines which allowed for the DMT, which would otherwise be broken down by the body before an effect could take place, to bypass the blood-brain barrier (Agurell, Holmstedt and Lindgren 1968; Marderosian, Pinkly, and Dobbins 1968; Schultes 1972; Ott 1996, 226). It would take approximately another sixteen years for this theory to be tested and confirmed by Dennis J. McKenna's (1984a) research team, further opening up the avenue for scientific exploration of this particular ayahuasca recipe's principal components. According to Ott (1996, 231), "this theory of *ayahuasca* as DMT-activator would go a long way toward explaining the widespread use of psychotropic admixture plants in the potions." Since these discoveries, scientific perspectives on ayahuasca tend to regard DMT as the principal psychoactive ingredient in ayahuasca.

As chemists and pharmacologists began to accumulate knowledge on ayahuasca, its use started expanding outside of laboratory and traditional contexts. In the United States, the ingression of ayahuasca into the popular imagination is sometimes traced to author William S. Burrough's early report of his experience with *yagé*, written under the pseudonym William Lee (Lee 1953). Ten years later, Burroughs would co-publish *The Yage Letters* with poet Allen Ginsberg, wherein they included a series of correspondences they had sent one another over the years discussing ayahuasca and their experiences with

it (Burroughs and Ginsberg 1963). According to Ott (1996, 232), controversies over the publication of Burrough's subsequent book, *The Naked Lunch*, would not only catapult his writings into mainstream American culture throughout the late 1950s and into the 1960s, but would also bring greater attention to ayahuasca given that at least seven of Burrough's publications made mention of the drug. During the late 1960s, a momentous conference was held titled, *The Ethnopharmacological Search for Psychoactive Drugs*, which led to a publication under the same name, furthering academic awareness of ayahuasca (Ott 1996, 234). In 1971, Manuel Córdova-Ríos and Frank B. Lamb published *Wizard of the Upper Amazon*, a text which was met with backlash by many Amazonian ethnobotanists and anthropologists, yet was extremely popular among the wider population – much like the case of Carlos Castañeda's work (Córdova-Ríos and Lamb 1971; Ott 1996, 235). Despite the negative reception the book received by certain experts in the field, the publication became popular in spite of its questionable ethnography and its perpetuation of a longstanding myth about ayahuasca's ability to promote 'telepathy' (Ott 1996, 236).

The first comprehensive book dedicated solely to the subject of ayahuasca was published in Spanish in 1970 by Ecuadorian scholar Plutarco Naranjo; however, the book's impact is unknown in the United States and Europe as it was never translated into English (Naranjo 1970; Ott 1996, 237). Throughout the early 1970s, renowned anthropologist Marlene Dobkin de Rios would publish a series of articles, followed by a book in 1972, all on the use of ayahuasca in predominately mestizo contexts (Dobkin de Rios 1970a; 1970b; 1972; 1973; Ott 1996, 237). Ott (1996, 238) notes other important anthropological works on ayahuasca from the early 1970s, including Harner's (1972) work with the Shuar, Peter T. Furst's (1976) *Hallucinogens and Culture*, and Gerardo Reichel-Dolmatoff's (1975;

1971; 1978) commanding accounts of ayahuasca and Amazonian entheogen use among the Tukano of Colombia. While the well-known physician Andrew Weil also contributed significantly to spreading awareness of ayahuasca in two of his early books, his 1979 article published in *High Times* magazine shined a spotlight on ayahuasca for a wider American audience (Weil 1972; 1979; 1980). Several other important books were published on ayahuasca throughout the 1980s and into the 1990s; however, the Reagan era and its reinvigoration of Nixon's anti-drug agenda led to remarkably little work being published on ayahuasca and other psychedelics (Ott 1996, 239).

The use of ayahuasca in modern quasi-Christian contexts is also a phenomenon that arguably dates back to the early twentieth century, but which drew greater attention throughout the late 1900s (Ott 1996, 243). Most religious churches that utilize ayahuasca as a sacrament, such as the União do Vegetal (UDV) and Santo Daime, originated in Brazil as syncretic religious organizations, but have since become transnational churches that have established themselves in multiple countries outside of South America (Ott 1996, 244). At the same time that ayahuasca began to radiate outside of its Amazonian contexts, its globalization also drew in an influx of tourists who, during the 1980s and 1990s along with the rise of nature and ecotourism, began to arrive in South American indigenous and mestizo contexts seeking out shaman that could facilitate an ayahuasca 'tour' or 'retreat' (Ibid.). Since that time, ayahuasca tourism has only become more popularized throughout the media, while anthropological research on ayahuasca has surpassed all other work on other psychedelics (See Chapter 3). Although the effects of ayahuasca tourism have been understood as being both harmful and beneficial for certain indigenous communities (Luna and White 2016, 35; Labate and Cavnar 2014, 199; De Mori 2014, 225), one concern is

that the plants needed for ayahuasca have become devastatingly overharvested, much like peyote. Once the primary psychoactive ingredients needed for ayahuasca to produce a psychedelic effect were established, however, the Amazonian plants began being cultivated in regions outside of South America, while other ß-carboline and DMT-containing plants also started being grown and used in the United States given their psychoactive properties (Ott 1996, 244). Today, ayahuasca is more popular than ever, and tourism is arguably at an all-time high due to various documentaries and other media sources that have popularized the once-arcane substance (Tupper 2009; Fotiou 2016).

D. Psilocybin and Teonanácatl

The ritual use of hallucinogenic mushrooms was widespread among pre-Columbian Mesoamerican cultures for hundreds, if not thousands, of years (Schultes, Hofmann, and Rätsch 1998, 161; Trutmann 2012). While some estimates suggest that their use may date back over three and a half millenia (Carod-Artal 2015, 45), more modest evaluations maintain that mushroom cults flourished in northwestern Mexico from 100 BCE to approximately 300-400 AD (Schultes, Hofmann, and Rätsch 1998, 162). The main type of psychoactive mushrooms utilized in Mesoamerica, as well as in some parts of Latin America, have been identified as belonging to the genera *Stropharia*, *Panaeolus*, and *Psilocybe*, the last of which spans over 230 species of mushrooms (Carod-Artal 2015, 45; Luna and White 2016, vi). Hallucinogenic mushrooms were but one of many venerated entheogens used across Mesoamerican cultures, including the Maya and the Aztecs, the latter of which referred to them as *teonanácatl*, or 'divine flesh' (Schultes, Hofmann, and Rätsch 1998, 156). Other interpretations of teonanácatl suggest that the term is better

translated as ‘meat of the gods’ (Breen 2021, 12), ‘flesh of the gods’ (Furst 1972; Rätsch 2005: 669), and ‘wonderous’ or ‘sacred’ mushroom (Wasson 1980; Wasson and Wasson 1957a). Prehistoric archaeological evidence points to a longstanding practice of grinding the divine mushrooms into powder among the people of Teotenango, and more recently discovered mushroom stones and anthropomorphic mushroom effigies suggest that sacred mushroom use extended beyond Mexico to Guatemala, El Salvador, Honduras, and other parts of Central America (Carod-Artal 2015, 45). One of the most iconic representations of Mesoamerican entheogenic plant and fungi reverence is the Aztec ‘Prince of Flowers’ statue, Xochipilli, which not only exhibits stylized depictions of numerous psychoactive plants adorned throughout his body, but also displays hallucinogenic mushroom reliefs on its pedestal (Schultes, Hofmann, and Rätsch 1998, 161). The use of hallucinogenic mushrooms must therefore be understood within the wider context of how entheogenic plants and fungi were folded into Mesoamerican societies in multiple ways, ranging from medical diagnosis and religious practice to moral reasoning and political power (Breen 2021, 13).

The first accounts of sacred mushroom use in Mexico are written in Spanish, dating roughly a century after the conquistadorial decimation of the Aztec empire (Ott 1996, 276). In 1598, an educated native provided the first known description of mushroom use in Mexico by detailing how inebriating mushrooms were ingested as part of Moctezuma II’s coronation in 1502 (Tezozómoc 1975). Due to the various purposes towards which psychedelics were used in Native contexts, mushrooms and other entheogens proved difficult to assimilate into European cultures upon encountering them, leading to various competing interpretations that at once regarded them as food items, medicines, inebriating

substances, visionary tools, and instruments of Satan (Breen 2021, 14). Granted that many of the initial chroniclers wrote either ambiguously or favorably of the mushroom's medical uses, European "demonological understandings" ultimately won out as entheogens became hegemonically associated with devil worship (Breen 2021, 2). Early friars, such as Toribio de Benavente Motolinía for example, claimed that the mushrooms caused visions, constituted a harsh form of inebriation, and were used for the purposes of unholy communion (Ott 1996, 277; Breen 2021, 12). Despite contradictory claims, such as Bernardino de Sahagún's, which recognized the healing properties of mushrooms as effectively treating ailments such as gout and fever (Carod-Artal 2015, 45), mushroom use became demonized and eventually banned by the same Inquisitional edict that outlawed peyote in 1620 (Breen 2021, 12). From this point onward, it is thought that the Catholic Church's extermination of teonanácatl was so effective that it would take approximately four centuries until teonanácatl would be 'rediscovered' and incorporated into the modern imagination (Ott 1996, 278).

In 1915, William Edwin Safford, a well-respected botanist from the United States writing on entheogen use in Mexico, speciously suggested that the visionary mushrooms used in Mesoamerica never actually existed and that teonanácatl was just another name for peyote—a theory that was generally accepted until the late 1930's (Ott 1996, 279; Schultes, Hofmann, and Rätsch 1998, 157). An Austrian ethnobotanist by the name of Blas Pablo Reko would be the first to challenge Safford's thesis in 1919; however, he could not initially produce evidence given that the initial mushroom samples he collected disintegrated in transit upon sending them to Harvard University for analysis by none other than Richard Evans Schultes (Ott 1996, 279). Schultes would eventually become the most

renowned ethnobotanist from the United States, and his unparalleled knowledge on the ethnopharmacology and ethnobotany of the Americas was instrumental in bringing psychedelics into European and American cultural awareness. In 1938, Schultes accompanied Reko to Huautla de Jimenéz to acquire samples of teonanácatl, subsequently publishing his findings in both botanical and anthropological journals (Schultes 1939; 1940). Despite these early investigations, World War II disrupted further research on these sacred mushrooms given that the US government redirected Schultes' surveys to focus on studying rubber trees (Ott 1996, 279). It would then take almost twenty more years for Mexican mushroom rituals to be observed and partaken in by European and American foreigners.

During the early 1950s, a married couple of amateur mycologists named Valentina Pavlovna Wasson and Robert Gordon Wasson would turn their attention to Mexico after a confluence of momentous events led them to learn about a modern mushroom cult located in Huautla de Jimenéz (Wasson and Wasson 1957a). While the Wassons were each trained professionals in their own right as a physician and banker respectively, they ultimately became self-taught specialists in the emerging field of ethnomycology. After a few trips to Mexico accompanied by unsuccessful attempts at experiencing the mushroom's effects, the Wassons were eventually fortunate enough to participate in a mushroom *velada* with the *curandera*, or healer, Maria Sabina in 1955 (Ott 1996, 280). After experiencing the visionary effects of the mushrooms, the Wasson's became convinced of the religious import of psychoactive mushrooms. This encounter between the Wasson's and Maria Sabina would ultimately prove problematic for the latter; however, as Jonathan Ott (1996, 280) has keenly observed, "Thus it came about that 434 years after the conquest of Mexico,

the pharmacotheon was rescued from oblivion, in the nick of time, just as the cult was nearing its final stages of senescence." Once R. Gordon Wasson acquired mushroom specimens from Maria Sabina, he sent them to French mycologist Roger Heim who, in 1956, made subsequent trips with the Wassons to Mexico over several years and discovered a series of entheogenic mushrooms formerly unknown to science (Heim and Wasson 1958). Although Heim was able to cultivate the samples of *Psilocybe mexicana* back in his laboratory in Paris, he was unable to isolate their endogenous psychoactive compounds. Heim then contacted Albert Hofmann, the chemist who created LSD in 1938, and supplied him with a large sample of mushrooms which allowed Hofmann to successfully isolate the predominant psychoactive chemical compounds in the mushrooms in 1958, naming them psilocybin and psilocin (Hofmann et al. 1958; Hofmann and Troxler 1959; Hofmann et al. 1959; Miller 2015, 51). These chemical molecules are alkaloids of the indole family and derivatives of tryptamine which have a biogenetic relationship to serotonin as well as a structural affinity to tryptophan, an essential amino acid (Chilton, Bigwood, and Jensen 1979).

One year prior to Hofmann's isolation of psilocybin and psilocin, R. Gordon Wasson published a monumental article in *Life Magazine* in 1957 titled, "Seeking the Magic Mushroom" (Wasson 1957b). At virtually the same time, Valentina P. Wasson published her own article, "I Ate the Sacred Mushrooms," in a newspaper called *This Week Magazine* (Wasson 1957a). The cultural impact of these publications cannot be overstated insofar as they were the first articles to bring awareness of psychedelic mushrooms to the general English-speaking public (Ott 1996, 238). One of the outcomes of this publicity was that it attracted droves of foreigners to Huautla de Jimenéz to seek out entheogenic

mushroom experiences, leading to an eventual profaning of the once sacred mushrooms as well as bringing shame and ruin to Maria Sabina (Ott 1996, 284; Feinberg 2018; Hatsis 2021, 126). Among the tourists that ventured to Mexico seeking out a sacred mushroom séance was American psychologist Timothy Leary, whose life was so transformed by his experience with the sacred mushrooms in 1960 that he dedicated himself to conducting research using psychedelics at Harvard (Ott 1996, 276). Leary's subsequent experiments with psychedelics during the 1960s, many of which came under the guise of the Harvard Psilocybin Project, were supplied with synthetic psilocybin by Sandoz laboratories who marketed the drug for therapeutic and psychopharmacological purposes under the name *Indocybin* (Passie et al. 2002, 7; Lattin 2017, 106; Geiger, Wurst, and Daniels 2018, 2438). Despite the psychotherapeutic promise psilocybin exhibited in early clinical studies[15] (Geiger, Wurst, and Daniels 2018, 2348), Leary's Harvard Psilocybin Project experiments were eventually shut down, and he and his colleagues Richard Alpert and Ralph Metzner would ultimately be dismissed from Harvard by 1963 (Ott 1996, 276; Hatsis 2021, 259). As the narrative surrounding psychedelics became more politically charged, psychedelic substances were subsequently made illegal through a series of measures culminating in the Controlled Substances Act (CSA) of 1970, which also effectively put an end to scientific research due to lack of funding (Pollan 2018, 57).

Notwithstanding the shifting political climate surrounding psychedelics in the United States, Carlos Castañeda's publication of *The Teachings of Don Juan* in 1968 helped to further cement entheogenic mushrooms into American culture, in spite of the

[15] For a history of the use of psilocybin in psychotherapy, see Passie (2004) and Lattin (2017).

numerous issues found within his work with regards to anthropological and scientific veracity (Castañeda 1968; Ott 1996, 285). That same year, Leary published his own book titled, *High Priest*, in which he described his first experience with entheogenic mushrooms in 1960, while the first known comprehensive guide to growing mushrooms was also printed that year, providing detailed instructions for cultivating psychedelic mushrooms for scientific purposes (Brown 1968; Leary 1968). The next major publication available to the general public was Terence and Dennis McKenna's book, *Psilocybin: Magic Mushroom Grower's Guide*, co-published with Kathleen Harrison and Jeremy Bigwood, all under pseudonyms (Oss and Oeric 1976). The publication of their book not only provided a new technique for cultivating mushrooms which only required the use of ordinary, easily obtainable supplies, but it also streamlined the cultivation process to teach novices how to grow mushrooms without needing advanced technologies, chemicals, or equipment (Ott 1996, 290). The McKenna brothers' impact on spreading knowledge about psychedelics in general is arguably unmatched in American history and perhaps even globally. Although Terence passed away at the young age of 53, he has reached an almost immortal status online as he lives on virtually through myriad videos, audio lectures, memes, and clips which psychedelic enthusiasts continue circulating to this day. Dennis McKenna has also become one of foremost ethnopharmacological experts on psychedelics and continues to be active in hosting, organizing, and delivering lectures on psychedelics and related topics. A number of novel cultivation methods were later developed by private mushroom growers, and with the eventual introduction of the internet, mushroom cultivation videos and knowledge became accessible to the masses to this day.

II. Psychedelics, Religiosity, and Mysticism

The cultural integration, commodification, and appropriation of Eastern philosophies and practices in the United States gained significant momentum before the explosion of psychedelic use among the general public during the 1960s and 1970s. Alan Watts, for instance, was already publishing books on Zen buddhism for the wider American audience in 1932, and Aldous Huxley's (1954) *Doors of Perception* likened the psychedelic experience to Eastern philosophical understandings of liberation and mysticism. Since mescaline and LSD had taken on negative associations due to their synthetic nature, the introduction of mushrooms did not carry this cultural baggage and so presented a new lens through which to view psychedelics, that of supernaturalism. As historian Thomas Hatsis writes, "the United States in the middle 1950s was just ripe for such a paradigm shift," and associations between psychedelic mushrooms and religious or mystical experiences were made from early on. In fact, William James developed a typology of mysticism in 1902 which stemmed from his self-experimentations with nitrous oxide and the states of consciousness it facilitated.

In his book, *The Varieties of Religious Experience*, James identified four elements that, if present during an experience, are sufficient to qualify the experience as mystical: ineffability, noetic quality, transiency, and passivity (James 2004 [1902], 329). *Ineffability* refers to the inability to adequately express the content of the experience in ordinary language. *Noetic quality* signals that mystical experiences are states of knowledge; "They are illuminations, revelations, full of significance and importance, all inarticulate though they remain; and as a rule they carry with them a curious sense of authority for an after-

time (Ibid.). *Transiency* marks the mystical experience as unsustainable; the experiences can only be imperfectly reproduced in memory, but the insights gained may be perpetually developed "in what is felt as inner richness and importance" (Ibid.). Finally, *passivity* signifies that the experience is out of one's power in a sense, or that one feels "grasped and held by a superior power" during the experience (James 2004 [1902], 330). James is an important thinker insofar as he was perhaps the first to argue that ordinary, normal waking consciousness consciousness is but one of multiple states of consciousness that are potentially available to humans. He recognized that although the experiences attained through alternate states of consciousness prove difficult to reconcile with experiences in normal waking consciousness, "no account of the universe in its totality can be final which leaves these other forms of consciousness quite disregarded" (James 2004 [1902] 335).

The association between drug-induced experiences and mysticism would later be reinforced by the philosopher Walter Terence Stace (1960) in his book, *Mysticism and Philosophy*. Stace argued that if the phenomenology of a drug-induced experience completely maps onto the phenomenology of mystical experiences, then the former must be regarded as a genuine form of mystical experience (Stace 1960, 70). The seven phenomenological characteristics of both 'extrovertive' and 'introvertive' mystical experiences, which Stace (1960, 131) considers "two species of one genus," include the following: 1) a unifying vision of all things as One, or an experience of "Unitary Consciousness"; 2) the "concrete apprehension of the One as an inner subjectivity, or life, in all things," or a nonspatial, nontemporal experience; 3) a sense of reality and objectivity; 4) feelings of blessedness or peace; 5) impressions that the experience is sacred, divine, or holy; 6) experience of paradoxicality; 7) ineffability (Stace 1960, 132). In building on

James' initial insights, Stace's work would also help in the development of the first mystical experience typology operationalized in scientific research. In 1962, a graduate student of psychology at Harvard named Walter Norman Pahnke (1931-1971), whose advisor was Timothy Leary, conducted a study that was designed to empirically investigate how the phenomenology of psilocybin-induced experiences compared to historical accounts of mystical experiences (Pahnke 1962, 1). This experiment is considered by many to be one of the preeminent scientific investigations in psychedelic literature, since it demonstrated that if psilocybin were taken by religiously inclined individuals who were in a religious setting, that it could catalyze a mystical experience in the individual (Doblin 1991, 23).

Although it has been stated that Pahnke's study did not receive final approval by university administrators, Leary proceeded with the study regardless, and the experiment took place at Marsh Chapel with twenty students of theology as research subjects (Hatsis 2021, 258). The double-blind study involved administering psilocybin to half of the participants during a Good Friday ceremony at the church located on Boston University's campus, ultimately resulting in eighty percent (eight of ten) of the participants reporting a momentous religious experience that qualified as a mystical experience (Miller 2015, 5; Pollan 2018, 45). The typology of mysticism used by Pahnke to evaluate the phenomenological reports of his participants was developed with a clear debt to both James and Stace. It included nine categories that were thought to be fundamental aspects of mystical experiences, each of which contained subcomponents of their own: 1) unity (internal/external); 2) transcendence of space and time; 3) deeply felt positive mood; 4) sense of sacredness; 5) objectivity and reality; 6) paradoxicality; 7) alleged ineffability; 8)

transiency; 9) persisting positive changes in attitude and/or behavior (Pahnke 1962, 3-8). Although certain flaws in Pahnke's study were later exposed in a follow-up study conducted aproximately twenty-five years after the Good Friday experiment (Doblin 1991), most of the participants reported in their follow-up interviews that their experience during the experiment profoundly changed both their work and personal lives in significant and lasting ways (Pollan 2021, 46). Since Pahnke's study demonstrated the ability to quantify religious experience in a way that yields to scientific investigation, the use of mystical experience typologies and questionnaires has since become a significant aspect of psychedelic clinial research today, as I will explain in this section.

However, before jumping to the delployment of mystical experience typologies in contemporary scientific studies, it is important to note that Pahnke's project also made a connection between religious and psychedelic experiences to the extent one could incorporate the mystical experience into one's religion. This connection between psychedelics and religion would also be championed by one the participants in the Good Friday experiment, Huston Smith, who would go on to become a renown scholar of comparative religion and argue in support of the religious import of drugs throughout his career (Smith 1964; 2000; 2004). Although the use of entheogens had long been associated with religiousity throughout colonial encounters with indigenous peoples, Smith's remarks were more oriented towards how science can help investigate religious phenomena and how religious experiences can be facilitaed by drugs – a view which resonated with the 'entheogenic origins of religion' thesis attributed to Gordon R. Wasson (Ott 1996). These sentiments are also echoed by clinical psychologist William. A Richards who has been involved with psychedelic research for over sixty years. As a clinical psychiatrist with

decades of experience administering psilocybin to research subjects, Richards (2008) is of the view that psychedelics, when used with care in constructive and supportive settings, can facilitate mystical experiences with religious import (Pollan 2018, 55). Richards' perspective on psychedelics is reminiscent of many transpersonal psychogists' views on both mystical and psychedelic experiences, some of which equate the two, wherein mystical states of consciousness are understood as experiences that deeply influence a person's life thereafter insofar as they tend to shift a person's values, perceptions, beliefs, behaviors, relations, and sense of self in a profound and enduring ways (Maslow 1971, 269; Deikman 1982; Grof 1988, 39; 1998; 2009; Wiethaus 1996, 104; Roberts 2004, 53).

During the late 1990s, independent researcher and activist Bob Jesse would bring together leading scientists Roland R. Griffiths and Bill Richards in an attempt to revitalize the scientific investigation of psychedelics (Pollan 2018, 53). In 1998, Richards, Jesse, and Griffiths designed a study aimed at testing whether 'transcendental experiences' could be provoked by psilocybin (Pollan 2018, 60). The study was ultimately approved in 1999, bringing Richards, along with his colleague Mary Cosimano, back into the realm of psychedelic therapy after a twenty-two-year hiatus (Pollan 2018, 61). The team involved with psychedelic research at Johns Hopkins University has since conducted over three hundred sessions testing the efficacy of psilocybin for various ailments, with a number of studies focused on whether psilocybin can induce a mystical experience. While the researchers admittedly note that their studies were initially biased in conditioning participants for a spiritual experience (Pollan 2018, 62), researchers were nevertheless surprised to find that a third of the participants that were administered psilocybin ranked the experience as among "the most spiritually significant of their lives," rated the

experience as the top five most significant events of their lives on par with the death of a parent or the birth of a child, and reported "enduring positive life changes" in a fourteen-month followup study (Griffiths et al. 2006; Griffiths et al. 2008; Richards 2016, 5).

In a subsequent study, the Hopkins team reported that seventy-two percent of research participants attained a "complete mystical experience" (Griffiths et al. 2011, 661). Participants' experiences were analyzed using an altered states of consciousness questionnaire as well as the Hood Mysticism Scale, both of which were designed to measure the phenomenological elements of the experience (Hood 1975; Dittrich 1998). The items on the mystical scale have clear influences from the previous work of James, Stace, and Pahnke insofar as the questionnaire measured participants' feelings of sacredness, noetic quality, deeply felt positive mood, ineffability, transcendence of space and time, and internal or external unity (Griffiths et al. 2011, 658). Researchers found that not only did participants report that their experiences were personally and spiritually significant – a feeling that increased over time up to fourteen months later – but eighty-three percent of study participants initially "rated the experience as the single most or among the five most spiritually significant events of their life," which increased to ninety-four percent at the fourteen-month mark (Griffiths et al. 2011, 662). Moreover, researchers found that psilocybin-induced mystical experiences also conferred "positive changes in attitudes, mood, life satisfaction, behavior, and altruism/social effects," thereby extending the findings from the two previous studies conducted at Hopkins (Ibid.). The positive changes reported by participants and from their close relatives and friends included increased psychological and physical self-care, enhanced spiritual practice, improved social relationships with their own family and with others, and positive changes in life

satisfaction, mood, and attitudes (Griffiths et al. 2011, 663). According to the team of researchers, since this study showed that mystical experiences could be reliably provoked using psilocybin under appropriate conditions, mystical-type experiences are "biologically normal" experiences that most people have the ability to experience (Griffiths et al. 2011, 664).

In an additional assessment based on data drawn from two of the aforementioned studies undertaken at Johns Hopkins (Griffiths et al. 2006; Griffiths et al. 2011), researchers found that participants' personality trait of 'openness' increased after attaining a mystical experience provoked by psilocybin (MacLean. Johnson, and Griffiths 2011). Openness is one of the "big five" personality traits measured according to "the most widely used measures of personality in modern psychology," the NEO-PI, and openness is associated with an array of related traits such as aesthetic sensitivity and appreciation, imagination and fantasy, awareness of one's own feelings and those of others, intellectual engagement, being more open to new experiences and ideas, and creativity (MacLean, Johnson, and Griffiths 2011, 1459). Not only did participants who attained 'complete' mystical experiences show significant and enduring increases in their openness ratings one year after the experience, but researchers claim that this is the first study to demonstrate that personality change can occur after the age of 30, something theretofore thought impossible (MacLean. Johnson, and Griffiths 2011, 1458). The 'mystical scale' applied in the previous studies would eventually be replaced by a 'revised mystical experience questionnaire' (MEQ) that explicitly builds on the work of Pahnke and Stace (MacLean et al. 2012). While the updated MEQ contains forty-three items, upon initial testing of the scale through web-based studies, researchers found that thirty of the items reveealed a

fourfold structure that contained “dimensions of classic mystic experience” such as noetic quality, positive mood, sacredness, unity, ineffability, and transcendence of space and time (MacLean et al. 2012, 721). A few years later, researchers validated the MEQ-30 given its ability to empirically predict positive outcomes based on the value of psilocybin-occasioned mystical experiences (Barret, Johnson, and Griffiths 2015, 1190). Since that time, mystical experiences in further studies have shown them to mediate the therapeutic value of psychedelic sessions (Griffiths et al. 2016;), while the MEQ-30 has more recently been applied to experiences with 5-MeO-DMT, a substance that researchers suggest can facilitate mystical experiences similar to those induced by psilocybin (Barsuglia et al. 2018).

As one might expect, not all scientists have been in favor of using mystical and quasi-religious language to investigate the effects of psychedelics. In a recent opinion piece written by one of the lead researchers at Johns Hopkins and co-author of several of the studies involving psilocybin and mystical experiences, Matthew W. Johnson (2021) writes that researchers should maintain a complete dissociation with anything quasi-religious or spiritual during psychedelic research and practice. For Johnson, scientists should not only adhere to empirically-based and secular understandings of ‘spiritual’ that are supported by the therapeutic import these frameworks have exhibited, but researchers should also avoid using any type of religious iconography or symbolism during psychedelic practice while also being wary of psychedelic exceptionalism – the idea that since psychedelics are a special kind of drug, regular scientific protocols and procedures need not be followed (Johnson 2021, C). Taking it a step further, chemical neuroscientist David Olson (2021) has argued that the mystical experience, and the subjective effects of psychedelics in

general, may not be necessary for their therapeutic effects. Olson's rationale is based on evidence that psychedelics and other substances such as MDMA and ketamine act as psychoplastogens, or substances that exhibit the potential to change neural circuitry through engaging the brain's mechanisms of neural plasticity (Olson 2018; Ly et al. 2020). In another piece titled, *Moving Past Mysticism in Psychedelic Science*, researchers James W. Sanders and Josjan Zijlmans (2021, 1253) warn against using mystical experience typologies to avoid conflating science with the supernatural. Their charge is that not only do mystical frameworks treat certain dimensions of psychedelic experiences as beyond scientific inquiry, but they also present ethical and methodological issues with regards to biasing responses and filtering participants' own interpretations of their experiences through these frameworks (Sanders and Zijlmans 2021, 1254). On their account, psychedelic scientists should avoid incorporating mysticism into their research to avoid losing credibility while focusing instead on modern, empirically-validated frameworks such as computational predictive processing in evaluating the subjective effects of psychedelics (Sanders and Zijlmans 2021, 1255).

In response to the aforementioned hostility towards mysticism in psychedelic science, David B. Yaden and Roland R. Griffiths (2021, 570) have argued that the subjective effects of psychedelics such as psilocybin play a significant role in their enduring beneficial effects insofar as mystical experience measures reliably predict positive therapeutic outcomes when applied in experimental settings. Yaden and Griffiths (2021, 569) acknowledge that the neurobiological mechanisms underlying psychedelic-mystical experience are necessary component of their therapeutic effects; however, the significance and meaning attritbuted to psychedelic experiences by participants is essential

to understanding the full range of enduring beneficial effects such as lasting increases in wellbeing. Other researchers have that have taken issue with the attempt to move psychedelic science past mysticism, such as Joost J. Breeksema and Michiel van Elk (2021), who argue that mystical experience frameworks are thoroughly scientific and have a proven history of use in clinical settings. In providing a rejoinder to Sanders and Zijlman's (2021) claim that mysticism is unscientific, Breeksema and Elk (2021, 1471) show that mystical experiences have a long history of scientific application that the former authors altogether miss. Not only do Breeksema and Elk (2021, 1472) maintain that is is unscientific to avoid investigating mystical experiences due to either their colloqual associations or based on the difficulties in reconciling them with neurocognitive evidence, but their position also seeks to make space for studying the "weird" types of phenomena that psychedelic experiences elicit without reducing them to ordinary cognitive functions.

While these debates highlight an important rift that exists in contemporary approaches to psychedelic science, possibly the most poignant critique of those who wish to do away with mysticism is one that is philosophical. As philosopher and psychologist Jussi Jylkkä (2021, 1468) maintains, Sanders and Zijlmans are correct in suggesting that mystical experience questionnaires may bias the evidence that is collected, but mystical phenomena need not be seen as irreconcilable with science and naturalism. Jylkkä (2021, 1469) highlights a recurring problem in philosophy of mind and applies it to the case of psychedelics and mysticism, noting that since there exists an "epistemic gap" in reconciling first (subjective) and third (objective) person accounts of experience in general, mystical experiences must also be studied from both of these "mutually irreducible viewpoints." This means that although neuroscientific models can be developed that coincide with a

research subject's subjective experiences, neuroscientists are not in the position to evaluate the veridicality of the subject's experiences, nor should they confuse these neuroscientific models with reality. Jylkkä draws on the noetic nature of psychedelic mystical-type experiences to note that participants not only report deep intuitions or knowledge gained through these experiences, but these insights are often philosophical in nature and can shape a person's worldview in a way that reaches beyond understanding them as simply neural processes. Although mystical experiences prove problematic from the perspective of reductionistic materialism or naturalism, Jylkkä argues that they can be better accommodated using a panpsychist metaphysics which can reconcile mysticism, natural science, and materialism (Ibid.).

There are many other ways that psychedelics have been associated with religion, mysticism, and spirituality. A number of thinkers, for instance, have explored the connection between psychedelics and Eastern traditions, with some even making direct connections between psychedelics and Buddhism (Baidner 2015; Osto 2016). The purpose of this section, however, was to review the history of the scientific study of psychedelic-mystical states to underscore several points. First, the overview of psychedelic-mystical literature demonstrates that the phenomenology of psychedelic experiences is often significant, meaningful, and profound enough for many individuals to refer to them as religious or mystical. Second, this section makes explicit how the multidimensional phenomenology of psychedelic experiences is reified according to different models. These models not only reduce the content and meaning of the psychedelic experience into quantifiable information or empirically observable neurobiological events, but they also implicitly maintain a certain philosophical stance in relation to the nature of reality and the

nature of the self. On a reductive materialist or naturalist account, a person's subjective experiences are understood as being, at a more fundamental level, simply brain states that can be empirically mapped out. Proponents of this view often understand 'the self' as being an epiphenomenon that can be reduced to biophysical explanation. On the other hand, while those who embrace mystical interpretations of psychedelic experiences may also view the self as illusory, it is often based on an experience of unity or oneness wherein the self is expanded to include things and relations not normally associated with it. For some, panpsychism, or the idea that consciousness is a fundamental aspect of the universe, provides greater explanatory power regarding psychedelic-mystical experiences while it also embraces a perspective of self that is coextensive with other forms of consciousness. While more will be said on this point later, what can be observed thus far is an apparent 'politics of the self' insofar as the way that one's experience is reified is an inherently political matter that embraces a certain view of reality and of the self. As I will demonstrate later in this chapter, psychedelic mysticism not only constitutes a particular type of psychedelic assemblage, but it also foregrounds a secular versus spiritual debate that has broad philosophical and political implications.

III. US Drug Politics: A Brief Review

Given that psychedelic substances are currently illegal, a brief review of the political history of psychedelic drugs in the United States is in due order to better understand their place in modernity and in current times. As I demonstrated in the brief history of classic psychedelics section, psychoactive drugs take on different meanings,

serve different purposes, are utilized by different figures, or are banned altogether across different sociohistorical milieus, making their use in societies an inherently political affair. A case could be made for tracing the suppression and prohibition of psychedelics back to early Christianity (ratsch), or more recently to colonial encounters wherein European conquerors banned and demonized the use of certain substances, including psychedelics and the states of consciousness and practices associated with them. Both instances can, from a certain light, be understood as resulting in a delimitation of the conscious states available to a people – a trend which has continued into American drug policy. Given the context of my study, however, I restrict my focus in this section to reviewing several of the key legal actions taken in the United States, predomintaely throughout the twentieth century, with regards to the use, distribution, and production of certain drugs. It is necessary to review the politics of other psychoactive drugs such as opium and marijuana insofar as many of the early drug regulation measures built the foundational frameworks for later interventions in drug policy by the US government.

The formative elements for the full-fledged anti-drug enterprise we have today can be seen as coming together over time. Granted that prohibitions on alcohol in particular precincts occurred during the nineteenth century, the first federal tax on opium and morphine occured in the United States toward the end of the nineteenth century, marking the commencement of lawful interventions in drug policy (Redford and Powell 2016, 514). In 1906, the Pure Food and Drug Act was passed, creating the Food and Drug Administration (FDA) in the United States and representing a shift in the federal government's policy from "distributive to regulatory policy" (Barkan 1985). The Opium Exclusion Act – thought to be the culmination of a series of measures taken against Chinese

immigrants who were working on the railroads at the time – then became the first law banning the "non-medical use" of a substance in 1909 (Ahmad 2007, 82). After early anti-drug laws such as the Opium Exclusion Act caused a series of "unintended consequences" (Redford and Powell 2016, 509), the Harrison Act was then passed by Congress in 1914, becoming the United States' "first major federal anti-drug legislation" (Caquet 2021, 207). Not only was the Harrison Act the first measure designed to regulate and tax the importation, distribution, and manufacture of opiates, coca, and their derivatives, but it also made the sale and purchase of these psychoactive substances illegal without the procurement of written medical consent (Caquet 2021, 209). In conjunction with the United Nations Single Convention on Narcotic Drugs, the Harrison Act helped to lay the framework for future interventions into drug policy in the US. In 1915, marijuana was first banned in the state of Utah, followed by the Narcotic Drug Import and Export Act and the Heroin Act in 1922 and 1924 respectively; the former sought to eliminate narcotic use outside of medical contexts, while the latter made the manufacture of heroin illegal.

The Marihuana Tax Act was the next major drug law passed in 1937, thereby taxing all dimensions of cannabis use from hemp farmers and marijuana smokers to doctors and patients. This measure was drafted by Harry Anslinger, the head of the Federal Bureau of Narcotics and a key figure in the war on drugs that was soon to come. Next, the Food, Drug, and Cosmetic Act was passed in 1938, and with it, the FDA gained full control in overseeing drug safety and shifted its focus from policing adulterated drugs to regulating the production of new drugs (Wax 1995, 456). The FDA's Food, Drug, and Cosmetics Act, ultimately signed by Franklin D. Roosevelt, also "oversaw distribution and manufacture of Delysid," or LSD (Hatsis 2021, 267). In 1951, the Boggs Amendment to the Harrison

Narcotic Act was passed, creating mandatory sentencing for narcotic violations, and in 1956, the Narcotics Control Act extended the severity of penalties associated with narotic-related drug offenses. The Drug Abuse Control Amendements (DACA) were then made to the Food, Drug and Cosmetic Act in 1965, placing stringent controls over barbiturates, amphetamines, and LSD among other drugs. While the substances included under the DACA, many of which were considered "habit-forming drugs," were recognized to have "legitimate medical uses," the issue was their transition from "legitimate medical uses to nonmedical uses, and from legitimate professional channels into illegal channels" (O'Keefe 1966, 361). The governor's of both California and Nevada subsequently outlawed the "manufacture, sale, and posession of LSD" in 1966 (Hatsis 2021, 267).

The next major anti-drug measure carried out by the US government under the Nixon administration would be the Comprehensive Drug Abuse Prevention and Control Act passed in 1970. The Controlled Substances Act (CSA) was included as an integral part of this act, constituting a decree that created a system for scheduling psychoactive drugs, placing most of the known psychedelics such as LSD, psilocybin, mescaline, and even cannabis under the Schedule 1 classification of drugs. By definition, Schedule 1 drugs are the most dangerous of drugs, characterized by their supposed high-potential for abuse, in addition to having no known medicinal applications. A few years after the CSA was passed, the Drug Enforcement Administration (DEA) was created during the Reagan era as a replacement for the Bureau of Narcotics and Dangerous Drugs. The DEA gave rise to a specialized police unit with access to military grade technologies and funded by the federal government; it was designed for the purpose of targetting illegal drug use, distribution, and importation, and also introduced a new series of anti-drug measures (Benavie 2012).

IV. Discussion

It must be recognized that the historical representation of psychedelics provided in this chapter is limited in a number of ways. To begin, in only providing histories of the 'classic psychedelics' in terms of their psychoactive properties, I have already adopted a neuropharmacological distinction between certain substances. This is problematic insofar as a number of psychoactive drugs fall outside of the category of 'classic psychedelics', yet are still considered to be psychedelic in other contexts by different groups of people. Some of these non-classic psychedelic substances include iboga, kratom, 3,4-methylenedioxymethamphetamine (MDMA), and ketamine to name a few; however, in certain contexts these same substances are regarded as psychedelics. To further complicate matters, there exists a range of psychoactive plants that may be considered entheogenic, but not psychedelic, such as coca. Finally, sometimes psychoactive substances are considered to be psychedelic based on the dosage. Tobacco and cannabis, for example, may be considered hallucinogenic substances in their own right albeit at high doses or potencies. In addition to these categorial issues, given the complex history of psychedelic substances and their ingression into modernity, a number of important historical events have also been left out of these summaries, including details surrounding the early psychiatric experiments involving psychedelics, the US government's interest in and use of psychedelics as agents of psychochemical warfare, underground psychedelic psychotherapy practiced after their illegalization, and the ways in which psychedelics influenced myriad aspects of American culture such as technology, art, music, social

organization, and other areas. Notwithstanding these caveats, the brief histories provided here allow for drawing out at least three important lessons.

First, it appears that there is a hegemonic history regarding psychedelics that has been written from the perspective of the Global North. The encounters between "Western" anthropologists or ethnobotanists and indigenous communities, for instance, has only been told from a Euro-American perspective. This entails approaching psychedelics as objects of scientific inquiry from the first, paving the way for the current trends in the medicalization of psychedelics. Not-for-profit educational organizations such as Chacruna have spearheaded this issue in contemporary psychedelic spaces, organizing conferences that amplify the voices from the Global South regarding psychedelic science, culture, and history.

Second, the historical picture of psychedelics portrayed in this chapter represents what is predominately found across most of the discourse written about psychedelics; that is, a white, educated, male-centric, and scientific history of psychedelics and their ingression into the United States. It appears that among the early ethnobotanists and anthropologists who sought to exchange knowledge with indigenous communities, there has largely been a one-way transfer of information that has allowed actors in the Global North to capitalize and commodify the knowledge of indigenous peoples. Throughout these histories, the encounters between scientists and indigenous communities are often extractivist on the part of the former, only filtering out what is relevant through the lends of scientific objectivity. The isolation of alkaloids and their psychoactivity take precedence over indigenous cosmological or phenomenological understandings of the plant and their experiences with ingesting them, while there is sometimes no acknowledgement of

indigenous knowledges and relations apart from what is thought to contribute directly to the psychedelic experience. The situation is reminiscent of early medical anthropological encounters with culturally distinct concepts and practices associated with health and well being, wherein many anthropologists played the role of a "cultural broker" that essentially siphoned traditional knowledges and adapted them into a hegemonic allopathic medical model (Mas 2022a; 2022b). It helps to keep in mind that, the meaning of the word 'drug' transformed approximately between the sixteenth and seventeenth centuries largely due to European global expansion. Modern understandings of 'drugs' are generally restricted to either intoxicating or medicinal meanings; however, before the sixteenth century, they signified a number of things ranging from animal parts and minerals to metals, incenses, spices, dyes, and perfumes. During the 1500s, however, medicinal and psychoactive drugs became an object of European interest apart from slaves, silver, and gold, thereby spawning a new profession of "druggists" that helped the drug trade become a global force in early modernity (Breen 2017, 3-4).

Third, when viewed from a historical perspective, it is clear that psychedelics take on unique meanings and are used for different purposes throughout their transitions into disparate sociohistorical, cultural, political, and geographic milieus. Psilocybin mushrooms, for example, were revered by the Aztecs, demonized by Spanish missionaries, considered psychosis-producing by early psychiatrists and psychologists, thought to be agents of psychochemical warfare by the CIA, and today, they are marketed as miraculous cures for depression and other mental illnesses. In Euro-American cultures alone, psychedelics have been referred to in countless ways over time by different groups:

psychotomimetics, hallucinogens, psychedelics, entheogens, empathogens, plant medicines, plant teachers, and psychoplastogens to name a few.

The shifting meanings of psychedelics, including the relations and associations that come with each rendition, can be helpfully understood through two concepts developed by philosophers Deleuze and Guattari (1987) and elucidated on by Ian Buchanan (2021). The first is territorialization, which entails the concepts deterritorialization and reterritorialization, and can be used to help explain how psychedelic substances are decontextualized and recontextualized to fit certain sociopolitical mileus. It helps to understand Deleuze and Guattari's concept of territorialization when contrasted against chaos – an ever present force of possibility which is at once "the absolute foundation for all thinking (it is the beginning and end of thought) and as a kind of relative dissolution of the senses and the sensible" (Buchanan 2021, 85). The territories we construct, on this view, are only transient victories over chaos, meaning that territory "should be understood as a defensive concept" (Buchanan 2021, 87). On this view, our lives are stratified in countless ways through the territorialization of different spheres of experience, including the most fundamental of territories, that of the 'self'. (Buchanan 2021, 88). Deterritorialization, therefore, refers to "the process of leaving our territorial fortress, which defends against the despair of the potential black holes populating our existence" (Ibid.). Although deterritorialization is a potentially dangerous process, it is often followed by an immediate reterritorialization. Lines of flight, for Deleuze and Guattari, signify paths of deterritorializaiton that manifest themselves in three ways: negative, relative, and absolute. The first deterritorializes only to remain the same; the second inititally overcomes reterritorialization, but either falls back into chaos or is reterritorialized; the last "is

absolute when it succeeds in creating a new earth, a new beginning, one that does not lead back to old territories" (Buchanan 2021, 89).

The second concept drawn from Deleuze and Guattari that helps to make sense of the psychedelic landscape is that of assemblage – a concept that has been hotly debated and contested in its own right. Insofar as "territory is the first form of the assemblage" (Buchanan 2021, 60), the initial attempt to reify and take hold of the otherwise chaotic nature of psychedelics is the starting point for an assemblage. Further, assemblage theory is a way of analyzing how something works (Buchanan 2017, 461); it involves an interrogation of "the circumstances in which things happen," and attempts to answer several questions such as 'how?', 'when,' and 'why?' (Buchanan 2021, 13). When looking at the psychedelic landscape, assemblage helps to demonstrate how different psychedelic assemblages have come to exist, such as *psychedelic-medicalization assemblages*, *entheogenic assemblages*, and *psychedelic-capitalist assemblages* to name a few. Assemblage thought helps to analyze how different meanings, practices, and material elements come together as psychedelics are drawn into new social arrangements. As I will argue below, each assemblage adheres to certain philosophical presuppositions about the nature of reality, and each also contains its own implicit conception of a subject, or 'the self'. By drawing out disparate types of assemblages that work to capture psychedelics in different ways, a certain 'politics of the self' can be seen espoused in each which reflects the politically contested nature of psychedelics.

For example, in what I refer to as *psychedelic-medicalization assemblages*, there tends to be a commitment to physicalism and scientism, with leading philosophers and scientists embracing such a stance. On this view, consciousness is seen as an

epiphenomenon produced by the brain (Dennet 1991; Wegner 2002; Metzinger 2003). The 'self' is therefore thought to be illusory, and one's identity is viewed as nothing more than a psychological construction (Zahavi 2008, 1). One's ego, or subjectivity, is reduced to its neural correlates, and according to neuroscientific models, is associated with activity in the Default-Mode-Network (DMN) (Carhart-Harris et al. 2014; Carhart-Harris 2018). A distinction is sometimes drawn between a minimal or 'embodied self', and a 'narrative self', where the former follows a Bayesian model of selfhood whch posits "the subjective structure of conscious experience" as ultimately resulting "from the optimization of predications in perception and action" (Millière 2017, 1). According to such a view, psychology is often seen as being reducible to biology, which itself is reducible to chemistry, and all of which are ultimately explainable by laws of physics at the most fundamental level. Psychedelic substances, therefore, may be considered to be *psychoplatogens* insofar as their effects are ultimately seen as stemming from the changes they produce in one's biology, and not necessarily from one's conscious experience (Olson 2018; 2021). Psychedelics are also used in this context as a tool that can help scientists and philosophers discover the neural correlates of the self due to psychedelics' ability to provoke drug-induced ego dissolution (DIED) (Millière 2017). Psychedelic-medicalization assemblages also adhere to allopathic forms of medical practice, where symptoms are diagnosed and treated with drugs that produce effects that are opposite to their symptoms (McElroy and Townsend 2015, 26). Allopathic medicine, also known as biomedicine or modern medicine, renders health, illness, and wellbeing in individualistic terms (Frankenberg 1981; McKee 1988). As a hegemonic medical system, biomedicine has not only delegitimized all other forms of medical practice that it cannot incorporate into its

integrative frameworks (Erickson 2008, 4; Fries 2008), but it also decontextualizes health and disease by viewing them as the "product of the person and his/her interaction with the environment writ large" (Erickson 2008, 102). This chapter demonstrates how these medicalization assemblages formed over time, with anthropologists playing a key role in laying the groundwork for psychedelics to be reified as medicines from the first. The current medicalization of psychedelics, however, draws together new forms of medical practice involving psychedelics, with an explosion of new actors such as prestiguous universities and research institutes opening new centers for psychedelic research daily. This also has the effect of rendering psychedelics purely in terms of their medicinal import, ignoring the wide range of phenomena often accompany psychedelic experiences. In addition, some have observed that the medicalization of psychedelics not only adheres to neoliberal forms of governance (Gearin and Devenot 2021), but the mass-marketing of psychedelic-assisted psychotherapy may also undermine both "the safety and efficacy of the therapy itself," in addition to current efforts to decriminalize or legalize psychedelic drugs (Noorani 2019, 1).

There are also *entheogenic assemblages*, which tend to view the nature of the world as being immanently supernatural or divine. Entheogenic assemblages proceed by rendering psychedelics as 'entheogens', or they may use psychedelics in an entheogenic context; in either case, psychedelics are imbued with a spiritual or quasi-religious significance (Ruck et al. 1979; Ott 1996, 15; Winkelman 2019). The plants and fungi that provoke psychedelic experiences may be attributed agency on such a view and are sometimes thought of as plant teachers or allies (Luna 1984a; 1984b). While the purposes for using entheogens are multivalent, they are often used as a way for the practitioner to

acquire arcane knowledge, commune with nonhuman species or other entities, or allow them to travel to or experience dimensions of reality thought to be sacred in nature (Rätsch 2005, 671). The consumption of entheogens tends to be ceremonial or ritualistic, and conceptions of health, illness, and wellbeing are often understood in a communal way as opposed to individualistic, with one's relations playing a significant role. Entheogenic assemblages often entail traditional or prescribed methods of preparation, as well as unique techniques to guide the experience. There may also be practices that preceed and follow the entheogenic experience itself, which reflect the particular cosmology of the community in question (Narby and Chanchari Pizuri 2021, 44). In an enthegeonic assemblage context, 'the self' is therefore not only viewed as having a spiritual nature, with psychedelics acting as revered aides that help to facilitate healing or personal and spiritual growth, but the self is relational, meaning that one's subjectivity is essentially constituted through one's relations. The term entheogen has recently been embraced and mobilized by social movements as well who advocate for the decriminalization and legalization of psychedelic plants, fungi and substances, such as Decriminalize Nature, which uses the term as a way of foregrounding the history of psychedelic use in traditional indigenous contexts. Lastly, conceptions of health and wellbeing in entheogenic assemblages are usually tied into one's wider socioenvironmental relations, including one's relations with other humans and nonhuman entities.

More recently, *psychedelic-capitalist assemblages* have increasingly begun to emerge, and which philosophically tend espouse a physicalist ontology. On this view, however, the subject or a self is not simply a biological entity; it is an economic unit inherent to modes of liberalism and neoliberalism that can be described as *homo-*

economicus (Read 2009). Psychedelic substances, on this view, are reduced to their biochemical effects on human physiology – as is the case in psychedelic-medicalization assemblages; however, psychedelic-capitalist assemblages work on monetizing every aspect of psychedelics' ingression into modern medicine and mainstream culture. One way this manifests itself is where psychedelics merge with the pharmaceutical industry and its relationship to the medical-industrial complex (Relman 1980; De Sutter 2018). Psychedelic-capitalist assemblages aim at the maximization of capital or profit, and thereby work to extract value from the mainstreaming of psychedelics at various scales. On one level, psychedelic substances themselves have begun to undergo changes to their molecular structure in the pursuit of either novel drugs or modifications to exisiting drug effects[16]. New technologies, such as artificial intelligence, are also drawn into psychedelic-capitalist assemblages wherein they are used to create novel psychedelic drugs[17], assist in psychedelic psychotherapy[18], and even to analyze the effects of psychedelics by learning from user experience reports[19]. The creation of patents with regards to psychedelics has also become a site of capital accumulation, where venture capitalists are vying for securing property rights over drug delivery methods, synthesization techniques, psychotherapeutic practices, and more (Psilocybin Alpha 2022). Psychedelic-capitalist assemblages also range in scale from corporations to individuals. The explosion of psychedelics into

[16] https://www.forbes.com/sites/willyakowicz/2021/06/23/the-future-of-psychedelic-medicine-might-skip-the-trip-rick-doblin-bryan-roth-mindmed-darpa-maps/?sh=6f27f10f244f

[17] https://doubleblindmag.com/artificial-intelligence/

[18] https://www.prnewswire.com/news-releases/why-some-psychedelic-assisted-therapy-clinics-are-turning-to-artificial-intelligence-for-digital-mental-therapies-301446468.html

[19] https://www.technologyreview.com/2022/03/16/1047350/what-do-psychedelic-drugs-do-to-our-brains-ai-could-help-us-find-out/

mainstream American culture has also spawned rogue entrepreneurs that grow, manufacture, sell, and distribute psychedelic substances through less regulated spaces such as social media or the dark web. From a political economic perspective, psychedelics are being drawn into a panoply of contexts where they are monetized, such as for-profit lecture series, conferences, cultivation lessons, retreat centers, merchandise, and media outlets to name a few, and all of which constitute entities seeking to derive a profit from psychedelic as commodoties.

Each of the assemblages I have outlined is not self-contained and may merge with other assemblages, as there are no hard lines which divide each assemblage, and there are scenarios wherein there is clear overlap between them, such as with medicalization and capitalist assemblages for example. More importantly however, the aim of using assemblages is to demonstrate how there are questions of hierarchy and selection involved in the ways psychedelics are imbued with meaning and drawn into particular arrangements. Assemblage, in this case, is simply a way of highlighting these questions of selection and hierarchy which dictate how psychedelics are reified and what types of philosophical commitments are implicit within each. These assemblages can be thought of as vortices that draw together disparate materials, entities, actors, and ideas based a particular principle of unity, which here I refer to as medicalization, entheogenic, and capitalist. The assemblages described in this chapter can certainly be further unpacked, as can other types of assemblages be seen when looking at the psychedelic landscape. However, the purpose of using assemblage in this chapter is to signal a starting point for analyzing the various ways in which psychedelics become drawn into disparate sociocultural and political mileus. Moreover, they allow me to demonstrate how there are competing notions of

subjectivity, or the self, within different psychedelic assemblages that are representative of a wider politics of the self in the Anthropocene.

Conclusion

This chapter provided a brief history of each of the classic psychedelics and detailed their ingression into the cultural contexts of the United States and Europe. The historical overview offered here not only highlights the political, sociocultural, and historical dimensions of classic psychedelic drugs in the Global North, but it also details the indigenous and traditional contexts from which they originally emerged where applicable. I began the chapter by delivering a sociohistorical account of mescaline, followed by lysergic acid diethylamide (LSD), psilocybin, and dimethyltryptamine (DMT). After demonstrating how the use of these substances changed over time and across sociocultural contexts, I elucidated on the connection established between psychedelic experiences, religiousity, and mysticism. I show how apart from everyday accounts of quasi-religious phenomena during psychedelic experiences, philosophers and scientists began to embrace such an association from a secular perspective as well. In the next section, I review major events in the history of US drug policy, including the legal history of psychedelics in the United States. In the final section, I discuss how the history of classic psychedelics presented in this chapter demonstrate how psychedelics have been drawn into various types of assemblages over time, each with their own philosophical commitments, meanings, practices, material elements, and so forth.

CHAPTER 5. THE PSYCHEDELIC RENAISSANCE: PSYCHEDELICS IN CONTEMPORARY PERSPECTIVE

> It should be kept in mind that the relative dearth of research on psychedelics in the past half century did not result from a lack of scientific interest, but rather occurred as a consequence of political forces that manifested principally in the United States in the 1960s and 1970s (Nichols 2016, 267).

Introduction

The topic of classic psychedelic drugs has generated intense controversies for over half a century across the world. Since the ingression of psychedelics into European and American societies during the mid-twentieth century to the present day, the study of psychedelic drugs and their effects has been interdisciplinary in nature. As previously discussed, the DEA has catalogued the most well-known psychedelics under the Schedule 1 classification, thereby categorizing them as having both a high potential for abuse and no recognized medicinal applications (Drug Enforcement Administration 2022). In spite of these circumstances, the use of psychedelics has nevertheless flourished within American society at large, and today, psychedelics have once again begun to enter mainstream culture and are gaining widespread media coverage. Surveys conducted during the COVID-19 pandemic have also shown that people are not only increasingly using psychedelics as forms of self-medication, but adolescents are also showing decreased trends of alcohol use and increased use of psychedelics and marijuana (Winstock et al. 2020; 2021; Evens et al. 2021; Johnston et al. 2021). As more scientific research is published on the therapeutic effects of psychedelic substances, combined with increasing legal changes that are seeing psychedelics decriminalized and even legalized in some cases, these trends in psychedelic

use are expected to continue to rise in the near future. This resurgence of psychedelic substances is therefore taking place within the context of the Anthropocene, where human-environment have become a topic of central concern, and wherein psychedelics appear to unsettle modernist form of subjectivity and human-environment relations.

This chapter begins with an overview of contemporary scientific research on the classic psychedelics, highlighting how neuroscientists, psychopharmacologists, psychiatrists, and psychologists have studied psychedelics within the past twenty years. I continue in the next section by revisiting issues related to the war on drugs, including how social movements have begun to make efforts to decriminalize psychedelic plants, fungi, and substances. In the final section of this chapter, I revisit the assemblage theory to reinforce the idea that psychedelics continue to be drawn into different types of sociohistorical milieus as they are reified and mobilized in highly distinct and particular ways. In doing so, I argue that assemblage serves as a heuristic to help understand how psychedelics are defined and used by different actors in different ways, from early colonial accounts and anthropological engagements seen in Chapters 2 and 3, to the novel forms displayed in this chapter.

I. The Psychedelic Renaissance: Contemporary Research on Psychedelics

Today, we are in the midst of what many have called the 'psychedelic renaissance' as a second wave of psychedelic research and a widespread psychedelic use has come full force in the United States (Sessa 2012; McClelland 2017; Sessa 2018). Although psychedelic drugs continue to be categorized as Schedule I substances by the US government's Drug Enforcement Administration (DEA), and decades of scientific research

have been stultified by their illegal status, scientific interest in psychedelics has nevertheless remained as research centers across the world have begun to emerge daily in an effort to better understand psychedelic compounds and their effects. Universities such as New York University, University of New Mexico, Harvard, Wisconsin, Alabama, and Imperial College London, in addition to institutions across Canada, Germany, Switzerland, Israel, Spain, Mexico, New Zealand, have all launched research on psychedelics after taking a multi-decade hiatus (Richards 2016, 7). The current reconsideration of psychedelic substances comes a momentous time given the incremental legalization of marijuana across the United States in both medical and recreational contexts. In the case of the classic psychedelics, non-profit educational organizations, universities, and non-governmental associations (NGO's) such as the Multidisciplinary Association for Psychedelic Studies (MAPS), The Beckley Foundation, Imperial College London, and Johns Hopkins University, are continuously making major breakthroughs in providing the empirical foundations to support the legalization of the classic psychedelics for therapeutic purposes. The impetus behind this recent resurgence of interest in psychedelic substances and experiences has largely been the bequest of novel scientific research which has provided promising results that support the efficacy of using psychedelics in medicinal settings as adjuncts for therapy. These innovative therapeutic applications of psychedelic substances are also being compounded with an increasing amount of research on the safety of the effects of psychedelic drugs both physiologically and socially (Halpern and Harrison 1999; Amsterdam, Opperhuizen, and van den Brink 2011; Krebs and Johansen. 2013; Johansen 2015; Winstock 2017; 2019; Nichols & Grob 2018; Holze et al. 2021; Reckweg et al. 2021). Taken together, the academic literature generated on psychedelic substances within

approximately the past two decades has begun to erode both popular cultural biases against psychedelic drugs as well as governmental perception of them.

Although the revival of psychedelic research has been driven by a confluence of multiple forces and factors, there are certain institutions and individuals that have somewhat spearheaded the current psychedelic renaissance. Among these are Rick Doblin from Multidisciplinary Association for Psychedelic Studies (MAPS), Robert (Bob) Jesse who is the founder of Council on Spiritual Practices (CSP), along with researchers at Imperial College London, Johns Hopkins University, and the Heffter Foundation to name a few (Pollan 2018). The research produced by several of these entities is predominately driven by the disciplines of psychiatry, pharmacology, and neuroscience, all of which utilize state of the art research methods and technologies to produce never-before-seen understandings of how psychedelic substances affect human physiology and experience. By using double-blind protocols, along with functional magnetic resonance imaging (fMRI) and electroencephalography (EEG) scanning technologies among other tools, there is now a wealth of empirical evidence to support many of the longstanding claims made about psychedelics during the first wave of research. In particular, there has been a vested interest in exploring the therapeutic potential of psychedelics as medicines for treating an array of mental health issues that are projected to be on the rise (Carhart-Harris and Goodman 2017; Muttoni, Ardissino, and John 2019; Nichols, Johnson, and Nichols 2017; Johnson et al. 2019; Kuypers 2019).

Among the groundbreaking studies conducted in recent times, it has been found that the classic psychedelics, including psilocybin in particular, show promise in their ability to effectively treat alcohol addiction as well as other forms of substance abuse

(Webb 2011; Bogenschutz et al. 2015; Bogenschutz 2017; Johnson, Garcia-Romeu, and Griffiths 2017; Noorani et al. 2018; Garcia-Romeu et al. 2019; Garcia-Romeu et al. 2020). These findings support longstanding claims regarding the potential of psychedelics in treating alcoholism (O'Reilly and Funk 1964; Mangini 1998; Dyck 2006), while they also present a challenge to the governmental categorization of psychedelics as addictive substances with a high potential for abuse. Psychedelics, such as psilocybin, have also recently shown a remarkable promise in treating both depression and anxiety related to death (Griffiths et al. 2016; McCorvy et al. 2016; Nutt 2016; Ross et al. 2016; Malone et al. 2018; Davis et al. 2020), signaling the import of psychedelics in palliative care contexts (Kelmendi et al. 2016; Shelton and Hendricks 2016; Spiegel 2016; Summergrad 2016; Agin-Liebes et al. 2020). Another area where classic psychedelics have facilitated extraordinary positive changes is in depression, where psilocybin has been used in treating both depression and instances of treatment-resistant depression (Carhart-Harris et al. 2017; Carhart-Harris et al. 2018b; Roseman, Nutt, and Carhart-Harris 2018; Davis et al. 2020). Additional classic psychedelics, such as ayahuasca, have also shown positive results in efficiently treating depression (Osório et al. 2015; Sanches et al. 2016; Palhano-Fontes et al. 2019; Galvão-Coelho et al. 2021). There is also evidence of using psychedelics to treat posttraumatic stress disorder (PTSD) and other traumas such as those resulting from racial violence (Krediet et al. 2020; Williams et al. 2021), in addition to other illnesses such as obsessive compulsive-disorder (OCD) (Moreno et al. 2006).

Patients who have undergone psychotherapeutic treatment with psilocybin for depression have also shown positive psychological and existential effects, such as increases in feelings of connectedness to oneself, others, and the world at large (Watts et al. 2017;

Carhart-Harris et al. 2018c). Not only this, but participants also displayed increases in psychological flexibility, a "willingness to experience painful emotions," a defragmentation of rigid thought patterns, and tended to reflect on their values and how they planned to enact them in the world (Watts et al. 2017, 555). Other studies claim that individuals can more successfully forecast future events in their lives after undergoing psilocybin therapy for depression (Lyons and Carhart-Harris 2018b), while more controversial studies claim that individuals tend to have decreased authoritarian political perspectives and increased relatedness to nature after their experiences with psilocybin (Lyons and Carhart-Harris 2018a). The extra-therapeutic effects of psychedelics, according to some studies that have worked with psilocybin, may also lead to increases in personality traits such as altruism, empathy, creativity and openness (Griffiths et al. 2011; MacLean, Johnson & Griffiths 2011; Pokorny et al. 2017; Mason et al. 2019). The idea that psychedelic experiences can lead to more empathic dispositions has also been echoed by recent studies that have demonstrated a positive correlation between a lifetime of usage of classic psychedelics and increases in nature-relatedness, pro-environmental behaviors, and overall feelings of connectedness to nature (Forstmann and Sagioglou 2017; Kettner et al. 2019).

It is important to note that the psychological changes provoked by psychedelics are not just based on subjective experience reports, for psychedelic substances significantly affect the structure and physiology of the brain as well. Not only do classic psychedelics exhibit neurogenerative effects including the ability to promote neural plasticity (Catlow et al. 2013; Ly et al. 2018; Carhart-Harris 2019; Morales-Garcia et al. 2020; Ly et al. 2021; Shao et al. 2021), but they also tend to lead to lasting changes in personality and brain

structure (Bouso et al. 2015; Bouso et al. 2018; Erritzoe et al. 2018; Olsen 2018). Based on novel neuroimaging evidence, it is now theorized that classic psychedelics elevate levels of entropy in the brain, leading to "unconstrained" modes of cognition that are otherwise suppressed in normal states of waking consciousness (Carhart-Harris et al. 2014; Carhart-Harris 2018). Under the effects of classic psychedelics, there is also a suppression of the default-mode-network (DMN) which is a network in the brain that operates "as the highest level of functional hierarchy" (Carhart-Harris et al. 2014, 6). It is thought that one's sense of self, or ego, is linked with the DMN, which may help explain why individuals report feeling a loss of sense of self, or 'ego death', when under the effects of psychedelics. The reduction in DMN activity is also believed to be correlated with increases in divergent thinking, creativity, and more globally integrated brain functioning (Tagliazucchi et al. 2016; Carhart-Harris 2018, 173). More recently, it has been posited that under the effects of psychedelics, individuals tend to have relaxed "high-level priors," or beliefs, that are otherwise normally maintained in a top-down fashion (Carhart-Harris and Friston 2019). What psychedelics appear to do is facilitate "bottom-up" styles of thinking that are associated with increases in entropy, allowing for the revision of rigidly held beliefs that dominate cognition (Carhart-Harris and Friston 2019, 333).

Taken together, the neurophenomenological and psychopharmacological approaches to psychedelic substances and experiences has led researchers to suggest that psychedelics may change significant aspects of one's subjectivity (Studerus et al. 2011; Preller et al. 2017; Carbonaro, Johnson, and Griffiths 2020). Among these changes, it has been found that classic psychedelic experiences exhibit the ability to treat instances of pathological, or maladaptive, narcissism (Mulukom, Patterson, and Van Elk 2020), as well

as a range of mood disorders (Vollenweider and Kometer 2010; Rucker et al. 2016). In addition to affecting personality traits and subjectivity in general, psychedelics also exhibit the ability to influence one's philosophical precepts (Jylkkä 2021), as some evidence now suggests that psychedelics may lead to shifts in metaphysical beliefs that move away from 'hard materialism' towards 'non-physicalist beliefs' such as panpsychism (Timmermann et al. 2021). Granted that psychedelics have shown to reliably produce many of the aforementioned effects in individuals, psychedelic substances are nevertheless known to be influenced by a range of contextual factors. These contextual aspects include both the set and setting, referring to an individual's psychology and the environment in which the substances are taken, respectively (Leary, Litwin, and Metzner 1963; Hartogsohn 2014; 2017), in addition to the fact that psychedelic substances increase suggestibility (Carhart-Harris et al. 2015; Hartogsohn 2018). Since contextual factors are essential to understanding how psychedelics produce their diverse effects on different people (Carhart-Harris et al. 2018a), researchers have begun to express the need for analyses of sociocultural contexts that, when integrated with neuropsychopharmacological understandings, can aid in understanding how and why psychedelics produce certain subjective effects in certain individuals (Lifshitz, Sheiner, and Kirmayer 2018; Langlitz et al. 2021; Pace and Devenot 2021). Sociocultural contexts include extra-pharmacological elements, such as one's upbringing, life experiences, cultural conditioning, and meanings associated with or attributed to psychedelics.

Amidst the growing scientific evidence that presents psychedelics as having a revolutionary potential in treating a wide array of mental illnesses (Johnson 2018), there has been a swarming of capital venture investors drawn to psychedelics. These

entrepreneurs may either represent or invest in pharmaceutical companies and psychedelic retreat centers, or may be engaged in other business opportunities that are connected to the medicalization of psychedelics. As the trajectory of psychedelics is increasingly becoming intertwined with capitalism, researchers have coined the term 'corporadelic' to signal how diverse for-profit entities are commodifying psychedelics in ways that can be accommodated by capitalist economic models (Noorani 2021, 4). The capitalization of psychedelics has taken numerous forms across many scales, one of which is the rising trend of psychedelic conferences centered on the integration of psychedelics into the market (Murphy-Beiner 2021). Prominent actors in the psychedelic space, such as Rick Doblin from MAPS who has played a key role in legitimizing psychedelic research in the current era, have come under fire for partnering with pharmaceutical companies and business-university entities who seek to monopolize psychedelic treatments and drug delivery methods through patenting and other technologies (Davis 2021). In spite of the joint plea that many scholars have made for scientists and entrepreneurs to commit to more 'open' and democratic forms of psychedelic medicine[20], it appears that psychedelic medicine "is already bound up with an authoritarian military-industrial-medical framework that does not have the world's best interests at heart" (Davis 2021, 94). Bioethicists have further warned that the re-medicalization of psychedelics risks turning traditional knowledges, ecosystems, and psychedelic experiences into resources that can be exploited (McMillan 2021). The medicalization of psychedelics is also politically charged insofar as it appears to invoke new distinctions between 'proper' and 'abusive' forms of psychedelic use, in

[20] See "Statement on Open Science for Psychedelic Medicines and Practices," *Chacruna Institute*, 2018. https://chacruna.net/cooperation-over-competition-statement-on-open-science-for-psychedelic-medicines-and-practices/.

addition to potentially undermining current efforts to decriminalize or legalize psychedelic drugs (Noorani 2020). While the discourse on psychedelic medicine is presented as objective scientific knowledge that is devoid of politics and morality, some argue that it actually adapts to neoliberal forms of individualism as psychedelics are presented as 'ego-dissolving medicines' (Gearin and Devenot 2021).

Without falling into "psychedelic exceptionalism" – the belief that since psychedelics are a distinct class of drugs, their clinical use need not follow established scientific protocols – it remains true that scientific methods may need to be adapted to deal with the unique nature of psychedelic experiences (Johnson 2021). Given that psychedelic experiences can provoke lasting changes in a person's worldview, lead to new behavior patterns, or potentially traumatize or retraumatize a person, an increasing number of researchers have called for the development of new protocols for working with psychedelics as medicines (Brennan, MacLean, and Ponterotto 2021; Pilecki et al. 2021). Other researchers have expressed worry about the conflation of psychedelic research with other cultural agendas, calling for more rigorous adherence to established scientific protocols and paradigms to help legitimize psychedelic science (Sanders and Zijlmans 2021; Yaden, Yaden, and Griffiths 2021). One issue that has arisen in psychedelic science is the extent to which a researcher may come forward about their own psychedelic use, including how their experiences might influence the findings in their research or create conflicts of interest given the imperative for researchers to remain as transparent as possible in their research design (Ross et al. 2020; Forstmann and Sagioglou 2021). A related issue has to do with whether it is required for psychedelic researchers and clinicians to have had

their own psychedelic experiences as part of their training to better assist patients undergoing psychedelic psychotherapy treatments (Nielson and Guss 2018).

II. The US War on Drugs, Psychedelic Decriminalization, and the Shifting Psychedelic Landscape

Today, the classic psychedelics remain illegal in the United States at the federal level, based on drug classifications created after 1970 in the United States (see Chapter 3). Psychedelic plants, fungi, and substances are thereby classified as Schedule 1 substances; a category reserved for drugs that supposedly have no medicinal value and a high potential for abuse (Drug Enforcement Administration 2022). This categorization of psychedelic drugs has not only stultified legitimate scientific inquiry into these substances for several decades, but it has also led to stigmatization, mass incarceration, and other legal troubles for those that are caught with psychedelics for any purpose. The governmental rendering of psychedelic drugs as Schedule 1 drugs is not based on scientific evidence, however, as both natural and social scientific disciplines show that psychedelics have a wide range of medicinal application, are nonaddictive, and even assisting in the treatment of addiction as I have shown in this chapter. Moreover, as I have argued elsewhere (Falcon 2021b; 2021c), the illegalization of psychedelic substances constitutes a biopolitics of consciousness that has restricted the states of consciousness that are available to the population. By restricting the psychoactive substances that citizens can legitimately avail themselves to, the US war on drugs has not only constrained people's ability to modify their psychology and physiology in potentially positive ways, but it has also denied individuals the opportunity of experiencing the modes of perception, affectual capacities, and forms of subjectivity that

psychedelic substances can confer. On further grounds, the war on drugs in the United States has also been critiqued for its effects on racial and ethnic minorities, with several scholars arguing that the war on drugs, if not racist in nature and origin, at the very least has racist effects in terms of persecution of minority groups (Szasz 1974; Bobo and Thompson 2006; Provine 2008; Alexander 2010; Hart 2013a; 2013b). And finally, as Chapter 7 will demonstrate, the illegalization of psychedelics may also restrict people's ability to either enhance their existing relations, or form new relations, with themselves, others, and the environment.

In response to the longstanding war on drugs that has become international in scope, a number of social movements have spawned advocating for the decriminalization or legalization of psychedelic drugs. In the United States, the foremost organization leading efforts to decriminalize psychedelics is Decriminalize Nature,[21] an Oakland, California based collective comprised of a variety of intellectuals, lawyers, academics, and activists. Decriminalize Nature works to decriminalize entheogenic plants and fungi through community and political organizing, advocacy, and education. It also promulgates the notion that the decriminalization of entheogens can improve human wellbeing and health, in addition to helping "restore our root connection to nature." Part of Decriminalize Nature's mission is embodied in its "Five Principles for Creating Sustainable Communities in Partnership with Sacred Plant Medicines," which include: 1) decriminalizing entheogens and ensuring equitable access to them; 2) protecting healing with community-based ceremonies; 3) creating community-serving, local economies for plants and fungi; 4)

[21] https://decriminalizenature.org/

ensuring equitable access to benefits from the emerging synthetic psychedelic market; and 5) developing sustainable relationships with indigenous communities, habitats, and species. Decriminalize Nature has spawned a number of branches since its inception, with its Denver, Colorado branch decriminalizing being the first in the nation to get their city council to decriminalize psilocybin mushrooms. Soon after, Oakland was successful in decriminalizing psilocybin and other entheogens such as mescaline-containing plants and ayahuasca. The number of cities, states, and townships affiliated with Decriminalize Nature is growing, with recent projections showing over one hundred cities involved in decriminalization and legalization efforts.[22]

Another organization that advocates psychedelic use is Extinction Rebellion (XR),[23] a politically non-partisan, international, and decentralized movement that uses civil disobedience and non-violent activism as a means of persuading "governments to act justly on the Climate and Ecological Emergency." XR demands that governments must not only admit the truth regarding the current ecological and climate crisis, but they must also communicate the urgency of this truth to institutions, act to eliminate greenhouse gas emissions and biodiversity loss entirely by 2025, and defer to a Citizens' Assembly on ecological and climate justice. One of the co-founders of XR, environmentalist Dr. Gail Bradbrook, not only attributes the impetus for creating XR to her experiences with psychedelics,[24] but she also calls for the mass use of psychedelics as a form of

[22] https://www.marijuanamoment.net/nearly-100-cities-are-considering-decriminalizing-psychedelics-map-shows/

[23] https://rebellion.global/about-us/

[24] https://psychedelicspotlight.com/psychedelic-experience-extinction-rebellion/

"disobedience" that can have a transformative effect on addressing the climate crisis.[25] With regards to the illegalization of psychedelics, other organizations have arisen maintaining that self-experimentation with drugs and the alternate states of consciousness they confer is not only an inalienable human right, but also a liberty that is protected by the American constitution. One of these organizations is Mind Army,[26] a non-profit organization that has the goal of making psychedelic "plant medicines" available to the population for healing purposes. Mind Army advocates for the legalization of psychedelic medicines, emphasizing the critical need for legal changes given the current "suicide, addiction, anxiety, and depression (SAAD) epidemic." In addition to advocating for legalization for medicinal purposes, Mind Army also mobilizes the United States Declaration of Independence's clause on "life, liberty, and the pursuit of happiness" to argue that access to experimentation with psychedelics should fall within this protection. This pursuit of happiness argument has also been promulgated recently by pharmacologist Dr. Carl Hart of Columbia University, who has also argued against the war on drugs and in favor of the legalization and regulation of all drugs (Hart 2013a; 2021).

Finally, the Center for Cognitive Liberty & Ethics (CCLE) is an organization that has existed for over twenty years, working to protect "freedom of thought."[27] CCLE dedicates itself to the protection and advancement of freedom of thought, closely following increasing trends in the neurosciences and technology that potentially threaten "self-

[25] https://psychedelicstoday.com/2019/09/25/extinction-rebellion-co-founder-says-psychedelic-disobedience-can-address-the-climate-crisis/

[26] https://mindarmy.org/

[27] https://www.cognitiveliberty.org/ccle1/mission.html

determination over one's own cognition." The principles which guide CCLE are based on privacy, autonomy, and choice, meaning that privacy should extend to one' to one's own inner domain of thought, that one should have full autonomy over one's own mental states as a matter of free will, and one should have the choice to experiment with all modes of consciousness. The last of these has particular relevance to psychedelics, especially since CCLE maintains that "governments should not criminally prohibit cognitive enhancement or the experience of any mental state." While cognitive liberty maintains affinities with arguments against the governmental intervention of women's autonomy over their own bodies, critical drug theorists, legal scholars, and others have rallied around the legal basis for cognitive liberty and its protection of consciousness experimentation (Boire 2001; 2003; Ruiz-Sierra 2003; Bublitz 2013; 2015; Sententia 2004; Walsh 2013; Shuster and Cappelletti 2015; Walsh 2016).

As the psychedelic landscape continues to shift, new assemblages are forming around psychedelics that draw them into particular arrangements, some of which I outlined in the last chapter. In geographies where laws have changed to more progressive stances regarding the decriminalization and legalization of psychedelic substances,[28] new avenues have begun to emerge for psychedelic practices, cultivation, distribution, and community formation. At the same time, the first federal grant for psychedelic research in over fifty years was granted in October of 2021, when the National Institute of Health (NIH) funded a psilocybin-assisted psychotherapy study for tobacco addiction conducted by Johns Hopkins University.[29] In April of 2022, the Benzinga Psychedelics Capital Conference was

[28] https://psychedelicalpha.com/data/psychedelic-laws

[29] https://themicrodose.substack.com/p/welcome-to-the-microdose?s=r

hosted in Miami, Florida, with venture capitalists Kevin O'Leary and Kevin Harrington– popularly known from the television show Shark Tank, promoting investment in the psychedelic space. The capitalist approach to psychedelics has even devised a novel name for this new wave of psychedelic drugs – namely, 'psychecеuticals'[30] – which reflects their merging with the pharmaceutical industry. The framing of psychedelics as medicine has therefore drawn interest of capitalist investors that may have little to no interest in psychedelics as they have traditionally been understood and used, and instead view them as commodities to invest in. Current estimates suggest that by 2027, the psychedelic medical industry will have a value of at least $11 billion (Phelps, Shah, and Lieberman 2022). These three examples exemplify the three types of assemblages I outlined in Chapter 4: social movements tend to be drawn to *entheogenic assemblages*, where psychedelics are understood as entheogens or plant medicines, are used in communal ways, and relationships are emphasized; *psychedelic medicalization* assemblages render psychedelics strictly in medical terms, and bring universities and the federal government into partnerships to further investigate the effects of psychedelic substances and their role in potentially revolutionizing modern psychiatric practices; and finally, psychedelic-medicalization assemblages have played a significant role in helping spawn *psychedelic capitalist* assemblages where particular ideas, actors, technologies, and materials coalesce around the notion of psychedelics as commodities.

These assemblages are not clear cut, however, for there are individual capitalists who sell psychedelics as commodities while referring to them as sacred substances or

[30] https://www.forbes.com/sites/amandasiebert/2022/05/11/shark-tanks-kevin-harrington-invests-in-psychedelics-company-psycheceutical-inc/?sh=6621990a786a

entheogens, just as there are venture capitalists who personally believe in the transformative power of psychedelics yet at the same time directly contribute to their commodification. What assemblage helps to shed light on is how psychedelics are drawn into particular arrangements or sets of relations based on some unifying principle or ideal. Each assemblage shows how psychedelics are rendered in highly specific ways and how processes of selection and hierarchy are born thereof, creating new forms of psychedelic practice and discourse. Furthermore, I argue that within each of the assemblages that I refer to as *entheogenic*, *medical*, and *capitalist*, there are philosophical underpinnings that entail highly particular renderings of reality and of the self, as I argued in Chapter 4. As such, the contemporary landscape of psychedelics helps to illustrate how these what these assemblages constitute, how they are formed, and what effects they might have on both psychedelics and people's relationship to them.

Conclusion

This chapter offered a brief overview of the contemporary psychedelic landscape in the United States. The first section of the chapter offered an overview of the scientific research conducted on the classic psychedelics over roughly the last twenty years, showing how the impetus for the current resurgence of scientific interest in psychedelics has come from extraordinary findings in psychology, psychiatry, and the neurosciences. I demonstrate how scientific research has grown significantly in recent years, with findings largely centered on the therapeutic effects of psychedelics in treating a range of psychological conditions such as depression, end-of-life anxiety, and addiction. I then

illustrated how further research suggests that psychedelic substances, such as psilocybin, appear to promote neuroplasticity and neurogenesis, demonstrating positive physiological effects that psychedelics may have in addition to their therapeutic psychological effects. By reviewing contemporary scientific findings, I argued that psychedelic research provides evidence which shows that psychedelic experiences promote changes in subjectivity as well. Finally, at the end of the first section, I drew attention to current debates within the field of psychedelic medical practice as they relate to research ethics and practices.

After providing a summary of contemporary research on psychedelics, I moved on in the next section to elucidate on the US war on drugs, current decriminalization efforts, and the shifting psychedelic landscape. Not only do I argue that contemporary scientific evidence undermines the US DEA's categorization of psychedelics as Schedule 1 substances, but I further point to how the US war on drugs can be understood as a biopolitical enterprise that also has racist effects due to how minorities are disproportionately persecuted for drug offenses. I also showed how a number of social movements have spawned in response to the illegalization of psychedelic drugs, arguing for the decriminalization and legalization of psychedelics from various vantage points. Next, I showed how current legal regimes surrounding psychedelics are beginning to shift, as prestigious universities and research institutions continue to open research centers for psychedelics. This has led to changes in the federal perception of psychedelics as well, with the National Institute of Health (NIH) funding the first psilocybin research study in over fifty years in 2021. Finally, I discuss how assemblage helps to understand the shifting psychedelic landscape, pointing to how contemporary forms of psychedelic practice become drawn into disparate arrangements, each with their own motivations, philosophical

commitments, and understandings of what psychedelics are. I end the chapter by reinforcing how *entheogenic assemblages, psychedelic-medicalization assemblages, and psychedelic-capitalist assemblages* are some of the ways that psychedelics are rendered and mobilized in a contemporary context.

CHAPTER 6. PSILOCYBIN AS A TECHNOLOGY OF THE SELF

> At the same time my sense of self-identity entered ultimate synesthesia. I became everything and nothing simultaneously. This was at least the second greatest moment of my life. It was the feeling of complete psychological freedom. Finally free from attachment to the conventional sense of self, of being the man in the machine responsible for keeping everything functioning. Finally, I could simply relax and let everything happen effortlessly. I could sit back and enjoy the rest of my life– Interview (5.12).

Introduction

I present in this chapter my argument that the psychedelic experiences occasioned by psilocybin "magic" mushrooms function as technologies of the self. By this I mean that experiences with psilocybin mushrooms are used by individuals as a means of working on, or changing, some aspect of their sense of self or subjectivity. In drawing on empirical findings acquired through interviews with individuals from Miami, Florida and experience reports drawn from Shroomery.org using netnographic methods, I argue that individuals utilize the experiences provoked by magic mushrooms as contemporary techniques of subjectivation. As such, this chapter focuses on how psilocybin experiences, and the reports written about them, function as technologies of the self in drawing on key passages from both data sets. I illustrate how in the course of conducting theme analysis (see Chapter One), six themes emerged that were related to changes in subjectivity: *intentions*, *learning or insights*, *changes in self*, healing or self-care, *effects of experience*, and *psychedelics as tools.*

I. Psilocybin as a Technology of the Self

In Chapter 2, I elucidated on Foucault's (1988) conception of technologies of the self to signal practices, techniques, and discourses that individuals utilize as a means of provoking a change in themselves, and therefore their subjectivity. Recall that in his genealogical study of 'the subject', Foucault discovers historical examples of practices that were aimed at the shaping subjectivity in ancient Greece, Greco-Roman Stoicism, and early Christianity (Foucault 1983; 2001; 2017). For Foucault (1988, 18), these practices of subjectivation, or technologies of the self,

> permit individuals to effect by their own means or with the help of others, a certain number of operations on their own bodies and souls, thoughts, conduct, and way of being, so as to transform themselves in order to attain a certain state of happiness, purity, wisdom, perfection, or immortality.

Since many of the reports included in both my ethnographic and netnographic data sets show that individuals often use psilocybin mushrooms as ways of changing some aspect related to their sense of self, I argue that the psychedelic experiences facilitated by psilocybin function as technologies of the self. In some cases, individuals report having the intention of using mushrooms as a way of changing their perception of something – which often times is their perception of self or some other pressing issue for them at that moment – while in other cases, individuals use the experiences as a way of healing or curing themselves of a psychological issue, be it depression or something akin to existential stress. Many people also report acquiring profound lessons and wisdom through their psilocybin experiences, some of which are attributed to the spirit of the mushroom itself. There are also instances of individuals experiencing a rebirth or immortality, as well as cases wherein they report learning or understanding something about the nature of reality, life, and death.

Apart from the experiences themselves functioning as technologies of the self, my netnographic data set, which consists of one hundred experience reports drawn from the online forum Shroomery.org, provides further evidence that the report writing process itself functions as a technology of the self as well insofar as individuals go online to write these experiences volitionally. The experience reports produced signify meaning-making practices wherein a person attempts to articulate an experience that is often described as ineffable, thereby allowing the individual to externalize their thoughts in a way that can facilitate a change in self. Foucault (1988, 27) recognized that writing practices, such as correspondences, notebooks, and personal diaries, were a way for Stoics such as Seneca to "reactivate for oneself the truths one needed." Granted that Foucault (1988, 30) is referring to a particular sociohistorical context wherein letter writing had this specific function, it is nevertheless defensible to claim that psychedelic experience reports, like Stoic correspondences, represent examinations of conscience and a concern for the self. These psychedelic experience report writing practices maintain affinities with Stoic technologies of the self since they not only involve a "disclosure of self," but they often times include references to acquiring insights, knowledge, or lessons about the self and its relation to the world (Foucault 1988, 34). The reports also contain certain 'truths' that these individuals activate through their experiences.

In this section, I draw from both my interviews and netnographic data sets to argue that the psychedelic experiences facilitated by magic mushrooms, in addition to the experience reports individuals write about them, function as technologies of the self or techniques of subjectivation. To justify this claim, I differentiate between statements made about: (1) the *intention* an individual attributes to their psychedelic experience; (2) general

insights or *lessons* learned through the experience; (3) *changes in self* brought about through the experience; (4) the use of psilocybin experiences as a form of *healing* or *self-care*; (5) the impact or *effects of the experience* post-experience and beyond; and (6) how people perceive and use *psychedelics as tools*. Each of these themes, in their own way, provide evidence to support the idea that psilocybin experiences operate as tools for subjectivation, or the shaping of one's subjectivity.

A. Intentions

In analyzing the one hundred and thirty psilocybin experience reports included in this project, I discovered that there was a great deal of reports where individuals were either intentionally using the psychedelic experience as a means of personal exploration, or they were hoping to acquire some kind of knowledge or insight from the experience regarding something momentous in their lives. The intentions demonstrate that these individuals are going into their psilocybin experiences with the expectation that they will be changed in some way. At times, the reference to their intention is vague and unspecified, sometimes taking the form of a general curiosity:

> [I reflected on the] intentions behind going through this experience (1.1).
>
> set my intentions, in my darkened room next to my equally straight laced wife and waited for the ride of a lifetime (1.2).
>
> CEOs micro dosing got me interested in mushrooms, and the effects on the brain that help with inner reflection sparked my curiosity (2.4).
>
> I was strongly curious about what it would be like to experience the world through different eyes (R-26).

The above cases show that individuals sometimes reference having intentions for their psychedelic experience, but then do not specify what these intentions are. Other times, they

state that they were simply curious to see what the experience was like without necessarily having an intention beyond that. One person who was simply curious about psilocybin experiences interestingly referred to the micro dosing trend that was popular among Silicon Valley tech industry workers a few years back as a means of increasing their productivity. Apart from these vague references to intentions, in many more instances individuals are quite clear about the intentions they have for going into their psilocybin experience:

> I wanted to explore my mind and face my demons. I have tripped a lot with friends but always felt the urge to go deeper and to explore my own mind a little further. Something I found not possible in the company of others. So I decided to do this trip on my own (4.10).
>
> My intention was to treat life-long depression. I had some psychedelics in the 90s, but nothing this strong. I only recently started trying mushrooms again after learning about the new research on depression. I said more about that in this report of my first failed attempt at an ego-dissolving experience (5.12).
>
> I went into the trip with the intention of finding out what is so wrong with me? Why do I feel this way no matter what I try? What was the truth I was missing? (5.10).

In these instances, there is a conscious use of psychedelics as what I would call a form of self-diagnosis and self-medication. Whereas one individual reveals their intention to treat their depression through the psilocybin experience, the other two mention self-exploration and truth-seeking as a way of hopefully resolving some psychological issues or stress they are experiencing. While the first person mentioned using the experience as a way of facing their demons and exploring their mind, the others had the intention of using the experience as a means of helping them treat a psychological condition or to discover insights that can aid with resolving existential issues such as feeling lost.

These intentions for using psilocybin are common throughout the experiences I have analyzed as I discovered that at times, people go into their psychedelic experiences

with the intention of solving a specific issue, such as an identity crisis, an interpersonal conflict, or gaining insight into some pressing issue that is on their mind. Examples of this include:

> Girlfriend and I are going thru a lot of shit. I took 5 grams of golden teachers seeking advice (3.3).
>
> 2.5g mushroom trip to gain some insight into my life, the situations, how I got here, and to motivate me to change (2.17).
>
> I wrote down a long list of aspects of my mental health I would like to overcome, and some things to try to remember to tell myself if the trip gets challenging (1.8).
>
> My reasons for taking shrooms was that they could give me a new perspective on life where I stop being so caught up in work and take me to a better place mentally...and just improve my perception of reality overall (1.10).
>
> One of my primary motives for even taking these medicines at all is the pursuit of happiness (3.6).
>
> I know 5 dried grams is called heroic but I was MOTIVATED to talk to the shroom and see if it could answer my burning question...."WHO CREATED GOD?" (5.16).

In all of the aforementioned quotes, one can see how psychedelic mushroom experiences appear to function as technologies of the self insofar as these passages demonstrate how they constitute practices that individuals intentionally engage in as a way of shaping their experience of, and relationship with, themselves. These intended changes in subjectivity also go beyond one's relationship to the self in many instances to include changes in one's perception of the world and one's interpersonal relations as well. The people in these particular passages, for example, went into their experiences seeking advice on how to improve their relationship with their partner, sought to overcome a range of mental health issues, hoped that the experience could help them to attain happiness, and even intended for the experience to allow them to better understand the metaphysical nature of reality.

Despite all of these intentions being strikingly different, they all nevertheless constitute attempts to transform some aspect of the self in some desired way, which often involves changing one's perception of oneself and one's relations, including one's relation to oneself, to others, or to the world.

The interviews I conducted also showed similarities in the ways that individuals reported their intentions before going into their psychedelic experiences. One interviewee, a 34-year-old Hispanic female, mentioned that her intention was "to be taken into another dimensional realm (dream like or open/spiritual aspect)…to get to a deeper understanding" (R-28). I interpret this as the subject using the experience as a way of attaining some type of knowledge, learning, or understanding. This is reinforced by her claim that when using psilocybin in a known setting, such as her home, "the expectation becomes more of an internal investigation of self." (R-28). This "internal investigation of self" associated with psilocybin experiences cannot be clearer in its implications for subjectivation. For another interviewee, namely a 35-year-old Cuban-Colombian male who was originally from Miami but moved to Oregon, his intended use of psychedelics transitioned throughout his life, from just taking them for fun or crazy visuals with friends early on, to beginning to use them in a more serious or ceremonial way to get something out of the experience. He told me,

> And it's grown to be like a way for me to reset, like, meditate. You know, kind of reset. Yeah, I don't know. That's the best way I can explain it. It just helps me reset. It helps me get back to baseline kind of rid whatever is occupying my mind and, you know, or kind of explore What's occupying my mind? Like, think about like, why am I you know, doing these things? Why am I you know, deviating from these behaviors like what's going on? Like, something's off. And yeah, it's and I've been successful with

> psychedelics and trying to find what's wrong. And the thing is like you once again, and this is kind of going back to bringing down the ID, is like when you when are bringing down your ego, and when you bring down that ego, you can then look in the mirror and have that real conversation and be like, Yo, this is where I'm fucking up. Or this is a truth that I need to see…I think psychedelics, it helps you kind of change, it gives you perspective; they may not change your perspective, but it helps you give perspective…I'm not taking this just so I can, you know, have a good time at this festival for the next couple of hours. Like, I want to do this because like, I want to gain something out of it (R-3).

This person's experience resonates with many of the aforementioned passages given that there's an internal investigation or examination that they expect to occur during their psilocybin experience. Here, the experience appears to be used as a way of treating existential stress accumulated over time, by performing a "reset," to gain perspective on one's current circumstances or past actions and behavior patterns. He also describes the experience as a way of breaking down egotistic tendencies which prevent him from realizing that there is anything wrong with the way he is doing things. This particular individual mentioned that he went from using psychedelics simply for fun, to a more serious approach in which they are used in a ceremonial context. The intention to use mushrooms simply for fun, however, is not uncommon, as another interviewee who identified as a 30-year-old mixed-race Filipino male, predominately used mushrooms in this manner. He described going up in a conservative Catholic household, but he had nevertheless experimented with drugs early in his teenage years and throughout his adult life. For him, mushrooms were not as profoundly introspective as most other reports in this study would suggest, but instead were used as a way of having fun with friends. When I asked him to give a general statement regarding his thoughts about magic mushrooms, he said:

> I think that like they're amazing for just, having a really, unique experience, it can turn just a regular day into a phenomenal day, like you know, just so much fun, and laughing, and, overall just like, very, very emotional and mental…unfortunately I cant say spiritual with mushrooms specifically, but definitely a very like, rollercoaster of an emotion and mental kind of day which is nice, and I think it kind of breaks the mundane cycle from just like a regular day, so its like always a good time to do mushrooms with friends and explore, and just have some great laughs, and, you know, just see some trippy shit (R-7).

This more recreational way of using mushrooms is also common and found throughout the experiences I have examined, especially those where psychedelics are taken with friends. It just so happens that in the vast majority of cases I analyzed where individuals took psychedelics with friends, there was less of an introspective focus and more of a focus on the external world. In addition, I also learned that in these contexts where individuals use mushrooms with friends for fun, there is usually lower dosages consumed (approximately 1g – 2g dried in most instances), which may also be suggestive of why there is less introspective focus during these experiences.

What can be seen in this first subtheme of intention is that there is a wide array of reasons why individuals use mushrooms. These intentions may range from being curious, exploring oneself, learning something about reality, for mental health, or simply having fun with friends. Apart from the cases wherein psychedelic mushroom experiences are simply used for fun, all of the aforementioned intentions reflect a desire to use the experience as a way of attaining something, and in particular, a change in one's perspective or perception of a particular thing or issue. In the next subsection, I go on to demonstrate how learning and insights are also one of the most common features found in psilocybin experience reports, further attesting to their role as technologies of the self.

B. Learning or insights

One of the most intriguing aspects of psilocybin experiences, especially in relation to changes in subjectivity, has to do with the acquisition of knowledge. The knowledge individuals reportedly acquire through their experiences is often described as learning something about the nature of reality or about oneself, or gaining insights into existential issues related to one's interpersonal relations. These moments of insights and learning are such a common feature of psychedelic experiences that researchers in recent clinical studies have modified and operationalized the concept of 'noetic quality' (Griffiths et al. 2011, 658; MacLean et al. 2012, 721), derived from the philosopher William James' typology of mystical experience (2004 [1902], 329), to stand for "states of knowledge" or "states of insight into depths of truth unplumbed by the discursive intellect." As was seen with the previous section with the subtheme of intention, references to gaining insights or lessons is unspecified at times, with individuals stating **"**[I] have had a few positive personal insights which I've written down" (1.16); **"**Insights and good thoughts for the last 2 hours" (1.10); "the lessons I have received have been numerous" (1.4). In other cases, the references about what they learned are much more specific, such as, "I learned was everything is connected but at the same time nothing is" (1.1), and:

> I felt like I opened up parts of my brain that I never used before and that we are all energy and that everything will be okay after death. That in fact its not scary we are just balls of energy and light that are intelligent beings even outside this body. It was a very comforting thought and the more I gave in to letting go of worry and fear and doubt of leaving this body, the better I felt. (2.13).

While not everyone is clear about what they learned or what type of knowledge they acquired, it is nevertheless clear that psychedelic experiences can be considered to have epistemic import in many cases according participant testimony. In the aforementioned

excerpt, for instance, this person described feeling “that we are all energy,” and then learning something about the nature of death, both of which immediately resolved any anxiety they had with regards to death and dying. As the experience of learning is a clear theme found throughout the experience reports I analyzed, there appeared to be two different ways this manifested itself. First, there were many people reporting an experience of learning, but not being able to recall either some or any of what they learned. In numerous other instances, however, individuals remember specific things they learned through the experience which they were able to bring back with them and even integrate into their lives. In both scenarios, and seemingly regardless of intention, the experience of learning something new, especially in relation to oneself or one’s lifeworld, seems to have significantly impacted people’s subjectivity or sense of self. This connection between psilocybin experiences and changes in subjectivity is further exemplified in the following passages:

> * I've learned so much and it isn't over. A friend who I had rung and texted asked me how the universe was. This was what I said to them and the last communication I had with anybody during the experience. And I was right, I did learn a lot and it was not yet over. I took that beyond the trip, it hadn't ended but it didn't even start that day and it wouldn't end that day either as I knew I would take what I learned forward with me in my life. It hadn't started that day as I have long had a curiosity about entheogens but in a very childish and uninformed way. However as the possibility of me trying such substances became a stronger reality I really dove into investigating what they were all about and how it could be for me. This research took me beyond just the effects of the fungi into some soul-searching inquisition with a focus on my philosophy of life and MY life (3.15).
>
> I started stuffing my face with tortilla chips and then all at once I realized that I have a bad habit of eating mindlessly. Stuffing my face while watching TV or whatever and eating an entire bag of chips without really enjoying or savoring every bite. So, with this realization I ate each chip carefully as if I could absorb all of the joy and flavor. This realization I

> took with me into the waking state, I've caught myself several times now and stopped this destructive behavior. Thank you mushroom gods, that is but one of many lessons I've been hoping to learn and improve about myself (3.11).
>
> I had a ton of other insights about other things and sometimes even many insights at the same time, so that I could not even process them. It was like I could see the nature of everything, but without my eyes, it was another wa[y] of observing, more with the mind itself. but all this was tainted by the horror of staring into the abyss. it sounds hard to imagine I guess and never knew before what was meant exactly by this. No[w] I know, but I am not sure I wanted to know this (4.9).

The first experience in this set shows that while the things this person reported learning were multiple, they could not remember everything. They reported learning "so much" that they could not recall it all nor provide details regarding what they learned. One thing they did remember though, which also appears to bear quite a level of meaning for this individual, was this "soul-searching" quest that made him or her focus on their life and their philosophical understanding of the world and their relation to it. The following individual's report is momentous in the sense that they realized something significant about themself and their behaviors. In this particular instance, they were mindlessly eating only to realize a few moments later that this was a habitual and harmful behavior that they engaged in frequently. By having this learning experience about their "destructive behavior" while on magic mushrooms, they were able to then take this lesson into their normal life where they have been able to catch themselves in the act of eating mindlessly, therefore illustrating how this person's experience led to their reported ability to change their subjectivity and behavior. Furthermore, this person admitted that one of their intentions for experiencing mushrooms was to learn things about themself and thereby improve themself in the process. The final passage refers to insights that this person acquired during their psilocybin experience, but which nevertheless could not be

processed due to being so overwhelming. Interestingly, however, this person mentioned that they learned something about the metaphysical nature of reality, but something so powerful that they might regret actually having learned it.

Psychedelic experiences are often described as being ineffable – another concept borrowed from William James (2004 [1902], 329) – meaning that the experience is difficult or impossible to rendered in regular language. There are diverging ideas as to why this may be the case; whereas physicalists tend to attribute ineffability to reduced activity in the regions of the brain where language is processed, individuals themselves describe the phenomenology of their psychedelic experience as so intense, with so much happening at once, that it is impossible to recall given the speed and intensity of the experience and what one is learning. Another possibility is that since the noetic quality of psychedelic experiences may in fact signal knowledge that is not discursive or rational, it implicitly suggests that there might be other forms of knowledge that are not easily translatable into common language, but which nevertheless are valuable in their own right. Moreover, the manner in which this knowledge is presented to people during psilocybin experiences also bears significance insofar as people often describe the knowledge acquired as an undeniable truth in many cases. In the experience reports that contain a reference to an acquisition of knowledge, this learning is often described as being arcane in nature and may take the form of "being told" or "let in on" an ancient undeniable truth, discovering some form of secret knowledge, or even a remembering of something they had always known.

> I didn't think it could get more intense but the more we talked the deeper I got into my mind and I started to feel like I had figured out everything/all of life's secrets (4.7).
>
> But I transcended it and saw something else. The reason we're here and need to connect and love each other. The reason I was going through this. A pulsing wave of colorful energy branching up from a deep universal network. It was feeding me and strengthening my connection to it. I saw other people in my life connected through their own branches and it was showing me why I need to connect with them. Because of this greater thing that exists beyond our normal reality. The next thing I remember was what I wrote above about the universal network. It felt like an important revelation. I don't remember what the thoughts were, probably nothing articulatable in this world, but they seemed deeply insightful. Like something that explained the interaction between this world and the one I just witnessed (5.12).

It is important to remember that these excepts extracted from experiences where there are a range of emotions, feelings, insights, and visualizations that are absolutely awe-inspiring and rich in meaning. As such, it is not an exaggeration when individuals say they felt like they "had figured out everything/all of life's secrets," or that they experienced connecting to a "deep universal network" when they received a revelatory message about "The reason we're here and need to connect and love each other." These experiences of learning something new regarding the nature of reality or the self often leave individuals reporting feeling permanently changed, even if they cannot articulate exactly what about the experience has changed them.

In one experience report in particular titled, *Insane First Trip was Totally Unexpected: Should Half a Bag of Atlantis Truffles Do This*, the individual reported various lessons and insights gained through their experience, all of which the individual reported in monumental terms and which came in the arcane form I described earlier. To provide a few examples of how multivalent this experience was with regards to what they learned:

> * I'd been let in on a secret. What it is exactly I can't remember but I strongly remember the feeling/thought that I was kinda privileged as I'd come to a greater understanding of myself, my life, my universe. I say my not as an ego-centric thing but more that I'd never apply anything I write here to others. Others may relate but this was my personal experience and I'll never assume it applies to anybody other than myself - though it could (3.15).
>
> * I have value / a piece of the divine. Inspired by Dr Peterson's biblical talks. He's spoken about the phenomenon of humans' repeated theme of there being something special or "other" about each and every one of us. That this powerful idea is from way before Christianity and to credit it to any one group seems pointless as it appears to be a basic human tenant. As somebody who has been through numerous bouts of depression with consistent self-image problems, one such feeling toward myself was a lack of worth. I had(!) no self worth, no feeling that *I* had sanctity of life and that my being was inherently special. I feel closer to having self-worth now than I have in a long time (3.15).
>
> * I've lost/lost sight of who I am in actuality and I need to re-discover the bits that make up me but also to go out and create more OF me, part of it is a lack of my sense of self that I've lost and part of it is that my "self" wasn't fully formed anyway so I need to work on also building who I am. During my trip I experienced a form of ego-death but it was different to what I had expected yet exactly what I expected, this being influenced by the recent realisation that I have in some ways embodied ego-death in a very real-life and visceral way (3.15).
>
> * Indecisive - choose my experience of life. Linked to my sense of self I'm too passive. I'm too go with the flow, too agreeable. I want to take charge of myself and the situations that present themselves as opposed to being passive, uncaring about life and my experience of it. I'm too dominated by feelings of fear and a lack of drive and discipline (3.15).

These are just a few excerpts from this rich and vivid experience report wherein this individual reported learning numerous lessons. As one can see in the passages above, there are realizations about self-worth, the nature of the self, achieving a greater understanding of oneself and one's life in relation to the universe, and even acquiring insights into personal flaws such as being indecisive. Not only were there several additional lessons that this individual reported learning through their experience that are not included here, but all

of these moments of insight took on a profundity that was unparalleled with any other experience in their life. The meaningfulness and therefore the value of these insights reported by participants should not be considered just another form of empirical knowledge, but instead, as potentially lifechanging lessons with a depth of significance that cannot be overstated.

Experiences of learning and insight can also be found throughout the semi-structured interviews I conducted. In speaking with a 32-year-old European non-binary female interviewee, she reported having deep realizations about her behavior and attitude towards herself. Before this experience, she had only tried mushrooms once and it was a very small dose which only resulted in minor visual distortions. For the experience she spoke with me about, however, which entailed eating an eighth of mushrooms with friends, which is about 3.5g:

> I had a lot of realizations about how often I put myself second and my own struggle to prioritize my own feelings and defend my feelings without feeling intimidated or afraid of abandonment. I didn't want to give my energy to people who didn't want to reciprocate in a way that supports growth (R-16).

She then continued to describe her experience in a way that highlights nearly all of the themes present in this chapter by speaking about how the experience impacted her environmental relations, allowed her to acquire knowledge about herself, and even helped her to manage her mental health. For example, when I asked her what her perception of psychedelics was today, as well as the impact that they have had on her life, she told me:

> They're amazing for mental health. They've helped me grow as a person. I had such [a] beautiful experience and was even able to find a lesson to learn from the less pleasurable experiences. Learned to love myself more and love being alive…They've saved my life before. They've also added a humorous joy to my life that reminds me not to take life too seriously, just serious enough! (R-16).

Again, here is a person reporting “realizations” about themselves and the circumstances in their lives during their psilocybin experiences. For this person in particular, there was a profound lesson learned that involved reflecting on her relationship with herself and her relationship and behavior with others. She claimed that psychedelics have helped her in terms of personal growth, in addition to helping her manage her mental health. The excerpts from this individual are one example of the impacts that psychedelic experiences can have on subjectivity, from minor changes in perspective and outlook on life, to “life-saving realizations” which incite positive changes in self-perception and self-care.

The impact that psilocybin experiences can have on subjectivity operate on multiple registers, as can be seen in the following excerpt from a 29-year-old Colombian female interviewee:

> I think my biggest realization is the fact that I want to chase my dream professional[ly]. Nature was a huge one. The fact that not now I know that that next level exists; before mushrooms, I didn't really know that you could get to that level. And then again, music was so amazing. I really love hearing the music hearing the lyrics like your ear just opens up and you just hear different sounds that you never heard before. And, and he just makes you makes you a happier person. And for me, my biggest realization is like, you know what? Life is temporary. We're just here for a little while. And sometimes we just get super rough talking the little things or like just the little problems and like, you know, if you ask yourself, like will this matter in five years? If it doesn't let it go, you know, and I think I think that was a big one for me too. You know, just realizing that like, for real we're just here, here for a little bit. So it makes me a more chill, appreciative person (R-5).

The realizations which occurred in this experience were multivalent, ranging from a new understanding of nature and one’s ability to connect to it through mushrooms to a shift in her perspective on life that involved taking a step back so to speak to appreciate and be thankful for what she has. This shift in values and prioritizations also reflects how this experience was the catalyst for her to begin a career transition; something I will detail

further in a later section. Finally, like many other reports, she recalls acquiring a newfound perception of music during the experience, signaling enhancements or alterations in one's sensory apparatuses while under the effects of psilocybin.

One final testimony which exemplifies this theme of learning or acquiring insights through one's psychedelic experience comes from a 43-year-old Cuban female from Miami. She grew up in Miami, and had early exposure to psychedelics while in high school. During her early experiences with psychedelics, she could not recall much other than having fun with friends. Although she was always into "mystical stuff," she did not experiment with psychedelics again until after college. She had begun to recently attend ayahuasca ceremonies in Homestead, Florida, which she claimed have been transformative. When I asked about her experiences with psilocybin, the first thing she told me was:

> I mean, the psilocybin it involves a lot of like, just reflection, and a lot of insights, a lot of, you know, some visual, but it's mostly, um, it's mostly like a waking dream kind of thing, like, you just see and have a conversation, but, you know, it's like, a lot of things, you know, memories come to the surface, and then…you see it from like, a different perspective, you see it from, you know, you treat it with compassion, instead of fear…it's mostly like, it's like, a session with yourself, you know, like a psychiatric session with yourself (R-6).

The theme of self-medicalization or self-healing certainly emerges in this passage when she speaks about her psilocybin experiences being like a psychiatric session with herself. While I will speak more about this theme in another section, what is present again in her report is this theme of learning or acquiring insights. She describes the experience as a mode of introspection, which involves gaining insights, revisiting memories, and seeing things in one's life from a less judgmental perspective. I then asked her to elaborate on the insights or lessons she acquires and what types of things she learned through these experiences:

> Oh, so much. I mean, I have so many journals full of it, mostly, it's some, it's, it really gives you I guess, I guess on psilocybin it's just the nature of reality has really been challenged, you know, just like perception and dimension…I've [also] been able to, like experiment a lot of times, like, you know, even the information I get [about] stuff that I didn't know, like, nobody told me in this life. And then I'd ask my mom or my grandmother, and they'd confirm it. And I was like, whoa, you know, like, just information, stuff like that, that I wouldn't know. So I'll ask and I'll get insights, and another thing, like…even after the mushroom trip…I still feel a bigger connection in general, you know? And, like, just, I'll get insights randomly, and just ask my mom, hey, you know, about this random person's life, [and she'll say] oh yeah, as a matter of fact, and, you know, stuff like that. I wouldn't have known (R-6).

As was the case in previous excerpts, knowledge or insights about the nature of reality, which in turn cause one to question one's own philosophical commitments and conceptions of reality, were significant insights she reported. She also mentioned learning things that no one could have ever told her, but that ended up being true upon further probing these insights after the experience. Not only do the experiences themselves contain numerous forms of information, but she mentioned that these insights continue to emerge even after her experience is over. For this individual, as for others I interviewed, one's sense of self, or subjectivity, is impacted by these experiences in momentous ways. By reflecting on oneself, seeing oneself and one's past actions from a novel perspective that is nonjudgmental, and acquiring insights into the nature of reality, individuals feel themselves as being transformed through these experiences in ways that have changed their lives. As such, the theme of learning or insights speaks to how there is a connection between the knowledge gained during one's experience and changes in subjectivity.

C. Self-exploration and changes in self

A third way that psychedelics appear to function as technologies of the self can be seen in the changes that people claim have occurred as a result of their psilocybin experience. It is sometimes difficult to tease apart the themes in this chapter given that many excerpts, including the ones in this section, can easily be categorized under the other themes that I have outlined here. The distinction between learning and insights, changes in self, and effects of experience, for instance, have clear overlaps that may lend themselves to various readings. I discovered in the online experience reports that people often reported how they have been changed as a result of their experience. Some examples of this include:

> I had a beautiful "awaking". I realized where I was fucking up in life and what to do (2.5).
>
> I remember looking at myself in the mirror and having a profound experience. It's hard to describe but It was like the reflection was not me, but me from another dimension, or maybe I was from the other dimension. Either way I felt dissociated with the person I was looking at which allowed me to judge the being in front of me without personal bias and I found myself to be really happy with this person. He was nice, competent and attractive (lol) and I felt like I could be his friend which made me feel good about being that person. (2.3).
>
> At this point, the mushrooms told me I need to get a couple of things in my life in order. They pointed out some glaring problems that I've been avoiding. I felt naked, like the whole world could see my shortcomings plainly. It wasn't a good feeling, but it was definitely what I needed to see in myself. After a decent amount of introspection, I realized I was thirsty (3.18).

At first glance, these excerpts appear as if they could be categorized under knowledge or insights, but since these are all themes that show changes in subjectivity, in addition to the fact that many of these experiences contain several or all of these themes, they should not be understood for how well they fit this particular theme. What is more important here is the changes in self that are signaled through these passages. In the first case, the individual

reports a profound experience, akin to an “awakening,” where they realized certain maladaptive behaviors and gained a plan of action on how to change these things about themselves. In the second passage, there is reference to a shift in perception of self which came about through perceiving oneself in a nonjudgmental way. This experience shifted how this person came to see and understand themself, one which made them feel good about being who they were. The third excerpt, like the first one, revealed things this individual needed to get in order in their life. Although this person did not experience the nonjudgmental aspect of learning their faults and realizing their shortcomings, they nevertheless felt that this introspection forced them to confront truths they have been avoiding which they needed to resolve. Despite not being able to measure or quantify exactly how it is these experiences changed these individuals’ sense of self or subjectivity apart from what they have written, it is nevertheless apparent that the experiences have impacted their subjectivity in general.

The combination of emotions, feelings, and affects that are present during intense psilocybin experiences also contribute to why such experiences are so impactful for individuals in terms of changing their subjectivity. The following “trip” report provides a window into how changes in subjectivity are enmeshed within a wider psychedelic experience that includes a range of powerful experiences:

> I saw life, death, I saw that life is not ending by the death, that there is full beyond behind it. That everything in this world is nothing really matters, no matter you win or you lose, no matter your life or you die, it was something out of it. My body felt like I was falling, or something like that. We were in space, full of alien sound and alien creatures, talking with us. I didn't felt like it was hallucinations, I felt it like its hyperspace, or another dimension, so they exist and stuff like this is real, not just made in my messed up brain. It was a real breakthrough. I remember, I thought, fuck, when this ends, it's too intense. We were in

> my bed, moving and moaning like a freaking out. I didn't recognize even my GF, my bed, my room. I thought that I died. I saw the light, and it was so strong and so bright, i couldn't stand it. I thought we only one that life in house, that my mom is dead, my grandfather is dead, and such stuff...but visions and sounds very really beautiful. I could saw my thoughts, my past, my future, everything. Whole trip I felt like someone is watching me. I felt that I'm god, and I saw billions of universes, millions of world. It was so intense and exciting, that i really cried. I had a lot of realisistation about my life, and what my purpose is (4.17).

Here, the person's experience involved seeing things about the metaphysical nature of life and death, interacting with interdimensional creatures, imagining that his relatives were dead, and even seeing awe-inspiring visions and hearing beautiful sounds. This person also recalls feeling as if they were God at one moment, and then viewing the infinite expanses of the universe which brought him or her to a joyful sob. Included among these experiences were several realizations about their life, including acquiring knowledge about their purpose in life.

It is possible that people do in fact make changes in their lives after these impactful experiences, or that the experience changes certain thoughts or behaviors they might have. In the following report, for instance, this person discovered something during their psilocybin experience that they have since integrated into their daily life:

> Practice gratitude... for everything - If your trip goes south, look at your hands and start thanking them for working so hard for you; start showing gratitude - his usually softens the blow of any negativity that may enter your realm (3.10).

This lesson of practicing gratitude, while acquired during a psilocybin experience, is something this individual felt helps prevent one's psychedelic experience from going awry, while it also helps in managing any negativity that one may confront throughout their life. Other changes in self, however, may not be easily articulated insofar as there are often experiences where individuals report feeling as if they are being worked on by some alien

creatures or otherworldly entities, or as if they are being physiologically transformed in some way through the experience. Many times, individuals report feeling as if their brain is expanding and growing, or as if they are operating with a higher level of awareness or consciousness. These types of experiences are rich in meaning, including experiences where one feels a change occurring within oneself, but individuals are sometimes not able to describe exactly what it is that changed about them:

> In my mind's eye, I came face to face with the man in the desert. He saw me through a portal in the sky and I looked down to see him. We were both aware of each other but more curious about who was orchestrating this interfacing. We both had an awareness that there was something that linked one another but that we were different, and most notably, that there was a transfering taking place from me to him, him to me. While I was being injected with the soul-qualities of this man (stoicism, strength, plainness, warriorism), he was being given knowledge of future events, of the persimmon tree, the sound of cars driving by, of kids laughing, of mowers droning. But it seemed like even something deeper was being transferred for a wholly unrelated purpose and both he and I were merely conduits for that purpose. A time-independent upload and download for a third-party (4.5).

The excerpt above is drawn from an experience report titled, *Interfacing With Past Lives: My finance and I tripped together yesterday high*, wherein this individual consumed approximately four grams of mushrooms infused into a tea along with his fiancé at their home. The experience was full of vivid images of colors, shapes, diagrams, and evolving objects, and upon closing his eyes, the experience was "hypnotizing" and "intoxicating." Apart from seeing his fiancé transformed into a mesmerizing and divinelike form, he reported other realizations and intellectual experiences of learning things he did not fully comprehend. In the above passage, he details a transference of knowledge and virtues, or what he describes as "soul-qualities," which he described as a "time-independent upload and download for a third-party." What this demonstrates is that there are transformative

changes that a person may report undergoing during their psilocybin experience, but one which they cannot fully comprehend the meaning or implications of.

One final example is drawn from a 39-year-old female originally from Lithuania who grew up in a radically anti-drug environment she described as a "post-soviet regime." She reported, as other respondents did, that psychedelics, and mushrooms in particular, changed her life. She moved to the United States from Lithuania in her twenties, seeking educational and economic opportunities that were nonexistent back home. After arriving in the US, she began working for several years at a restaurant where she worked until she transitioned into working hospitality. As she worked more and more hours and paid less attention to her mental and physical health, she eventually told me that the overworking led to overdrinking and an overall state of depression. Eventually, she realized she had been depressed for months or maybe even years after a friend introduced her to juicing which changed her life. After several months of juicing and experiencing her mental and physical health begin to improve, she had her first experience with psilocybin mushrooms, although she was unaware of exactly what she consumed since she unknowingly ate the mushrooms that were contained in some chocolates that a friend had. She was at a New Year's Eve party, and remembered a vivid experience with a palm tree wherein she homed in on the sound it was making over and against everyone and everything else at the party. When I asked her what she thought about psilocybin, she told me:

> It's throwing dynamite into your paradigm. It's absolutely rewriting the rules. So, the mind stretch. I mean, it was a shock, probably first, because if you've never, never ever experienced anything like that, you haven't seen colors like that in your life, um, then, you start questioning everything. Right? So now that your world gets shattered, literally. And you know, at that time I was trying to get out of this depressive, syrupy, you know, thick energy that I was in. But, that got my attention of, first

> of all, I don't know what I don't know. I thought I knew what I don't know. I don't know how to do a surgery, I don't know how to fly a plane. But I did not know there are things that I don't even know that I didn't know. So now the expansion of the horizon. You know, it's, it's the biggest blessing because with that, what problems do you ever have? So now, the relationships, with the world, and myself with myself, had to be reexamined. Now. And I had plenty of work to do, right here, hahahah. I had the first patient to work with. And I had a case study, and it was like, well, then who's better to test this theory that I now have, this new theory that I've realized. Something that hasn't been told by my parents, by my movies, by my culture, my friends or my associations (R-8). Olga

This particular interview touched upon several of the aforementioned elements I argue are common in psilocybin experience reports. The experience described here forced this interviewee to rethink her understanding of reality since it involved having her world "shattered," akin to having dynamite thrown into her "paradigm." Moreover, the experience forced her to reevaluate her relationship with herself, others, and the world. She also mentions that these experiences entailed realizations or insights that were not attributable to friends, family, or culture. Since this experience, she continued learning as much as she could about psychedelics, in addition to having more experiences with different psychedelics. When asked about the impact psychedelics have had on her life, she said, "I think this is the biggest gift that I've ever received in my life beyond being born, so it's pretty high, ranking pretty high, hahaha, in how profound the impact" (R-8). These excerpts show that the insights, knowledge, or realizations she acquired through her psilocybin experiences reportedly transformed her understanding of herself, the world, and her relations, clearly showing that these experiences impacted her sense of self or subjectivity. Furthermore, her experiences were so profound that she ranked them among the highest, if not the highest, gifts she has ever received in her life. She fortified this claim when she told me:

> And I think there's like, in big chapters of my life, before psilocybin and after psilocybin, and then life before bufo and after bufo…So these two monumental things…that were a huge reset. And huge question mark, new question mark. I believe that number one is, it's really looking at yourself, right? But you're given full permission to look at the ugliest parts of you and the most divine parts of you that in normal states our range is much more narrow, here, the tool is the beauty; the beauty of the tool [is that] it expands the range, I think that's the biggest blessing it gives because in the wider range, now you see how complex, how beautiful, you know, how flawed you are. With that permission. Now you're like, your self-appreciation and approval and like, okay, I'm a decent human being, actually I am lovable, and I am worthy, and it grows, and for people who suffer from depression and anxiety, at the end of the day, it's what they think about themselves. It's not about…[being] victims of abuse, or the economy falling apart, or my dad was an asshole, like, all these things still, at the end of the day, it's the meanings that they give to themselves about themselves. So now, when these binoculars are showing you way [more] than you thought your boundaries of understanding self were (R-8).

As the passages in this chapter thus far illustrate, psilocybin experiences lend themselves to several forms of categorization given the depth and range of impacts that they have on a person's subjectivity. People often report that during and even after their psilocybin experiences, they are given an opportunity to reexamine their lives, view themselves from a nonjudgmental perspective, reflect on their relationships, reconsider their philosophical commitments, and even recollect past behaviors and actions from a new vantage point. The meaningfulness and significance of these experiences is also reflected in how they are described insofar as it is typical for the knowledge acquired through these experiences to be interpreted as revelations, realizations, insights, lessons, and gifts based on my analysis of user reports. The self-examinations which commonly take place during psilocybin experiences is also evident throughout the passages, as is the notion that the self has reportedly changed as a result of undergoing this experience. Apart from changes in

behavior that are sometimes reported, the acquisition of a new perspective on self, others, and world is arguably the most prominent theme in psilocybin experiences, reinforcing their role as technologies of the self.

D. Healing and Self-Care

Although psychedelics being used as a form of self-medication can be understood as a *change in self*, and therefore can be categorized under the previous theme, there are nevertheless instances where individuals specifically describe their intended use of the mushrooms as therapeutic adjuncts. A participant in my study who identified as a 45-year-old female 'alien' was one such case. She began by telling me that she grew up in the Reagan "Say No To Drugs" era, and that she had not tried any psychoactive substances apart from alcohol or cigarettes up through her college career. At age 35, when faced with a "career-ending degenerative injury," she described herself as being depressed. A friend suggested she look into psilocybin mushrooms, and upon learning more about them, she decided to grow her own mushrooms to ensure that she knew their source. After waiting a year since cultivating the mushrooms, she finally mustered up the courage to consume them, claiming that she "felt immediately better and realized I'd been depressed for years, even decades, and a depressed mind state was my normal." She elaborated:

> Depression is manageable with 2-3 trips a year. Creativity and insight is greatly enhanced, ability to meditate is enhanced, vivid, lucid dreams and a positive, wide view perspective of my life, it's meaning, the role of my past traumas and how they've built me, a strengthened personal faith and belief in God (you gotta meet Him—He's way cooler that religion in Catholic school depicted). I still struggle with anxiety and depression but I have a framework for understanding the why and how

> of it all now. And I know when it's time to recharge on the other side. Literally 8 years of therapy in 8 hours (R-19).

In this case, their first experience with psilocybin led to the realization that they had actually been depressed for years. Furthermore, the psilocybin session itself was described as a form of therapy which invokes a theme found in an earlier section. Apart from managing their depression by having two or three experiences with psilocybin per year, they also reported that their psychedelic experiences have led to enhancements in creativity, insight, meditation, and lucid dreaming. Moreover, the experiences allowed them to better understand how their past traumas have affected their life, permitted them to gain a wider and more positive perspective on their own life, and even enhanced the meaning or purpose of their life. Finally, psilocybin also reportedly impacted their belief in God, leading them to an undeniable belief in "Him" after having experiences where they interacted with God.

In another interview, a 31-year-old mixed race male had the following to say about the impact that psychedelics have had on his life, "They cured me of chronic depression and opened my mind to more creative ways of thinking" (R-14). When asked about his perception of psychedelics today, he mostly associated them with their medicinal effects, claiming that "They have the capacity for positive medical benefits in depression, anxiety, PTSD, and general malaise" (R-14). The belief in the medicinal aspects of psychedelics was unyielding in this interview, as he informed me that he was "working towards a political movement that supports medical legalization of psychedelics, beginning with psilocybin" (R-14). This case is also illustrative in the sense that it shows how the use of mushrooms as a form of self-medication or self-care is a highly political issue given that

cultivating mushrooms is illegal across virtually the entire United States with the recent exception of Oregon. This restricted ability to utilize psychedelics due to their legal status was also reflected by a 47-year-old female-nonbinary interviewee who told me that,

> I don't use psychedelics presently because they're not legal and I don't like taking such big risks. If they were legal, I would use them to improve my mental health and work through some traumas (soul wounds) (R-16).

As one can see here, the legal issues surrounding psychedelics prevent people from using them for fear of persecution or other reasons related to stigma. In other works, I have argued that the US war on drugs constitutes a biopolitical enterprise that has limited the modes of consciousness that are available to the population, including the states of knowledge and insight as well as the forms of psychosomatic healing that they may confer (Falcon 2021a; 2020b; 2021c). Although the political nature of the illegalization of psychedelics partly falls outside of the scope of this dissertation, it is nevertheless important to note that a number if interviewees mention how the illicit nature of these substances has restricted their ability to self-medicate.

Despite legal impediments to self-medication with psychedelics, I found that a great number of individuals either used psychedelics to purposely treat their depression, or report that the experience cured them of a depression they were not consciously aware of. Examples of both these scenarios include:

> I have just recently started microdosing (>0.2-0.3g dried Cubensis every few days which I grew myself, thanks to the advice on this site) to cure my depressive episodes - the effects are remarkable (3.12).

> I will feel like the people that I have met through like psychedelics. Like not only does it help them reset…it helps them, it helps. Yeah, I feel like those are people who have had like, whether it's anxiety, even myself,

> like the bout of depression, like it seems like psychedelics, whether mushrooms or LSD has really like helped these people (R-3).
>
> Then I sprung back to this reality and was laughing and crying at the same time. It was like I was feeling the opposite of the depression that I've suffered for so many years. I had feelings of being assured I have a purpose or I was sent here for something. I bathed in these positive emotions until the trip ended. But the trip shook my whole view on my existence, again…I have always suffered from depression, lack of meaning, lack of purpose. I have tried everything for my depression including psychedelics, which have been very helpful for me (5.10).
>
> It was really strong trip, confusing and blessing in peak, full of laugh in come up, and some deep thoughts in coming back...I had some realisations about drugs, cigs, alcohol, my GF, my MOM and my life in total...i just feel like everything is okay, and my depression i suffered for year is almost gone...(4.17).
>
> My experience/perspective/quality of life has been profoundly enhanced beyond my wildest dreams/expectations. My mind, body and soul is no longer sick, scared and scarred. I am no longer depressed and no longer looking for that something to fill the void in my life. I have found an interest and passion for this hobby. I am forever grateful for this beautiful organism and its impact, influence and place in my life (4.19).

These are a few instances where people appear to be addressing or looking for relief from their feelings of depression, although in most cases it is unclear whether this is a clinically diagnosed depression. The first passage mentions micro dosing – or sub-threshold doses that are thought to have imperceptible effects – as a way of managing their depression. The second and third excerpts attest to how psychedelic experiences have helped them overcome or better deal with their depression which they report having either for their entire life or several years. The final quote encapsulates how this cure for depression involves acquiring a new perspective on oneself, one's relations, one's problems, and one's life in general, signaling that changes in subjectivity are at the heart of these reported instances of healing.

Another illustrative experience report shows how impactful psilocybin has been in

curing what psychologists and psychiatrists refer to as treatment-resistant depression. These are cases of depression where patients are prescribed pharmaceutical drugs to treat their depression, but where these drugs nevertheless fail to eliminate depressive symptoms. For this particular person, who had even experienced suicidal tendencies linked to their depression, psilocybin's effects were remarkable:

> I was in a very dark place for a few years, Its hard to explain exactly what it was as people can't comprehend it, but I would watch myself die over and over in my head, I was a emotionless depressed robot with no will of my own thoughts, my depression was so bad I was "Spiriling" you begin to lose control of your own [thoughts] and can't think for yourself, as well I'd [hear] voices from time to time, and all color in the world had faded to a dimmer greyer color. for awhile I was going to do dmt to try to cure this as the doctors only made it worse with medicine and I was getting curios on tripping for a cure. when I realized dmt was to much and to hard to get. I did research about shrooms and although at the time I couldn't find a lot. I just had hope. but I wasn't ready for what the shrooms really did. so I was depressed for 2 years straight with only bumps of happiness every week or so. but while I was tripping, my percpective on the world was so beautiful, I just felt like the universe was talking to me, but not words just sending telepathic information in the form of ideas, these ideas where that the world is so beautiful, and that i'll be okay. all the colors that were faded had come back, I no longer saw myself dying in my head, my suicidal [tendencies] dropped, I no longer could even imagine hurting myself, the idea of it would make me cringe and shutter where as it could have been considered becoming an addiction before and the best part of all, I wasn't able to be sad/depressed for more than a week. I apologize for such a sad post, but the beauty that shrooms has brought me is something that I can never stop being thankful for, because these lil things saved me when nothing else could. and as well shrooms for mental illnesses is becoming more prevelant of an idea (1.3).

As these experience reports demonstrate, people sometimes report feeling cured of their depression after undergoing psychedelic experiences with psilocybin. At times, people that their depression remained unshakable prior to their experience with psychedelics. These changes from a depressed to a nondepressed state signal that a person feels that their sense

of self, or subjectivity, has changed as a result of their experience with mushrooms. The ability of psychedelics such as psilocybin to eliminate or greatly reduce the symptoms of treatment-resistant depression has been proven in clinical trials as I demonstrated in previous chapters, and there are clear neurobiological changes that occur in the brains of individuals who consume high doses of psilocybin. Still, there remains a question regarding how to interpret the phenomenology of these experiences, and in what sense the experience itself and the meaning attributed to it contribute to the lasting positive changes attributed to psychedelics.

E. Effects of Experience

The penultimate theme I highlight in this chapter focuses on the ways in which changes in subjectivity are associated with the lasting effects or impacts that people attribute to their psychedelic experiences. As was the case with the other themes, one can find insights or knowledge, changes in self or self-exploration, and even references to healing in these excerpts regarding the effects of psilocybin experiences. The effects that psilocybin experiences have on one's sense of self are noteworthy, with people feeling completely transformed at times, or as if they have undergone the most profound experience of their lives. Of course, sometimes the effects might seem minimal insofar as there is only mention of a shift in perspective on certain issues; however, even these minor shifts in perspective may be representative of larger changes in behaviors, beliefs, and life satisfaction. In the following passages, I illustrate how the impacts or effects of psilocybin experiences sometimes reflect changes in a person's subjectivity:

> Psychedelics have helped me open my eyes and mind to the beauty of living and appreciating the experience of life. To me it has clarified the connection we have to one another, as souls, and helped me understand that we are all on a journey in which becoming a better self is the goal (some working on this more than others). It has clarified the connection we have to the Earth and to the universe. Psychedelics have also highlighted how insignificant and unnecessary it is to surround yourself with toxicity (whether humans or habits) and how those energies affect us (or me) (R-28).
>
> I have to say this was the most profound experience of my 60 year life and I will be reflecting long and hard as to what I experienced. I'm not sure I need to go to the place I was anytime soon, but I won't rule it out. Be safe and enjoy the trip. Learn what to expect (5.11).
>
> There is a difference 100% between the person that I was before the session, and the person that I've become after the session, I'm not saying that the session, the session entirely changed me, but just the person I've become since the session, because it did allow me to go deeper and to kind of realize that, that thing and it was a predominant issue current and current state of my life. And for me to continue to meditate on it (R-4).
>
> With my wife I was told, also in a semi awake, semi dream like state, to not give her a hard time. My wife does some things that are very off the wall and I swear she does some stuff just to irritate me. But when I went back to this voice and said are you kidding me? What about this and that and that? It said all that I could say was to say "Stop being mean to me." I was also told to not look back in my life which I do and I was also told that in 500 years I will be as nameless as a nameless gnat. Ouch, but true. Ego breaking for sure but true. All of the people who were alive 500 years ago and came and went who had things that were important to them it's all gone. So I worry less, it's all going to be gone anyway. The other thing/thought I had was don't worry about time anymore it just take what it takes. I hope I can do that, I am trying now (5.14).

In these passages, one can begin to see some of the ways in which people report that their experience of themselves, and experience of others in turn, is affected by their psychedelic experiences. The first excerpt clearly demonstrates this insofar as this individual learned that "we are all on a journey in which becoming a better self is the goal," signaling that work on the self is something one should strive for. This same person also reported having an enhanced appreciation for life, as well as a more meaningful "connection to the Earth

and the universe." In addition, the experience also allowed them to filter out the types of relations they have, and to cut off those relations which they deem toxic or negative. In the next passage, however, this individual could not articulate any definite change in their sense of self, but they nevertheless felt impacted by this experience in a deep way as it was "the most profound experience" of their 60-year life. In the next quote, a 30-year-old interviewee told me that "there is a 100% difference between the person that I was before the session, and the person I've become after the session." And in the final passage, there are statements about lessons this individual acquired through their experience related to treating their spouse better, coming to terms with the finitude of life, and feeling relieved of existential stress such as worrying.

The theme of changes in subjectivity is rife throughout the comments people make regarding the overall effects or impact that psilocybin experiences have had on their lives. The breadth of changes in self that people attribute to their psychedelic experiences, as I have made evident throughout this chapter, range from changes in one's relationship to, or perception of, oneself, to changes in one's perception of and relations towards others and the world. Further examples of these types of changes in subjectivity reported by participants include:

> I felt acceptance. I forgave myself for the mistakes I have made, for my failures, and my wrong doing (5.4).

> I think I've carried over into "regular life" this feeling of connectedness to everything as a result of taking mushrooms (though I can't say for sure if I would have felt the same way had I never taken them). I also am hyper-aware, partly because of mushrooms and partly because of other experiences, that we live in a society where the rules exist because we all agree, implicitly or explicitly, to follow them. This means we can also change those rules and shape society into something kinder and more

> equitable if we work at it, an idea that has given me comfort when the news has been particularly horrible (R-26).
>
> What I saw was the most changing thing I have experienced because I took them telling me to let go as I need to let go of what people think of me and I need to just focus on myself and Noe. Our marriage because so much more to me in those hours. I feel truly different (4.11).
>
> I believe that psychedelics changed my life, allowed me to take control of my relations from my perspective and not be influenced by the gaze or expectations of others. My connection with nature has been enhanced and I believe we are all interconnected. My fear of death has subsided as a result of psychedelic experience as well (R-2).

The effects that psilocybin experiences had on these individuals' lives is told in a straightforward manner. In the first case, this person experienced forgiveness in the sense that the experience allowed them to feel acceptance despite past failures and wrongdoings. Interestingly, many psilocybin experiences also contain reference to forgiving oneself, some of which I have included in this chapter. In the second excerpt which was drawn from one of my interviewees, she reported feeling an enhance feeling of "connectedness to everything" and a hyper-awareness that she believes were both, at least in part, attributable to her psilocybin experiences. My interviewee then remarked on the possibility for change in society which is fascinating given the political implications of such a statement if this is related to her psilocybin experiences. In the last excerpt, this person believed that the effects of their experience "was the most changing thing" they had ever experienced, and that they now feel "truly different."

Another significant finding of this study is that among the changes in self that individuals reported, there was an enhanced capacity for empathy reported in some cases. Recent clinical studies have tentatively made correlations between psilocybin experiences and increases in empathy (Griffiths et al. 2011; Pokorny et al. 2017), however, the

association is still not well understood due to a multitude of factors. Nevertheless, a few individuals in the reports I examined claimed to attain an enhanced capacity for empathy through their experience. For instance, in an online experience report titled, *5 Grams of Golden Teachers: Felt Empathy for the 1st Time,*

> Short version: I believe shrooms gave me the ability to empathize for the first time and taught me that I'm a narcissist. The shrooms showed me that she was right. Several things that she has been saying to me over the last several months were coming to me over and over and over and the shrooms helped me understand and actually comprehend what she was saying. Then that led to me coming to the conclusion that I am a narcissist. I'm so self-centered that I can't even comprehend what she is saying to me. Unable to put myself in her shoes. Everything was so clear and made complete sense during the trip. I will be doing more heroic doses in the future for sure. I can't wait. I believe shrooms can help overcome narcissism (3.3).

> Psilocybin acts as a counter agent releasing you from that identity to see things as they are from a species and beyond level; and in my experience when you disconnect from yourself and see your circumstance from a global and cosmic level you have no choice but to have empathy for those around you (1.7).

An enhanced capacity for empathy is undoubtedly a remarkable shift in one's subjectivity, marking a change that may even persist after the experience itself in many aspects of a person's life. Changes in empathy are also interesting in the sense that they demonstrate that it is at least possible for some people to report being more sensitive to the needs of others, and in such cases, psychedelic experiences demonstrate that they may even potentially have ethical import (Falcon 2017). The first passage in this set contains a reference to a realization of this person's own narcissism – a claim which interestingly coincides with recent research findings which show that psilocybin can lead to decreases in "maladaptive narcissism" (Mulukom, Patterson, and van Elk 2020). In the second

excerpt, this person links their enhanced capacity for empathy to experiencing an expanded sense of self that is facilitated by psilocybin and its effects on one's identity.

Perhaps the most straightforward way that psychedelic experiences with psilocybin may provoke changes in subjectivity can be seen in those cases where people report changing their careers as a result of their experience. While this was not a commonly reported theme, I nevertheless found several instances where people claimed that psychedelics changed the direction and purpose of their life, or that they catalyzed a change they had long desired. One of my interviewees, who described himself as a 40-year-old black male, wrote that during his upbringing, "Drugs were bad. We were a black Baptist family in a poor small town." He went on to tell me that despite his strict upbringing, he was nevertheless introduced to cannabis and psychedelics such as LSD, mushrooms and MDMA with friends since he was 18 years old. Throughout most of his life, he described his psychedelic use as recreational in the sense that he mostly took smaller doses and while partying or at music festivals. After consuming some psilocybin tea with friends in his apartment, he decided to go on his "first solo adventure" with leftover mushroom tea he had stored in his freezer. After drinking a few glasses, he turned on a livestream music festival called California Roots, and went to lay under his bed as a way of "grounding" himself. He claimed that as he heard music start from another band, he shouted "I have paint supplies!" suddenly remembering some art materials he had recently purchased. In his inebriated state, he threw a bed sheet over his desk and struggled to make a painting of "a simple beach palm tree that I had drawn maybe a thousand times." This experience, however, "was different in so many ways I am still discovering. People took notice. I started painting more." When asked about his perception of psychedelics today, he

exclaimed "Lifesaving!" This was reiterated when I asked him the impact that psychedelics have had on his life, as he told me, "Did you not hear when I said lifesaving?! Because it had been. That one experience changed me forever. I make art instead of news." This reported change was in reference to his previous career where he worked in television news which stressed him out. Not only was a career change attributed to his psychedelic experience, but this change was considered to be "lifesaving."

In another one of my interviews, a 35-year-old Cuban-Colombian Hispanic male also told me that he changed his career as a result of a psilocybin experience. He describes the effects of his experience as follows:

> I want to say, like, the first insight that I really had that, like, it was more, it was more about like, my career path. Like, what I wanted to do, because I had, I was like this close to being a lawyer. And I had come down from school, I had graduated, like, I got into law school, I just wasn't going to go because I did my internships. I was like, this is not what I want to do like that. I wanted to help people…And then, you know, I think like, a few hours later, we ended up taking some mushrooms and like, just the avenue of helping people providing help. Like, I remember thinking about that. Thinking about like, what maybe this is kind of like my calling, and then like, you know, sometimes you play this game where, like, is it a coincidence that I met this guy and his wife is a nurse? And like, whoa, you know, like, right, right…And like, you know, I think about that a lot. When I, yeah, like, in that, like, for that specific instance, maybe I was like, you know, this was, I was supposed to meet him for this reason, you know, and I became a nurse, and, you know, it's, it's my career, and I've been a nurse, I've been a nurse for six years, and I love what I do. I love what I do (R-3).

During another interview I conducted with a 29-year-old Colombian female, I was told that her psilocybin experience brought her to realize that it is time for her to fulfill her long-held desire for a career change. Early on in our conversation, before I was even able to ask her about the effects or impacts of psilocybin on her life, she recalled having "so many" moments of introspection and insight:

> “THE MOST! THE MOST! I’m super happy that I’m sharing my experience because I've been working in the corporate world for a long time. I've been in sales for like seven years. But my true passion is like fitness and helping people like achieve their fitness goals. Like if you want to lose weight if you want to, I don't know, run faster, or look fit or whatever. Like that's, that's kind of what I love. I love helping people. Um, so then my biggest realization is like, I hate my corporate job. I hate it. I passionately hate it. I’m tired of it, it's been seven years in sales, like just like, wears you down. And I was like, I just want to, like, achieve my dream achieve my goal. I just want to like be like a fitness, I would say, like a personal trainer. And from that moment, I was able to actually [see it] because it was like that inner voice that like always was with me, but I wasn't able to kind of like, say it out loud. I was scared or like afraid of like, what, what would people think if I don't have that nine to five job or like, what, why would I do if I don't have that safe paycheck every two weeks? Why will my husband say I say like, I just don't want to do corporate job anymore. But that trip, made me just say it out loud. And I actually I said it to Zach. [I told] my husband in that trip, I was like, you know what, I like what I do. I just, I would rather do my fitness. And he's like, I knew it, I knew it for the longest time. I know for a fact that you're not going to be in corporate world forever. Like, you just need to do what makes you the most happy. So that was like, LIFE CHANGING TO ME. And like, I've been thinking for like two years. I'm like, how do I word this? Yeah, I'm, I'm from that trip. I'm actually actively thinking of how to build my business plan and how to do it, and how to make that step. And I'm gonna do it.

The last three interviewees I have drawn excerpts from all displayed the belief that their psilocybin experiences were lifechanging, particularly in terms of their career choices and path. One thing that is striking is that the three of them were working in what I would call corporate America (television news, law, sales), only to shift or begin to move towards working as an artist, a nurse, and a personal trainer, all vocations which they claimed were their passion. At least in the last two cases, it is evident that these were long-held beliefs they already had, but their psilocybin experience became the catalyst for the change.

The last interviewee I will mention here is a 56-year-old Puerto Rican Hispanic male who lives in Miami. When I asked him about his experience with magic mushrooms, he told me that psychedelics changed the entire trajectory of his life. He told me that his

father had wanted him to go into the army, and that he had already begun tactical training as he was preparing to enlist. Although I was unable to acquire a detailed explanation of how much he consumed, or the environment that he was in, I was told that after consuming some mushrooms with friends in nature in Puerto Rico, the meaning of his life changed entirely:

> Psychedelics completely changed my life. I was supposed to go to the army, I was training to be a sniper and everything. My dad wanted both my brother and I to join the army. After a life-changing psychedelic experience where I bathed in a waterfall in PR, I realized that I wanted to pursue my passion for arts and music. Since then, I dedicated my life to the arts, to music, and to nature.

Testimonies of changes in career paths not only signal monumental shifts in a person's life trajectory, but they also reflect significant changes in a person's subjectivity, which again is understood here to reflect both one's experience and sense of oneself. In all of the cases provided heretofore, changes in one's sense of self have been the central feature of psilocybin experiences and their lasting effects. In the next and final section of this chapter, I move on to demonstrate how psychedelics are often described by people as tools, which I argue mean tools of subjectivation.

F. Psychedelics as tools (of subjectivation)

As a way of both concluding this chapter and reinforcing my argument that psilocybin experiences function as technologies of the self, I would like to provide a few examples of how psychedelics are also frequently referred to as being "tools." The type of tools that people describe psychedelics as being, furthermore, appear to be tools of

subjectivation. I will elucidate with a few examples. For instance, according to one of my interviewees, namely a 34-year-old Hispanic female,

> My perception today is that it is a tool to peel back layers that cloud our understanding. I believe years of programming have piled up around ourselves (souls/beliefs/understanding) and psychedelics helps crack that open to see what is truly you without others misconceptions (R-28).

For her, psilocybin is described as deprogramming tool that can "peel back layers that cloud our understanding" to reveal "what is truly you." In another interview with a 33-year-old Hispanic female, I was told regarding psychedelics that:

> I think they're really powerful tools for getting outside yourself and putting life into perspective, though I don't think they're the only tools for that (R-26).

Again, psychedelics are seen as tools, but tools that allow one to acquire a novel perspective on one's situation and one's circumstances. Another 37-year-old Hispanic female concurred with the two aforementioned perspectives, stating:

> I'm starting to realize how that is a tool for you to start really looking at who you are. And then when you're in the waking world, maybe you can understand how far I am from that was supposed to be? (R-1).

For others, such as a 24-year-old Hispanic female, psychedelics are understood as tools for enhancing our normal brain functioning: "Our brains have so much capacity, I view psychedelics as tools to expanding what we are normally functioning at" (R-19). According to a 35-year-old Hispanic male whom I mentioned earlier in this chapter in terms of his career change from an attorney to a nurse, he also believed that psychedelics were tools in the sense that:

> But like the one thing that for me psychedelics really helped me do once I started, you know, kind of paying attention a little bit more, is it you drop your ego man and you drop this ego and like, you know, you view the world, not through a lens of like you and like, why is this happening to me? And you know, like, you ask yourself that those kinds of

> questions, because that's the one you're going through a breakup, like why me like, why this, like, you know, and those that really, really helped me like, and, you know, I'm a big proponent of psychedelics, but also like, I also understand that you know, the depends on who's taking them like they can, you know, they can also be it's a powerful tool, very powerful tool (R-3).

Here, there are resonances with the previous passages wherein psychedelics are viewed as a powerful tool for allowing one to see oneself from a depersonalized vantage point so to speak. This ability to see oneself and one's circumstances from a new perspective appears to allow one to reassess one's life choices and direction, and this shift in subjectivity may then become a catalyst for change. Further evidence in support of psychedelics being tools of subjectivation comes from a quote from a 43-year-old Cuban interviewee, who viewed psychedelics as tools in terms of their therapeutic potential:

> But, a lot of the times, if you're, you know, you're like, if you're aware of conscious material that's traumatic, you can heal from that, but a lot of times, you're not aware of the conscious material, you know, it's all subconscious. So, I think psychedelics really allow for you to explore, you know, like, trauma without even knowing the full picture, and a lot of times, that's necessary, but psychedelics, it's like a gentle, it kind of brings it to surface without, like, being so bad in your face, you know? So that's really what I'm trying to explain. I've seen a lot of studies now they're doing…so now it's really becoming more of an awareness in society. And I think it's an important time because people aren't seeing it as a bad thing and seeing it as a tool, you know, just another tool for healing that's necessary (R-6).

For this interviewee, psychedelics are understood as tools that allow subconscious traumatic material to become conscious, thereby facilitating healing insofar as one can then process their trauma in a supportive and gentle manner. Finally, I would like to end with certain remarks made in an online forum post insofar as this person draws attention to the notion that psychedelics can be potentially harmful as well if their use is not approached in a proper manner. She put it this way:

> I can also see how mushrooms can change your mind in ways that can be both helpful as well as harmful if you cannot find your balance and keep them in perspective as a tool (1.4).

In all of the aforementioned cases, psychedelics are considered as tools that one can utilize for self-healing, self-exploration, and acquiring a new perspective on oneself from a nonjudgmental or supportive point of view. Given that psychedelics such as psilocybin are used to by people as a way of acquiring new perspectives on themselves, and thereby reportedly changing themselves in the process, I argue that they constitute tools of subjectivation. Since psilocybin experiences and their effects appear to have transformative effects on people's subjectivity according to participant testimony, the notion of psychedelics being tools of subjectivation lends credence to my overall argument about psychedelics being technologies of the self.

Conclusion

This chapter argued that psychedelic experiences with psilocybin mushrooms function as technologies of the self. Insofar as technologies of the self signal practices, discourses, and techniques that individuals use, either by themselves or in conjunction with others, as means of shaping their subjectivity or sense of self, then psilocybin experiences are a prime exemplar in a contemporary context. As I have demonstrated through the themes of *intention*, *learning or insights*, s*elf-exploration and changes in self*, *healing and self-care*, *effects of experience*, and *psychedelics as tools*, people report that they not only intentionally use psychedelics as a way of changing some aspect of their subjectivity, but their experiences themselves and the reports written about their experiences also demonstrate how people believe that their psilocybin experiences have catalyzed changes

in their sense of self. In most cases, individuals tend to report acquiring a new understanding or insight into themselves, their behaviors, and their circumstances, including how they relate to and interact with others. In several instances, there is also a therapeutic use of psychedelics as a way of self-treating psychological issues and existential stress. The changes in subjectivity reported may also be so significant that they have become catalysts for lifechanging events in people's lives as well.

People often go through a wide range of emotions and feelings throughout their psilocybin experiences, from laughter and giddiness to anxiety and paranoia, or from terror and fear to bliss, awe, and tears of joy or sadness. This is precisely the reason that people call them "trips," for they feel as if they have gone through a psychosomatic journey that is, at times, entirely indescribable yet remarkably profound. The entirety of the experience report is also important to take into consideration because if a person learns or changes something about themselves through this experience, it takes on a much greater significance if this experience was accompanied by feelings of awe, wonder, and ultimate truth. The experiences are often described as being among the most profound, if not the most significant, experience of participants' lives which compounds the importance that these experiences have in people's lives and their subjectivity.

Finally, while this chapter works to illustrate how psilocybin experiences are utilized as technologies of the self, there were still a number of themes that fell beyond the scope of this chapter which are worthy of further exploration in future studies. One theme that particularly stood out was the social learning that takes place on online forums that is evident throughout the comments section for each post. Individuals appear to help one another make meaning of either their own experiences or the experiences of others, offer

advice, and even help people integrate the content of their experience in a way that is done in community. Furthermore, there are a range of phenomena people report experiencing that also may be the focus of future studies, including things such as creature or entity encounters, as well as experiences of sacredness, divinity, or God. In the next and final chapter, I will argue that in some cases, psychedelic experiences with psilocybin mushrooms can also lead people to report attaining newfound relations with, or perceptions of, the environment, nature, and nonhumans.

CHAPTER 7. PSILOCYBIN EXPERIENCES AND CHANGES IN HUMAN-ENVIRONMENT RELATIONS

> I would describe the psychedelic world as tools to be able to enhance a person's ability to explore and to understand what connections and interrelationships are. –Deborah Parrish Snyder (2022)

Introduction

The topic of human-environment relations is a refrain that has been central to the psychedelic movement and its discourse since the ingression of psychedelics into the cultures of the Global North. In a certain sense, this may be due to the politically charged climate of America during the 1960s which saw widespread psychedelic use intersect with various social movements such as feminist and black rights activists, to anti-war protestors and environmentalists. Another possibility regarding why the topic of human-nature relations remains close to the rhetoric of psychedelics may be due to the history of the traditional use of psychedelics in indigenous contexts, along with Westernized conceptions that associate indigeneity with closeness to nature. Apart from these speculative lines of thought, however, what is clear is that prominent voices in the psychedelic community have consistently made direct associations between psychedelic experiences and enhanced relations with nature. Implicit in this association is an ethico-political stance which links the illegalization of psychedelic plants, fungi and substances and the modes of consciousness they facilitate to the decreased capacity for empathy and the disconnection from nature that is characteristic of the industrialized cultures across the Global North.

The close associations drawn between psychedelics and human-nature relations can be seen in figures such as Paul Stamets, one of the world's most renown mycologists and

a leading figure in the global psychedelic space, who reportedly attributes the development of his "ecological consciousness back to his experience with psychedelic mushrooms" (Stamets 2005, x; Hagenbach and Werthmüller 2011, 259). Albert Hofmann, the chemist who originally synthesized lysergic acid diethylamide (LSD-25), also believed that psychedelics had the potential to transform human relatedness and connectedness to nature (Hagenbach and Werthmüller 2011, 259). Stanislav Grof, possibly the world's leading LSD-assisted psychotherapist, maintains psychedelics can

> make you more independent from brainwashing and advertising. You feel embedded in nature, even if you are not taught about ecology. People involved in this experimentation are more difficult for the government to control (Grof 2012, 198 in Lattin 2017, 259).

Terence McKenna, arguably the most significant icon in psychedelic culture, continuously promulgated the idea that the rift which exists between humans and nature could be ameliorated by using psychedelics. McKenna maintained that psychedelics provoke an "earth-oriented, imagination-oriented" perspective that has the potential to "restore meaning and direction to our civilization" and connect humans back to "the Gaian mind" (Abraham, McKenna, and Sheldrake 1992, 17; McKenna 1992, 92-93; McKenna 2012, 84; Montieth 2016). Ralph Metzner, a key figure in the Harvard Psilocybin Project, also believed that "the use of hallucinogenic visionary plants…[can help] to cultivate a more direct psychic, conscious connection with the natural world," thereby aiding in the "fundamental reorientation of human attitudes toward the totality of the 'more-than-human world'" (Metzner 1999, 4). Richard Doyle (2011, 18) argues that one of the hallmark features of psychedelic experiences is that they reliably challenge egotistical forms of identity insofar as they impart an 'ecodelic insight', or "the sudden and absolute conviction

that the psychonaut is involved in a densely interconnected ecosystem" through a "sudden apprehension of immanence."

Scientific researchers have also begun to acquire evidence which substantiates some of the aforementioned claims regarding the relationship between humans, psychedelics, and nature. One large scale survey, for instance, found that a lifetime use of classic psychedelic substances predicted increases in nature relatedness and pro-environmental behaviors (Forstmann and Sagioglou 2017). In a clinical study, it was found that participants who were administered psilocybin reported increases in nature-relatedness and decreases in authoritarian political views, both of which remained at the seven-to-twelve-month mark (Lyons and Carhart-Harris 2018). Further support for this line of thought comes from an online study where individuals were given a set of several questionnaires to complete both before and after their psychedelic experiences (Kettner et al. 2019). Researchers found that not only was there a baseline positive correlation found between lifetime use of psychedelics and nature relatedness, but they also discovered significant increases in nature relatedness at the two-week, four-week, and two-year marks. These studies coincide with other findings which show that individuals tend to report increased feelings of connectedness with themselves, with others, and the world after their psychedelic experiences (Krippner and Luke 2009; Watts et al. 2017; Carhart-Harris et al. 2018c). There are also a number of researchers who have also begun investigating how the combination of psychedelics and nature immersion have therapeutic effects on mental health (Gandy et al. 2020). Finally, in a very recent large-scale survey, researchers found that for individuals who had a history of belief-changing psychedelic experiences, there were increases in their attributions of consciousness to an assortment of nonhumans,

including insects, fungi, plants, and inanimate objects to name a few (Nayak and Griffiths 2022).

Given the historical, cultural, and scientific context on the topic of psychedelics and enhanced human-nature relations, this chapter aims to provide a contribution to the growing scientific literature by examining individual psychedelic experience reports from both online and interview responses. Whereas the online psilocybin experience reports I examine in this chapter were posted onto Shroomery.org by individuals at their own behest and therefore may not contain any references to nature, the interviews I conducted entailed semi-structured questions (See Appendix 2), one of which focused on psychedelics and relations with nature specifically. As I argue in this chapter, although changes in perceptions of, relations with, and behaviors towards nature and nonhumans are not substantial across the experience reports analyzed, the instances which do report changes signal the possibility that psychedelic experiences may influence subjectivities towards more sustainable and nurturing relations with the environment. Although the evidence presented in this chapter cannot verify any actual changes in human-nature relations, there are some cases wherein people nevertheless report experiencing a change in their environmental perception or relations with nature. As such, psychedelic experiences may potentially be a means of reorienting subjectivity towards the ecological, which would thereby connect the practice of consuming psychedelics to the challenge posed by critical theorists of transforming human-environment relations in the Anthropocene (Guattari 1995; 2000; Head 2016; Braidotti and Hlavajova 2018, 339).

Based on the reports presented in this chapter, I argue that people's capacity to be affected by their environment can potentially shift during a psilocybin experience, making

existing yet unacknowledged connections and relations with one's environment become consciously apprehended, thereby allowing people to experience their relations in ways they had not before. I begin this chapter by reviewing excerpts drawn from both my interviews and netnographic data sets regarding changes in perception of nature either during or after a psilocybin experience. The first reason for including both data sets together is because it allows me to analyze more experience reports in total. Furthermore, I did not discover and stark differences between the interview reports and online reports insofar as I conducted a phenomenological analysis of these experiences. In the second section, I draw on passages from my ethnographic interviews where the theme of nature was only discussed when asked directly. In both scenarios, as I will demonstrate, there is sufficient evidence to support the notion that psychedelic experiences can potentially influence a person's subjectivity in ways that make them feel more connected to nature.

I. Changes in Perception of Nature During or After Experience

Reports of changes in human-environment relations in psychedelic experience reports are often subtle and difficult to tease apart from other remarks made about nature. There are already a great number of perceptual changes that accompany psychedelic experiences, especially in high doses, so changes in perception of nature are not uncommon among people who consume psilocybin in outdoor settings. What is less clear, however, is if these changes in perception of nature during one's experience persist, and to what extent these experiences or new perceptions influence one's philosophical commitments and behaviors. Although it is beyond the scope of this dissertation to determine how individuals act towards nature after their psilocybin experiences, it is nevertheless valuable to examine

the phenomenology and reported effects of psychedelic experiences to demonstrate that enhancements in human-environment relations are possible. Examples of these changes may take the form of alterations in the perception of one's immediate environment, where things "come alive" so to speak, as many individuals describing walls or inanimate objects appearing as if they were breathing:

> This table was where I had a definitive peak, and the visuals were often so intense that I had to close my eyes and rest my head on the table. I was seeing geometric patterns and every object in the room was breathing (5.2).
>
> As this thing started to work, I saw very bright colors, I had blurred mind a bit, and the walls and paintings in my room started to breathe (4.7).
>
> Arriving back to my camp I feel a jolt, I'm beginning to come up. I sit down by my fire, and the world around me comes to life. The grass is breathing, the trees are waving (5.4).

As changes in visual perception are among the most consistently reported and well-known features of psychedelic experiences, it is not surprising that individuals experience distortions of objects in their visual field. What is interesting, though, is that people often use the word "breathing" to describe the movement that objects or nonhuman entities, including everything from paintings to grass, appear to be undergoing. In attributing the quality of breathing to various phenomena, this may simply be a reference to how things appeared to be moving, or it may be a sign of seeing something anew that a person normally had not considered as being alive. In the last of the three aforementioned quotes, the grass and trees certainly appear to take on a form that this individual had never experienced before, or which contrasts starkly from their experience of them during regular states of consciousness.

In other scenarios, people sometimes describe changes in their perception of nature, but which are accompanied by insights or feelings that are significant and meaningful. In one of my interviews with a 33-year-old Hispanic female, for instance, there was a merging which took place between herself and her environment that she described as follows:

> I remembered the far-distance mountains looking like they were breathing and I had very intense feelings of both emotional closeness and remoteness that I think (in retrospect) had a lot to do with feeling nostalgic for that landscape and for my life in L.A…I have read (I can't remember where…?) that certain psychedelics can destroy the ego. I definitely felt something like that, i.e., a sense of forgetting myself and becoming completely integrated into the landscape…Mushrooms in particular made me feel the connectedness of everything in a way I hadn't before. I.e., I understood that humans and the natural world are influenced by one another in all sorts of ways, but it was an intellectual understanding. Taking mushrooms and meditating on this connection really helped me internalize it (R-26).

According to this interviewee, the mountains she was observing a distance during her psilocybin experience appeared as if they were breathing, and this was accompanied by "feelings of both emotional closeness and remoteness." While she retrospectively attributed these feelings as having to do with a personal decision she recently made to move, her perceptions of those mountains and the feelings that accompanied them were unforgettably meaningful to her especially in that moment. She then went on to say that she felt as if her ego had been destroyed as she completely forgot about herself and became "completely integrated into the landscape." Whether or not these experiences in particular shaped this person's perception of and relations with nature, what she became more certain of is the connectedness of everything, humans and nature included. For her, this connection was previously understood from an intellectual perspective; however, her experience with mushrooms, combined with meditation practice, reportedly allowed her to internalize this connection in a way she had not before. This is perhaps one of the most poignant aspects

of reports of changes in human-environment relations facilitated by psychedelics insofar as they are based not on a rationalization or an intellectualization of what was experienced, but instead people feel as if they now truly understand something they had only previously understood logically. What her experience signals is that psilocybin may potentially occasion experiences that expand people's capacity to be affected in new ways.

Following this line of thought, I discovered that many people reported seeing things they had always seen, but under the effects of psilocybin, these things took on a new significance and meaning. Experiences in nature, for example, were sometimes described as being magnificent and awe-inspiring in a way that they had not experienced before:

> while I was tripping, my [perspective] on the world was so beautiful, I just felt like the universe was talking to me, but not words just sending telepathic information in the form of ideas, these ideas where that the world is so beautiful (1.3).
>
> I could focus so deeply and sharply to all of the nature around me. I couldn't help myself but to love everything around me. Everything I did or saw just so perfect and fun (1.9).
>
> My friends left and I sat in my backyard for a few mins, enjoying nature. Everything was so beautiful, the trees, the birds, the insects, but after a while I wanted to finally go back to my room and lay down (4.2).

According to first person in this set, there was a shift in perspective during their low-dose psilocybin experience that led to a perception of the world as being "so beautiful." They then describe the experience as transitioning into feelings of communication between "the universe" and them, wherein the messages they were receiving were about how beautiful the world is. What is particularly striking here is that the information this person reported acquiring was not described in the form of propositional knowledge, but "information in the form of ideas." Moving on to the following two excerpts, again there are details about experiences in nature that are described as "perfect" and "beautiful." While it is unclear

how these experiences affected these individuals' overall perception of, and relations towards, their environment and nonhuman others, they nevertheless still have value in their implications for psychedelics and human-environment relations insofar as the experiences were so meaningful and memorable for these individuals.

For some people, reports of changes in their perception of nature during their psilocybin experiences include a phenomenon akin to interspecies communication. The type of entities and form of communication involved in these experiences vary greatly, and may range from encounters and correspondences with alien creatures to newfound interactions with animals or nature. The following examples show how people tend to describe these types of experiences:

> I do remember that I was capable of open-eyed visuals at the point. I would set my attention to the waxy reflection of the leaves of the persimmon tree, but with a subtler attention to the limbs behind the leaves. I would breath deeply and the breeze would filter through the tree with such intent that Carina and I both remarked how the leaves were dancing; that the tree's vitality was starkly obvious. It was as though the plants were elders on the outside of a bonfire, quietly laughing at us children chasing each other around the fire. I felt as though there was an acknowledgement, a nod so to speak, between the trees, the wind, even the clouds (but less so)...a nod between entities of nature and the mushrooms. The trees were not so much communicating to me but communicating to what was inside of me and I was the go-between, of less importance. My consciousness-faculties were the host by which enhanced communion could be achieved between mushroom and nature. I was a mere witness, but not unimportant or unloved. My ego seemed to be slipping (4.5).

> I noticed that the trees in her backyards were feeling lonely...you see the trees were palm trees so they were straight and tall but because of the patio only half of each tree was in the light leaving the top (head) of the tree to be in darkness. This led my tripping brain to sense that the trees were lonely and sad and so I began talking to them. "Don't worry" I said, "I'll keep you company" and with that I went and sat on the grass next to them, really appreciating the size of them, they never "spoke" to me but

> I was like I could feel their emotions, sort of like ordinary empathy one my feel for a living thing but dialed up (2.3).
>
> My brain became wildly active with this new super complex language that I somehow was able to comprehend and understand that it was indeed the language of all energy. And therefore I was able to converse with all things. From televisions, to trees, to animals, to rocks, to doors (5.6).

In the first scenario, a fairly high dose of psilocybin (approximately 4 dried grams) was prepared into a tea and then consumed. This person's experience, as nearly all of the experiences included here, contained a multitude of different aspects, only one of which was about nature. For this person, who consumed the mushrooms along with his fiancé in their backyard, the plants that surrounded his house took on a novel character he had never experienced. In attempting to describe his experience, he personifies the trees surrounding his house as if they were elders looking over him and his wife, which he imagined appeared as children playing to them. He felt an "acknowledgment" take place between various elements of nature such as the clouds, the wind, and the trees, which he described as "a nod between entities of nature and the mushrooms." Slowly, he then began to feel his ego dissipate as he experienced being a conduit through which something "inside" himself and the trees were communicating; an experience of being a witness to "enhanced communication [that] could be achieved between mushrooms and nature."

In the second experience there is again an anthropomorphizing of trees wherein this individual felt as if the trees "were feeling lonely." They then began to speak to the trees that "were lonely and sad," telling them not to worry and that they would keep them company. Although the trees never "spoke," this person felt that they could "feel their emotions" and described the feeling as having an enhanced capacity for empathy. Finally, in the last excerpt, we again find an experience like the ones mentioned earlier in this

chapter where the nature of things take on new forms. Here, this person reports gaining the ability to speak a language of energy which then allowed them to communicate with objects and entities ranging from electronics and rocks to animals and trees.

Even if it were the case that these individuals are deemed as being deluded in believing they can communicate with trees or animals, or that they can feel the emotions of a nonhuman, it does not take away from the possibility that the people who have these types of experiences report coming away with an enlarged capacity for empathy towards nature and nonhumans – a point which will be revisited later. Moving on, in another online experience report I came across, the author described their experience with 1.5 dried grams of psilocybin mushrooms that they had prepared as a 'lemon tek'. They consumed the mushrooms at about 2:00 am, and began to wander around their neighborhood which was described as a "very rural, forested area, no streetlights, no traffic." The moon was full, and it was a hot summer night with a clear sky. As they were walking around, they came across a deer that was grazing by the side of the road. The deer and this individual then stared at one another for a few minutes, which transitioned into momentous experience they described as follows:

> I felt as if there was some kind of connection with this deer, so in my 1.5 grams of lemon tek goodness I decided, while I am connecting with this deer that I would try and communicate with it...So I decided to in a very non aggressive way to motion and invite it to come closer by waving my hand and arm in a "come hither" motion…Well just as I did this the deer started walking straight towards me.....without delay, just like if you motioned to some person....hey come here and they responded by walking towards you. This after staring at each other for 5 minutes motionless.....well holy f**k ... it walked right up to about 5-8 feet away from me stopped and stared at me.....at this point the deer wasn't in the moonlight anymore it was in the shadows where I was. We were face to face although I could not see its eyes, just the silhouette of his head and ears. it walked right up to me and stopped just out of arm's length. and

> we looked at each other some more and all I could do was think OMG, is this really happening?.....I felt like I was back in high school, spent months trying to get a girls attention and then when I finally got my chance to talk to her.....I couldn't think of anything intelligent to say.....lol.....I mean how often do you get to communicate with a deer.....what the heck do you say? After a couple minutes of this close contact with this deer it got bored with my lack of anything to say.....and went back to grazing. I was so astonished at the prospect that I had in some way connected/communicate with this deer that my mind just went blank...I'm not offering a demonstration of how I can do this.....lol.....people would think I'm nuts anyway.....it was like I for a couple minutes I was experiencing nature in such a Taoistic way that even a deer was not afraid of me and was even willing to walk right up to me and try and communicate with me…I don't think that going back and trying to recreate this would ever be possible so I'm not going to try....it is an excellent example of how one needs to live in the immediate moment of experience.....that's when it "the magic" happens. I wish I actually had the communication skills to convey just how powerful of an experience it was.

The prospect of interspecies communication between humans, plants, and animals is a theme that has circulated in psychedelic discourse arguably since its inception, even surfacing in anthropological discussions on indigenous ontologies and the use of entheogens. For the particular case referenced above, this individual had an experience wherein he connected and communicated with a deer. I omitted sections where this person expressed that he would be ridiculed and not believed if he told anyone about this; however, he nevertheless felt this to be an unforgettable and significant experience of amazement. He reflected on his encounter with the deer, expressing his belief that these types of experiences, where “the magic happens,” are made possible when “experiencing nature in such a Taoistic way.” Experiences such as these are not entirely uncommon across psychedelic experience reports, and they may have implications for how people interact with nature henceforth.

There are many ways that people express their feelings about nature and how nature takes on a new significance while under the effects of psilocybin mushrooms. In one of my interviews, a 31-year-old mixed-race Filipino male spoke with me about how he had first used psychedelics during his late-teenage years. He described his continued use of psychedelics as a way of having fun with friends, and a way of making a normal day into a great day. He had rarely, if ever, used psychedelics on his own from what he could recall, and nearly all of his experiences were with low doses of psilocybin. Although he did not believe that his psychedelic experiences made him drastically change anything in his life, such as "going vegan" for example, he nevertheless did speak highly of his experiences of nature while on psilocybin and his feelings towards nature as a result of these experiences:

> The majority of the time I'm out in nature, and um, it's always great. I think…the coolest moment on mushrooms is when you really get to experience that transition from daytime to nighttime, and I feel like when you're on mushrooms you really get to appreciate that transition. It's a lot more, uh, heightened, because like, from a visual perspective, the light, you get to see all of the colors of the world and when it comes to nighttime, there's an absence of majority of colors, and, the sounds of nature, you can really pick them up, like, the animals you hear at nighttime are so much different than the lack of noises that you hear in the daytime. I've done mushrooms at like a national forest in northern California, where there's redwoods and stuff. And that was really cool just like seeing these big trees and, like, being in like the thick dense forest, you just, just appreciate them more you realize like wow this tree has been here forever, like, this is uh, this tree is older than the USA (R-7).

Here, he described becoming more appreciative of nature when consuming mushrooms in an outdoor environment such as a National Park. Another fascinating aspect of his report has to do with his reflecting on the age of the redwood trees he was around, prompting the possibility that people might perceive their immediate environment in ways that they perhaps would not without the effects of psychedelics.

Upon asking him if his relations with, or perceptions of, nature have changed as a result of his psychedelic experiences, he said:

> yeah, I definitely have a stronger connection to nature, I feel like it makes you more aware of like, everything in nature, like I was saying the transition from day to night, you know, the natural light of the world, the sounds you hear at night time, our connection with the sun, like how important the sun is, the way it feels when the sun is hitting you, you know, I really, I really feel like mushrooms make you connected to earth um, and appreciate nature. It's hard for me to describe what I mean in words, but I feel like, on like a high level, that is enough of a statement to cover my opinion, like it's definitely more profound and more deep than just like, that, that sentence, but it's one of those things you just can't, it's a feeling, it's a feeling like, how do you describe the feeling of being high or the feeling or being drunk, you can't describe it, you have to feel it for yourself, so, that connection to nature that is stronger, I FEEL It when I'm on mushrooms, and I'm more conscious and aware of it when I'm on mushrooms (R-7).

These statements are certainly profound in their implications for changes in human-environment relations. Not only did he report feeling more aware of "everything in nature," but he also strongly felt that his experiences with psychedelics made him "have a stronger connection to nature." It was difficult for him to put into words exactly what had changed or what he felt towards nature as a result of his experiences with psilocybin, but he was nevertheless certain that his connection to nature had been strengthened. On mushrooms, there was a connection to nature that he could "FEEL"; however, he believed that the feeling is impossible to describe to someone that has not experienced it themselves.

Enhancements in one's connection to nature were also reported by other participants I spoke with, in addition to being discovered in online experience reports as well. According to a 29-year-old mixed-race female I interviewed, psychedelics not only had profound, life-changing effects on helping her heal from certain traumatic events in

her past, but they also fortified her bond with nature. As I was interviewing her about her experiences with psilocybin mushrooms, she told me that:

> Psychedelics also impacted my life in terms of allowing me to see nature in a new way. I feel connected with water, especially, and that water is love. It is my element.

Here, she attributes psychedelics with allowing her to perceive nature in a new way, and describes acquiring a newfound relationship with water in particular. A few moments later, she continued talking about how psychedelics impacted her relationship with nature by stating:

> My connection with nature has been enhanced and I believe we are all interconnected. And like, yeah, meditation has been very helpful for me, but I feel like plant medicine has kind of [changed my] life, given me…showed me just how interconnected everything is…I believe that psychedelics changed my life, allowed me to take control of my relations from my perspective and not be influenced by the gaze or expectations of others. My connection with nature has been enhanced and I believe we are all interconnected. My fear of death has subsided as a result of psychedelic experience as well (R-2).

Again, the theme of interconnectedness emerges as a metaphysical precept that resonates with several of the experience reports analyzed in this chapter. The notion of *connectedness* in general appears to be a common refrain in psychedelic experience reports in general, lending credence to the studies about psychedelics and connectedness mentioned in the introduction of this chapter. In this particular case, interconnectedness and enhanced relations with, or connections to, nature are not only prominent, but are also reinforced by her initial claim that psychedelics allowed her to perceive nature in this novel way.

Further evidence that speaks to how psychedelic experiences with psilocybin mushrooms can potentially lead people to reflect on their perceptions of, and relations with, nature were found in other interviewee testimonials as well. For the 29-year-old Colombian

female I mentioned in the last chapter that realized her desire to change her career through her psilocybin experience, the theme of nature also emerged in a way that was arguably just as significant. During her psilocybin experience, she had the realization that:

> That made me kind of realize that like, we like, we're kind of, in nature's way. We're kind of like borrowing nature's space, here in the level that we're in every day. But then like, with mushrooms, or you go up this one level, and that's where nature resides like, that's nature's level, right? She's up here, and we're down here. And I was like, in that level for a little bit, too. So, like, I was kind of in this relationship with nature. I felt like all the vibration...of like, literally the air breathes, and like, you just feel it. And you're like, what's happening? And like, when we went out of the room that we were at, like, I was, like, literally really high. And I was feeling like, it was so much, and like, all the movements and all the artwork, it comes to life, the house, was alive! But it's crazy. And I feel like, that's how every day is, but we're just so, so, unaware, that like, in a lower level. Because I guarantee you that like right now, the same vibrations that I felt, are here right now. But we just don't see it. But it's just like, it's so crazy, how insignificant, and I think that's the thing how insignificant I felt, once I felt that connection with nature, because it was the first time that I ever felt that. And like, I guarantee you that, that this is always here, but we just don't see it…So well. It was just great, First, the house, it felt like it had a heartbeat. And [Z] was kind of prepping me for that, he's like, you need to be ready, it's gonna be a lot, and we went outside, and it was like, oh my god. And then the craziest thing, we went outside, it was probably like seven, and nature is just like insane. Like the clouds were moving at the speed of light. It went like the fastest thing! It was crazy. The moon was sooo bright, and we were lucky enough it was full moon, so literally just crazy, it was beautiful, and the palm trees were like moving like that with the wind (R-5).

The phenomenology of this experience maintains affinities with some of the other interviews I conducted, but also goes beyond them in certain ways as well. Apart from perceiving the clouds, the moon, and nature in a novel way that was "beautiful," there were also several realizations that occurred about her relationship with nature. She believed that during her trip, she was able to operate at a level that is superior to one that humans normally operate at, and that this superior level was the level of nature. Being at this level of nature was also described as being "kind of in this relationship with nature," where she

felt as if everything were alive in a way she could both see and feel. One particular conviction she had during her experience was that this is the way things normally are, but people's inability to perceive nature at this level is clouded under regular circumstances. Another insight she had was that she felt absolutely insignificant in comparison to the whole of nature; something she had never felt before.

It is worth delving further into her remarks on her feelings of insignificance in the face of nature given that it appears to have shifted her perception of nature thereafter. She continued describing what she meant by telling me that:

> We don't fully understand life and nature and how powerful it is. We need to get to that next level. And the only way to get there, at least for me, I don't know if people have cracked the code on how to get to that next level without mushrooms. I haven't. But it just it helps you get there. And he helps you understand how insignificant we are against nature and how powerful nature is. And like we're literally borrowing a space here in nature, right? And we're literally just in nature's way. And I feel it's sad that we think we're super powerful. And we think that we can like damage nature with all these chemicals and all these like roads and destroy all the green and everything. But yeah, I think you need to really get there to fully understand and to fully understand like, what, like what happens once you're in that level (R-5).

This idea of mushrooms allowing one to get to the "next level" persisted throughout our conversation, despite it being difficult for her to convey exactly what she meant by this. The following comments she makes, however, are much more easily discernable in terms of their implications for the discussion at hand on human-environment relations. She clarifies what she means by feeling insignificant in the face of nature by stating that "we are just borrowing space" and that we are entirely vulnerable to "how powerful nature is." In addition, she reflected on how humans are just in nature's way, and that we continuously damage nature with our activity on the planet. For a person who had reportedly never experienced these feelings of "insignificance" in relation to nature, these realizations

appear to potentially have ethical import given her statements made about human activity and the destruction of nature.

While it is difficult to assess the ways in which this experience impacted her relations with, or perception of, nature and nonhuman others, she did inform me that it prompted her to make small life changes. These changes in lifestyle emerged when asking her whether she had felt this way about nature before her experience:

> I mean, I really like, I respect nature and I've always had respect and like definitely, like, I loved, I love nature. But with mushrooms, it just made me realize that even more, like that [mind] expand that I didn't think was possible. Because, yeah, I mean, like, everybody loves nature, everybody says oh yeah that's nice, this and that, but with mushrooms now I fully get it, it's like without nature, we will have no future, we will have no next generations, like, we cannot do anything, we cannot do anything. And so, this made me be more appreciative and like, just like little things like, you know, like recycle, or like, don't use plastic, don't use plastic straws if you don't need to, like, a lot of things like that, you know, we have a long, long way to go to really take care of nature, but at least like it helped me at home, make like, little modifications or changes or things. I feel like if people were more open to trying them. I feel like we would be better people (R-5).

This excerpt shows that not only did her perceptions of, and relations with, nature change in what she considered to be a positive way both during and after her psychedelic experience with psilocybin, but there is also testimony regarding changes in behavior that reoriented her actions towards more sustainable or ecologically minded practices. Granted that the behaviors she is describing might seem minimal, there appears to be a significant shift in her subjectivity that she not only resolutely expressed, but which is also reflected in her behaviors thereof. Moreover, she expressed the belief that if more people were at least open to experiencing psychedelics such as mushrooms, these small changes would incrementally become more commonplace. Finally, she could not believe these types of

experiences were possible, and then stated that everyone needs to try mushrooms at least once in their life, regardless of whether they have prejudices against them or not.

The interviews and experience reports drawn on in this section represent statements that were made by people without asking them directly about how psychedelics impacted or affected their relations with nature and nonhumans. In other cases, however, people did not report changes in their relations or perceptions until they were prompted. In the following section, I will review several cases wherein people did not report changes in their perception of nature until they were directly asked.

II. Indirect Changes in Perception of Nature

As I was conducting my ethnographic and netnographic research, I discovered that a great deal of people did not openly mention changes in their perception of nature or the environment in a direct manner. I was able to somewhat overcome this limitation while conducting my semi-structured interviews, where I prompted interviewees through my interview questions about changes in their perception of animals and the environment. I found that sometimes, people reported that their perceptions of, and relations with, nature had changed significantly; however, this was not something they would have mentioned had I not asked. In a way, it speaks to how overwhelming a psychedelic experience can be, where people are sometimes only able to recall a trace of what they had experienced. The question about nature was asked as the penultimate question in my interviews, and more often than not, it was a question which drew significant emotional responses from participants.

One example is drawn from a 25-year-old Hispanic female, born in Madrid, Spain, who consumed around 1.7 to 2g of dried psilocybin mushrooms with her boyfriend and his friend one evening. It was a spontaneous event, with no preconceived expectations or intentions going into it. The mushrooms were consumed at a home, and the group later went out to walk by the bay during the experience. Although she reported having some anxiety before consuming the mushrooms, and that the topic of drugs had been taboo in her family especially after having a brother who died from a drug overdose, she nevertheless reported having an amazing experience. What stood out the most for her during this experience was "How dreamy it felt, all my creative ideas came to life and it was a super fun experience." Her mood shifted throughout the experience; from not feeling anything at first, to feeling like she "was in a creative magical world where fun things happened," to getting anxiety again and wanting the experience to be over. When I finally asked about her experience of the environment, animals, and nonhuman others, she claimed that she "Absolutely ADORED the environment, the sea, the sky, the clouds. I wanted to hug trees and I wanted to touch the water. I felt it was a beautiful experience in terms of nature" (R-30).

Another interviewee who identified as a 40-year-old white female, did not mention any particular insights gained during her experience, nor did she provide many details about the experience itself or its effects on her life. Early during our interview, she admitted to being open about her use of psychedelics with others, and that many people approved of her using psychedelics as a way of "treating or helping with [her] bipolar and ptsd issues." While she had experimented with psychedelics throughout her life beginning at age 19, the specific experience she described to me for our interview consisted in consuming five

grams of dried golden teacher mushrooms at a stunning home of a family friend. At the beginning of her experience, she reported having "kaleidoscope vision going on" and saw other visuals such as patterns on floors and in the air. Later, she became in awe of the colors she was seeing and reported that the "walls were breathing." As her experience was coming to an end, she "listened to classical music and watch the sky rain burning embers. So peaceful." When asked about her perception of psychedelics today, she said "They are amazing. They help people conquer their demons. They help brains that aren't right, [be] just a little bit better." With regards to the impact of psychedelics on her life, she told me that "they have opened my mind to so many things…as well as helping with my bipolar and ptsd." It was not until nearly the end of my interview, where I asked if psychedelics have influenced her relationship or perception of the environment and animals, where she exclaimed that one is "DEFINITELY more aware of mother nature when on psychedelics. It's almost as if you are one with the universe" (R-20). This case is exemplary in the sense that while there was nothing in the phenomenology of her experience, nor in her reports about the experience, that would lead one to believe that she had a change in her perception of the environment or nature in any way. Nevertheless, when prompted, she reported a significant relationship between psychedelics and nature that would not have emerged had I not asked.

In another case, I came across a scenario wherein taking psychedelics in nature was a consistent activity that one of my interviewees would engage in, but his relationship or perception of nature never emerged as a significant theme until I asked. This interviewee was a 35-year-old Hispanic male who reported having that psychedelics helped treat his depression and provoke him to pursue a career change. When I asked him whether

psychedelics had impacted his relationship with, or perception of, nature and nonhuman animals and plants, he said:

> It's funny that you said this…the one thing that I have noticed like what I do when you're out tripping out here, like you can really feel and sense the forest breathe like wow. Like it's, it's a magical place to do it. Like, I've always I want to say like, it's made me want to go like, camping more, it's made me want to explore more. But I will say it hasn't necessarily pushed me, now that I'm reflecting on it. Like, it hasn't necessarily pushed me towards like conservation. Certainly, that kind of stuff. But it's definitely made me feel more in tune, and as a result, want to go and explore and reach that, you know, that like relationship with Mother Nature more? Yeah. But yeah, you know, interestingly, it hasn't made me think of like, ways to get involved in that kind of effort (R-3).

One feature of this report which stands out is that this person did not feel any changes in their behaviors resulting from their psychedelic experiences. He mentioned conservation and camping in particular, noting that he honestly had not felt a greater push towards these activities. Nevertheless, he did feel that nature was a magical place to do mushrooms, and that he could "feel and sense the forest breathe" in an awe-inspiring way when he consumed mushrooms in nature. Despite not reporting any changes in his behavior, he was still convinced that he felt "more in tune" with nature after his psychedelic experiences, and that this feeling of being more in tune with nature made him to want to explore his "relationship with Mother Nature more."

Finally, I had one case wherein I was told that this person actually felt more disconnected from nature than they had before, but that the experience in retrospect made her appreciate nature more. In this particular interview with a 30-year-old Hispanic female, I was told that when she went outside during her psilocybin experience, she actually felt more separate from nature than she had ever felt. She began experiencing dissociative effects such as not feeling like herself, or having an experience of herself from a perspective

that was disembodied. During this experience, she reports that she went outside to put her feet in the grass, expecting to feel grounded as she usually does when she goes outside barefoot. This time, however, she said that:

> I went outside and I expected to be so, so connected to nature, and I was barefoot and I wanted to have like that grounding experience with the earth and I just did not have it, on the contrary, I felt so, so disconnected because again, I felt like I was just not even in my body, I felt like I was touching the grass and my feet were touching the grass and I was like wiggling my toes and trying to touch, and again, it felt like I was just watching this experience, watching someone else have this experience, rather than me be so fulfilled and connected with the grass and earth and the horses I was watching, if that makes sense (R-4).

At first glance, it would seem that there is the possibility that in some cases, there are people who actually feel less of a connection to nature, and that this may potentially persist even after their psilocybin experiences. It is curious that she reported this since she is a person who described herself as living in a van with her partner and travelling constantly, particularly to picturesque places such as national parks and other natural attractions. As such, she told me she always had a strong bond and attraction towards nature, so it was surprising for her to have felt disconnected during her experience. It does not appear that this experience of feeling disconnected negatively impacted her perception of, or relations with, nature in the long term; on the contrary, it may have actually had an enhancing effect. To my surprise, when I directly asked her whether psychedelics had influenced or changed her perception of, or relations with nature, the environment, and animals in general, her response was,

> I didn't take away anything negative from it. On the contrary, I think that, you know, afterwards, like a couple of days later when I did go [outside], I was like, wow, I'm so grateful now to be connected…and touch it and feel something and feel the same love that I did before (R-4).

What this case in particular shows is that even if a person reports undergoing a feeling of disconnectedness from nature, or perceives the environment and nonhuman others in a negative light during their experience – which is the only case I found in analyzing one hundred thirty experiences – it does not necessarily follow that this will have an influence on their long-term perceptions of and relations towards nature. On the contrary, feelings of being disconnected from nature may actually lead to new behaviors towards nature, or greater feelings of appreciation and gratitude as my participant expressed. Apart from this sole experience where there was a temporary disconnection from nature, the experience reports which did speak of changes in human-environment relations generally reported feeling an enhanced connection to nature in general.

Based on the evidence acquired through my research and presented in this chapter, I maintain that psychedelic experiences with psilocybin can, in certain cases, potentially enhance one's affectual capacities by bringing existing relations more prominently into one's consciousness or subjectivity. The inextricable entanglements that humans maintain with their environments, for instance, come more clearly into focus for some people during or after their psilocybin experiences, which thereby makes the connections and relations they have with their environment become more evident and meaningful. Furthermore, as several excerpts drawn from my research show, the novel perceptions of, or relations with, nature are often described as something that is felt rather than something that can be understood intellectually. I maintain that instances wherein one's relationship with, or connection to, nature is felt rather than understood intellectually are demonstrative of how these individuals' capacity to be affected by nature may have potentially changed. Psychedelic experiences are often times transformative for people in many respects, and

the conviction people have about the insights or lessons acquired during their experiences is usually unwavering. Therefore, since psilocybin experiences often leave an indelible mark on those who undergo them, when enhanced connections to nature are expressed, they should not be discounted or devalued even if the purported changes in human-environment relations are difficult to quantify or prove in any systematic way.

Conclusion

This chapter argues that psilocybin experiences may have the potential to lead to newfound perceptions of, and relations with, the environment and nonhumans. Although the experiences presented in this chapter might come under critique as empirically unsubstantiated from an objectivist perspective, this would nevertheless fail to account for how impactful and meaningful these experiences are for people, and therefore shuns the possibility of admitting that real changes in one's perceptions of, and relations towards, nature and nonhumans in general is possible. Said another way, it does not matter how one interprets the experiences found in this chapter from a third-person point of view insofar as the value and meaning that these individuals attribute to their experiences appears to supersede any contrasting opinions. Given how impactful psychedelic experiences are for people, there is a sense in which they can be approached from a radical empiricist perspective. According to William James (1996, 42), radical empiricism signals the idea that the content of each person's experience should be considered veridical for themselves. Moreover, theoretical knowledge should always yield to experience first according to radical empiricism. When examining the reports reviewed in this chapter from the vantage point of radical empiricism, one must take the reports of enhanced connections or

relatedness at face value. Moreover, James' (1996) pragmatic approach to experience posits that beliefs are precursors to behaviors, and that for people who hold a belief it is more likely that they may act on this belief than not. Finally, given the human-environment discourse that has promulgated changing subjectivity as a means of ameliorating the destructive relations between humans and nonhumans, the possibility that psychedelics afford in this regard is significant.

In reflecting on the excerpts drawn out in this chapter, I must admit that my aim to discover changes in human-environment relations facilitated by psilocybin experiences was not as straightforward an endeavor as I had hoped. In part, this is due to the fact that it is not clear or even possible to assess whether these individuals have experienced a significant change in their behavior towards the environment since I cannot shadow people's every action before, during, and after their psychedelic experiences. Furthermore, most of the reports I analyzed did not mention reflections on nature, nor did they contain references to how psychedelics impacted their relationship with nature; however, what I did discover is that there were instances wherein people's perception of, and ability to be affected by the environment, did change, and that even if small in number, these changes are nevertheless significant. For instance, in some of the experience reports that do contain references to nature, animals, or the environment, there are often statements associated with acquiring novel perceptions of nature and the environment as sentient or breathing during the psilocybin experience. This ability to affect, or be affected by, things or entities in the environment that people were normally unaffected by can certainly lead to changed behaviors. I argue that since individuals report seeing forests breathe, seeing the ocean as a living entity, or simply seeing a tree in a new way, these qualify as instances wherein

individuals are acquiring the capacity to be affected by something that was normally taken for granted or seen as inanimate.

Finally, there is also a political dimension to the theme of psychedelics and human-environment relations that mimics some of the issues encountered in the previous chapter, only here the illegalization of psychedelics can be understood as having prohibited individuals from engaging with, and thereby being affected by, nature in ways that are deeply meaningful. This is evident insofar as most of my participants reported growing up in antidrug households, with some drawing direct links to Nixon and Reagan era drug rhetoric or strict religious beliefs, if not a combination of both. Although these individuals eventually experienced psychedelics, they had to take a major risk in order to do so, and could only depend on the knowledge of friends and others on how to prepare for the experience or what one should expect. Lastly, it can be maintained that the illegalization of psychedelics may even have even delayed the encounters people had with these plants, fungi, and other substances, and that their prohibition may actually stultify people's ability to connect with nature from a younger age.

CHAPTER 8. CONCLUSION

> The answer to the question of mushrooms and consciousness may yet be advanced by those prepared to think the unthinkable and to take the risk of being labeled as more than a little mad (Letcher 2007, 92).

As the psychedelic landscape continues to shift in new and unexpected ways, psychedelics are being brought into evermore novel arrangements. On one level, psychedelic drugs are being modified and integrated into mainstream psychiatry and psychology, where they being used as therapeutic agents aimed at treating an array of mental illnesses and disorders. The medicalization of psychedelics draws an increasing number of professionals, technologies, ideas, materials, and even entities together in a particular way, leading to phenomena such as increases in animal experimentation, new devices for studying psychedelics and their effects, and novel theoretical and neuropsychopharmacological discourses about how psychedelics work to treat illnesses. This incorporation of psychedelics into mainstream scientific research and medical practice has also attracted capitalist interests, which sometimes merge with medicalization assemblages, with the aim of devising ways to derive profit from the findings produced by the new science of psychedelic medicine. At the same time that these medical and capitalist trajectories are playing out, a number of social movements in the United States are working to dismantle draconian drug laws, with varying degrees of success. This has resulted in the decriminalization of psychedelics across several cities in the US, in addition to the legalization of psilocybin therapy in Oregon. In geographies where psychedelics have become decriminalized or legalized, new forms of social engagement have spawned around

psychedelics, including bartering, gifting, and other forms of informal economy. These more community-based uses and understandings of psychedelics contrast sharply with both medical and capitalist models of psychedelic use, which is often reflected in the way that psychedelics are reified and used by each group.

By introducing the concept of *psychedelic assemblages* in this dissertation, it helps to make sense of the considerable shifts in the contemporary psychedelic landscape in the United States. Assemblage offers a new way of bringing together literatures across the social and natural sciences, providing a new way of looking at the history of psychedelics. As such, psychedelic assemblages help to unearth the different ways that psychedelics become reified – culturally, legally, and medically, for instance – and how new forms of psychedelic practice take shape around these reifications. The contemporary psychedelic landscape not only shows that psychedelics such as psilocybin are increasingly being brought into new practices of the self that may influence human-environment relations, but also how commodified forms of psychedelic use and practice lend themselves to neoliberal forms of identity construction. Furthermore, the continued illegalization of psychedelic drugs has inhibited people's ability to engage with psychedelic substances, forcing them to make meaning of their experiences in isolation in many cases.

Looking ahead, future research on the *medical*, *capitalist*, and *entheogenic* assemblages that form around psychedelics can help to understand how each assemblage operates, and may also help unveil other ways that psychedelics are drawn into particular sociohistorical forms of organization. The increased use of psychedelics during the pandemic for self-medication is also an agenda that needs to be further explored, especially in light of the continued illegalization of psychedelic plants, fungi, and substances in

conjunction with growths in mental health disorders in the Global North. The proliferation of psychedelics on the internet, which includes websites and forums dedicated to selling psychedelics, and also spaces where cultivation methods, experience reports, synthesis techniques, and general knowledge about psychedelics is shared, has also created spaces wherein psychedelic communities have been able to flourish. These consocial forms of community deserve further academic attention insofar as they signal ways that marginalized groups interact in spite of persecution and stigmatization. There is also a political economy of psychedelics emerging, with entrepreneurs creating businesses which offer cultivation materials, or social media pages that help newcomers learn how to grow and synthesize their own psychedelic substances.

Finally, the devastating environmental crises taking place in the Anthropocene call for extreme measures to be taken by governments, corporations, and even individuals in attempting to address global issues such as mass species extinction, the toxification of the planet, and climate change. Social scientists have pointed out the need to change the way humans relate with the environment and nonhuman others, noting that subjectivity is a key domain of political struggle in this regard. As this dissertation demonstrates, there is a politics of the self at work in the Anthropocene that can be viewed through the phenomenon of psychedelic use in the United States. There are competing understandings of self at work in different psychedelic assemblages, some of which reduce the self to a biological mechanism or an economic unit, while others promulgate a relational self that is embodied and embedded in a multispecies community. These competing understandings of self also operate beyond the phenomenon of psychedelic drug use, reflecting the wider understandings of subjectivity in the Anthropocene. Insofar as psychedelics such as

psilocybin remain outlawed, yet are nevertheless used as tools of subjectivation and self-medication, the phenomenon of psychedelic drug use further exemplifies the politics of the self insofar as it sheds light on what kind of practices of self are permissible, and what conceptions of self are regarded as legitimate.

REFERENCES

Abraham, Ralph, Terence McKenna, and Rupert Sheldrake. 1992. Trialogues at the Edge of the West: Chaos, Creativity, and the Resacralization of the World. Santa Fe, NM: Bear & Co.

Adey, Peter. 2012. "How to engage? Assemblage as ethos/ethos as assemblage." *Dialogues in Human Geography* 2 (2): 198-201.

Agin-Liebes, Gabrielle I., Tara Malone, Matthew M. Yalch, Sarah E. Mennenga, K. Linnae Ponté, Jeffrey Guss, Anthony P. Bossis, Jim Grigsby, Stacy Fischer, and Stephen Ross. 2020. "Long-Term Follow-up of Psilocybin-Assisted Psychotherapy for Psychiatric and Existential Distress in Patients with Life-Threatening Cancer." *Journal of Psychopharmacology* 34 (2): 155–66.

Agurell, Stig, Bo Holmstedt and Jan-Erik Lindgren. 1968. "Alkaloid content of Banisteriopsis rusbyana." *American Journal of Pharmacy* 140 (5): 148-151.

Ahmad, Diana L. 2007. *The Opium Debate and Chinese Exclusion Laws in the Nineteenth-Century American West.* Reno and Las Vegas: University of Nevada Press.

Alexander, Michelle. 2010. "The war on drugs and the New Jim Crow." *Race, Poverty & the Environment* 17 (1): 75-77.

Amsterdam, Jan van, Antoon Opperhuizen, and Wim van den Brink. 2011. "Harm Potential of Magic Mushroom Use: A Review." *Regulatory Toxicology and Pharmacology* 59 (3): 423–29.

Anderson, Ben. 2006. "Becoming and Being Hopeful: Towards a Theory of Affect." *Environment and Planning D: Society & Space* (5): 733–752

Anderson, B. and C. McFarlane. 2011. "Assemblage and Geography." *Area* 43 (2): 124-127.

Anderson, B., Kearnes, M., McFarlane, C. and Swanton, D., 2012. "On assemblages and geography." *Dialogues in Human Geography* 2 (2): 171-189.

Apud, Ismael. 2015. "Ayahuasca from Peru to Uruguay: Ritual Design and Redesign through a Distributed Cognition Approach." *Anthropology of Consciousness* 26 (1): 1–27.

Apud, Ismael and Oriol Romaní 2017. "Medicine, religion and ayahuasca in Catalonia. Considering ayahuasca networks from a medical anthropology perspective." *International Journal of drug policy* 39: 28-36.

Badiner, Allan Hunt and Alex Grey (eds). 2015. *Zig Zag Zen: Buddhism and Psychedelics,* Art Edited by Alex Grey. Santa Fe, NM: Synergetic Press.

Barber, B. 1941. "A socio-cultural interpretation of the Peyote cult." *American Anthropologist* 43 (4): 673-675.

Barber, C. G. 1959." Peyote and the Definition of Narcotic." *American Anthropologist* 61 (4): 641-646.

Barkan, Ilyse D. 1985. "Industry invites regulation: the passage of the Pure Food and Drug Act of 1906." *American Journal of Public Health* 75 (1): 18-26.

Barker, Steven A. 2018. "N, N-Dimethyltryptamine (DMT), an Endogenous Hallucinogen: Past, Present, and Future Research to Determine Its Role and Function." *Frontiers in Neuroscience* 12 (AUG): 1–17.

Barrett, Frederick S., Matthew W. Johnson, and Roland R. Griffiths. 2015. "Validation of the Revised Mystical Experience Questionnaire in Experimental Sessions with Psilocybin." *Journal of Psychopharmacology* 29 (11): 1182–90.

Beaman, L.G. 2002. "Aboriginal spirituality and the legal construction of freedom of religion." *Journal of Church and State* 44 (1): 135–149.

Becker, Howard S. 1977. "The Marihuana Tax Act" In: Paul E. Rock (ed) 2017, *Drugs and Politics.* London and New York: Routledge, 55-66.

Belouin, Sean J., and Jack E. Henningfield. 2018. "Psychedelics: Where We Are Now, Why We Got Here, What We Must Do." *Neuropharmacology* 142: 7–19.

Benally, Steven, Sandor Iron Rope, Arlen Lightfoot, Andrew Tso, Dawn D. Davis, and IPCI Board Members and Staff. 2020. "Statement from National Council of Native American Churches and the Indigenous Peyote Conservation Initiative regarding Decriminalization of Sacred Plants Ordinances at the City or other jurisdictional level, as they pertain to Peyote." 1-2.

Benavie, Arthur. 2012. *Drugs: America's holy war*. Abingdon: Routledge.

Bennett, Jane. 2010. *Vibrant Matter: A Political Ecology of Things*. Durham, NC: Duke University Press.

Bigwood, Jeremy and Jonathan Ott. 1977. "DMT: The fifteen minute trip." *Head* 56.

Blainey, M.G. 2015. "Forbidden therapies: Santo Daime, ayahuasca, and the prohibition of entheogens in Western society." *Journal of Religion and Health* 54 (1): 287-302.

Blaser, Mario. 2014. 'Ontology and indigeneity:' on the politics of heterogenous assemblages'. *cultural geographies*, 21 (1): 49-58.

Blätter, Andrea. 1994. Die Funktionen des Drogengebrauchs und ihre kulturspezifische Nutzung. *Curare* 18 (2): 279-290.

Blunden, Andy. 2005. *Introduction.* In: *The Subject* (Abandoned Draft). https://www.ethicalpolitics.org/ablunden/works/subject.htm

Bobo, L. D. and Thompson, V. 2006. "Unfair by Design: The war on Drugs, Race, and the Legitimacy of the Criminal Justice system." *Social Research: An International Quarterly* 73 (2): 445–472.

Bogenschutz, Michael P. 2017. "It's Time to Take Psilocybin Seriously as a Possible Treatment for Substance Use Disorders." *American Journal of Drug and Alcohol Abuse* 43 (1): 4–6.

Bogenschutz, Michael P., Alyssa A. Forcehimes, Jessica A. Pommy, Claire E. Wilcox, PCR Barbosa, and Rick J. Strassman. 2015. "Psilocybin-Assisted Treatment for Alcohol Dependence: A Proof-of-Concept Study." *Journal of Psychopharmacology* 29 (3): 289–99.

Boire, R. G. 2001. "On Cognitive Liberty." *The Journal of Cognitive Liberties* 2 (1): 7-22.

Boire, R. G. 2003. "On Cognitive Liberty, Part IV". *Journal of Cognitive Liberties* (4) 1: 15-24.

Bonson, Katherine.R. 2012. "Hallucinogenic Drugs." In: *eLS*, John Wiley & Sons, Ltd (ed.), 1-7. https://doi.org/10.1002/9780470015902.a0000166.pub2

Bouso, José Carlos, Fernanda Palhano-Fontes, Antoni Rodríguez-Fornells, Sidarta Ribeiro, Rafael Sanches, José Alexandre S. Crippa, Jaime E.C. Hallak, Draulio B. de Araujo, and Jordi Riba. 2015. "Long-Term Use of Psychedelic Drugs Is Associated with Differences in Brain Structure and Personality in Humans." *European Neuropsychopharmacology* 25 (4): 483–92.

Bouso, José Carlos, Rafael G. dos Santos, Miguel Ángel Alcázar-Córcoles, and Jaime E.C. Hallak. 2018. "Serotonergic Psychedelics and Personality: A Systematic Review of Contemporary Research." *Neuroscience and Biobehavioral Reviews* 87 (April 2017): 118–32.

Bradley, A. and A. Millington. 2008. Coca and Colonists: Quantifying and Explaining Forest Clearance Under Coca and Anti-Narcotics Policy Regimes. *Ecology and Society* 13 (1): 1-19.

Braidotti, Rosi. 2016. “Posthuman critical theory.” In: M. Paranjape and D. Banerji (eds), *Critical Posthumanism and Planetary Futures*, New Delhi, Springer: 13-32.

Braidotti, Rosi. 2019a. “A Theoretical Framework for the Critical Posthumanities.” *Theory, Culture, and Society* 36, (6): 31-61.

Braidotti, Rosi. 2019b. *Posthuman Knowledge*. Cambridge, UK: Polity Press.

Braidotti, Rosi and Maria Hlavajova (eds). 2018. *Posthuman Glossary*. New York, NY: Bloomsbury.

Breeksema, Joost J., and Michiel Van Elk. 2021. “Working with Weirdness: A Response to ‘Moving Past Mysticism in Psychedelic Science.’” *ACS Pharmacology and Translational Science* 4 (4): 1471–74.

Brennan, William, Margo A. Jackson, Katherine MacLean, and Joseph G. Ponterotto. 2021. “A Qualitative Exploration of Relational Ethical Challenges and Practices in Psychedelic Healing.” *Journal of Humanistic Psychology*.

Breen, Benjamin. 2021. “The Failed Globalization of Psychedelic Drugs in the Early Modern World.” *The Historical Journal* 1-18.

Breen, Benjamin. 2017. “Drugs and early modernity.” *History Compass* 15 (4): 1-9.

Brenner, N., Madden, D.J. and Wachsmuth, D., 2011. Assemblage urbanism and the challenges of critical urban theory. *City* 15 (2): 225-240.

Brouwer, K.C., Rusch, M.L., Weeks, J.R., Lozada, R., Vera, A., Magis-Rodríguez, C. and Strathdee, S.A., 2012. Spatial epidemiology of HIV among injection drug users in Tijuana, Mexico. *Annals of the Association of American Geographers* 102 (5): 1190-1199.

Brown, R. W. 1968. *The Psychedelic Guide to Preparation of the Eucharist*. Austin, TX: Linga Sharia Incense Co.

Bruhn, J.G., De Smet, P.A., El-Seedi, H.R. and Beck, O. 2002. Mescaline use for 5700 years. *The Lancet* 359 (9320): 1866.

Bublitz, J. C. 2013. My Mind Is Mine!? Cognitive Liberty as a Legal Concept. In: Hildt E., Franke A. (eds) *Cognitive Enhancement. Trends in Augmentation of Human Performance*, vol 1. Springer, Dordrecht: 233-64.

Bublitz, J. C. 2015. “Cognitive Liberty or the International Human Right to Freedom of Thought.” In: Clausen J., Levy N. (eds) *Handbook of Neuroethics*. Springer, Dordrecht.

Buchanan, Ian. 1997. “The problem of the body in Deleuze and Guattari, or, what can a body do?” *Body & Society* 3 (3): 73-91.

Buchanan, Ian. 2013. “The little Hans assemblage.” *Visual Arts Research* 39 (1): 9-17.

Buchanan, Ian. 2014. “Assemblage theory and schizoanalysis.” *Panoptikum* 13 (20): 115-125

Buchanan, Ian. 2015. “Assemblage theory and its discontents.” *Deleuze Studies* 9 (3): 382-392.

Buchanan, Ian. 2017. “Assemblage theory, or, the future of an illusion.” *Deleuze Studies* 11 (3): 457-474.

Buchanan, Ian. 2021. *Assemblage Theory and Method*. New York, NY: Bloomsbury.

Burroughs, William S. and Allen Ginsberg. 1963. *The Yage Letters*. San Francisco, CA: City Light Books.

Calabrese, J. D. II. 1994. “Reflexivity and Transformation Symbolism in the Navajo Peyote Meeting.” *Ethos* 22 (4): 494–527.

Calabrese, J.D., 1997. Spiritual healing and human development in the Native American church: Toward a cultural psychiatry of peyote. *Psychoanalytic Review* 84 (2): 237-255.

Callicott, C., 2016. Introduction to the Special Issue: Ayahuasca, Plant-Based Spirituality, and the Future of Amazonia. *Anthropology of Consciousness* 27 (2): 113-120.

Campbell, H., 2014. Narco-propaganda in the Mexican “drug war” an anthropological perspective. *Latin American Perspectives* 41 (2): 60-77.

Caquet, Pierre E. 2021. “France, Germany, and the Origins of Drug Prohibition.” *The International History Review* 43 (2): 207-225.

Carbonaro, Theresa M., and Michael B. Gatch. 2016. “Neuropharmacology of N,N-Dimethyltryptamine.” *Brain Research Bulletin* 126 (2016): 74–88.

Carbonaro, Theresa M., Matthew W. Johnson, and Roland R. Griffiths. 2020. “Subjective Features of the Psilocybin Experience That May Account for Its Self-Administration by Humans: A Double-Blind Comparison of Psilocybin and Dextromethorphan.” *Psychopharmacology* 237 (8): 2293–2304.

Cardeña, E. and Winkelman, M., 2011. *Altering Consciousness: Multidisciplinary Perspectives: History, Culture, and the Humanities. Biological and psychological perspectives* (Vol. 1). ABC-CLIO.

Carhart-Harris, Robin. L. 2018. “The Entropic Brain - Revisited.” *Neuropharmacology* 142: 167–178.

Carhart-Harris, Robin L. 2019. “How Do Psychedelics Work?” *Current Opinion in Psychiatry* 32 (1): 16–21.

Carhart-Harris, Robin L., Robert Leech, Peter J. Hellyer, Murray Shanahan, Amanda Feilding, Enzo Tagliazucchi, Dante R. Chialvo and David Nutt. 2014. “The Entropic Brain: A Theory of Conscious States Informed by Neuroimaging Research with Psychedelic Drugs.” Frontiers in Human Neuroscience 8 (1 FEB): 1–22.

Carhart-Harris, R. L., M. Kaelen, M. G. Whalley, M. Bolstridge, A. Feilding, and D. J. Nutt. 2015. “LSD Enhances Suggestibility in Healthy Volunteers.” *Psychopharmacology* 232 (4): 785–94.

Carhart-Harris, Robin L. and Guy M. Goodwin. 2017. “The Therapeutic Potential of Psychedelic Drugs: Past, Present, and Future.” *Neuropsychopharmacology* 42 (11): 2105–13.

Carhart-Harris, Robin L., Leor Roseman, Mark Bolstridge, Lysia Demetriou, J. Nienke Pannekoek, Matthew B. Wall, Mark Tanner, et al. 2017. “Psilocybin for Treatment-Resistant Depression: FMRI-Measured Brain Mechanisms.” *Scientific Reports* 7 (1): 1–11.

Carhart-Harris, Robin L., Leor Roseman, Eline Haijen, David Erritzoe, Rosalind Watts, Igor Branchi, and Mendel Kaelen. 2018a. “Psychedelics and the Essential Importance of Context.” *Journal of Psychopharmacology* 32 (7): 725–31.

Carhart-Harris, Robin L., M. Bolstridge, C. M.J. Day, J. Rucker, R. Watts, D. E. Erritzoe, M. Kaelen, et al. 2018b. “Psilocybin with Psychological Support for Treatment-Resistant Depression: Six-Month Follow-Up.” *Psychopharmacology* 235 (2).

Carhart-Harris, Robin L., David Erritzoe, Eline Haijen, Mendel Kaelen and Rosalind Watts. 2018c. “Psychedelics and Connectedness.” *Psychopharmacology* 235 (2): 547–50.

Carhart-Harris, Robin L. and K. J. Friston. 2019. “REBUS and the Anarchic Brain: Toward a Unified Model of the Brain Action of Psychedelics.” *Pharmacological Reviews* 71 (3): 316–344.

Carlson, Robert G. 1996. “The Political Economy of AIDS among Drug Users in the United States: Beyond Blaming the Victim or Powerful Others.” *American Anthropologist* 98 (2): 266-278.

Carod-Artal, F.J. 2015. “Hallucinogenic Drugs in Pre-Columbian Mesoamerican Cultures.” *Neurología (English Edition)* 30 (1): 42–49.

Carroll, M.P. 2020. What Evicting Grizzly Bear Spirit Does (and Doesn’t) Tell Us about Indigenous “Religion” and Indigenous Rights. *Studies in Religion/Sciences Religieuses* 49 (1): 32-49.

Castañeda, Carlos. 1968. *The Teachings of Don Juan: A Yaqui Way of Knowledge*. Los Angeles, CA: University of California Press.

Catlow, Briony J., Shijie Song, Daniel A. Paredes, Cheryl L. Kirstein, and Juan Sanchez-Ramos. 2013. “Effects of Psilocybin on Hippocampal Neurogenesis and Extinction of Trace Fear Conditioning.” *Experimental Brain Research* 228 (4): 481–91.

Chilton, Scott W., Jeremy Bigwood, and Robert E. Jensen. 1979. “Psilocin, Bufotenine and Serotonin: Historical and Biosynthetic Observations.” *Journal of Psychedelic Drugs*. 11 (1-2): 61-69.

Chouvy, P. 2005a. Morocco’s Smuggling Rackets: Hashish, People, and Contraband. *Jane’s Intelligence Review* 17 (12): 40-43.

Chouvy, P. 2005b. Morocco Said to Produce Nearly Half the World’s Hashish Supply. *Jane’s Intelligence Review* 17 (11): 32-35.

Chouvy, P. 2010. *Opium: Uncovering the Politics of the Poppy.* Cambridge, Massachusettes: Harvard University.

Chouvy, P.A. and Afsahi, K., 2014. Hashish revival in Morocco. *International Journal of Drug Policy* 25 (3): 416-423.

Chouvy, P. and L. Laniel 2007. Agricultural Drug Economies: Cause of Alternative to Intra-State Conflicts? *Crime, Law and Social Change* 48 (3/5): 133-150.

Chouvy, P. and J. Macfarlane. 2018. Agricultural innovations in Morocco’s cannabis industry. *International Journal of Drug Policy* 58:85-91.

Christian, S. T., Harrison, R., Quayle, E., Pagel, J., & Monti, J. 1977. “The *in vitro* identification of dimethyltryptamine (DMT) in mammalian brain and its characterization as a possible endogenous neuroregulatory agent.” *Biochemical medicine* 18 (2): 164–183.

Cocklin, C., L Walker, and G. Blunden. 1999. “Cannabis Highs and Lows: Sustaining and Dislocating Rural Communities in Northland, New Zealand.” *Journal of Rural Studies* 15 (3): 241-255.

Cole, Jonathan O., and Martin M. Katz. 1964. "The psychotomimetic drugs: An overview." *Journal of the American Medical Association* 187 (10): 758-761.

Collins, J.J. 1968. A Descriptive Introduction to the Taos Peyote Ceremony. *Ethnology* 7 (4): 427-449.

Córdova-Ríos, Manuel and Frank Bruce Lamb. 1971. *Wizard of the Upper Amazon: The Story of Manuel Córdova-Rios*. New York, NY: Atheneum.

Corva, D. 2008. "Neoliberal globalization and the war on drugs: Transnationalizing illiberal governance in the Americas." *Political Geography* 27 (2): 176-193.

Crooker, R. 1988. Forces of Change in the Thailand Opium Zone. *Geographical Review* 78 (3): 243-256.

Crooker, R. 2005. Life After Opium in the Hills of Thailand. *Mountain Research and Development* 25 (3): 289-292.

Curra, J. 2019. *The relativity of deviance*. Sage Publications, Incorporated.

Davidov, V.M., 2010. Shamans and shams: The discursive effects of ethnotourism in Ecuador. *The Journal of Latin American and Caribbean Anthropology* 15 (2): 387-410.

Davis, Alan K, Frederick S Barrett, Darrick G May, Mary P Cosimano, Nathan D Sepeda, Matthew W Johnson, Patrick H Finan, and Roland R Griffiths. 2020. "Effects of Psilocybin-Assisted Therapy on Major Depressive Disorder A Randomized Clinical Trial," 1–9.

Davis, Erik. 2021. "Capitalism on Psychedelics: The Mainstreaming of an Underground." In: Beatriz C. Labate and Clancy Canvar (eds) 2021, *Psychedelic Justice: Toward a Diverse and Equitable Psychedelic Culture*, Santa Fe, NM: 89-95.

Davis, Heather and Zoe Todd. 2017. "On the Importance of a Date, or Decolonizing the Anthropocene." *ACME: An International Journal for Critical Geographies* 16 (4): 761–780.

Davis, Janae, Alex A. Moulton, Levi Van Sant, and Brian Williams. 2019. "Anthropocene, capitalocene,… plantationocene?: A manifesto for ecological justice in an age of global crises." *Geography Compass* 13 (5): 1-15.

Davis, Wade. 2014. *One river: Explorations and discoveries in the Amazon rain forest*. Random House.

Dean, Jon G., Tiecheng Liu, Sean Huff, Ben Sheler, Steven A. Barker, Rick J. Strassman, Michael M. Wang, and Jimo Borjigin. 2019. "Biosynthesis and Extracellular

Concentrations of N,N-Dimethyltryptamine (DMT) in Mammalian Brain." *Scientific Reports* 9 (1): 1–11.

Deikman, Arthur. 1982. *The Observing Self: Mysticism and Psychotherapy*. Boston, MA: Beacon.

DeLanda, Manuel. 2006. "Deleuzian social ontology and assemblage theory." *Deleuze and the Social*: 250-266.

DeLanda, Manuel. 2016. *Assemblage theory*. Edinburgh University Press.

DeLanda, Manuel. 2019. *A new philosophy of society: Assemblage theory and social complexity*. New York, NY: Bloomsbury Publishing.

Deleuze, Gilles and Félix Guattari. 1987. *A Thousand Plateaus: capitalism and schizophrenia*. Translated by Brian Massumi. Minneapolis and London: University of Minnesota Press.

Deleuze, Gilles and Félix Guattari. 1994. *What is Philosophy?* Translated by Hugh Tomlinson and Graham Burchell. New York, NY: Columbia University Press.

De Mori, B. B. 2014. From the Native's Point of View. In *Ayahuasca Shamanism in the Amazon and Beyond*, Beatriz C. Labate and Clancy Cavnar, eds., 206-230.

Dennett, Daniel C. 1991. *Consciousness Explained*. Boston, MA: Little, Brown.

De Rios, Marlene Dobkin. 1968. "Trichocereus pachanoi: a mescaline cactus used in folk healing in Peru." *Economic Botany* 22 (2): 191-194.

De Rios, Marlene Dobkin. 1969. "Folk curing with a psychedelic cactus in the north coast of Peru." *International Journal of Social Psychiatry* 15 (1): 23-32.

De Rios, Marlene Dobkin. 1970a. "A note on the use of ayahuasca among urban mestizo populations in the Peruvian Amazon." *American Anthropologist* 72 (6): 1419-1422.

De Rios, Marlene Dobkin. 1970b. "Banisteriopsis in witchcraft and healing activities in Iquitos, Peru." *Economic Botany* 24 (3): 296-300.

De Rios, Marlene Dobkin. 1971. "Ayahuasca—the healing vine." *International Journal of Social Psychiatry* 17 (4): 256-269.

De Rios, Marlene Dobkin. 1972. *Visionary Vine: Psychedelic Healing in the Peruvian Amazon*. San Francisco, CA: Chandler Publishing Co.

De Rios, Marlene Dobkin and D. E. Smith. 1976. “Using or abusing? An anthropological approach to the study of psychoactive drugs.” *Journal of Psychedelic Drugs* 8 (3): 263-266.

De Rios, Marlene Dobkin and D. E. Smith. 1977a. “The function of drug rituals in human society: Continuities and changes.” *Journal of Psychedelic Drugs* 9 (3): 269-275.

De Rios, Marlene Dobkin and D. E. Smith. 1977b. “Drug use and abuse in cross cultural perspective.” *Human Organization* 14-21.

De Rios, Marlene Dobkin and Cardenas, M., 1980. “Plant hallucinogens, shamanism and Nazca ceramics.” *Journal of Ethnopharmacology* 2 (3): 233-246.

De Rios, Marlene Dobkin. 1984. “The vidente phenomenon in third world traditional healing: An Amazonian example.” *Medical Anthropology* 8 (1): 60-70.

De Rios, Marlene Dobkin. 1989. “A modern-day shamanistic healer in the Peruvian Amazon: pharmacopoeia and trance.” *Journal of Psychoactive Drugs* 21 (1): 91-99.

De Rios, Marlene Dobkin. 1993. “Twenty-Five Years of Hallucinogenic Studies in Cross-Cultural Perspective.” *Anthropology of Consciousness* 4 (1): 1-8.

De Rios, Marlene Dobkin. 1994. “Drug tourism in the Amazon.” *Anthropology of Consciousness* 5 (1): 16-19.

De Rios, Marlene Dobkin. 1996. On “Human Pharmacology of Hoasca”: A Medical Anthropology Perspective. *The Journal of Nervous and Mental Disease* 184 (2): 95-98.

De Rios, Marlene Dobkin and Charles S. Grob. 2005. “Ayahuasca use in cross-cultural perspective.” *Journal of Psychoactive Drugs* 37 (2).

De Rios, Marlene Dobkin. 2006. “Mea culpa: Drug tourism and the anthropologist's responsibility.” *Anthropology News* 47 (7): 20-20

De Rios, Marlene Dobkin and O. Janiger. 2003. *LSD, spirituality, and the creative process: Based on the groundbreaking research of Oscar Janiger, MD*. Inner Traditions/Bear & Co.

De Rios, Marlene Dobkin and Rumrrill, R., 2008. *A hallucinogenic tea, laced with controversy: ayahuasca in the Amazon and the United States*. ABC-CLIO

Del Casino Jr, V.J. 2012. Drugs, sex, and the geographies of sexual health in Thailand, Southeast Asia. *Social & Cultural Geography* 13 (2): 109-125.

Derrida, Jacques. 1991. "'Eating Well' or the Calculation of the Subject: An Interview with Jacques Derrida in Cadava et al., *Who Comes After the Subject?* New York, NY: Routledge, 96-119.

Dewsbury, J.D. 2011. 'The Deleuze-Guattarian assemblage: plastic habits' *Area* 43(2): 148-153.

Dickson-Gomez, Julia. 2010. "Structural Factors Influencing Patterns of Drug Selling and Use and HIV Risk in the San Salvador Metropolitan Area." *Medical Anthropology Quarterly* 24 (2): 157-181.

Dilkes-Frayne, E. and C. Duff. 2017. "Tendencies and Trajectories: The Production of Subjectivity in an Event of Drug Consumption." *Environment and Planning D: Society and Space* 35 (5): 951–67.

Dittmer, J. 2014. 'Geopolitical assemblages and complexity'. *Progress in Human Geography* 38 (3): 385-401.

Dittrich, A. 1998. "The Standardized Psychometric Assessment of Altered States of Consciousness (ASCs) in Humans. *Pharmacopsychiatry* 31 (2): 80-84.

Doblin, Rick. 1991. "Pahnke's 'Good Friday experiment': A long-term follow-up and methodological critique." *Journal of Transpersonal Psychology* 23 (1): 134-139.

Doblin, Rick, J.E. Beck, K. Chapman, and M. Alioto. 1999. "Dr. Oscar Janiger's Pioneering LSD Research: A Forty Year Follow-up." *From the Bulletin of the Multidisciplinary Association for Psychedelic Studies MAPS* 9 (1): 7-21.

Doyle, Richard M. 2011. *Darwin's Pharmacy: Sex, Plants, and the Evolution of the Noosphere*. Seattle, WA: University of Washington Press.

Doyle, Richard M. 2012. "Healing with plant intelligence: A report from ayahuasca." *Anthropology of Consciousness* 23 (1): 28-43.

Drug Enforcement Administration. 2022. DEA Drug Scheduling. Accessed May 19, 2022. https://www.dea.gov/drug-information/drug-scheduling

Duff, C. 2014. *Assemblages of health: Deleuze's empiricism and the ethology of life*. Springer.

Dyck, Erika. 2006. "'Hitting Highs at Rock Bottom': LSD Treatment for Alcoholism, 1950-1970." *Social History of Medicine* 19 (2): 313–29.

Dyck, E. 2009. Prairies, psychedelics and place: The dynamics of region in psychiatric research. *Health & place* 15 (3): 657-663.

Dyck, E., & Farrell, P. 2018. “Psychedelics and Psychotherapy in Canada: Humphry Osmond and Aldous Huxley.” *History of Psychology* 21 (3): 240-253.

Efron, Daniel H., Bo Holmstedt, and Nathan S. Kline. 1967. *Ethnopharmacologic search for psychoactive drugs; proceedings of a symposium held in San Francisco, California, January 28-30, 1967. Daniel H. Efron, editor-in-chief; Bo Holmstedt [and] Nathan S. Kline, co-editors*. [Bethesda, Md.]: [For sale by the Supt. of Docs., U.S. Govt. Print. Off., Washington].

El-Seedi, Hesham R., Peter A.G.M. De Smet, Olof Beck, Göran Possnert, and Jan G. Bruhn. 2005. “Prehistoric Peyote Use: Alkaloid Analysis and Radiocarbon Dating of Archaeological Specimens of Lophophora from Texas.” *Journal of Ethnopharmacology* 101 (1–3): 238–42.

Erazo, J. and C. Jarrett. 2018. “Managing Alterity from within: The Ontological Turn in Anthropology and Indigenous Efforts to Shape Shamanism.” *Journal of the Royal Anthropological Institute* 24 (1): 145–163.

Erritzoe, D., L. Roseman, M. M. Nour, K. MacLean, M. Kaelen, D. J. Nutt, and R. L. Carhart-Harris. 2018. “Effects of Psilocybin Therapy on Personality Structure.” *Acta Psychiatrica Scandinavica* 138 (5): 368–378.

Etkin, N.L. 1992. “Side effects”: cultural constructions and reinterpretations of western pharmaceuticals. *Medical Anthropology Quarterly* 6 (2): 99-113.

Evens, Ricarda, Simon Reiche, Roman M Marek, Daa Un Moon, Rosa Elisa Groß, Amy Romanello, Dario Jalilzadeh Masah, and Matteo Scicchitano Böckheler. 2021. “Psychedelic Experiences During the Early COVID-19 Pandemic : Findings From an International Online Survey” 4 (12): 732028.

Falcon, Joshua. 2017. “The Ethical Import of Entheogens.” FIU Electronic Theses and Dissertations 3357.

Falcon, Joshua. 2021a. “Designing consciousness: Psychedelics as ontological design tools for decolonizing consciousness.” *Design and Culture* 13 (2): 143-163.

Falcon, Joshua. 2021b. “Situating Psychedelics and the War on Drugs within the Decolonization of Consciousness.” *ACME: An International Journey for Critical Geographies* 20 (2): 151-170.

Falcon, Joshua. 2021c. “Consciousness as a Domain of Extraterritoriality.” *Culture, Theory and Critique* 62 (1-2): 56-75

Farías, I. and Bender, T. eds. 2012. *Urban assemblages: How actor-network theory changes urban studies*. Routledge.

Featherstone, D. 2011. “On assemblage and articulation” *Area* 43(2): 139-142.

Feeney, Kevin. 2017. “Peyote as Commodity: An Examination of Market Actors and Access Mechanisms.” *Human Organization* 76 (1): 59–72.

Feinberg, Ben. 2018. “Undiscovering the pueblo magico: Lessons from Huautla for the psychedelic renaissance.” In: Beatriz C. Labate and Clancy Canvar (eds.), *Plant Medicines, Healing and Psychedelic Science: Cultural Perspectives*. Cham, Switzerland, 37-54.

Ferrando, Francesca. 2013. “Posthumanism, Transhumanism, Antihumanism, Metahumanism, and New Materialisms: Differences and Relations.” *Existenz* 8 (2): 26-32.

Ferrando, Francesca. 2019. *Philosophical Posthumanism*. New York, NY: Bloomsbury Publishing.

Fish, M. S., N. M. Johnson, and E. C. Horning. 1955. “Piptadenia Alkaloids. Indole Bases of P. Pcregrina (L.) Benth. and Related Species.” *Journal of the American Chemical Society* 77 (22): 5892–95.

Fonda, M.V., 2011. “Are they like us, yet? Some thoughts on why religious freedom remains elusive for Aboriginals in North America.” *International Indigenous Policy Journal* 2 (4).

Forstmann, Matthias, and Christina Sagioglou. 2017. “Lifetime Experience with (Classic) Psychedelics Predicts pro-Environmental Behavior through an Increase in Nature Relatedness.” *Journal of Psychopharmacology* 31 (8): 975–88.

Forstmann, Matthias, and Christina Sagioglou. 2021. “How Psychedelic Researchers’ Self-Admitted Substance Use and Their Association with Psychedelic Culture Affect People’s Perceptions of Their Scientific Integrity and the Quality of Their Research.” *Public Understanding of Science* 30 (3): 302–18.

Fotiou, E. 2012. Working with “L a M edicina”: Elements of Healing in Contemporary Ayahuasca Rituals. *Anthropology of Consciousness* 23 (1): 6-27.

Fotiou, E. 2014. On the uneasiness of tourism’. In *Ayahuasca shamanism in the Amazon and beyond*, Beatriz C. Labate and Clancy Cavnar, eds., 159-181.

Fotiou, E. 2016. The globalization of ayahuasca shamanism and the erasure of indigenous shamanism. *Anthropology of Consciousness* 27 (2): 151-179.

Fotiou, E. and Gearin, A.K., 2019. “Purging and the body in the therapeutic use of ayahuasca.” *Social Science & Medicine* 239: 112532.

Foucault, Michel. 1983. “Self Writing.” Translated from *Corps écrit* 5: 3-23. https://foucault.info/documents/foucault.hypomnemata.en/

Foucault, Michel. 1988. *Technologies of the Self: A Seminar with Michel Foucault*. Edited by Luther H. Martin, Hick Gutman, and Patrick H. Hutton. Amherst, MA: University of Massachusetts Press.

Foucault, Michel. 2001. *The Hermeneutics of the Subject: Lectures at the College de France, 1980- 1981*. Edited by Frédéric Gros, François Ewald, and Alessandro Fontana. Translated by Graham Burchell. New York, NY: Picador.

Foucault, Michel. 2017. *Subjectivity and Truth: Lectures at the College de France, 1980-1981*. Edited by Frédéric Gros, François Ewald, and Alessandro Fontana. Translated by Graham Burchell. London, UK: Palgrave Macmillan.

Furst, Peter T. (ed). 1972. *Flesh of the Gods: The Ritual Use of Hallucinogens*. New York, NY: Praeger Publishers.

Furst, Peter T. 1976. *Hallucinogens and Culture*. Novato, CA: Chandler & Sharp.

Gagnier, Regenia. 1991. *Subjectivities: A History of Self-Representation in Britain, 1832-1920*. Oxford: Oxford University Press.

Galvão-Coelho, Nicole L., Wolfgang Marx, Maria Gonzalez, Justin Sinclair, Michael de Manincor, Daniel Perkins, and Jerome Sarris. 2021. “Classic Serotonergic Psychedelics for Mood and Depressive Symptoms: A Meta-Analysis of Mood Disorder Patients and Healthy Participants.” *Psychopharmacology* 238 (2): 341–54.

Gamella, J.F. 1994. The spread of intravenous drug use and AIDS in a neighborhood in Spain. *Medical Anthropology Quarterly* 8 (2): 131-160.

Gandy, Sam, Matthias Forstmann, Robin Lester Carhart-Harris, Christopher Timmermann, David Luke, and Rosalind Watts. 2020. “The Potential Synergistic Effects between Psychedelic Administration and Nature Contact for the Improvement of Mental Health.”

Garcia-Romeu, Albert, Alan K. Davis, Fire Erowid, Earth Erowid, Roland R. Griffiths, and Matthew W. Johnson. 2019. “Cessation and Reduction in Alcohol Consumption and Misuse after Psychedelic Use.” *Journal of Psychopharmacology* 33 (9): 1088–1101.

Garcia-Romeu, Albert, Alan K. Davis, Earth Erowid, Fire Erowid, Roland R. Griffiths, and Matthew W. Johnson. 2020. “Persisting Reductions in Cannabis, Opioid, and Stimulant Misuse After Naturalistic Psychedelic Use: An Online Survey.” *Frontiers in Psychiatry* 10 (January): 1–16.

Garmany, J. 2011. Drugs, violence, fear, and death: The necro-and narco-geographies of contemporary urban space. *Urban Geography* 32 (8): 1148-1166.

Garrity, J.F. 2000. “Jesus, peyote, and the holy people: alcohol abuse and the ethos of power in Navajo healing.” *Medical Anthropology Quarterly* 14 (4): 521-542.

Gearin, Alex K. 2015. “‘Whatever you want to believe’: kaleidoscopic individualism and ayahuasca healing in Australia.” *The Australian Journal of Anthropology* 26 (3): 442-455.

Gearin, Alex K., and Neşe Devenot. 2021. “Psychedelic Medicalization, Public Discourse, and the Morality of Ego Dissolution.” *International Journal of Cultural Studies* 24 (6): 917–35.

Geiger, Haden A., Madeline G. Wurst, and R. Nathan Daniels. 2018. “DARK Classics in Chemical Neuroscience: Psilocybin.” *ACS Chemical Neuroscience* 9 (10): 2438-2447.

Gillen, J., 2016. Rethinking whiteness and masculinity in geography: Drinking alcohol in the field in Vietnam. *Antipode* 48 (3): 584-602.

Glasser, I. 2011. *Anthropology of addictions and recovery*. Waveland Press.

Glass-Coffin, B. 2010. “Shamanism and San Pedro through Time: Some Notes on the Archaeology, History, and Continued Use of an Entheogen in Northern Peru.” *Anthropology of Consciousness* 21 (1): 58–82.

Glennon, Richard A., Milt Titeler, and J. D. McKenney. 1984. “Evidence for 5-HT2 involvement in the mechanism of action of hallucinogenic agents.” *Life sciences* 35 (25): 2505-2511.

Gonçalves de Lima, O. 1946. “Observações sobre o “Vinho da Jurema” utilizado pelos índios Pancarú de Tacaratu (Pernambuco)." *Arquivos do Instituto de Pesquisas Agronômicas* 4: 45–80.

Goodman, J., A. Sherratt, and P. E. Lovejoy. eds. 2014. *Consuming Habits: Drugs in History and Anthropology*. Routledge.

Griffith, I.L. 2010. *Drugs and Security in the Caribbean: Sovereignty Under Siege*. Penn State Press.

Griffiths, Roland R., William A. Richards, Una McCann, and Robert Jesse. 2006. “Psilocybin Can Occasion Mystical-Type Experiences Having Substantial and Sustained Personal Meaning and Spiritual Significance.” *Psychopharmacology* 187 (3): 268–83.

Griffiths, Roland R., William A. Richards, Matthew W. Johnson, Una D. McCann, and Robert Jesse. 2008. “Mystical-Type Experiences Occasioned by Psilocybin Mediate the Attribution of Personal Meaning and Spiritual Significance 14 Months Later.” *Journal of Psychopharmacology* 22 (6): 621–32.

Griffiths, Roland R., Matthew W. Johnson, William A. Richards, Brian D. Richards, Una McCann, Robert Jesse. 2011. “Psilocybin occasioned mystical-type experiences: immediate and persisting dose-related effects.” *Psychopharmacology* (218): 649-665.

Griffiths, Roland R., Matthew W. Johnson, Michael A. Carducci, Annie Umbricht, William A. Richards, Brian D. Richards, Mary P. Cosimano, and Margaret A. Klinedinst. 2016. “Psilocybin Produces Substantial and Sustained Decreases in Depression and Anxiety in Patients with Life-Threatening Cancer: A Randomized Double-Blind Trial.” *Journal of Psychopharmacology* 30 (12): 1181–97.

Grinspoon, L. and J. B. Bakalar. 1979. *Psychedelic Drugs Reconsidered*. New York: Basic Books.

Grof, Stanislav. 1998. *The Cosmic Game: Explorations of the Frontiers of Human Consciousness*. Albany, NY: SUNY Press.

Grof, Stanislav. 1988. *The Adventure of Self-Discovery: Dimensions of Consciousness and New Perspectives in Psychotherapy and Inner Exploration*. Albany, NY: SUNY Press.

Grof, Stanislav. 2009 [1975]. *LSD: Doorway to the Numinous: The Groundbreaking Psychedelic Research into Realms of the Human Unconscious.* Rochester, VT: Park Street Press.

Grove, Kevin and J. Pugh. 2015. “Assemblage Thinking and Participatory Development: Potentiality, Ethics, and Biopolitics.” *Geography Compass* 9 (1): 1-13.

Grove, Kevin. 2018. *Resilience*. Routledge.

Guattari, Félix. 1995. *Chaosmosis: An Ethico-Aesthetic Paradigm*. Translated by P. Bains and J. Pefanis. Syndey: Power.

Guattari, Félix. 2000. *The Three Ecologies*. Translated by Ian Pinder and Paul Sutton. London: Athlone.

Guerra-Doce, E. 2015. “Psychoactive Substances in Prehistoric Times: Examining the Archaeological Evidence.” *Time and Mind* 8 (1): 91–112.

Guzmán, G. 1983. “The Genus Psilocybe: A Systematic Revision of the Known Species Including the History, Distribution and Chemistry of the Hallucinogenic Species.” Vaduz: J. Cramer.

Hall, Donald E. 2004. *Subjectivity*. New York, NY: Routledge.

Halpern, John H. and Harrison G. Pope Jr. 1999. “Do Hallucinogens Cause Residual Neuropsychological Toxicity?” *Drug and Alcohol Dependence* 53: 247-256.

Hagenbach, Dieter and Lucius Werthmüller. 2011. *Mystic Chemist: The Life of Albert Hofmann and His Discovery of LSD*. Sante Fe, NM: Synergetic Press.

Hardon, A. and Sanabria, E., 2017. “Fluid drugs: Revisiting the anthropology of pharmaceuticals.” *Annual review of anthropology* 46: 117-132.

Harner, Michael J. 1972. *The Jívaro: People of the Sacred Waterfalls*. University of California Press, Berkeley, CA.

Harner, Michael J. 1973. *Hallucinogens and Shamanism*. New York, NY: Oxford University Press.

Harner, Michael J., J. Mishlove and A. Bloch. 1990. *The Way of the Shaman*. New York: Harper San Francisco.

Harris, S., 2015. To be free and normal: Addiction, governance, and the therapeutics of buprenorphine. *Medical anthropology quarterly* 29 (4): 512-530.

Hart, Carl L. 2013a. *High Price: A Neuroscientist’s Journey to Self-Discovery That Challenges Everything You Know About Drugs and Society*. New York, NY: HarperCollins.

Hart, Carl L. 2013b. “Beyond the Drug War: A Time to Break Silence.” In: Carl Hart, 2013, *High Price: A Neuroscientist’s Journey to Self-Discovery That Challenges Everything You Know About Drugs and Society*. New York, NY: HarperCollins, 3-11.

Hart, Carl L. 2021. *Drug Use for Grown-Ups: Chasing Liberty in the Land of Fear*. New York, NY: Penguin Press.

Hartogsohn, Ido. 2014. *The Psycho-social Construction of LSD: How Set and Setting Shaped the American Psychedelic Experience 1950-1970*. Bar Ilan University.

Hartogsohn, Ido. 2017. “Constructing Drug Effects: A History of Set and Setting.” *Drug Science, Policy and Law* 3 (0): 1-17.

Hartogsohn, Ido. 2018. “The Meaning-Enhancing Properties of Psychedelics and Their Mediator Role in Psychedelic Therapy, Spirituality, and Creativity.” *Frontiers in Neuroscience* 12 (MAR): 10–14.

Head, Lesley. 2016. *Hope and Grief in the Anthropocene*: *Re-conceptualising human-nature relations.* New York, NY: Routledge.

Heim, Robert and Robert Gordon Wasson. 1958. “Les Champignons Hallucinogenes Du Mexique.” *Museum National d’Histoire Naturelle*

Hernández Castillo, R.A. 2019. Racialized Geographies and the “War on Drugs”: Gender Violence, Militarization, and Criminalization of Indigenous Peoples. *The Journal of Latin American and Caribbean Anthropology*.

Hobbs, J. J. 1998. Troubling Fields: The Opium Poppy in Egypt. *Geographical Review* 88 (1): 64-85.

Hochstein, F. A. and Anita M. Paradies. 1957. “Alkaloids of Banisteria caapi and Prestoni amazonicum.” *Journal of the American Chemical Society* 79 (21): 5735-5736.

Hofmann, Albert, Roger Heim, Arthur Brack, and H. A. N. S. Kobel. 1958. “Psilocybin, ein psychotroper Wirkstoff aus dem mexikanischen Rauschpilz Psilocybe mexicana Heim.” *Experientia* 14 (3): 107-109.

Hofmann, Albert and F. Troxler. 1959. “Identifizierung von Psilocin.” *Experientia* 15 (3): 101-102.

Hofmann, Albert, Roger Heim, Arthur Brack, H. Kobel, A. Frey, H. Ott, Th Petrzilka, and F. Troxler. 1959. “Psilocybin und Psilocin, zwei psychotrope Wirkstoffe aus mexikanischen Rauschpilzen.” *Helvetica Chimica Acta* 42 (5): 1557-1572.

Hollander, Gail. 2010. “Power Is Sweet: Sugarcane in the Global Ethanol Assemblage.” *Journal of Peasant Studies* 37 (4): 699–721.

Holze, Friederike, Toya V. Caluori, Patrick Vizeli, and Matthias E. Liechti. 2021. “Safety Pharmacology of Acute LSD Administration in Healthy Subjects.” *Psychopharmacology* no. 0123456789.

Hood, Ralph W. 1975. “The Construction and Preliminary Validation of a Measure of Reported Mystical Experience.” *Journal for the Scientific Study of Religion* 14 (1): 29–41.

Horák, M., Hasíková, L. and Verter, N., 2018. “Therapeutic potential ascribed to ayahuasca by users in the Czech republic.” *Journal of psychoactive drugs* 50 (5): 430-436.

Hornberger, J. 2018. “From drug safety to drug security: A contemporary shift in the policing of health.” *Medical anthropology quarterly* 32 (3): 365-383.

Horner, R., 2016. “Pharmaceuticals and the Global South: A Healthy Challenge for Development Theory?” *Geography Compass* 10 (9): 363-377.

Howard, J.H., 1956. “An Oto-Omaha Peyote Ritual.” *Southwestern Journal of Anthropology* 12 (4): 432-436.

Jacobson, R. 2014. “Turn on, tune in, get better: Psychedelic drugs hold medical promise.” *Scientific American* 25 (5): 24-25.

James, William. 2004 [1902]. *The Varieties of Religious Experience.* New York, NY Barnes & Noble Classics.

Jansen, A. 1991. *Cannabis in Amsterdam: A Geography of Hashish and Marihuana.* Muiderberg, The Netherlands: D. Coutinho.

Jay, Mike. 2019. *Mescaline: A Global History of the First Psychedelic*. New Haven, CT: Yale University Press.

Jayne, M., Holloway, S.L. and Valentine, G., 2006. “Drunk and disorderly: alcohol, urban life and public space.” *Progress in human geography* 30 (4): 451-468.

Jayne, M., Valentine, G. and Holloway, S.L. 2008. “Geographies of alcohol, drinking and drunkenness: A review of progress.” *Progress in Human Geography* 32 (2): 247-263.

Jayne, M., Valentine, G. and Holloway, S.L., 2010. “Emotional, embodied and affective geographies of alcohol, drinking and drunkenness.” *Transactions of the Institute of British Geographers* 35 (4): 540-554.

Jayne, M., Valentine, G. and Holloway, S.L. 2012. “What use are units? Critical geographies of alcohol policy.” *Antipode* 44 (3): 828-846.

Johansen, P. 2015. “Psychedelics Not Linked to Mental Health Problems or Suicidal Behavior: A Population Study.” *Journal of Psychopharmacology* 29: 270-279.

Johnson, J.B. 1940. “Note on the discovery of teonanacatl.” *American Anthropologist* 42 (3): 549-550.

Johnson, Matthew W. 2018. “Psychiatry Might Need Some Psychedelic Therapy.” *International Review of Psychiatry* 30 (4): 285–90.

Johnson, Matthew W. 2021. “Consciousness, Religion, and Gurus: Pitfalls of Psychedelic Medicine.” *ACS Pharmacology and Translational Science* 4 (2): 578–81.

Johnson, Matthew W., Albert Garcia-Romeu, and Roland R. Griffiths. 2017. “Long-Term Follow-up of Psilocybin-Facilitated Smoking Cessation.” *American Journal of Drug and Alcohol Abuse* 43 (1): 55–60.

Johnson, M. W., Hendricks, P. S., Barrett, F. S. and Griffiths, R. R. 2019. “Classic Psychedelics: An Integrative Review of Epidemiology, Therapeutics, Mystical Experience, and Brain Network Function.” *Pharmacology and Therapeutics* 197: 83–102.

Johnson, M. W., Peter S. Hendricks, Frederick S. Barrett, and Roland R. Griffiths. 2019. “Classic Psychedelics: An Integrative Review of Epidemiology, Therapeutics, Mystical Experience, and Brain Network Function.” *Pharmacology and Therapeutics* 197: 83–102.

Johnston, Lloyd D., Richard A. Meich, Patrick M. O’Malley, Jerald G. Bachman, John E. Schulenberg, Megan E. Patrick. “Monitoring the Future: National Survey Results on Drug Use 1975-2021.” *The National Institute on Drug Abuse at The National Institutes of Health.* http://www.monitoringthefuture.org/pubs/monographs/mtf- vol2_2020.pdf

Jones, P. N. 2007. “The Native American Church, peyote, and health: Expanding consciousness for healing purposes.” *Contemporary Justice Review* 10 (4): 411-425.

Jylkkä, Jussi. 2021. “Reconciling Mystical Experiences with Naturalistic Psychedelic Science: Reply to Sanders and Zijlmans.” *ACS Pharmacology and Translational Science* 4 (4): 1468–70.

Kedron, P. and Bagchi-Sen, S. 2011. “US market entry processes of emerging multinationals: A case of Indian pharmaceuticals.” *Applied Geography* 31 (2): 721-730.

Kelmendi, Benjamin, Philip Corlett, Mohini Ranganathan, Cyril D’Souza, and John H. Krystal. 2016. “The Role of Psychedelics in Palliative Care Reconsidered: A Case for Psilocybin.” *Journal of Psychopharmacology* 30 (12): 1212–14.

Kettner, Hannes, Sam Gandy, Eline C.H.M. Haijen, and Robin L. Carhart-Harris. 2019. “From Egoism to Ecoism: Psychedelics Increase Nature Relatedness in a State

Mediated and Context- Dependent Manner." *International Journal of Environmental Research and Public Health* 16 (24).

Kinkaid, E. 2019. "Can assemblage think difference? A feminist critique of assemblage geographies." *Progress in Human Geography* 1-16.

King, Ryan S. 2008. "Disparity By Geography: The War on Drugs in America's Cities," no. May: 1–34. https://www.opensocietyfoundations.org/sites/default/files/disparity_geography_20080501.pdf.

King, S. 2013. Context matters: Studying Indigenous religions in North America. *Religion Compass* 7(November): 498–507.

Klein, A. 2008. *Drugs and the World*. Reaktion Books.

Kracht, B.R. 2018. *Religious Revitalization Among the Kiowas: The Ghost Dance, Peyote, and Christianity*. University of Nebraska Press.

Krebs, Teri S., and Pål Ørjan Johansen. 2013. "Psychedelics and Mental Health: A Population Study." *PloS One* 8 (8): 1-10.

Krediet, Erwin, Tijmen Bostoen, Joost Breeksema, Annette van Schagen, Torsten Passie, and Eric Vermetten. 2020. "Reviewing the Potential of Psychedelics for the Treatment of PTSD." *International Journal of Neuropsychopharmacology* 23 (6): 385–400.

Krippner, Stanley; David Luke. 2009. "Psychedelics and Species Connectedness." In David Jay Brown (ed.) *Bulletin: Psychedelics and Ecology, MAPS* 19 (1): 12-15.

Kuzmarov, J. 2018. "The U.S. War on Drugs: From Its Origins to The Age of Trump." *Historians for Peace & Democracy, Broadsides for The Trump Era, Issue: 2*, March 14, 2018.

Krieg, L. J., M. Berning, and A. Hardon. 2017. 'Anthropology with algorithms: An exploration of online drug knowledge using digital methods'. *Medicine Anthropology Theory* 4 (3): 21-52.

Kuypers, K. P. C. 2019. "Psychedelic Medicine: The Biology Underlying the Persisting Psychedelic Effects." *Medical Hypotheses* 125: 21–24.

Kwan, P., R.D. Peterson, C. R. Browning, L. A. Burrington, C. A. Calder, and L. J. Krivo. 2008. "Reconceptualizing Sociogeographic Context for the Study of Drug Use, Abuse, and Addiction." In: *Geography and Drug Addiction*, edited by Y.F. Thomas, D. Richardson, and I. Cheung, 437-466. Dordrecht, The Netherlands: Springer.

La Barre, Weston. 1938. *The Peyote Cult*. Yale University Publications in Anthropology, 19. New Haven: Yale University Press

La Barre, Weston. 1939. 'Note on Richard Schultes' "The Appeal of Peyote"'. *American Anthropologist* 41 (2): 340-342.

La Barre, Weston. 1960. "Twenty years of peyote studies." *Current Anthropology* 1 (1): 45-60.

Labate, Beatriz C., De Rose, I.S. and dos Santos, R.G. 2008. *Ayahuasca religions: A comprehensive bibliography and critical essays*. MAPS, Multidisciplinary Association for Psychedelic Studies.

Labate, Beatriz C., Camurça, D.M., Brissac, S. and Ott, J. 2011. "Hoasca ethnomedicine: Traditional use of 'nove vegetais' ('nine herbs') by the União do Vegetal." *The internationalization of ayahuasca. Zürich: Lit Verlag*, 49-69.

Labate, Beatriz C. and Jungaberle, H. (eds). 2011. *The internationalization of ayahuasca* (Vol. 16). LIT Verlag Münster.

Labate, Beatriz C. and Kevin Feeney. 2012. "Ayahuasca and the process of regulation in Brazil and internationally: Implications and challenges." *International Journal of Drug Policy* 23 (2): 154-161.

Labate, Beatriz C. and Bouso, J.C., 2013. Ayahuasca y Salud (Ayahuasca and Health). *Barcelona: LosLibros de La Liebre de Marzo, Coleccin Cogniciones*.

Labate, Beatriz C. and Clancy Cavnar (eds). 2013. *The therapeutic use of ayahuasca*. Springer Science & Business Media.

Labate, Beatriz C. and Clancy Cavnar (eds). 2014. *Ayahuasca shamanism in the Amazon and beyond*. Oxford Ritual Studies.

Labate, Beatriz C. and MacRae, E., 2016. *Ayahuasca, ritual and religion in Brazil*. Routledge.

Labate, Beatriz C., Clancy Cavnar, Alex K. Gearin (eds). 2016. *The world ayahuasca diaspora: Reinventions and controversies*. Taylor & Francis.

Langdon, E. Jean Matteson and Isabel Santana de Rose. "Medicine Alliance: Contemporary Shamanic Networks in Brazil" In: Beatriz Caiuby Labate and Clancy Canvar (eds.), *Ayahuasca Shamanism in the Amazon and Beyond*, New York, NY: Oxford University Press, 81-104.

Langlitz, Nicolas, Erika Dyck, Milan Scheidegger, and Dimitris Repantis. 2021. "Moral Psychopharmacology Needs Moral Inquiry: The Case of Psychedelics." *Frontiers in Psychiatry* 12 (August): 1–6.

Lattin, Don. 2017. *Changing Our Minds: Psychedelic Sacraments and The New Psychotherapy.* Santa Fe, NM: Synergetic Press.

Latour, Bruno. 1996. On actor-network theory: A few clarifications. *Soziale welt*: 369-381.

Latour, Bruno. 1999. On recalling ANT. *Sociological Review* 47 (1): 15-25

Latour, Bruno. 2005. *Reassembling the Social: An Introduction to Actor-Network Theory*. New York, NY: Oxford University Press.

Law, John. 2004. *After method: Mess in social science research*. Routledge.

Lea, Tess. 2015. "What Has Water Got to Do with It? Indigenous Public Housing and Australian Settler-Colonial Relations." *Settler Colonial Studies* 5 (4): 375-386.

Leary, Timothy. 1964. "The Religious Experience: Its Production and Interpretation." *The Psychedelic Review* 1 (3): 324-346.

Leary, Timothy. 1966. "Playboy Interview: TIMOTHY LEARY: a candid converstaion with the controversial ex-harvard professor, prime partisan and prophet of LSD." *Playboy Magazine* 13 (9): 93.

Leary, Timothy, GH Litwin, Ralph Metzner. 1963. "Reactions to Psilocybin Administered in a Supportive Environment." The *Journal of Nervous and Mental Disease,* 137: 561–573.

Leary, Timothy. 1968. *High Priest*. New York, NY: The World Publishing Co.

Lee, William. 1953. *Junkie: Confessions of an Unredeemed Drug Addict*. New York, NY: Ace Books.

Leistle, B. ed., 2016. *Anthropology and Alterity: Responding to the Other*. Taylor & Francis.

Legg, S. 2011. "Assemblage/apparatus: using Deleuze and Foucault." *Area* 43 (2): 128-133.

Lende, D.H., 2005. "Wanting and drug use: A biocultural approach to the analysis of addiction." *Ethos* 33 (1): 100-124.

Letcher, Andy. 2007. "Mad Thoughts on Mushrooms: Discourse and Power in the Study of Psychedelic Consciousness." *Anthropology of Consciousness* 18 (2): 74-97.

Lewin, Louis. 1888. "XXVII. Ueber Anhalonium Lewinii." *Archiv fur Experimentelle Pathologie und Pharmakologie* 24: 401-411.

Lewin, Louis. 1998. *Phantastica: A Classic Survey on the Use and Abuse of Mind-Altering Plants*. Rochester, VT: Park Street Press.

Lifshitz, M., E.O. Sheiner, and L. J. Kirmayer. 2018. "Cultural Neurophenomenology of Psychedelic Thought: Guiding the 'Unconstrained' Mind through Ritual Context." *The Oxford Handbook of Spontaneous Thought: Mind-Wandering, Creativity, and Dreaming*, 573–94.

Londoño, David Sulkin. 2012. *People of Substance: An Ethnography of Morality in the Colombian Amazon*. Toronto, Canada: University of Toronto Press.

Lucas, M., 2005. On not passing the acid test: Bad trips and initiation. *Anthropology of Consciousness* 16 (1): 25-45.

Luna, Luis Eduardo. 1984a. "The healing practices of a Peruvian shaman." *Journal of Ethnopharmacology* 11 (2): 123-133.

Luna, Luis Eduardo. 1984b. "The concept of plants as teachers among four mestizo shamans of Iquitos, northeastern Peru." *Journal of Ethnopharmacology* 11 (2): 135-156.

Luna, Luis Eduardo. 1986a. "Apéndices" *América Indígena* 46 (1): 247-251.

Luna, Luis Eduardo. 1986b. *Vegetalismo: Shamanism among the Mestizo Population of the Peruvian Amazon*. (Acta Universitatis Stockholmensis, Stockholm Studies in Comparative Religion No. 27) Almquist and Wiksell International, Stockholm, Sweden.

Luna, Luis Eduardo. 2011. "Indigenous and Mestizo Use of Ayahuasca. An Overview." *The Ethnopharmacology of Ayahuasca* 661 (2): 1–21.

Luna, Luis Eduardo and Steven F. White (eds). 2016. *Ayahuasca reader: Encounters with the Amazon's Sacred Vine*. Santa Fe and London: Synergetic Press.

Ly, Calvin, Alexandra C. Greb, Lindsay P. Cameron, Jonathan M. Wong, Eden V. Barragan, Paige C. Wilson, Kyle F. Burbach, et al. 2018. "Psychedelics Promote Structural and Functional Neural Plasticity." *Cell Reports* 23 (11): 3170–82.

Ly, Calvin, Alexandra C. Greb, Maxemiliano V. Vargas, Whitney C. Duim, Ana Cristina G. Grodzki, Pamela J. Lein, and David E. Olson. 2021. "Transient Stimulation with Psychoplastogens Is Sufficient to Initiate Neuronal Growth." *ACS Pharmacology and Translational Science* 4 (2): 452–60.

Lyons, Taylor, and Robin L. Carhart-Harris. 2018a. "Increased Nature Relatedness and Decreased Authoritarian Political Views after Psilocybin for Treatment-Resistant Depression." *Journal of Psychopharmacology* 32 (7): 811–19.

Lyons, Taylor, and Robin Lester Carhart-Harris. 2018. “More Realistic Forecasting of Future Life Events after Psilocybin for Treatment-Resistant Depression.” *Frontiers in Psychology* 9 (OCT): 1–11

MacLean, Katherine A., Matthew W. Johnson, and Roland R. Griffiths. 2011. “Mystical Experiences Occasioned by the Hallucinogen Psilocybin Lead to Increases in the Personality Domain of Openness.” *Journal of Psychopharmacology* 25 (11): 1453–61.

MacLean, Katherine A., Jeannie-Marie S. Leoutsakos, Matthew W. Johnson and Roland R. Griffiths. 2012. “Factor Analysis of the Mystical Experience Questionnaire: A Study of Experiences Occasioned by the Hallucinogen Psilocybin.” *Journal for the Scientific Study of Religion* 51 (4): 721–37

Madsen, Martin Korsbak, Patrick Mac Donald Fisher, Dea Siggaard Stenbæk, Sara Kristiansen, Daniel Burmester, Szabolcs Lehel, Tomas Páleníček, et al. 2020. “A Single Psilocybin Dose Is Associated with Long-Term Increased Mindfulness, Preceded by a Proportional Change in Neocortical 5-HT2A Receptor Binding.” *European Neuropsychopharmacology* 1–10.

Malins, Peta. 2004. “Machinic assemblages: Deleuze, Guattari and an ethico-aesthetics of drug use.” *Janus head* 7 (1): 84-104.

Malone, Tara C., Sarah E. Mennenga, Jeffrey Guss, Samantha K. Podrebarac, Lindsey T. Owens, Anthony P. Bossis, Alexander B. Belser, Gabrielle Agin-Liebes, Michael P. Bogenschutz, and Stephen Ross. 2018. “Individual Experiences in Four Cancer Patients Following Psilocybin-Assisted Psychotherapy.” *Frontiers in Pharmacology* 9 (APR): 1–6.

Malm, Andreas. 2018. *The Progress of the Storm: Nature and Society in a Warming World.* Brooklyn, NY: Verso.

Malm, Andreas and Alf Hornborg. 2014. “The geology of mankind? A critique of the Anthropocene narrative.” *The Anthropocene Review* 1 (1): 62-69.

Mangini, Mariavittoria. 1998. “Treatment of Alcoholism Using Psychedelic Drugs: A Review of the Program of Research.” *Journal of Psychoactive Drugs* 30 (4): 381–418.

Mansfield, Nick. 2000. *Subjectivity: Theories of the Self from Freud to Haraway*. New York, NY: New York University Press.

Manske, Richard H. F. 1931. “A synthesis of the methyltryptamines and some derivatives.” *Canadian Journal of Research* 5 (5): 592-600.

Marcus, G. and E. Saka. 2006. 'Assemblage', *Theory, Culture & Society*, 23(2-3): 101-106.

Marderosian A. H., H.V. Pinkley and M. F. Dobbins. 1968. "Native use and occurence of N, N-dimethyltryptamine in the leaves of Banisteriopsis rusbyana." *American Journal of Pharmacy* 140 (5):137-147.

Marlan, D. 2019. "Beyond Cannabis: Psychedelic Decriminalization and Social Justice," *Lewis & Clark Law Review* 23 (3): 851-892.

Mas, Catherine. 2022a. *Culture in the Clinic: Miami and the Making of Modern Medicine.* Chapel Hill, NC: University of North Carolina Press.

Mas, Catherine. 2022b. "'Falling-Out' in Miami and the History of Culture in American Medicine." *Bulletin of the History of Medicine* 96 (1): 102–34.

Maslow, Abraham. 1971. *The Farther Reaches of Human Nature*. New York, NY: Penguin.

Mason, Natasha L., Elisabeth Mischler, Malin V. Uthaug, and Kim P.C. Kuypers. 2019. "Sub-Acute Effects of Psilocybin on Empathy, Creative Thinking, and Subjective Well-Being." *Journal of Psychoactive Drugs* 0 (0): 1–12.

Massey, D. 2005. *For Space*. London: Sage.

Matthewson, K. 2008. "Drug Geographies." In: *Placing Latin America: Contemporary Themes in Human Geography*, edited by E. L. Jackiewicz and F. J. Bosco, 137-158. Lanhan, MD: Rowman and Littlefield.

McCann, Eugene J. 2008. "Expertise, truth, and urban policy mobilities: global circuits of knowledge in the development of Vancouver, Canada's 'four pillar' drug strategy." *Environment & Planning A* 40 (4): 885–904.

McCann, Eugene. 2011. "Veritable Inventions: Cities, Policies and Assemblage." *Area* 43 (2): 143–147.

McClelland, Mac. "The Psychedelic Miracle." Rolling Stone. March 09, 2017. Accessed January 17, 2018. http://www.rollingstone.com/culture/features/how-doctors-treat-mental-illness-with-psychedelic-drugs-w470673.

McCorvy, John D., Reid H.J. Olsen, and Bryan L. Roth. 2016. "Psilocybin for Depression and Anxiety Associated with Life-Threatening Illnesses." *Journal of Psychopharmacology* 30 (12): 1209–10.

McCoy, C.B., Metsch, L.R., Inciardi, J.A., Anwyl, R.S., Wingerd, J. and Bletzer, K., 1996. Sex, drugs, and the spread of HIV/AIDS in Belle Glade, Florida. *Medical Anthropology Quarterly* 10 (1): 83-93.

McFarlane, C. 2011a. 'Assemblage and critical urbanism' *City* 15 (2): 204-224.

McFarlane, C. 2011b. The city as assemblage: dwelling and urban space. *Environment and Planning D: Society and Space* 29 (4): 649-671.

McFarlane, C. and B. Anderson. 2011. 'Thinking with assemblage' *Area*, 43(2): 162-164

McGuirk, P.M., Mee, K.J. and Ruming, K.J. 2016. "Assembling Urban Regeneration? Resourcing Critical Generative Accounts of Urban Regeneration through Assemblage." *Geography Compass* 10 (3): 128-141.

McKenna, Dennis J. and G. H. Neil Towers. 1984a. "Biochemistry and pharmacology of tryptamines and β-carbolines A minireview." *Journal of Psychoactive Drugs* 16 (4): 347-358.

McKenna, Dennis J., GH Neil Towers, and F. Abbott. "Monoamine oxidase inhibitors in South American hallucinogenic plants: tryptamine and β-carboline constituents of ayahuasca." *Journal of Ethnopharmacology* 10 (2): 195-223.

McKenna, Dennis J., GH Neil Towers and F. S. Abbott. 1984c. "Monoamine oxidase inhibitors in South American hallucinogenic plants Part 2: Constituents of orally-active Myristicaceous hallucinogens." *Journal of Ethnopharmacology* 12 (2): 179-211.

McKenna, Dennis J., Luis Eduardo Luna, and C. H. N. Towers. 1986. "Ingredientes biodinamicos en las plantas que se mezclan al ayahuasca: Una farmacopea tradicional no identificada." *America Indígena* 46:73-98.

McKenna, Dennis J., Callaway, J.C. and Grob, C.S., 1998. The scientific investigation of Ayahuasca: a review of past and current research. *The Heffter Review of Psychedelic Research* 1(65-77): 195-223.

McKenna, Terence. 1992. *The Food of the Gods: The Search for the Original Tree of Knowledge: A Radical History of Plants, Drugs, and Human Evolution*. New York, NY: Bantam Books.

McKenna, Terence. 2012. "Psychedelic Society" In: Robert Forte (ed). *Entheogens and the Future of Religion*. Rochester, VT: Park Street Press.

McLafferty, S. 2008. Placing Substance Abuse: Geographical Perspectives on Substances Use and Addiction. In *Geography and Drug Addiction*, edited by Y.F. Thomas, D. Richardson, and I. Cheung, 1-16. Dordrecht, The Netherlands: Springer.

Miceli McMillan, Riccardo. 2021. “Global Bioethical Challenges of Medicalising Psychedelics.” *Journal of Psychedelic Studies* 5 (2): 57–64.

McSweeney, Kendra, David J. Wrathall, Erik A. Nielsen, and Zoe Pearson. 2018. “Grounding Traffic: The Cocaine Commodity Chain and Land Grabbing in Eastern Honduras.” *Geoforum* 95 (June): 122–132.

Mendoza, S., Rivera, A.S. and Hansen, H.B. 2019. Re-racialization of Addiction and the Redistribution of Blame in the White Opioid Epidemic. *Medical anthropology quarterly* 33 (2): 242-262.

Mennis, Jeremy, Gerald J. Stahler, and David A. Baron. 2012. “Geographic Barriers to Community-Based Psychiatric Treatment for Drug-Dependent Patients.” *Annals of the Association of American Geographers* 102 (5): 1093–1103.

Merriam, A.P. and W.L d’Azevedo. 1957. “Washo Peyote Songs.” *American Anthropologist* 59 (4): 615-641.

Metzinger, Thomas. 2003. *Being No One*. Cambridge, MA: MIT Press.

Metzner, Ralph. 1963. “The Pharmacology of Psychedelic Drugs I: Chemical and Biochemical Aspects.” *The Psychedelic Review* 1: 69-115.

Metzner, Ralph. 2017. *Ecology of Consciousness: The Alchemy of Personal, Collective, and Planetary Transformation*. Oakland, California: Raincoast Books.

Miller, Richard J. 2015. *Drugged: The Science and Culture Behind Psychotropic Drugs*. New York, NY: Oxford University Press.

Miller, R. L. 2017. *Psychedelic Medicine: The Healing Powers of LSD, MDMA, Psilocybin, and Ayahuasca*. Rochester, Vermont: Park Street Press.

Millière, Raphaël. 2017. “Looking for the Self: Phenomenology, Neurophysiology and Philosophical Significance of Drug-Induced Ego Dissolution.” *Frontiers in Human Neuroscience* 11 (245): 1-22.

Mintz, Sidney W. 1986. *Sweetness and power: The place of sugar in modern history*. Penguin.

Monteith, Andrew. 2016. “‘The Words of McKenna’: Healing, Political Critique, and the Evolution of Psychonaut Religion since the 1960s Counterculture.” *Journal of the American Academy of Religion* 84 (4): 1081–1109.

Morales-Garcia, Jose A., Javier Calleja-Conde, Jose A. Lopez-Moreno, Sandra Alonso-Gil, Marina Sanz-SanCristobal, Jordi Riba, and Ana Perez-Castillo. 2020. “N,N-

Dimethyltryptamine Compound Found in the Hallucinogenic Tea Ayahuasca, Regulates Adult Neurogenesis in Vitro and in Vivo." *Translational Psychiatry* 10 (1).

Moreno, Francisco A., Christopher B. Wiegand, E. Keolani Taitano, and Pedro L. Delgado. 2006. "Safety, tolerability, and efficacy of psilocybin in 9 patients with obsessive-compulsive disorder." *The Journal of clinical psychiatry* 67 (11): 1735-1740.

Musto, David F. 1972. "The Marihuana Tax Act of 1937." *Arch Gen Psychiatry* 26 (2): 101–108.

Müller, Martin, and Carolin Schurr. 2016. "Assemblage Thinking and Actor-Network Theory: Conjunctions, Disjunctions, Cross-Fertilisations." *Transactions of the Institute of British Geographers* 41 (3): 217–29.

Mulukom, Valerie van, Ruairi E. Patterson, and Michiel van Elk. 2020. "Broadening Your Mind to Include Others: The Relationship between Serotonergic Psychedelic Experiences and Maladaptive Narcissism." *Psychopharmacology* 237 (9): 2725–37.

Murphy-Beiner, Ashleigh. 2021. "Profitdelic: A New Psychedelic Conference Trend." In: Beatriz C. Labate and Clancy Canvar (eds) 2021, *Psychedelic Justice: Toward a Diverse and Equitable Psychedelic Culture*, Santa Fe, NM: 97-102.

Muttoni, Silvia, Maddalena Ardissino, and Christopher John. 2019. "Classical psychedelics for the treatment of depression and anxiety: a systematic review." *Journal of affective disorders* 258: 11-24.

Myerhoff, Barbara G., 1970. The deer-maize-peyote symbol complex among the Huichol Indians of Mexico. *Anthropological Quarterly* 43 (2): 64-78.

Myerhoff, Barbara G., 1976. *Peyote hunt: The sacred journey of the Huichol Indians*. Cornell University Press.

Nail, Thomas. 2017. What is an Assemblage? *SubStance* 46 (1): 21-37.

Narby, Jeremy and Rafael Chanchari Pizuri. 2021. *Ayahuasca, Tobacco, and the Pursuit of Knowledge*. Novato, CA: New World Library.

Naranjo, Plutarco. 1970. *Ayahuasca: Religión y Medicina*. Quito, Ecuador: Editorial Universitaria, Universidad Central del Ecuador.

Nayak, Sandeep M, Roland R Griffiths, James W Moore, and David Luke. 2022. "A Single Belief-Changing Psychedelic Experience Is Associated With Increased

Attribution of Consciousness to Living and Non-Living Entities." *Frontiers in Psychology* 13: 1–8.

Nichols, David E. 2016. "Psychedelics." *Pharmacological Reviews* 68 (2): 264-355.

Nichols, David E. and Charles S. Grob. 2018. "Is LSD toxic?" *Forensic Science International*. 284: 141-145.

Nichols, David E., Matthew W. Johnson, and C. D. Nichols. 2017. "Psychedelics as Medicines: An Emerging New Paradigm." *Clinical Pharmacology and Therapeutics* 101 (2): 209–219.

Nielson, Elizabeth M., and Jeffrey Guss. 2018. "The Influence of Therapists' First-Hand Experience with Psychedelics on Psychedelic-Assisted Psychotherapy Research and Therapist Training." *Journal of Psychedelic Studies* 2 (2): 64–73.

Noorani, Tehseen, Albert Garcia-Romeu, Thomas C. Swift, Roland R. Griffiths, and Matthew W. Johnson. 2018. "Psychedelic Therapy for Smoking Cessation: Qualitative Analysis of Participant Accounts." *Journal of Psychopharmacology* 32 (7): 756–69.

Noorani, Tehseen. 2020. "Making psychedelics into medicines: The politics and paradoxes of medicalization." *Journal of Psychedelic Studies* 4 (1): 34-39.

Noorani, Tehseen. 2021. "Digital Psychedelia: Hidden Experience and the Challenge of Paranoia." *Somatosphere* 1-10.

Nutt, David. 2016. "Psilocybin for Anxiety and Depression in Cancer Care? Lessons from the Past and Prospects for the Future." *Journal of Psychopharmacology* 30 (12): 1163–64.

O'Keefe, Harold F. 1966. "Compliance with Drug Abuse Control Amendments of 1965." *Food, Drug, Cosmetic Law Journal* 21 (7): 360–367.

O'Reilly, P. O. and A. FUNK. 1964. "Lsd in Chronic Alcoholism." *Canadian Psychiatric Association Journal* 91: 258–61.

Ogden, Laura, N. Heynen, U. Oslender, P. West, K. A. Kassam, and P. Robbins. 2013. "Global Assemblages, Resilience, and Earth Stewardship in the Anthropocene." *Frontiers in Ecology and the Environment* 11 (7): 341–347.

Olson, David E. 2018. "Psychoplastogens: A Promising Class of Plasticity-Promoting Neurotherapeutics." *Journal of Experimental Neuroscience* 12.

Olson, David E. 2021. “The Subjective Effects of Psychedelics May Not Be Necessary for Their Enduring Therapeutic Effects.” *ACS Pharmacology and Translational Science* 4 (2): 563–67.

Ong, A. Stephen Collier, eds. 2005. *Global Assemblages: Technology, Politics and Ethics as Anthropological Problems*. Maiden, MA: Blackwell.

Opler, Marvin K. 1940. “The character and history of the southern Ute peyote rite.” *American Anthropologist* 42 (3): 463-478.

Opler, Morris E. 1938. “The use of peyote by the Carrizo and Lipan Apache tribes.” *American Anthropologist* 40 (2): 271-285.

Opler, Morris Edward. 1945. “Themes as Dynamic Forces in Culture.” *American Journal of Sociology* 51 (3): 198-206.

Osmond Humphry. 1957. “A Review of the Clinical Effects of Psychotomimetic Agents.” *Annals of the New York Academy of Sciences* 66 (3): 418-434.

Osmond, Humphry. 1971. ‘Philosophical aspects of psychedelics’. *Internationale Zeitschrift fur klinische Pharmakologie, Therapie, und Toxikologie. International journal of clinical pharmacology, therapy, and toxicology* 5 (1): 58-64.

Osório, Flávia de L., Rafael F. Sanches, Ligia R. Macedo, Rafael G. Dos Santos, João P. Maia-de-Oliveira, Lauro Wichert-Ana, Draulio B. De Araujo, Jordi Riba, José A. Crippa, and Jaime E. Hallak. 2015. “Antidepressant effects of a single dose of ayahuasca in patients with recurrent depression: a preliminary report.” *Brazilian Journal of Psychiatry* 37: 13- 20.

Oss, O.T. and O. N. Oeric with I. T. Obscure and Kat. 1976. *Psilocybin: Magic Mushroom Grower’s Guide: A Handbook for Psilocybin Enthusiasts*. Berkeley, CA: And/Or Press.

Osto, Douglas. 2016. *Altered States; Buddhism and Psychedelic Spirituality in America.* New York, NY: Columbia University Press, 2016.

Ott, Jonathan. 1994. *Ayahuasca Analogues: Pangaean Entheogens.* Kennewick, WA: Natural Products Co.

Ott, Jonathan. 1996. *Pharmacotheon: Entheogenic Drugs, their Plant Sources and History*. Second Edition. Kennewick, WA: Natural Products Co.

Pace, Brian A., and Neșe Devenot. 2021. “Right-Wing Psychedelia: Case Studies in Cultural Plasticity and Political Pluripotency.” *Frontiers in Psychology* 12: 1-21.

Pahnke, Walter. 1963. “Drugs and Mysticism: An Analysis of the Relationship Between Psychedelic Drugs and the Mystical Consciousness.” Ph.D. dissertation. Harvard University.

Pagán-Jiménez, J., and Carlson, L. 2014. “Recent Archaeobotanical Findings of the Hallucinogenic Snuff Cojoba (Anadenanthera Peregrina (L.) Speg.) in Precolonial Puerto Rico.” *Latin American Antiquity* 25 (1): 101-116.

Page, J.B., Chitwood, D.D., Smith, P.C., Kane, N. and McBride, D.C., 1990. “Intravenous drug use and HIV infection in Miami.” *Medical Anthropology Quarterly* 4 (1): 56-71.

Palhano-Fontes, Fernanda, Dayanna Barreto, Heloisa Onias, Katia C. Andrade, Morgana M. Novaes, Jessica A. Pessoa, Sergio A. Mota-Rolim, et al. 2019. “Rapid Antidepressant Effects of the Psychedelic Ayahuasca in Treatment-Resistant Depression: A Randomized Placebo-Controlled Trial.” *Psychological Medicine* 49 (4).

Pantoja, Mariana Ciavatta. 2014. “Kuntanawa: Ayahuasca, Ethnicity, and Culture” In: Beatriz Caiuby Labate and Clancy Canvar (eds). *Ayahuasca Shamanism in the Amazon and Beyond*. New York, NY: Oxford University Press, 40-58.

Passie, Torsten, Juergen Seifert, Udo Schneider, and Inderk M. Emrich. 2002. “The pharmacology of psilocybin.” *Addiction Biology* 7: 357-364.

Passie, Torsten. 2004. “A History of the Use of Psilocybin in Psychotherapy.” In: Ralph Metzner (ed.) *Sacred Mushroom of Visions: Teonanacatl*. Rochester, VT: Park Street Press.

Passie, Torsten and Benzenhöfer, U. 2018. “MDA, MDMA, and Other ‘Mescaline-Like” Substances in the US Military’s Search for a Truth Drug (1940s to 1960s)’. Drug Testing and Analysis 1 (72): 1–9.

Penglase, B. 2009. “States of Insecurity: Everyday Emergencies, Public Secrets, and Drug Trafficker Power in a Brazilian Favela.” *PoLAR: Political and Legal Anthropology Review* 32 (1): 47-63.

Penglase, B. 2010. “The Owner of the Hill: Masculinity and Drug-trafficking in Rio de Janeiro, Brazil.” *The Journal of Latin American and Caribbean Anthropology* 15 (2): 317-337.

Petryna, A., Lakoff, A. and Kleinman, A. (eds.). 2006. *Global pharmaceuticals: Ethics, markets, practices*. Durham, NC: Duke University Press.

Phelps, Joshua, Ravi N. Shah, and Jeffrey A. Lieberman. 2022. “The Rapid Rise in Investment in Psychedelics—Cart Before the Horse.” *JAMA Psychiatry.* 79 (3): 189–190.

Phillips, John. 2006. “Agencement/Assemblage” *Theory, Culture* & Society 23 (2-3): 108-109.

Pilecki, Brian, Jason B. Luoma, Geoff J. Bathje, Joseph Rhea, and Vilmarie Fraguada Narloch. 2021. “Ethical and Legal Issues in Psychedelic Harm Reduction and Integration Therapy.” *Harm Reduction Journal* 18 (1): 1–14.

Pile, Steve. 2010. “Emotions and affect in recent human geography.” *Transactions of the Institute of British Geographers* 35 (1): 5-20.

Pivnick, A., Jacobson, A., Eric, K., Mulvihill, M., Hsu, M.A. and Drucker, E., 1991. “Reproductive Decisions among HIV-infected, Drug-Using Women: The Importance of Mother-Child Coresidence.” *Medical Anthropology Quarterly* 5 (2): 153-169.

Pokorny, Thomas, Katrin H. Preller, Michael Kometer, Isabel Dziobek, Franz X. Vollenweider. 2017. “Effects of Psilocybin on Empathy and Moral Decision-Making.” *International Journal of Neuropsychopharmacology* 20 (9): 747-757.

Pollan, Michael. 2018. *How to Change Your Mind: What the New Science of Psychedelics Teaches Us About Consciousness, Dying, Addiction, Depression, and Transcendence*. New York, NY: Penguin Press.

Pollan, Michael. 2021. *This Is Your Mind On Plants*. New York, NY: Penguin Press.

Prance, G.T., McKenna, D. J., Davis, W., and De Loren, B. eds. 2017. *Ethnopharmacologic Search for Psychoactive Drugs (Vol. 1 and 2): 50 Years of Research*. Santa Fe, NM: Synergetic Press.

Preller, Katrin H., Marcus Herdener, Thomas Pokorny, Amanda Planzer, Rainer Kraehenmann, Philipp Stämpfli, Matthias E. Liechti, Erich Seifritz, and Franz X. Vollenweider. 2017. “The Fabric of Meaning and Subjective Effects in LSD-Induced States Depend on Serotonin 2A Receptor Activation.” *Current Biology* 27 (3): 451–57.

Price, David H. 2007a. “Buying a Piece of Anthropology Part 1: Human Ecology and Unwitting Anthropological Research for the CIA.” *Anthropology Today* 23 (3): 8–13.

Price, David H. 2007b. “Buying a Piece of Anthropology. Part Two: The CIA and our tortured past.” *Anthropology Today* 23:5, 17–22.

Proudfoot, J. 2017. Drugs, addiction, and the social bond. *Geography compass* 11 (7): e12320

Provine, D. H. 2008. *Unequal Under Law:Race in the war on Drugs.* Chicago, IL: University of Chicago Press.

Psilocybin Alpha. 2022. 'Psychedelic Sector Data Bank'. Available online at https://psilocybinalpha.com/data (accessed 16 May 2022).

Puar, J. 2013. "'I would rather be a cyborg than a goddess': Intersectionality, Assemblage, and Affective Politics." *Meritum, revista de Direito da Universidade FUMEC* 8 (2): 371-390.

Pugh, J. and K. Grove. 2017. Assemblage, transversality and participation in the neoliberal university. *Environment and Planning D: Society and Space* 35 (6): 1134-1152.

Punch, M. 2005. "Problem drug use and the political economy of urban restructuring: heroin, class and governance in Dublin." *Antipode* 37 (4): 754-774.

Ray, R.R. and Lassiter, K.S. 2016. "Ayahuasca Treatment Center Safety for the Western Seeker." *Anthropology of Consciousness* 27 (2): 121-150.

Rätsch, Christian. 2005. *The Encyclopedia of Psychoactive Plants: Ethnopharmacology and its Applications*. Rochester, VT: Park Street Press.

Read, Jason. 2009. "A Genealogy of Homo-Economicus: Neoliberalism and the Production of Subjectivity." *Foucault Studies* 6: 25-36.

Reckweg, Johannes, Natasha L. Mason, Cees van Leeuwen, Stefan W. Toennes, Theis H. Terwey, and Johannes G. Ramaekers. 2021. "A Phase 1, Dose-Ranging Study to Assess Safety and Psychoactive Effects of a Vaporized 5-Methoxy-N, N-Dimethyltryptamine Formulation (GH001) in Healthy Volunteers." *Frontiers in Pharmacology* 12 (November): 1–12. https://doi.org/10.3389/fphar.2021.760671.

Redford, Audrey and Benjamin Powell. 2016. "Dynamics of Intervention in the War on Drugs: The Buildup to the Harrison Act of 1914." *Independent Review* 20 (4): 509-530.

Reichel-Dolmatoff, Gerardo. 1971. *Amazonian Cosmos: The Sexual and Religious Symbolism of the Tukano Indians*. Chicago, IL: University of Chicago Press,

Reichel-Dolmatoff, Gerardo. 1975. *The Shaman and the Jaguar: A Study of Narcotic Drugs among the Indians of Colombia*. Philadelphia, PA: Temple University Press.

Reichel-Dolmatoff, Gerardo. 1978. *Beyond the Milky Way: Hallucinatory Imagery of the Tukano Indians. A Book on Lore. (UCLA Latin American Studies Vol. 42)*. Los Angeles, CA: University of California Press.

Relman, Arnold S. 1980. “The new medical-industrial complex.” *New England Journal of Medicine* 303 (17): 963-970.

Richards, William A. 2008. "The Phenomenology and Potential Religious Import of States of Consciousness Facilitated by Psilocybin." *Archive For The Psychology Of Religion / Archiv Für Religionspsychologie* 30 (1): 189-199.

Richards, William A. 2016. *Sacred Knowledge: Psychedelics and Religious Experiences*. New York, NY: Columbia University Press

Rincón-Ruiz, Alexander, and Giorgos Kallis. 2013. “Caught in the Middle, Colombia’s War on Drugs and Its Effects on Forest and People.” *Geoforum* 46: 60–78.

Roberts, Thomas B. 2013. *The Psychedelic Future of the Mind: How Entheogens Are Enhancing Cognition, Boosting Intelligence, and Raising Values*. Rochester, VT: Park Street Press.

Rodd, R. 2018. “It’s all you! Australian ayahuasca drinking, spiritual development, and immunitary individualism.” *Critique of Anthropology* 38 (3): 325-345

Rodríguez Arce, José Manuel, and Michael James Winkelman. 2021. “Psychedelics, Sociality, and Human Evolution.” *Frontiers in Psychology* 12 (September): 1–26.

Rose, Isabel Santa de. 2010. “Tata Endy Rekoe—Fogo Sagrado: Encontros entre os Guarani, a ayahuasca e o Caminho Vermelho.” PhD dissertation, Universidade Federal de Santa Catarina, Florianópolis, Brazil.

Roseman, Leor, David J. Nutt, and Robin L. Carhart-Harris. 2018. “Quality of Acute Psychedelic Experience Predicts Therapeutic Efficacy of Psilocybin for Treatment-Resistant Depression.” *Frontiers in Pharmacology* 8 (JAN).

Ross, Stephen, Anthony Bossis, Jeffrey Guss, Gabrielle Agin-Liebes, Tara Malone, Barry Cohen, Sarah E. Mennenga, et al. 2016. “Rapid and Sustained Symptom Reduction Following Psilocybin Treatment for Anxiety and Depression in Patients with Life-Threatening Cancer: A Randomized Controlled Trial.” *Journal of Psychopharmacology* 30 (12): 1165–80.

Ross, Anna, Gary R. Potter, Monica J. Barratt, and Judith A. Aldridge. 2020. “‘Coming Out’: Stigma, Reflexivity and the Drug Researcher’s Drug Use.” *Contemporary Drug Problems* 47 (4): 268–85.

Ruck, Carl. A. P., Jeremy Bigwood, D. Staples, Jonathan Ott, and Robert Gordon Wasson. 1979. “Entheogens.” *Journal of Psychedelic Drugs* 11 (1–2): 145–146.

Rucker, James J. H., Luke A. Jelen, Sarah Flynn, Kyle D. Frowde, and Allan H. Young. 2016. “Psychedelics in the Treatment of Unipolar Mood Disorders: A Systematic Review.” *Journal of Psychopharmacology* 30 (12): 1220–29.

Russell, Andrew and Elizabeth Rahman (eds.). 2016. *The master plant: tobacco in Lowland South America*. New York, NY: Bloomsbury Publishing.

Ryan, Gery W. and H. Russell Bernard. 2003. “Techniques to Identify Themes.” *Field Methods* 15 (1): 86-109.

Rycroft, Simon. 2007. ‘Towards an historical geography of nonrepresentation: making the countercultural subject in the 1960s’. *Social & Cultural Geography* 8 (4): 615-633.

Sanches, Rafael Faria, Flávia de Lima Osório, Rafael G. Dos Santos, Ligia RH Macedo, João Paulo Maia-de-Oliveira, Lauro Wichert-Ana, Draulio Barros de Araujo, Jordi Riba, José Alexandre S. Crippa, and Jaime EC Hallak. 2016. “Antidepressant effects of a single dose of ayahuasca in patients with recurrent depression: a SPECT study.” *Journal of clinical psychopharmacology* 36 (1): 77-81.

Saldaña, Johnny. 2016. *The Coding Manual for Qualitative Researchers. 2nd ed.* Thousand Oaks, CA: Sage.

Saldanha, A. 2006. “Vision and viscosity in Goa's psychedelic trance scene.” *ACME: An International E-Journal for Critical Geographies*, 4 (2): 172-193.

Saldanha, A. 2007. *Psychedelic white: Goa trance and the viscosity of race*. University of Minnesota Press.

Saldanha, A. 2012. ‘Assemblage, materiality, race, capital’. *Dialogues in Human Geography* 2 (2): 194-197.

Samorini, G. 2019. The oldest archeological data evidencing the relationship of Homo sapiens with psychoactive plants: A worldwide overview. *Journal of Psychedelic Studies* 3 (2): 63-80.

Sanders, James W., and Josjan Zijlmans. 2021. “Moving Past Mysticism in Psychedelic Science.” *ACS Pharmacology and Translational Science* 4 (3): 1253–55.

Santos, Rafael G. dos, Flávia L. Osório, José Alexandre S. Crippa, and Jaime E.C. Hallak. 2016. “Classical Hallucinogens and Neuroimaging: A Systematic Review of Human Studies: Hallucinogens and Neuroimaging.” *Neuroscience and Biobehavioral Reviews* 71: 715–28.

Sassen, S. 2008. *Territory, authority, rights: From medieval to global assemblages*. Princeton University Press.

Schultes, Richard Evans. 1938. “The appeal of peyote (Lophophora williamsii) as a medicine.” *American Anthropologist* 40 (4): 698-715.

Schultes, Richard Evans. 1939. “Plantae Mexicanae II. The identification of teonanacatl, a narcotic Basidiomycete of the Aztecs.” *Botanical Museum Leaflets* Harvard University 7 (3): 37-54.

Schultes, Richard Evans. 1940. “Teonanacatl: The Narcotic Mushroom of the Aztecs.” *American Anthropologist* 42 (3): 429-443.

Schultes, Richard Evans. 1970. “The botanical and chemical distribution of hallucinogens.” *Annual Review of Plant Physiology* 21: 571-594.

Schultes, Richard Evans. 1972. “De Plantis Toxicariis E Mundo Novo Tropicale Commentationes XI: The Ethnotoxicological Significance of Additives to New World Hallucinogens.” *Plant Science Bulletin* 18 (4).

Schultes, Richard Evans and Albert Hofmann. 1980. *The Botany and Chemistry of Hallucinogens*. Springfield, IL: C. C. Thomas Pub Limited.

Schultes, Richard Evans and N. Farnsworth. 1980. ETHNOMEDICAL, BOTANICAL AND PHYTOCHEMICAL ASPECTS OF NATURAL HALLUCINOGENS. *Botanical Museum Leaflets, Harvard University* 28 (2): 123-214.

Schultes, Richard Evans, Albert Hofmann, and Christian Rätsch. 1998. *Plants of the Gods: Their Sacred, Healing, and Hallucinogenic Powers*. Rochester: Healing Arts.

Schneider, J. and Schneider, P. 2008. “The anthropology of crime and criminalization.” *Annual review of anthropology* 37: 351-373.

Schaefer, Stacy B. and Peter T. Furst (eds). 1996. *People of the Peyote: Huichol Indian History, Religion & Survival*. Albuquerque, NM: University of New Mexico Press.

Sessa, Ben. 2012. *The Psychedelic Renaissance: Reassessing the Role of Psychedelic Drugs in 21st Century Psychiatry and Society*. London: Muswell Hill Press.

Sessa, Ben. 2018. “The 21st Century Psychedelic Renaissance : Heroic Steps Forward on the Back of an Elephant.” *Psychopharmacology* (235): 551–560.

Sententia, Wrye. 2004. “Neuroethical Considerations: Cognitive Liberty and Converging Technologies for Improving Human Cognition.” *Annals of the New York Academy of Sciences* 1013 (1): 221-228.

Shanon, Benny. 2010. “The epistemics of ayahuasca visions.” *Phenomenology and the Cognitive Sciences* 9 (2): 263-280.

Shao, Ling Xiao, Clara Liao, Ian Gregg, Pasha A. Davoudian, Neil K. Savalia, Kristina Delagarza, and Alex C. Kwan. 2021. “Psilocybin Induces Rapid and Persistent Growth of Dendritic Spines in Frontal Cortex in Vivo.” *Neuron* 109 (16): 2535-2544.e4.

Sharon, D. 2019. “Sacred Sanpedro in ethnoarchaeological context.” *Ñawpa Pacha* 39 (1): 77-120.

Shelton, Richard C., and Peter S. Hendricks. 2016. “Psilocybin and Palliative End-of-Life Care.” *Journal of Psychopharmacology* 30 (12): 1207–8.

Shonle, Ruth. 1925. “Peyote, the giver of visions.” *American Anthropologist* 27 (1): 53-75.

Shroomery – Magic Mushrooms Demystified. “Experiencing Mushrooms.” July 14, 2022. https://www.shroomery.org/6222/Experiencing-Mushrooms.

Shuster, Arthur and Adriana Cappelletti. 2015. “Cognitive Liberty Protecting the Right to Neuroenhancement,” no. Meds 2017: 13–14.

Singer, Merrill. 1997. “Needle Exchange and Aids Prevention: Controversies, Policies and Research.” *Medical Anthropology* 18 (1): 1-12.

Singer, Merrill. 2005. *The face of social suffering: The life history of a street drug addict*. Waveland Press.

Singer, Merrill. 2008. *Drugging the Poor: Legal and Illegal Drugs and Social Inequality*. Long Grove, IL: Waveland Press, Inc.

Singer, M. 2012. “Anthropology and addiction: an historical review.” *Addiction* 107 (10): 1747-1755.

Sjöstedt-Hughes, Peter. 2021. *Modes of Sentience: Psychedelics, Metaphysics, Panpsychism*, London, UK: Psychedelic Press.

Smith, Huston. 1964. “Do drugs have religious import?” *The Journal of Philosophy* 61 (18): 517-530.

Smith, Huston. 2000. *Cleansing the Doors of Perception: The Religious Significance of Entheogenic Plants and Chemicals*. Boulder, CO: First Sentient Publications.

Smith, Huston, Charles Grob, Robert Jesse, Gary Bravo, Alise Agar, and Roger Walsh. 2004. “Do drugs have religious import? A 40-year retrospective.” *Journal of Humanistic Psychology* 44 (2): 120-140.

Smith, C. J. and R. Q. Hanham. 1982. *Alcohol Abuse: Geographical Perspectives*. *Resource Publications in Geography*. Washington, DC: Association of American Geographers.

Smith, David E., Glenn E. Raswyck and Leigh Dickerson Davidson. 2014. "From Hofmann to the Haight Ashbury, and Into the Future: The Past and Potential of Lysergic Acid Diethlyamide." *Journal of Psychoactive Drugs* 46 (1): 3–10.

Snyder, Deborah Parrish. "Ecology, Synergy, and the Biosphere." Produced by Psychedelics Today. PT312, April 22, 2022. Podcast, MP3 audio, 34:02. https://psychedelicstoday.com/2022/04/22/pt312/

Soukup, Rudolf Werner. 2019. "On the Occasion of the 100th Anniversary: Ernst Späth and His Mescaline Synthesis of 1919." *Monatshefte Fur Chemie* 150 (5): 949–956.

Spiegel, David. 2016. "Psilocybin-Assisted Psychotherapy for Dying Cancer Patients - Aiding the Final Trip." *Journal of Psychopharmacology* 30 (12): 1215–17.

Stace, Walter Terence. 1960. *Mysticism and Philosophy*. London, Great Britain: MacMillan and Company Limited.

Stamets, Paul. 2005. *Mycelium Running: How Mushrooms Can Help Save the World*. New York, NY: Ten Speed Press.

Sterk, Claire E. and Kirk W. Elifson. 2000. "Fluctuating Drug Markets and HIV Risk Taking: Female Drug Users and Their Relationship with Drug Markets." *Medical Anthropology* 18 (4): 439-455.

Stewart, O.C., 1974. Origin of the Peyote Religion in the United States. *Plains Anthropologist* 19 (65): 211-223.

Stewart, O.C. 1987. *Peyote religion: A history* (Vol. 181). University of Oklahoma Press.

Strauss, Anselm and Juliet Corbin. 1993. *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*, Second Edition. Thousand Oaks, California: Sage Publications, Inc.

Studerus, Erich, Michael Kometer, Felix Hasler, and Franz X. Vollenweider. 2011. "Acute, Subacute and Long-Term Subjective Effects of Psilocybin in Healthy Humans: A Pooled Analysis of Experimental Studies." *Journal of Psychopharmacology* 25 (11): 1434–52.

Sullivan, R. and Hagen, E. 2002. "Psychotropic Substance-Seeking: Evolutionary Pathology or Adaptation?" *Addiction* 97(4): 389–400.

Sullivan, R., Hagen, E. and Hammerstein, P. 2008. “Revealing the Paradox of Drug Reward in Human evolution.” *Proceedings of the Royal Society B* 275(1640): 1231–1241.

Summergrad, Paul. 2016. “Psilocybin in End of Life Care: Implications for Further Research.” *Journal of Psychopharmacology* 30 (12): 1203–4.

Syvertsen, JL, Bazzi, AR & Mittal, ML 2017, ‘Hope Amidst Horror: Documenting the Effects of the “War On Drugs” Among Female Sex Workers and Their Intimate Partners in Tijuana, Mexico’, *Medical Anthropology* 36 (6): 566-583.

Szára, Stephen I. 1956. “Dimethyltryptamin: Its Metabolism in Man; the Relation of its Psychotic Effect to the Serotonin Metabolism.” *Experientia* 15 (6): 441-442.

Szasz. Thomas. 1974. Ceremonial Chemistry: The ritual persecution of drugs, addicts, and pushers. Garden City, New York: Anchor Press.

Szasz, Thomas. 1996. *Our right to drugs: The case for a free market*. Syracuse University Press.

Tagliazucchi, E., L. Roseman, M. Kaelen, C. Orban, S. D. Muthukumaraswamy, K. Murphy, H. Laufs, R. Leech, J. McGonigle, N. Crossley, E. Bullmore, T. Williams, M. Bolstridge, A. Feilding, D. Nutt, and R. Carhart-Harris. 2016. ‘Increased Global Functional Connectivity Correlates with LSD-Induced Ego Dissolution’. *Current Biology* 26: 1043-1050.

Tanne, Janice Hopkins. 2004. "Humphry Osmond: Psychiatrist Who Investigated LSD, "turned On" Aldous Huxley, and Coined the Word "psychedelic"." *BMJ: British Medical Journal* 328 (7441): 713.

Taylor, J.S., Jasparro, C. and Mattson, K., 2013. Geographers and drugs: A survey of the literature. *Geographical Review* 103 (3): 415-430.

Terry, M., Steelman, K.L., Guilderson, T., Dering, P. and Rowe, M.W., 2006. Lower Pecos and Coahuila peyote: new radiocarbon dates. *Journal of Archaeological Science* 33 (7): 1017-1021.

Terry, Martin and Keeper Trout. 2017. Regulation of peyote (Lophophora Williamsii: cactaceae) in the USA: A historical victory of religión and politics over science and medicine. *Journal of the Botanical Research Institute of Texas* 11 (1): 147-156.

Tezozómoc, F. A. 1975. [1598]. *Crónica Mexicáyotl*. Instituto de Investigaciones Históricas, Universidad Nacional Autónoma de México, México City.

Thomas, Y.F., Richardson, D. and Cheung, I. eds. 2008. *Geography and drug addiction*. Springer Science & Business Media.

Thoricatha, Wesley. 2015. “Giving Psychedelic Meaning: 5 Fascinating Things About Humphry Osmond, The Man Who Coined ‘Psychedelic.’” *Psychedelic Times*, Psychedelic Times, 20 Nov. 2015, https://www.psychedelictimes.com/psychedelic-therapy/giving-psychedelic-meaning-5-fascinating-things-about-humphry-osmond-the-man-who-Invented-the-word-psychedelic.

Timmermann, Christopher, Hannes Kettner, Chris Letheby, Leor Roseman, Fernando E. Rosas, and Robin L. Carhart-Harris. 2021. “Psychedelics Alter Metaphysical Beliefs.” *Scientific Reports* 11 (1): 1–13.

Torres, Constantino Manuel. “El arte de los taíno” in: Torres, Constantino Manuel (ed). *Taíno:Los Descubridos de Colón*. Museo Chileno de Arte Pre-colombino, Santiago, Chile: 9-22.

Torres, Constantino Manuel and D.B. Repke. 2006. *Anadenanthera: visionary plant of ancient South America*. Psychology Press.

Torres, Constantino Manuel. 2008. “Chavín's Psychoactive Pharmacopoeia: The Iconographic Evidence.” Chapter 9 in: William J. Conklin and Jeffrey Quilter. eds. 2008. *Chavín: Art, Architecture and* Culture, pp. 237-257.

Torres, Constantino Manuel. 2017. From Beer to Tobacco: A Probable Prehistory of *Ayahuasca and Yag*é. In: Trance, G.T., McKenna, D. J., Davis, W., and De Loren, B. (eds). *Ethnopharmacologic Search for Psychoactive Drugs (Vol. 1 and 2): 50 Years of Research*. Synergetic Press.

Trutmann, Peter. 2012. “The forgotten mushrooms of ancient Peru” In: *Global Mountain Action* Oreslina, Switzerland, 1-33.

Tupper, Kenneth.W. 2009. “Ayahuasca healing beyond the Amazon: The globalization of a traditional indigenous entheogenic practice.” *Global Networks* 9 (1): 117-136.

Tupper, Kenneth W. and Beatriz C. Labate, 2014. “Ayahuasca, psychedelic studies and health sciences: the politics of knowledge and inquiry into an Amazonian plant brew.” *Current Drug Abuse Reviews* 7 (2): 71-80.

Vollenweider, Franz X. and Michael Kometer. 2010. “The neurobiology of psychedelic drugs: implications for the treatment of mood disorders.” *Nature Reviews Neuroscience* 11 (9): 642-651.

Walker, Margath A. 2015. “Borders, One-Dimensionality, and Illusion in the War on Drugs.” *Environment & Planning D: Society & Space* 33 (1): 84-100.

Walsh, Charlotte. 2013. “Beyond Religious Freedom: Psychedelics and Cognitive Liberty.” In: *Prohibition, Religious Freedom, and Human Rights: Regulating Traditional Drug Use*. Berlin, Heidelberg. Springer: 211-33.

Walsh, Charlotte. 2016. “Psychedelics and Cognitive Liberty: Reimagining Drug Policy through the Prism of Human Rights.” *International Journal of Drug Policy* 29: 80–87.

Wakefield, Stephanie. 2020. *Anthropocene Back Loop: Experimentation in Unsafe Operating Space*. London, UK: Open Humanities Press.

Warf, Barney. 2014. “High Points: An Historical Geography of Cannabis.” *Geographical Review* 104 (4): 414–38.

Wasson, Valentina Pavlovna. 1957. “I Ate the Sacred Mushrooms.” *This Week Magazine* United Newspapers Magazine Corporation.

Wasson, Robert Gordon. 1957. “Seeking the Magic Mushroom.” *Life Magazine* 42 (19): 100-120.

Wasson, Robert Gordon. 1980. *The Wondrous Mushroom: Mycolatry in Mesoamerica.* New York, NY: McGraw-Hill.

Wasson, Robert Gordon and Valentina Pavlovna Wasson. 1957a. *Mushrooms Russia and History*. New York, NY: Pantheon Books.

Wasson, Robert Gordon, Albert Hofmann, and Carl A. P. Ruck. 2008. *The Road to Eleusis: Unveiling the Secret of the Mysteries*. 13th ed. North Atlantic Books: Berkley, California.

Wasson, Robert Gordon, Stella Kramrisch, Jonathan Ott, and Carl A. P. Ruck. 1986. *Persephone’sQuest: Entheogens and the Origins of Religion*. New Haven, CT: Yale University Press.

Watts, Alan. 1968. “Psychedelics and religious experience.” *California Law Review.* 56 (1): 74-85.

Watts, Rosalind, Camilla Day, Jacob Krzanowski, David Nutt, and Robin Carhart-Harris. 2017. “Patients’ Accounts of Increased ‘Connectedness’ and ‘Acceptance’ After Psilocybin for Treatment-Resistant Depression.” *Journal of Humanistic Psychology* 57 (5): 520–64.

Wax, Paul M. 1995. “Elixirs, diluents, and the passage of the 1938 Federal Food, Drug and Cosmetic Act.” *Annals of internal medicine* 122 (6): 456-461.

Webb, H.S. 2011. The Use of Peyote as Treatment for Alcoholism within the NAC Community: Reflections on a Study: An Interview with John Halpern, MD. *Anthropology of Consciousness* 22 (2): 234-244,

Weber, Andreas. 2016. *The Biology of Wonder: Aliveness, Feeling, and the Metamorphosis of Science*. Gabriola Island, BC: New Society Publishers.

Weil, Andrew. 1972. *The Natural Mind: A New Way of Looking at Drugs and the Higher Consciousness*. Boston, MA: Houghton-Mifflin.

Weil, Andrew. 1979. "Yagé: The Vine that Speaks." *High Times*. August Issue.

Weil, Andrew. 1980. "In the land of yagé" In: Andrew Weil *The Marriage of the Sun and the Moon: A quest for Unity in Consciousness*. Boston, MA: Houghton-Mifflin, 99-131.

Wegner, Daniel M. 2002. *The Illusion of Conscious Will*. Cambridge, MA: MIT Press.

Wenger, T. 2011. Indian Dances and the Politics of Religious Freedom, 1870–1930, *Journal of the American Academy of Religion* 79 (4): 850–878.

Wiedman, Dennis. 1990. "Big and Little Moon Peyotism as Health Care Delivery Systems." *Medical Anthropology* 12 (4): 371-387.

Wiedman, Dennis. 1991. *Medicine or Sacrament: The Development of Peyotism as a Religion and Health Care System.* In session titled: Medical Pluralism and Ethnic Identity. Annual Meeting of the American Association of Anthropologists, Chicago.

Wiedman, Dennis. 2012. "Upholding Indigenous Freedoms of Religion and Medicine: Peyotists at the 1906–1908 Oklahoma Constitutional Convention and First Legislature." A*merican Indian Quarterly* 36 (2): 215-246.

Wiedman. Dennis and Iveris L. Martinez. 2017. "Organizational Theme Theory and Analysis of Strategic Planning for a New Medical School." *Human Organization* 74 (3): 264-274.

Wiethaus, Ulrike. 1996. *Ecstatic Transformation: Transpersonal Psychology in the Work of Mechthild of Magdeburg*. Syracuse, NY: Syracuse University Press.

Williams, Monnica T., Alan K. Davis, Yitong Xin, Nathan D. Sepeda, Pamela Colón Grigas, Sinead Sinnott, and Angela M. Haeny. 2021. "People of Color in North America Report Improvements in Racial Trauma and Mental Health Symptoms Following Psychedelic Experiences." *Drugs: Education, Prevention and Policy* 28 (3): 215–26.

Wilkinson, S. 2015. "Alcohol, young people and urban life." *Geography Compass* 9 (3): 115-126.

Wilton, R. and Moreno, C.M., 2012. “Critical geographies of drugs and alcohol.” *Social & Cultural Geography* 13 (2): 99-108.

Winkelman, Michael. 1986. “Trance states: A theoretical model and cross-cultural analysis.” *Ethos* 14 (2): 174-203.

Winkelman, Michael. 1989. “A cross-cultural study of shamanistic healers.” *Journal of Psychoactive Drugs* 21 (1): 17-24.

Winkelman, Michael. 1991. “Therapeutic effects of hallucinogens.” *Anthropology of Consciousness* 2 (3-4): 15-19.

Winkelman, Michael. 1995. “Psychointegrator Plants: Their Roles in Human Culture.” *Consciousness and Health, Yearbook of Cross-cultural Medicine and Psychotherapy*.

Winkelman, Michael . 2000. *Shamanism: The neural ecology of consciousness and healing*. Greenwood Publishing Group.

Winkelman, Michael. 2001. “Alternative and traditional medicine approaches for substance abuse programs: a shamanic perspective.” *International Journal of Drug Policy* 12 (4): 337-351.

Winkelman, Michael. 2002a. “Shamanism and cognitive evolution (with comments).” Cambridge Archaeological Journal 12 (1): 71-101.

Winkelman, Michael. 2002b. “Shamanism as neurotheology and evolutionary psychology.” *American Behavioral Scientist* 45 (12): 1875-1887.

Winkelman, Michael. 2003. “Psychointegration: The physiological effects of entheogens.” *Entheos* 2 (1): 51-61.

Winkelman, Michael. 2004.” Understanding consciousness using systems approaches and lexical universals.” *Anthropology of Consciousness* 15 (2): 24-38.

Winkelman, Michael. 2005. “Drug tourism or spiritual healing? Ayahuasca seekers in Amazonia.” *Journal of psychoactive drugs* 37 (2): 209-218.

Winkelman, Michael. 2006. “Cross-cultural assessments of Shamanism as a biogenetic foundation for religion.” *Where God and Science Meet–How Brain and Evolutionary Studies Alter Our Understanding of Religion, 3*.

Winkelman, Michael. 2007. “Therapeutic bases of psychedelic medicines: psychointegrative effects.” *Psychedelic medicine* 1: 1-19.

Winkelman, Michael. J. 2010a. *Shamanism: A biopsychosocial paradigm of consciousness and healing (2nd ed.)*. Santa Barbara, CA: ABC-CLIO.

Winkelman, Michael. 2010b. “The shamanic paradigm: Evidence from ethnology, neuropsychology and ethology.” *Time and Mind, 3*(2): 159-181.

Winkelman, Michael. J. 2010c. “Evolutionary origins of ritual.” In: A. Michaels (Ed.), *Body, performance, agency, and experience*. Wiesbaden, Germany: Harrassowitz Verlag, 331-349.

Winkelman, Michael. 2011. “Shamanism and the alteration of consciousness.” *Altering consciousness: Multidisciplinary perspectives, 1*: 159-180.

Winkelman, Michael. 2013a. “Shamanism and psychedelics: A biogenetic structuralist paradigm of ecopsychology.” *European Journal of Ecopsychology* 4: 90-115.

Winkelman, Michael. 2013b. “Altered Consciousness and Drugs in Human Evolution.” In: *Entheogens and the Development of Culture: The Anthropology and Neurobiology of Ecstatic Experience*. Rush, J.A. ed. North Atlantic Books.

Winkelman, Michael .2014. “Psychedelics as medicines for substance abuse rehabilitation: evaluating treatments with LSD, Peyote, Ibogaine and Ayahuasca. *Current drug abuse reviews* 7 (2): 101-116.

Winkelman, M. 2015. “Shamanism as a biogenetic structural paradigm for humans’ evolved social psychology.” *Psychology of Religion and Spirituality* 7 (4): 267.

Winkelman, M. 2017. “The mechanisms of psychedelic visionary experiences: hypotheses from evolutionary psychology.” *Frontiers in neuroscience* 11: 539.

Winkelman, M. 2018. “An ontology of psychedelic entity experiences in evolutionary psychology and neurophenomenology.” *Journal of Psychedelic Studies* 2 (1): 5-23.

Winkelman, Michael. 2019. “Introduction: Evidence for Entheogen Use in Prehistory and World Religions.” *Journal of Psychedelic Studies* 3 (2): 43–62.

Winkelman, Michael and Ben Sessa (eds.) 2019. *Advances in Psychedelic Medicine: State-of-the-art Therapeutic Applications*. ABC-CLIO.

Winstock, Adam. 2017. “Global Drug Survey 2017. Findings” *Global Drug Survey.* 1-121

Winstock, Adam. 2019. “The Global Drug Survey 2019. Findings.” *Global Drug Survey*.

Winstock, Adam R., L. J. Maier, A. Zhuparris, E. Davies, C. Puljevic, K. P. C. Kuypers, J. A. Ferris, and M. J. Barratt. 2020. Global Drug Survey (GDS) 2020 Key Findings Report. www.globaldrugsurvey.com

Winstock, Adam R., L. J. Maier, A. Zhuparris, E. Davies, C. Puljevic, K. P. C. Kuypers, J. A. Ferris, and M. J. Barratt. 2021. Global Drug Survey (GDS) 2021 Key Findings Report. www.globaldrugsurvey.com

Yaden, David B., and Roland R. Griffiths. 2021. "The Subjective Effects of Psychedelics Are Necessary for Their Enduring Therapeutic Effects." *ACS Pharmacology and Translational Science* 4 (2): 568–72.

Yaden, David B., Mary E. Yaden, and Roland R. Griffiths. 2021 "Psychedelics in psychiatry—keeping the renaissance from going off the rails." *JAMA psychiatry* 78 (5): 469-470.

Yang, X. and H. Luo. 2009. "Migration, Urbanization, and Drug Use and Casual Sex in China: A Multilevel Analysis." *Environment & Planning A* 41 (3): 581–97

Young, K.R. 1996. Threats to Biological Diversity Caused by Coca/Cocaine Deforestation in Peru. *Environmental Conservation* 23: 7-15.

Young, K.R. 2004a. A Geographical Perspective on Coca/Cocaine Impacts in South America. In: *WorldMinds Geographical Perspectives on 100 Problems: Commemorating the 100th Anniversary of the Association of American Geographers 1904-2004: Celebrating Geography—The Next 100 Years,* D. G. Janelle, B. Warf, and K. Hansen (eds.) 363-367. Dordrecht, The Netherlands and Boston, MA: Kluwer Academic.

Young, K.R., 2004. "Environmental and social consequences of coca/cocaine in Peru: Policy alternatives and a research agenda." *Dangerous harvest: drug plants and the transformation of indigenous landscapes*, New York, NY: Oxford University Press, 249-273.

Zahavi, Dan. 2007. Subjectivity and the First-Person Perspective. *The Southern Journal of Philosophy* 45 (S1): 66-84.

Zahavi, Dan. 2008. *Subjectivity and Selfhood: Investigating the First-Person Perspective*. Cambridge, MA: The MIT Press.

Zahavi, Dan. 2019. *Phenomenology: The Basics*. New York, NY: Routledge.

Zeller, C. 2004. "North Atlantic innovative relations of Swiss pharmaceuticals and the proximities with regional biotech arenas." *Economic geography* 80 (1): 83-111.

APPENDICES

Appendix 1

Recruitment Script

Psychedelic Assemblages: The Influence of Psychedelic Experiences on Human-Nonhuman Relations

Script:

Hello!

My name is Joshua Falcon and I am currently a Ph.D. student whose research focuses on experiences with classic psychedelic substances such as lysergic acid diethylamide (LSD), psilocybin, mescaline, and dimethyltryptamine (DMT). I am currently looking for anyone 18 years of age or older that has had experiences with the classic psychedelics and is interested in participating in a current research project of mine. The research will just consist of engaging in brief interviews or freewriting responses to questions based on your experience with the classic psychedelics. If you wish to participate in an in-depth interview through Zoom, please contact me at jfalc020@fiu.edu to set up a day and time.

Please ensure that you DO NOT provide your real name, contact information, or any other personal information that can identify you as this study follows anonymity and confidentiality practices to ensure your safety.

Thank you!

Josh

Appendix 2

Interview Guide

Psychedelic Assemblages: The Influence of Psychedelic Experiences on Human-Nonhuman Relations

Interview Questions:

Paths to Psychedelic Use

What was your childhood like? (*For example, Where did you go to school?*)

What were your teenage years like? (*For example, What activities did you engage in recreationally? What were your friends like?*)

What were your family dynamics like when you were growing up? (*For example, did you grow up in a single parent household? Did you grow up with siblings? Were your parents strict?*)

What is your religious or spiritual history and upbringing; if you feel that you had no religious or spiritual history, describe that too. (*For example, Did you grow up going to church?*)

How would describe your personality?

What prior knowledge did you have of psychedelics before engaging in their consumption? (*For example, Were there any books, articles, or media that you read which sparked your interest in psychedelics? Were any of your friends consuming them?*)

How did you become acquainted with psychedelic substances? (*For example, Did your friends introduce you to them? Did you seek them out on your own? Did it happen randomly?*)

What factors do you believe led you to partake in the consumption of a psychedelic substance? (*For example, was there a specific reason that you decided to try psychedelics?*)

Appendix 2b

Interview Guide

Have you experienced any negative reactions toward your use of psychedelics from either your family, friends, or society? (*For example, Do you feel comfortable enough to speak about this topic with anyone?*)

What expectations, if any, did you have before partaking in a psychedelic experience?

Psychedelic Experience Phenomenology and Setting

Describe the **content** of a particular psychedelic or entheogenic experience you had with the classic psychedelics (LSD, psilocybin, mescaline, DMT). Please include the substance and the quantity of it that was used.

Who were you accompanied with, if anyone, during your psychedelic experience? Please do not provide any names or personal information.

Describe the setting in which this psychedelic experience took place, including any other details you feel may be relevant. If you are describing more than one experience, please separate this information clearly.

Is there anything about this particular psychedelic experience that stands out the most for you?

What mood or mindset were you in going into your psychedelic experience?

What was the weather like at that time?

Have you spoken to anyone about your experience? Who were they? Please do not provide any names or personal information.

Did speaking to this individual change your perception of the experience or help you make meaning of it?

Have you come across any literature or media that describes psychedelic experiences since your experience that speaks to what you experienced?

Forms of Psychedelic Lives

What is your perception of psychedelics today? (*For example, How do you understand or view psychedelics?*)

Appendix 2c

Interview Guide

If you continue to use psychedelic substances today, how do you approach their usage? (*For example, Are there particular practices you engage in when taking psychedelics? Are there certain intentions or expectations? Do you use psychedelics in particular setting and circumstances?*)

Describe your religious, spiritual, or secular worldview as you understand it today.

Describe the impact (or lack thereof) that psychedelic experiences have had on your life?

If you believe that your experience with the classic psychedelics has led to a change in your perception and values of, or behaviors towards, the environment or nonhuman others, please elaborate on this here.

Demographics

Now, this last set of questions covers demographics.

1. Please tell me your gender:

2. Please tell me your age.

3. How would you describe your race or ethnicity?

4. What was the highest level of education that you completed?

5. What is your current marital status? (*e.g., never married, currently married, separated, divorced, widowed.)*

6. Are you a military veteran?

8. Last, if it is okay with you, can you please give me your contact information in case I would like to clarify or get an update on your situation? (*one is sufficient-- email address, cell phone number, address, P.O. Box, etc.*)

VITA

JOSHUA FALCON

EDUCATION

2022	Ph.D., Florida International University, Global and Sociocultural Studies (Anthropology Track)
2017	M.A., Florida International University, Religious Studies Thesis: The Ethical Import of Entheogens (Honors)
2014	B.A. (Honors), Florida International University, Philosophy
2020	Source Research Foundation Inspiration Grant for Dissertation Research ($3901)
2016	Purdue University Archival Research Grant – Psychoactive Substances Archives ($2000)

PUBLICATIONS & PRESENTATIONS

2022 Toward a critical posthuman geography. Cultural Geographies 1-16. https://doi.org/10.1177/14744740221110579.

2021 Consciousness as a Domain of Extraterritoriality. Special issue of Culture, Theory and Critique 62 (1-2): 56-75. doi: 10.1080/14735784.2021.1908904

2021 Situating Psychedelics and the War on Drugs within the Decolonization of Consciousness. ACME: An International Journal for Critical Geographers 20 (2): 151-170.

2020 Designing Consciousness: Psychedelics as Ontological Design Tools for Decolonizing Consciousness. Design and Culture 13 (2): 143-163. doi: 10.1080/17547075.2020.1826182

2021 Invited paper: Psychedelics in Anthropology: Critical Theory, Decoloniality, and Design. Psychedelics in Society Seminar Series, University of Pennsylvania, March 16.

2017 Invited paper: Integrating Psychedelics into Academia. Students for Sensible Drug Policy (SSDP) Florida Regional Mini-Conference, Florida International University, Miami, FL, Nov. 4.

2021 Psychedelics as Technologies of the Self: An Ethnographic and Netnographic Study on the Relationship Between Psilocybin Experiences and Subjectivity. Paper presented at Annual Meeting of the American Anthropological Association, Baltimore, Maryland. November 20.

2021 Caring for the self: psychedelic experiences and the relationship between self-knowledge and health. Paper presented at Annual Meeting of the American Association of Geographers, Virtual Conference. April 11.

2019 Decolonizing Our Conceptual Heritage Through Psychedelics. Paper presented at Annual Meeting of the American Association of Geographers, Vancouver, BC. November 21.

2019 Psychedelics, Cognitive Liberty, and the Decolonization of Consciousness. Paper presented at Annual Meeting of the American Association of Geographers, Washington, DC, April 6.

2019 Situating Psychedelics in the Decolonization of Consciousness. Paper presented at Annual Meeting of the Anthropology of Consciousness. Portland, Oregon. March 29.

2019 Cognitive Hegemony and the Psychedelic Resistance. Paper presented at SAGGSA Graduate Student Conference: Crisis, Catastrophe, and Complexity, Florida International University, Miami, FL, March 1.

2018 Alterity and Psychedelic States of Consciousness. Paper presented at Annual Meeting of the American Association of Geographers, New Orleans, LA. April 13.

2018 The Ethical Import of Entheogens. Paper presented at Annual Meeting of the Anthropology of Consciousness, Sofia University, Palo Alto, CA. March 23.

2018 Nature, Culture, and Consciousness. Paper presented at SAGGSA Graduate Student Conference, Florida International University, Miami, FL, March 30.