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# UC BERKELEY STUDENTS' PSYCHEDELIC EXPERIENCES

## A Qualitative Analysis

By Dylan Earp

There has been an emergence in psychedelic science in recent years, in both basic and applied research. Clinical trials have shown psychedelic drugs to be exceptionally effective in treating psychiatric illnesses such as post-traumatic stress disorder (PTSD) and depression, while other research suggests they may be effective in treating a range of other indications in the future.<sup>1</sup> Outside of the lab, study of illicit psychedelics and college students has shown that use of these drugs does not correlate with higher rates of mental health problems.<sup>2</sup> However, studies like these fail to understand the scope of students' experiences and may ignore potentially rich perspectives uncovered by qualitative methodologies.<sup>3</sup> Thus, I interviewed 10 students currently enrolled at UC Berkeley in order to understand their psychedelic drug experiences. I found that UC Berkeley students have a wide variety of rich experiences with these drugs, including: 1. empathogenic effects of "classic" psychedelics directed towards peers, 2. connectedness with nature, 3. healing from family trauma, 4. increasing authenticity, 5. continued use defined as a self-directed "journey," and 6. improving students' capacity for presence. Adverse reactions brought up by some interviewees included panic attacks, existential distress, and suicidal ideation. Overall, I found that naturalistic use of psychedelics by UC Berkeley students may occasion positive experiences worthy of future research.

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1 D. E. Nichols, "Psychedelics," *Pharmacological Reviews*, no. 68 (2016): 264-355. doi:10.1124/pr.115.011478.

2 P. O. Johansen, and T. S. Krebs, "Psychedelics not linked to mental health problems or suicidal behavior: A population study," *Journal of Psychopharmacology* (Oxford, England), no. 29 (2015): 270-279. doi:10.1177/0269881114568039.

3 A. Steckler, et al., "Toward integrating qualitative and quantitative methods: An introduction. *Health Education Quarterly*," no. 19 (1992): 1-8. doi:10.1177/109019819201900101.

## Introduction

At this point, it is almost cliché to say that academic research into the quantitative impact of psychedelics is having a renaissance. While psychedelic drugs are providing many opportunities for brain imaging and clinical research, they also provide a rich trove of qualitative data that is in need of further investigation. Qualitative analyses have been published on using 3,4-methylenedioxymethamphetamine (MDMA) in conjunction with psychotherapy in veterans with post-traumatic stress disorder (PTSD), psychedelic experiences and smoking cessation, experiences with microdosing (taking roughly one tenth of a recreational dose), and so on.<sup>4,5,6</sup> However, all of the quantitative research and much of the qualitative research focuses on patients in controlled settings.<sup>7</sup> I am seeking to understand the experiences of college students who more or less stumble upon (or do they approach these experiences with any specific intention?) psychedelic drugs (hereafter also referred to interchangeably as “trips” or “tripping”) in a naturalistic environment.

The National Survey of Drug Use and Health (NSDUH) is conducted by the Substance Abuse and Mental Health Services Administration (SAMHSA) and utilized by the National Institute on Drug Abuse (NIDA) to develop research programs. Its findings suggest that experimenting with mind-altering substances is rather common upon starting college: According to NIDA, 16.4% of young people in the 18-25 year-old demographic tried a psychedelic drug in 2018—a marked increase from the 2.3% in the 12-17 year-old demographic during the same year.<sup>8</sup> Moreover, a NIDA-funded longitudinal study on a single cohort of incoming freshman (aged 17-19) at an East Coast university found that their use of “hallucinogens” peaked during Year 3 (aged 20-22) of the eight-year study.<sup>9</sup> Psychedelics are powerful substances that have been used sacramentally—in a sanctioned, socialized framework around important life and community events, such as the use of mescaline-containing cacti in the Americas—for hundreds, if not thousands, of years.<sup>10</sup> However, due to their status as illicit Schedule 1 drugs, there is no formalized psychedelic-infused rite of passage in our culture. And yet, the rates of psychedelics use suggest the existence of informal psychedelic-infused experiences within the college experience. In this study, I interviewed UC Berkeley students to learn how they came to use psychedelics and how they make sense of their experiences. This study utilized an explorative, qualitative approach, seeking to understand these students' experiences with psychedelics, hoping to inform possible theories and future research.

## *Psychedelic drugs*

Defining what constitutes a psychedelic drug requires a bit of nuance. “Psychedelic” characterizes these drugs by their effects—the word itself comes from the Greek *psyche*, meaning “soul” and *delos*, meaning “manifest,” translating roughly to “revealing the soul.”<sup>11</sup> These drugs have also been referred to as “entheogens,” roughly meaning “generating the divine within,” meant to describe their mystical effects, and as “hallucinogens,” drugs that

4 W. Barone, et al., “Perceived benefits of MDMA-assisted psychotherapy beyond symptom reduction: Qualitative follow-up study of a clinical trial for individuals with treatment-resistant PTSD,” *Journal of Psychoactive Drugs* 50, no. 2 (2019): 199-208, doi:10.1080/02791072.2019.1580805.

5 P. G. Johnstad, “Powerful substances in tiny amounts: An interview study of psychedelic microdosing,” *Nordic Studies on Alcohol and Drugs*, no. 35 (2018): 39-51. doi:10.1177/1455072517753339

6 T. Noorani, et al., “Psychedelic therapy for smoking cessation: Qualitative analysis of participant accounts,” *Journal of Psychopharmacology (Oxford)*, no. 32 (2018): 756-769. doi:10.1177/0269881118780612.

7 J.J. Brecksema, et al., “Psychedelic treatments for psychiatric disorders: A systematic review and thematic synthesis of patient experiences in qualitative studies,” *CNS Drugs*, no. 34 (2020): 925–946. doi:10.1007/s40263-020-00748-y.

8 National Institute on Drug Abuse, “National survey of drug use and health: Trends in prevalence of various drugs for ages 12 or older, ages 12 to 17, ages 18 to 25, and ages 26 or older; 2016 - 2018 (in percent),” (2018): <https://www.drugabuse.gov/drug-topics/trends-statistics/national-drug-early-warning-system-ndews/national-survey-drug-use-health>.

9 A. M. Arria, et. al., “Prevalence and incidence of drug use among college students: An 8-year longitudinal analysis,” *The American Journal of Drug and Alcohol Abuse*, no. 43 (2017): 711-718. doi:10.1080/00952990.2017.1310219.

10 J. R. Baker, “Psychedelic sacraments,” *Journal of Psychoactive Drugs*, no. 37 (2005): 179-187. doi:10.1080/02791072.2005.10399799.

11 C. A., Ruck, et al., “Entheogens,” *Journal of Psychedelic Drugs*, no. 11 (1979): 145-146. doi:10.1080/02791072.1979.10472098.

occasion hallucinations.<sup>12</sup> Defining these drugs by their effects can be useful because not many pharmacological substances reliably induce mystical experiences in the lab as such.<sup>13</sup> Pharmacologically, psychedelics are defined as serotonin 5-HT<sub>2A</sub> receptor agonists.<sup>14</sup> Additionally, while it is not considered a classic psychedelic, MDMA is often lumped with “psychedelic research” and “psychedelic-assisted psychotherapy” because it can lead to powerful personal insights, has been shown to be particularly effective at treating PTSD, and can be used in conjunction with therapy in a manner similar to classic psychedelics.<sup>15</sup>

For the purpose of this thesis, I used the conventions above to decide which drugs I asked participants about, taking effects, pharmacology, therapeutic model, and research paradigm into account. That said, while I went into this study expecting to speak about MDMA, all participants only spoke about their most impactful experiences having come from classic psychedelics like psilocybin-containing mushrooms (“mushrooms” or “psilocybin” used interchangeably hereafter as none reported using psilocybin in its pure molecular form), lysergic acid diethylamide (LSD or “acid”), and ayahuasca, containing N,N-dimethyltryptamine (DMT).

### ***Clinical Applications***

As briefly mentioned, promising research has shown psychedelics and MDMA to be very effective towards treating various mental health outcomes to the point where two have been designated “breakthrough therapies” by the U.S. Food and Drug Administration (FDA): psilocybin twice for two types of severe depression and MDMA for PTSD.<sup>16</sup> As such, much of the current excitement around psychedelics is a result of the clinical trials that provide safety and efficacy data to FDA that may eventually lead to their legal use as psychiatric medicines and open doors to further research. This research is outcome-driven in nature—for example, whether or not PTSD symptoms decrease—and takes place in a research facility.

### ***Psychedelics in ecological settings***

Despite their federal designation of having no accepted medical use and high abuse potential (the definition of a Schedule 1 drug), psychedelics have been shown to be quite safe chemicals.<sup>17</sup> Not only are they safe physiologically, but outside of the lab, study of illicit psychedelics and college students has shown that use of these drugs does not correlate with higher rates of mental health problems in that population.<sup>18</sup>

### ***Why the Qualitative Approach***

While the Johansen & Krebs study demonstrates the relative safety of ecological psychedelics use in terms of psychological outcome measures, it fails to understand the scope of students’ experiences and may ignore potentially rich perspectives uncovered by qualitative methodologies.<sup>19</sup> For example, even if college students using illicit psychedelics do not meet any of the studied outcome measures, i.e. did not show higher rates of depression or anxiety, it is possible that they will have an experience, either positive or negative, gone undetected by the study. A qualitative follow-up one year after an MDMA clinical trial demonstrated this phenomenon

12 C. A., Ruck, et al., “Entheogens,” 145-146.

13 R. R. Griffiths, et al., “Psilocybin can occasion mystical-type experiences having substantial and sustained personal meaning and spiritual significance,” *Psychopharmacology*, no. 187 (2006): 268-92. doi:10.1007/s00213-006-0457-5.

14 D. E. Nichols, “Psychedelics,” *Pharmacological Reviews*, no. 68 (2016): 264-355. doi:10.1124/pr.115.011478.

15 D. Nutt, “Psychedelic drugs—a new era in psychiatry?” *Dialogues in clinical neuroscience*, no. 21 (2019): 139-147. doi:10.31887/DCNS.2019.21.2/dnutt.

16 E. Krediet, et al., “Reviewing the potential of psychedelics for the treatment of PTSD,” *The International Journal of Neuropsychopharmacology*, no. 23 (2020): 385-400. doi:10.1093/ijnp/pyaa018.

17 K. A. A. Andersen, et al., “Therapeutic effects of classic serotonergic psychedelics: A systematic review of modern-era clinical studies,” *Acta Psychiatrica Scandinavica*, no. 143 (2020): 101-118. doi:10.1111/acps.13249.

18 P. O. Johansen, and T. S. Krebs, “Psychedelics not linked to mental health problems or suicidal behavior: A population study,” *Journal of Psychopharmacology (Oxford, England)*, no. 29 (2015): 270-279. doi:10.1177/0269881114568039.

19 A. Steckler, et al., “Toward integrating qualitative and quantitative methods: An introduction. *Health Education Quarterly*,” no. 19 (1992): 1–8. doi:10.1177/109019819201900101.

where rich narrative data go undetected by the PTSD-focused outcome measures; in that study, every single trial participant reported lasting positive benefits and enhanced quality of life.<sup>20</sup> Thus, this study explores the ecological psychedelic stories of UC Berkeley students that cannot adequately be described by existing quantitative research.

### *Hypothesis*

I set out on this exploratory research without any specific hypothesis. That said, I expected the nature of college students' experiences with psychedelics to vary quite a bit in terms of physical setting, intentions for the experience, integration into personal life narrative (seen as separate, one-off experience(s) or as integral to their college experience, or anything in between), and acute and lasting significance. I also expected that some of the scientific findings related to positive mental health outcomes, mystical experiences, and so forth that have been demonstrated in the lab to be reported by students who used psychedelics in a more naturalistic setting. A feature of the exploratory nature of this research is that I hoped to uncover unanticipated variations in the nature of students' psychedelic experiences that may not have yet been adequately explored in the existing quantitative research.

### **Methods**

#### *Materials*

I administered an eligibility survey on Qualtrics to recruit possible interview participants. The survey was posted in the course websites for the classes that I was enrolled in at the start of the semester and sent out via email to a club email list. The demographic data included in the survey responses included gender identity, age in years, ethnic identity, socioeconomic status (SES), year in school, and major. The survey also asked questions addressing bias towards psychedelics (Likert scales such as "how favorably do you view psychedelics?"), estimated number of instances of use, and use of which specific drugs. My decision to ask about bias was derived from Haijen et al.'s study on predicting responses to psychedelic drugs and meant to provide a broad sense of the participant pool's bias as a possible future point of comparison to the rest of the UC Berkeley student community.<sup>21</sup>

As will be discussed later in this section, this study takes a phenomenological lens to interpreting qualitative data, meaning my personal experiences (or "filters") are inextricably linked to how the data are examined.<sup>22</sup> The reader should therefore contextualize my findings as being examined through the following filters. About the researcher at the time of writing: I am a fourth-year undergraduate student at UC Berkeley. I am studying psychology and conducting this thesis as a part of the departmental honors program. I am a white, cis male. And, perhaps most relevant to this study, I have used psychedelics with both profoundly positive and challenging impacts on my worldview and metacognition. My pattern of use with psychedelics is that of careful intention. It is difficult for me to evaluate whether they have had a directly causal impact on my mental health, but considering how use of these drugs has provided me with personal insights that I view as fundamentally important, I would definitely attribute a correlative increase in emotional wellbeing to them. Moreover, prior to conducting this research, I read about psychedelic research in news articles and books, including Michael Pollan's *How to Change Your Mind*, which I found to be incredibly inspiring for the future of mental health treatment.<sup>23</sup> In my methodology, I "bracketed" these filters at the onset of this project so that I could identify my own biases and do my best to set them aside (doing this completely is impossible, of course)<sup>24</sup> in order to conduct interviews with the least amount

20 W. Barone, et al., "Perceived benefits of MDMA-assisted psychotherapy beyond symptom reduction: Qualitative follow-up study of a clinical trial for individuals with treatment-resistant PTSD," 199-208.

21 E. C. H. M. Haijen, et al., "Predicting responses to psychedelics: A prospective study," *Frontiers in Pharmacology*, no. 9 (2018): 897. doi:10.3389/fphar.2018.00897.

22 J. Sutton, and Z. Austin, "Qualitative research: Data collection, analysis and management," *Canadian Journal of Hospital Pharmacy*, no. 68(2015): 226-231. doi:10.4212/cjhp.v68i3.1456

23 M. Pollan., "How to change your mind: What the new science of psychedelics teaches us about consciousness, dying, addiction, depression, and transcendence," New York: Penguin Press, (2019).

24 L. Tufford, and P. Newman, "Bracketing in qualitative research," *Qualitative Social Work : QSW : Research and Practice*, no. 11(2012): 80-96. doi:10.1177/1473325010368316.

of judgment and interpret participants' experiences through their narratives rather than my own.<sup>25</sup>

### *Procedure*

After submitting the survey, eligible students were invited to participate in an hour-long interview about their experience(s) with psychedelic drugs. The semi-structured interview questions used to obtain the presented qualitative data followed a broad arc: self description questions; questions focusing on what happened before, during, and after their most impactful psychedelic experience; general questions about their overall assessment of their experience(s) with psychedelics. The full interview guide can be found in the Appendix. Qualitative interviews were conducted via Zoom, designed to explore the nature of their psychedelic experiences that occurred while they were in college. This ensured that participants were thoughtfully reflecting on relatively recent experiences. Interviews were transcribed and analyzed thematically.

### *Interpretive Phenomenological Analysis*

Interviews were first transcribed by Zoom's automatic transcription software and then manually edited by me. The quotes reported herein are edited for clarity, meaning I deleted when participants said extraneous words ("like" or "um" etc.) but maintained the meaning of their statements. Transcripts are otherwise intact and true to the source material.

I utilized the Interpretive Phenomenological Analysis (IPA) methodology for analyzing the raw interview data.<sup>26</sup> IPA is a qualitative research method that consists of conducting the research without prior formulated hypotheses, studying participants idiographically, and is meant to generate "detailed descriptions of how individuals experience phenomena under investigation."<sup>27</sup> Data collection for IPA generally consists of semi-structured, one-on-one interviews.<sup>28</sup> In accordance with both IPA principles and my research question, my interview questions were designed to explore participants' lived experiences and how they made sense of them. Using the transcripts, IPA consists of the following steps: 1) going through the original transcripts and writing exploratory comments that arise from specific quotes; 2) from these quotes and notes, the researcher identifies "emerging themes" that are defined by a "slightly higher level of abstraction which may refer to a more psychological conceptualization"; 3) after the emerging themes have been identified from the transcript(s), they are connected with one another "according to conceptual similarities" to form theme clusters.<sup>29</sup> My results section ultimately reports five theme clusters. See the example below for an IPA excerpt.

IPA is the "method of choice" for clinical psychology as it is an effective way to make sense of the "lived experience."<sup>30</sup> IPA is typically best suited for small, fairly homogenous samples—mine was defined as reasonably homogenous as a result of the eligibility requirements and a research question that sought to understand one specific "culture": that of UC Berkeley students.<sup>31</sup> Thus, I decided to use IPA as I sought to understand how their use of psychedelics has affected their lived experience. Moreover, the IPA methodology is used in other qualitative psychedelic research and has been shown to be sufficiently effective in presenting narratives describing complex

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25 J. Sutton, and Z. Austin, "Qualitative research: Data collection, analysis and management," 226-231.

26 J. A. Smith, M. Jarman, and M. Osborn, "Doing interpretative phenomenological analysis," in *Qualitative health psychology: Theories and methods*, eds. Michael Murray & Kerry Chamberlain (SAGE Publications Ltd., 1999), 218. doi: 10.4135/9781446217870.n14.

27 I. Pietkiewicz, and J. A. Smith, "A practical guide to using interpretative phenomenological analysis in qualitative research psychology," *Czasopismo Psychologiczne Psychological Journal*, no. 20(2014): 7-14. doi:10.14691/CPJ.20.1.7.

28 I. Pietkiewicz, and J. A. Smith, "A practical guide to using interpretative phenomenological analysis in qualitative research psychology," 7-14.

29 I. Pietkiewicz, and J. A. Smith, 7-14.

30 D. Biggerstaff, and A. R. Thompson, "Interpretative phenomenological analysis (IPA): A qualitative methodology of choice in healthcare research," *Qualitative Research in Psychology*, no. 5(2008): 214-224. doi:10.1080/14780880802314304.

31 I. Pietkiewicz, and J. A. Smith, "A practical guide to using interpretative phenomenological analysis in qualitative research psychology," 7-14.

and non-ordinary states of consciousness that are difficult to describe.<sup>32,33,34,35</sup>

**Example IPA:**

I used a spreadsheet to organize IPA notes with the following column names: “Participant,” “Quote,” “Note,” “Emerging Theme,” “Theme Cluster(s).” Here is an example IPA, reformatted from its original landscape orientation (on the spreadsheet) to portrait:

**Frame 1:** *An extract from the interview with Participant 2's experience with ayahuasca*

**Quote**

**Interviewer:** Before we get into talking about psychedelics, I am wondering if you would be willing to tell me a little bit about yourself. How would you describe yourself?

A huge part of my development and who I am definitely comes from where I grew up. I grew up in this very small rural town... the community, is just like very strong... so I grew up having a very good sense of myself and just like knowing who I was and what I wanted to do because it's a very spiritual community and my mom raised us in a very spiritual way. Like meditating and being comfortable with the use of psychedelics. That's how I was introduced and happened to do ayahuasca because my mom is really involved in that like, community.

Note	Emerging Theme	Theme Cluster(s)
strong sense of self from growing up in tight knit community		
mentions psychedelics already in self-description	Psychedelics use in self-description	Self-descriptions
perhaps primed by upbringing for profound psychedelic experience?		

**Quote**

**Interviewer:** How would you compare yourself amongst your psychedelics-using peers?

I don't know, I feel like when you know people who use psychedelics and you talk about your experiences, there's kind of like a lot of commonalities between people who regularly use psychedelics. Everyone's experiences are different, obviously, but I think there's like kind of a common thread that connects people who regularly use psychedelics.

Note	Emerging Theme	Theme Cluster(s)
Sees fundamental similarities in all psychedelic experiences	Sees experience similar to that of others who use psychedelics	Participant self-descriptions

**Quote**

32 W. Barone, et al., “Perceived benefits of MDMA-assisted psychotherapy beyond symptom reduction: Qualitative follow-up study of a clinical trial for individuals with treatment-resistant PTSD,” 199-208

33 J.J. Brecksema, et al., “Psychedelic treatments for psychiatric disorders: A systematic review and thematic synthesis of patient experiences in qualitative studies,” 925–946.

34 L. Gashi, S. Sandberg, and W. Pedersen, “Making ‘bad trips’ good: How users of psychedelics narratively transform challenging trips into valuable experiences,” *The International Journal of Drug Policy*, no. 87 (2021): 102997. doi:10.1016/j.drugpo.2020.102997.

35 J.J. Palamar, and P. Acosta, “A qualitative descriptive analysis of effects of psychedelic phenethylamines and tryptamines,” *Human Psychopharmacology*, no. 35(2020): e2719. doi:10.1002/hup.2719.

**Interviewer:** The next thing that I want to do is to talk about your profound experiences with psychedelics. Earlier you mentioned ayahuasca, but take a moment and think about your most profound experience or experiences with psychedelics and let me know when something comes to mind.

I'd say definitely my experience with ayahuasca. Because it was also just a very transformative time in my life. I took it the summer before I came to Berkeley. And it was just like so insane. So yeah, that's definitely the most profound experience I've had in my life. I microdose mushrooms... so that's more of a subtle experience over a long period of time... but ayahuasca was just this huge event.

Note	Emerging Theme	Theme Cluster(s)
starting college is transformative time in life		Lasting impacts
most profound experience of her life	Taking psychedelics during life transitions	College
ayahuasca experience is compressed, not subtle		

### Quote

**Interviewer:** I want to focus on that experience for this interview. The first question I have is how did you first decide to use ayahuasca?

Like I said earlier, my mom is very involved in that community... and I just kind of came to the conclusion that I wanted to do something like that before I started to live independently because I just wanted to get a sense - or deeper sense - of who I was before I went and established myself in a new place.

Note	Emerging Theme	Theme Cluster(s)
intention: wanted to get to know self before starting college	Getting to know self	Attractions (Why Use)
psychedelics use as a part of independence process	College	College

### Quote

**Interviewer:** Thank you. What were your expectations?

I expected it to not be pleasant, from my mom's experiences. She was just like, "it's not fun, but it's the type of work that you want to do." And my expectations was it was going to be like 10 years of therapy in one night, so I was ready.

**Interviewer:** You said "work." So this wasn't just a recreational thing.

Oh no. I was really excited to do it. But in no way was I going to do ayahuasca with my friends. And I knew it was going to be like not super fun.

Note	Emerging Theme	Theme Cluster(s)
expected it to be fast forward, condensed experience	Expectations affect outcomes	Why Use
power of expectations on these experiences	Work	Varieties of experience
not recreational. for her, it's "work"		



**Quote**

**Interviewer:** My next question is about your intentions going into the experience and what they were, if any.

I think my intentions were to understand myself more and understand the experiences which make me who I am, I guess. Just to basically understand myself more, I guess. And get to know myself better, on like a deeper personal level.

**Interviewer:** Could you expand a little bit more on that?

Yeah, I think that one of the biggest things for me is growth and wanting to improve myself, as a person. Or, just understand why I do certain things, why I react to certain situations and the way that I do. And I wanted to know what experiences in my life were either traumatic or monumental enough to kind of shape the person that I am today. You know, I feel like when you do psychedelics it's like, at least for me, it's been really introspective... I just wanted it to be in a concentrated kind of night and to do the work and understand myself more and take it, carry that through the rest of my life and my experience at Cal

Note	Emerging Theme	Theme Cluster(s)
again, a very intentional choice	Getting know self	
wanted to get to know self better specifically before starting college	Self-awareness	Intentions and Impacts
to identify the specifics of what shaped her as a person	Self improvement	Why Use

Next, I compiled IPA notes across participants to create a “Theme Table.” The full table is included in the appendix (Appendix B).

***Top-down/Bottom-up***

The IPA methodology necessitates that emergent themes and theme clusters be derived from the participants’ quotes.<sup>36</sup> However, I designed, conducted, transcribed, and analyzed the interviews, meaning a top-down/bottom-up approach (top-down in that themes were influenced by the interview question design; bottom-up in that themes emerged out of participant quotes) was unavoidable. It would have been impossible for me to not identify emergent themes in a participant’s responses that were not influenced by the interview questions that I had written myself. Emergent themes and theme clusters were thus derived both top-down from interview questions and bottom-up from patterns that I identified in the transcripts.

***Participants***

Ten currently-enrolled UC Berkeley students participated in the interview portion of the study. In order to be eligible, participants were required to have at least one reported instance of use of psychedelic drugs during the time that they were enrolled that they considered personally meaningful.

***Selection***

*Forty-five* respondents filled out the Qualtrics survey and I hand-selected 10 interview subjects based on their demographic data. All eligible students had personally meaningful experiences with psychedelics. As

36 I. Pietkiewicz, and J. A. Smith, “A practical guide to using interpretative phenomenological analysis in qualitative research psychology,” 7-14.

this study was meant to generate rather than confirm hypotheses, I selected participants that I assumed would provide a rich and diverse set of stories. I therefore selected participants based on their year in school, self-reported psychedelics experience level (numbers of use and number of different drugs used), gender identity, ethnic identity, SES, and degree of study. The only criterion meriting selection for an interview was that the survey respondent was either unique (i.e. the only respondent identifying with a specific ethnicity) or an outlier (i.e. the respondent with the lowest bias) in at least two demographics.

Interview participants were between 19-29 years old (mean: 22.1 years). One identified as nonbinary, four identified as women, and five identified as men. The average year in school was 3.1, with two transfer students and one student in their fifth year. Majors represented in the participants included Business Administration, Civil Engineering, Cognitive Science, Computer Science, Economics, Interdisciplinary Studies Field, Public Health, Legal Studies, Rhetoric, and Society and Environment. Two participants were pursuing dual degrees at the time of study. Self-reported ethnic identities represented by the interviewees included Asian, Hispanic (2), Indian, Pakistani, South Asian, Sri Lankan, Jewish, and White (2). Average bias out of 10 for interviewees was 8.2 ( $SD = 1.6$ ), representative of the 8.44 average of all who filled out the Qualtrics survey ( $n = 45$ ). While there is no data surveying UC Berkeley students' general bias towards psychedelics, I assume the 8.44 out of 10 average suggests that my overall participant pool was more positively biased towards psychedelics than the general population.

I began each interview by asking participants to first describe themselves and to then describe themselves in comparison to their Berkeley peers. Then, I asked them to describe their friends that use psychedelics, and again how they would compare themselves to one another. In order to give a brief sense of who these interviewees are before sharing their stories, here are brief excerpts from each of their self-descriptions:

*I am extremely caring for the most part. I act fairly and just... I'm super outgoing. I love to take on a challenge... I love to explore the unknown in many different ways, whether it's traveling... or in this case, substances. I am very open minded.*

*I really love the outdoors, I love hiking and that's always been a big part of my life... I love puns. I'm very sentimental and nostalgic.*

*I think I just feel like I'm especially different within my friend group... I feel like I'm unique among this set of people.*

*I'm not your typical "competitive-I-care-about-school-a-lot" Berkeley person and I'm definitely a part of the "I-like-to-help-community" Berkeley person.*

*I'm very passionate about human rights, especially women's rights and especially bodily autonomy... A lot of my fundamental experiences as an adult came from traveling.*

*I try to be an empathetic person as much as possible and care pretty deeply about relationships and friendships. I'm also someone who tries to work as hard as I possibly can, and learn as much as I can.*

*Works hard but doesn't take life too seriously, or anything too seriously. Likes to see the humor in things.*

*I'm more of an introverted person, I have a lot of anxiety that is very, very obvious.*

*Overall, I think I'm definitely on a more happier, optimistic spectrum in terms of people. And secure - I think that's why I've had positive experiences with things like psychedelics as well.*

*I'm a calm person, but I have a lot of energy when I need to. I like to spend my time out in nature. I'm also very mindful of other people and sometimes overly sensitive.*

I wanted to understand how participants described themselves in order to see what their immediate depictions of themselves were and if they included any references to psychedelics, in order to see if there were specific “types” of Berkeley students that use psychedelics. Despite the fact that all participants knew that this interview would be about their experience with psychedelics, only two participants referenced these drugs in describing themselves, but even these mentions were brief. Moreover, all participants talked about their social group when describing themselves, with only one mentioning having an external (non-Berkeley students) friend group defined by their use of psychedelics. It follows that none of these participants saw psychedelics as an integral piece in how they describe themselves. Rather, participants represented other subsets of the UC Berkeley student body who happened to use psychedelics. Participants separately stated themselves as having a strong affinity with the following specific communities: “queer,” “co-op,” “Greek life” (fraternities and sororities), “transfer student,” “international student,” “business school,” and “engineering student.” This was denoted by phrases such as “I fit in with...” and “I am a part of...” From this study, it is difficult to identify any possible singular identity and/or community centered around psychedelic drug use at UC Berkeley that may be worth further research. Even social groups with a reputation for partying, such as Greek-letter societies or Berkeley Student Cooperative houses, did not appear to have a reportedly pervasive culture of repetitive psychedelic drug use. Consequently, it is of utmost importance to see these interviewees as individuals and their psychedelic experiences as a part of their uniquely personal college journey, rather than as representatives of psychedelics-using subcommunities or countercultures.

## Results

In this paper I report five different clusters of themes from the interviews: 1) attractions of psychedelics, 2) varieties of experiences, 3) limits to use, 4) adverse reactions, and 5) lasting impacts. Emergent themes contained within the theme cluster were derived bottom-up from participant quotes. Theme clusters were largely derived top-down from the interview guide. Here I will discuss how emerging themes and theme clusters were identified, and how I derived operational definitions of themes.

The first theme cluster that I will discuss is “Attractions of Psychedelics: Why UC Berkeley Students Tried and Used.” The “Attractions” cluster largely corresponded to answers to the “How did you first decide to use this particular substance?” question on the interview guide. “Attractions” is split into two sections: first-time use and subsequent use. These were easily delineated by the aforementioned interview question, simply depending on if the psychedelic experience being discussed was the participant’s first or subsequent time using psychedelics. That said, multiple less significant experiences were commonly mentioned during the interview (generally during the last portion of the interview when asking about broader scope of psychedelic experience(s)), so this theme did not solely emerge from the “How did you first decide” question. Moreover, quotes related to motivations for subsequent use generally emerged throughout the “Beforehand, intentions” section of the interview and again in “Other Questions” (Appendix A). For first-time use, I identified five different broad attractions of psychedelics to this set of students: 1) novelty, 2) thrill-seeking, 3) influence from peers, 4) self-exploration, and 5) as a perceived feature of the college experience. These emerging themes were derived bottom-up from participant quotes: I defined “novelty” as encompassing quotes related to the desire to try psychedelics due to the sheer newness and uniqueness they expected from the experience. Somewhat related, I defined “thrill-seeking” as encompassing quotes related to the desire to have a fun time with a highly stimulating experience - this has some overlap with novelty, but not entirely. “Influence from peers” was defined as quotes related to either having heard about a specific peer(s)’s experience(s) with psychedelics that motivated them into trying and/or trying psychedelics at a peer’s suggestion. I took the phrase “self-exploration” from Participant 2’s quotes about wanting to “explore myself” and defined the theme as trying psychedelics specifically in order to occasion new personal insights. Similarly, I took “as a perceived feature of the college experience” from participant quotes and limited this theme specifically to quotes semantically similar to the ones reported herein.

The second theme cluster that I will discuss is named “Varieties of the Golden Bear Psychedelic Experience.” This name is meant to simply encompass the fact that participants reported a variety of unique experiences and is defined by the acute effects participants reported having during the psychedelic experience. The five “varieties” reported were emerging themes derived bottom-up from quotes and include: 1) connected with nature, 2) trauma

and healing, 3) self-awareness, 4) presence and gratitude, and 5) challenging trips. The names of these emerging themes are also derived from participant quotes and meant to illustrate the source of my interpretations. The types of quotes that defined each theme are reported. Quotes were almost entirely derived from responses to questions within the “The psychedelic experience itself” section of the interview guide (Appendix A).

The third theme cluster that I will discuss is “Limits to Use.” Unlike the aforementioned clusters, limits to use emerged bottom-up from quotes and did not correspond to a specific question(s) on the interview guide. Rather, it was a theme that arose while reading through the transcripts and I deemed worthy of discussing considering that the United States Drug Enforcement Administration (DEA) considers this class of drugs as having “a high potential for abuse and the potential to create severe psychological and/or physical dependence,” despite the scientific literature reporting otherwise.<sup>37,38</sup> The emerging themes within this cluster, “uncertainty,” “timing of the trip,” and “time required to process,” emerged bottom-up out of the transcripts. They were defined by reported features of the experience that limited the frequency of their use of psychedelic drugs.

The fourth theme cluster that I will discuss is “Adverse Reactions.” Emerging themes were “acute,” and “lasting” adverse reactions. I defined these as negative experiences while still under the influence of the drugs and negative experiences in the indefinite amount of time following the conclusion of the trip, respectively. The acute and lasting themes arose in responses to questions in the “The psychedelic experience itself” and “Post-psychedelic experience” sections of the interview guide (Appendix A). Even though these responses were not fully anticipated by the interview guide nor the generally positive bias towards psychedelics illustrated by the eligibility survey, it is important to note them to provide a balanced depiction of the student narrative and to illustrate that “personally meaningful experiences” is not a synonym for “overwhelmingly positive.”

The fifth and final theme cluster that I will discuss is “Lasting Impacts.” The cluster was derived top-down from the “Post-psychedelic experience” questions of the interview guide, but the emerging themes contained within the cluster were derived bottom-up from participant narratives. These emerging themes were 1) “affirmations,” 2) “realignments,” and 3) “a note on turning on and dropping out.” They were defined by persisting impacts psychedelics had on their lives. The first theme was defined by participant quotes and named in the language of Participant 5. I defined the second emerging theme as encompassing the several ways participants described the impact of psychedelics as change-inducing - I chose the word as to encompass the change-inducing impacts in participants’ experiences that resulted from a personal insight. The third is a reference to Timothy Leary’s “rejection of establishment values,” which is appropriate considering that much of the federal policy around psychedelics was a response to a “psychedelic revolution” championed by Leary in the 1960s.<sup>39</sup> This decision to include a reference to Leary was a result of bottom-up emerging themes, but identifying a theme related to lasting impacts on the perception of college was influenced top-down by the interview question(s) related to college. These first two themes arose out of the “Post-psychedelic experience” section of the interview guide, the third one specifically emerged from responses to “How has the experience changed your perception of or attitude toward college?” (Appendix A).

### ***Attractions of Psychedelics: Why UC Berkeley Students Tried and Use***

According to the American College Health Association (ACHA), 6.6% of UC Berkeley students have used “hallucinogens.”<sup>40</sup> In this section, I will report why the UC Berkeley students I interviewed reported wanting to use psychedelics, whether for the first time or in subsequent times. An important note: From the numbers, it is clear that multiple students had multiple reasons for trying psychedelics. In using their quotes to typify a broad category, I am in no way reducing their overall motives into a single group.

#### *First-Time Use*

While each student had their own unique set of circumstances that led them to using psychedelics for the

37 US Drug Enforcement Agency, “Drug fact sheet: Hallucinogens,” 2020, <https://www.dea.gov/sites/default/files/2020-06/Hallucinogens-2020.pdf>

38 D. E. Nichols, “Psychedelics,” 264-355.

39 R. Forte, Timothy leary: Outside looking in. Park Street Press, 1999.

40 American College Health Association, “National college health assessment survey: University of california berkeley executive summary spring 2017.” Hanover, MD, 2017.

first time, I identified five different broad attractions of psychedelics to this set of students: novelty ( $n = 8$ ), thrill-seeking ( $n = 6$ ), influence from peers ( $n = 4$ ), self-exploration ( $n = 3$ ), and as a perceived feature of the college experience ( $n = 3$ ). Students trying psychedelics for the sheer novelty of it said things like Participant 5: "I just wanted to have a very interesting experience and something new."

Those expressing thrill-seeking motives generally cited simply wanting to have a good time along the lines of this quote from Participant 7:

*I think I was initially just drawn to it because it seemed fun. My brother told me that he did mushrooms when he went to Disneyland for Grad Night, and I was like, "Oh, that sounds really fun."*

This quote is also an example of how a single participant can contain multiple motives: while she was reportedly drawn by how fun mushrooms sounded, this is also an example of students being influenced by their peers into trying psychedelics, as Participant 7 emulated this experience of doing psychedelics at Disneyland for her own Grad Night a couple years after. Three other students reported trying psychedelics in part because their peers had told compelling stories that they wanted to see for themselves.

Students who first tried psychedelics in the name of self-exploration ( $n = 3$ ) had prior knowledge of psychedelic effects beyond what their peers said. In the case of Participant 1, it was an extension of the self-reflective nature of her experiences with cannabis. Participant 9 had done his own research and listened to podcasts about the possibilities of personal insights and wanted to try out himself. Participant 2 had come from a community where the ceremonial use of psychedelics was destigmatized. She said this about wanting to try psychedelics the summer before starting at UC Berkeley: "I wanted to do something like that, before I started to live independently...I just wanted to get a deeper sense of who I was before I went and established myself in a new place."

The last emerging theme I identified from participant's reasons for first trying psychedelics was the perception that using psychedelics was an important feature of the college experience. Here are quotes from Participants 5 and 9, respectively, touching on how they perceived psychedelics as a necessary to their time in college:

*I think it was a pretty intentional choice. I talked about it with the friend that I had done it with and I had heard his experience as well. I thought, "Yeah, so that's an experience that I kind of want to try before college ended."*

*I wanted to try psychedelics when I came into college - I wanted to try everything... I think it's a very interesting and fascinating atmosphere and I wouldn't be okay with not trying everything. Yeah, I just think it's always exciting.*

### *Subsequent Use*

All participants ( $n = 10$ ) said that they would do psychedelics again in life, to varying degrees of enthusiasm and frequency. Here, I will present the reasons behind subsequent use of psychedelics, after participants had a sense of what to expect. Many ( $n = 7$ ) participants reported a desire to be more intentional with their subsequent use of psychedelics, where psychedelics are used for a particular purpose. Participant 1, for example, reported a later experience intending to strengthen specific relationships:

*I was kind of searching for a connection. I felt very happy with this group of people, but I didn't necessarily feel very close with any of them. And it felt like a way that I could build friendships with people. Because with every psychedelic experience I've had with someone, I've felt so much deep connection with either that person or that group of people afterwards. So, it's powerful in that way - it's just a shared experience that can't really be formed in any other situation.*

Participant 6 reported similarly using psychedelics to strengthen relationships, but in his case when catching up

with old friends, rather than connecting with new ones. Another type of intentional subsequent use typified by Participant 2 is seeing psychedelics as a part of one's personal growth. She said the following about her use of other psychedelics following her first trip with ayahuasca:

*I have come to love them, respect them, and honor the power that they have to really incite self-growth and like self-awareness. Ayahuasca allowed me to realize how truly powerful psychedelics are - not just like their recreational use but also like the incredible healing potential that they have. So, I think I just wanted to continue on that journey.*

A recurring theme in the interviews was participants' qualification of the psychedelic experience as singularly unique. According to Participant 7, "psychedelics push you and your emotions to a threshold that you will never experience when you are sober." A couple participants ( $n = 2$ ) reported that their subsequent use of psychedelics was characterized by a desire to return to that "threshold." Participant 10, for example, reported that

*My intention was to repeat a previous experience that I had. My first LSD trip was quite profound. I had full the prototypical ego, death, mystical experience - and I was seeking it because I felt like I needed to see it again.*

In the next section, I will report which types of experiences were reported by participants to further illustrate how unique these non-ordinary states of consciousness are.

### ***Varieties of the Golden Bear Psychedelic Experience***

Participants in this study reported the whole gamut of physical and psychological effects seen in the literature.<sup>41</sup> Hallucinations - a perceptual experience generated from the mind and not actually there externally - of some kind, whether it be visual, auditory, or tactile, were reported by all ( $n = 10$ ) participants. Empathogenic effects, increases in empathy and connectedness with others, are commonly associated with MDMA in the literature, but most participants ( $n = 8$ ) in this study also reported empathogenic effects attributed to "classic" psychedelics like psilocybin mushrooms and LSD.<sup>42</sup> Other positive psychological effects reported included feelings of awe, profundity, gratitude (during and after), and mystical experiences.

While it is important to note that effects seen in published basic and clinical research are reflected in these reports, this paper is more concerned with the features of the experience unique to college students.

#### *Connected with Nature*

One of the common mantras in psychedelic harm reduction education is Set and Setting. "Set" is one's internal, mental state going into the experience. "Setting" comprises external factors of the experience, including the environment and who is present. In the lab, these two variables have been shown to be highly influential in shaping the quality of the psychedelic experience.<sup>43</sup> Settings that students reported taking psychedelic drugs in included at home, in a yurt, concerts, outside in nature, walking around Berkeley neighborhoods, and at festivals. Participant 2, who participated in a guided ayahuasca ceremony in a yurt, had a facilitated experience, whereas all others were either with friends, family, or alone. Out of this sample of UC Berkeley students, by far the most common "type" of experience was outside and with friends - while it was not always cited as their most impactful psychedelic experience, almost all ( $n = 9$ ) mentioned having tried psychedelics outside with friends at least once. Within this group, four had their most impactful psychedelic experience at a park and referenced nature as a part of the overall experience. Participant 1, in particular, had a tremendous connection with nature, where she had her first "intense trip" with psilocybin mushrooms:

*It was very powerful in the way that it felt like I really fell into something - After that I became much more comfortable taking psychedelics. It was also the first time that I've done a large amount of psychedelics*

41 D. E. Nichols, "Psychedelics," 264-355.

42 J.J. Palamar, and P. Acosta, "A qualitative descriptive analysis of effects of psychedelic phenethylamines and tryptamines," e2719.

43 R. L. Carhart-Harris, et al., "Psychedelics and the essential importance of context," *Journal of Psychopharmacology* (Oxford), no. 32(2018): 725-731. doi:10.1177/0269881118754710.

*and where I've really been in nature the entire time and that was the focus of the entire trip. Whether I was with people or by myself, I really felt connected to nature and my surroundings. It just felt so intensely grounding. This was also at the end of the summer and it felt like being connected to both the environment and the change of seasons. Like, it felt like the end - but also the start of something. I remember having moments when I would leave the group and I would be by myself and I would just be thinking about random stressors, or just tangential things in my life, and I would always become centered again in nature and the importance of it... I was going through a lot of like, emotional states, but then I kind of just had a moment of realization like this: At the end of the day, what really matters is nature and this beautiful Earth that we're in and all of that. I feel like if I was in a non-psychedelic state, it would've been easy for me to not be able to get to that place and just focus on, "I'm so sad right now."*

Here, psilocybin mushrooms elicited “random stressors” and sadness, but they also provided relief. Moreover, she attributes connecting with nature as the primary anxiolytic source. This participant connected with nature by seeing herself as a part of it, both spatially (in the ground in front of her) and temporally (in the changing seasons). Upon further reflection, this was not a fleeting moment and remains an important emotional reference point to this day:

*It's something that has continued to ground me, y'know, in this non-psychedelic state of consciousness. I'll be like, "Why am I in school, why am I doing this, what is the point?" And I can kind of go back to those moments - like one specific moment, I was sitting under a big tree and just looking up at it and feeling so profoundly entranced by the power of nature. It felt like a very feminine energy to me. I can't really explain why, but it felt very meaningful in that way. So in very nuanced ways, I feel like it helped dictate my day-to-day things, making me more mindful of my individual choices and also making me want to encourage other people to do things that are more mindful towards the environment and the Earth that we share. It also pushes me to put more work into things like my education.*

#### *Trauma and Healing*

One participant reported having her most impactful psychedelic experience during an ayahuasca ceremony led by “shamans from Peru.” While no other participants spoke of participating in a group psychedelic ceremony such as this, her reported experience is in line with the published literature on the therapeutic effects of ayahuasca used in Indigenous Amazonian ceremonies.<sup>44</sup> She reported personally meaningful visual hallucinations:

*A big part of the journey - the overarching theme of it - was just women in my life and the lineage of women that I came from. So I definitely had visions of all of the women in my life, who are really important to me. I had this montage of visions of both my like grandmas. I had visions of hugging my mom and just like the comfort that I felt. And, the safeness that I felt with all of them and how strong they were.*

Additionally, she reported “purging,” or vomiting, that was associated with trauma:

*You just feel physically and emotionally lighter because not only do you revisit these traumas but you literally purge - you throw them up too. So there's that sense of lightness in that way... [The shamans] would visit parts of my body, [and] free the energy tension from that part and how it stemmed from it. Them freeing the energy tension in my body corresponded with me purging the emotional trauma that it stemmed from.*

Participant 2's ayahuasca experience was largely defined by discovering unknown traumas and finding “grounding” in herself and her family. She names this experience as being helpful to this day in navigating UC Berkeley:

*Ayahuasca allowed me to be so comfortable with my own individual experience and not feel any anxiety,*

44 J. Hamill, et al., “Ayahuasca: Psychological and physiologic effects, pharmacology and potential uses in addiction and mental illness,” *Current Neuropharmacology*, no. 17(2019): 108-128. doi:10.2174/1570159X16666180125095902.

*or comparison or anything like that. I feel like I'm just so okay with my own experience. And that has really helped me cope with the stressful environment that I think is present at Berkeley.*

The other student (Participant 8) who reported revisiting past traumas as an especially prominent feature of their trip, in this case on a moderately large dose of psilocybin mushrooms (“seven to eight grams”), also described it as a “grounding” experience:

*This first time I actually did mushrooms - psilocybin - was with my sister... Every time I've done them I've never really had any visual experiences, it's always been more feelings. And we ended up having a really emotionally, eye-opening experience with each other. We were outside and it was just the two of us and we ended up just talking about things we've gone through, we went through collective trauma with our family together. They're actually memories that I had pushed so deep inside and she started talking about things that just came to the surface and it was— There were lots of tears, but in a good way. Almost like a flood of emotions and then a calm, right after. So that was a pretty big experience, especially that being my first time on any type of psychedelics.*

This student in particular struggles with anxiety, but upon lying down and listening to music, reported what “felt like the inverse of my panic attacks... and everything kind of just felt calmer.”

Participant 2 was prepared for “10 years of therapy in one night” and therefore perhaps primed for the type of experience she had. Participant 8, on the other hand, reported expectations that were “warped by pop culture” and went into the experience rather unprepared, and yet still had this profoundly therapeutic experience.

I asked all participants if any memories came up during their most impactful psychedelic experience that we spoke about in the interviews. Only these two participants explicitly spoke of having experienced the emergence of old memories during their respective psychedelic experiences. Only one other participant (total  $n = 3$ ) reported realizing her trauma as a major piece of their most impactful psychedelic experience.

#### *Self-Awareness*

Other qualitative psychedelic research described all interviewed participants who had previously participated in an MDMA clinical trial as having an experience of “improved self-awareness,” defined as having a better understanding of themselves, following treatment.<sup>45</sup> All participants in the present study ( $n = 10$ ) also described having some kind of lasting insight that qualified as improved self-awareness. All participants gained a better understanding (either novel or affirming previously-held notions) of themselves after the trip. Participants also reported being more aware of their authentic thoughts and feelings while still feeling the effects of psychedelics. I will address self-awareness when reporting the lasting impacts of psychedelics use in college later in the paper (***Lasting Impacts***). In this section, I will report what this increase in self-awareness looks like during the trip itself. First, it is important to note that not all participants reported having a life-changing experience as a result of increased self-awareness. Participant 7, for example, notes that “From my experience, it doesn't change how you feel about anything, it only reveals your true thoughts and your true feelings towards things.” Sometimes this inner discovery is pleasant, as Participant 8's was:

*I think that “elated” is a good word to describe how I felt. I just didn't have any anxiety during the whole time. For once, it was like peace and serenity in my brain instead of a million thoughts going everywhere all at once.*

On the other hand, one of Participant 3's significant LSD experiences with “one or two tabs” that “hit me as if I would have taken 10, 20, 30,” was described as more of an unpleasant discovery:

*I started looking around me, and I remember looking at my hands and being like, “Oh what am I doing? This is not even—I'm not doing it for the fun anymore.”*

45 W. Barone, et al., “Perceived benefits of MDMA-assisted psychotherapy beyond symptom reduction: Qualitative follow-up study of a clinical trial for individuals with treatment-resistant PTSD,” 199-208.



Participant 1 described this experience of acute increase in self-awareness as due to being in a different state of consciousness:

*I think that this is something that's not just unique to psychedelics. For example, drinking coffee is something that kind of takes you out of the mental fog into a new state of consciousness that realigns the way that you're thinking. In a much more intense way, psychedelics can do the same thing. It kind of just tears away those layers of the mundane tasks of the day - you're not worrying about the assignments you have due the next day, you're able to dive much deeper and see the bigger picture of life more clearly... And I think that psychedelics allow you to zoom back out and say, "Why am I doing this?"*

The word used to name these drugs—"psychedelic," roughly translating to "mind-manifesting"— is particularly apt here. As compared to other drugs like caffeine (see Participant 1's reference to coffee), this particularly prominent elucidation of participants' inner experiences was integral to their experience of tripping. While this acute increase in self-awareness has been shown to be beneficial to populations included in clinical trials, the findings presented in this paper suggest that it is a valued experience for these Berkeley students as well.

#### *Presence and Gratitude*

Several participants recounted experiences with LSD and psilocybin mushrooms that were fun and exciting, yet less distinctly profound than the trips addressed above. Even so, the students described the seemingly simple experience of feeling present in a personally meaningful way. There was not a clear pattern in participants' experience of presence, as seen in the similarities and differences between Participants 5, 7, and 9. Participant 5, for example, straightforwardly said that he "felt very, very present" during his experience with an average dose of LSD ("one tab"). Whether that was with his breath or the "trees swaying in the distance," Participant 5 described an experience of being fully immersed in his external surroundings, contrasting with a simultaneously tumultuous inner experience:

*I felt like I was in my head a lot and I felt like whenever I looked up and saw what was in front of me, it kind of distracted me from what I was thinking... I was able to focus on one thing in very, very, detailed attention and really feel a lot of features that I wouldn't have otherwise seen... I felt colors become extremely, extremely vivid — so greens are really green and oranges are really orange and seeing the sunset and kind of all the range of colors in the sky and all that stuff... I appreciated what I was seeing more than what I was thinking... What I was experiencing in the moment — I was more aware of it than anything.*

Presence, the experience of one's self fully existing within their immediate environment during the current moment, is suggested to be a distinct psychological state, or state of consciousness.<sup>46</sup> Moreover, research has shown the therapeutic benefits of this state of consciousness— of "savoring the moment."<sup>47</sup> Participant 5's feelings of presence corresponded with pleasurable visual hallucinations and auditory distortions along with acute fear and anxiety. Another participant (7) recalled her experience with presence while on mushrooms in the following way:

*I was sobbing and I remember looking at the trees and looking at the leaves on the trees and [they] were so beautiful and I was just mesmerized by each leaf on the tree and understanding the parts that make up the whole... that was — I don't know, shocking, in a way, because I hadn't really thought about things like that before, but to sit there and to be able to stare at a tree and look at a single leaf and think about the*

46 J. A. Waterworth, et al., "Presence: Form, content and consciousness," in *Immersed in Media: Telepresence Theory, Measurement & Technology*, eds. Matthew Lombard et al. (Cham: Springer International Publishing, 2015), 35-58. doi:10.1007/978-3-319-10190-3\_3.

47 L. Kiken, K. Lundberg, and B. Fredrickson, "Being present and enjoying it: Dispositional mindfulness and savoring the moment are distinct, interactive predictors of positive emotions and psychological health," *Mindfulness*, no. 8(2017): 1280-1290. doi:10.1007/s12671-017-0704-3.

*context of that leaf was crazy.*

Participant 9 also had a non-ordinary depiction of being in the present moment. His strongest-reported feelings during his second and most impactful experience with psilocybin mushrooms were of gratitude and connection. Note that in speaking with the general “you,” he is referring to his own experience:

*Day-to-day, you kind of have to stop to make sure you're being grateful, but on psychedelics that's the only thing you can do. There's nothing else to do but feel very, very grateful and connected. It's kind of an impersonal gratitude. It's just grateful for being there in the moment, firstly, grateful for being around people who you care about, and even people you don't know. It wasn't like, "Oh I'm so grateful that I've had a good upbringing, I have a good family." It wasn't any of that. I wasn't thinking about family members or friends or my own life as much, I was more thinking about being alive - the actual feeling of being alive and being there and being in that moment.*

### *Challenging Trips*

From participants' reports, psychedelics are powerful drugs in terms of their range and intensity of psychological and perceptual effects. They do not cause substance addiction. No overdose deaths have ever been reported from the use of classic psychedelics; the primary potential for harm with psychedelics is psychological rather than physiological.<sup>48</sup> Even still, existing literature has shown the potential for psychedelics users who experienced an acutely psychologically challenging trip— what may be characterized as a “bad trip” in popular culture— to make sense of it after the fact in a way that produces “existential and life-altering insights.”<sup>49</sup> Thus, I will refer to these experiences as “challenging” rather than “bad trips.” Out of the 10 participants, most ( $n = 8$ ) reported at least one unpleasant psychological experience (whether recurring or fleeting), but only two participants recalled a particularly challenging trip in detail as their most significant, where these unpleasant feelings predominated the overall experience. One was from a relatively large dose of LSD (Participant 3), whereas the other (Participant 10) was from a “single tab” of LSD. Alone, meditating, and following some pleasurable and “interesting hallucinations,” Participant 10 reported:

*I started feeling very dissociative following that. I got a huge bout of anxiety and started having panic attacks because I wasn't able to fully let go and let my ego dissolve... I was like, "Why can't I let my ego dissolve?" and then I'd go down these rabbit holes pushing myself further and further into panic attacks. And I felt like my heart was beating out of my chest, very strong heart palpitations... I started breathing really hard. And holding my pillow... After holding my pillow, I started going down the suicidal route, thinking that I have to kill myself in order to really let go. Like, the only way to let go of my ego is if I kill myself... like, "Oh, if I can't let go of myself then something external has to forcibly remove myself from my body." And it was really intense, feeling the only way out was death, like physical death.*

This participant went on to explain that in hindsight, this dark moment “allowed [them] to grow.” I will expand upon this in **Lasting Impacts**. For now, it is important to note that while all participants reported the ability of psychedelics to occasion powerful experiences, these experiences can take the form of something unimaginably negative as well as positive. While this provides a characterization of the acute effects of challenging psychedelic experiences, there will be a later section dedicated to **Adverse Reactions** which addresses lasting adverse effects.

### **Limits to Use**

Classic psychedelics are not physically addicting and do not lead to dependence (Nichols, 2016).<sup>50</sup> Even so, with such reportedly simulating and profound effects, I wondered why students did not use psychedelics more

48 D. E. Nichols, “Psychedelics,” 264-355.

49 L. Gashi, S. Sandberg, and W. Pedersen, “Making ‘bad trips’ good: How users of psychedelics narratively transform challenging trips into valuable experiences,” 102997.

50 D. E. Nichols, “Psychedelics,” 264-355.

often. Subjects reported reasons limiting their use which can be clustered into three categories: (1) the degree of uncertainty involved, (2) the amount of time required to trip, and (3) the amount of time required to process an intense trip before embarking on another one.

#### *Uncertainty*

Another important feature of the psychedelic experience reported by many participants ( $n = 6$ ) that can limit the frequency of use is how relatively unpredictable and individually unique the psychedelic experience is, especially as compared to other drugs used more frequently by college students. For example, Participant 9 said “As compared to either weed or alcohol, people have such different trips— everyone reacts very differently” to psychedelics. Moreover, these trips may uncover aspects of the psyche that users must be adequately prepared to confront when deciding to take these drugs. As Participant 2 said, referring to setting intentions for a trip,

*You think that you may have the reins because it's your consciousness and you're like, “Oh no, this is what I'll unpack,” but it's never fully what you expect. They [the psychedelics] are always just like, “Ha, kidding! You have trauma here.”*

#### *Timing of the trip*

All ( $n = 10$ ) participants reported their most significant psychedelic experience occurring on a day singularly dedicated to the experience or, in the case of Participant 2's ayahuasca experience, a ceremony continuing into the next day as well. A number of participants ( $n = 4$ ) specified having “set an entire day aside” (in Participant 8's words) to use psychedelics when describing their experience, whereas the rest ( $n = 6$ ) suggested the same in their stories: a day spent using psychedelics is a day spent almost entirely away from usual daily routines and responsibilities. Thus, the day chosen to use psychedelics by participants was determined by the time that they could afford to spend using psychedelics or, in the case of Participant 1, breaks during the school year:

*It was a transition period. It was the end of summer... school was starting again soon. I was done with my summer classes and stuff, so I had so much less responsibilities and stress on my plate and it was an opportunity for me to do something truly for myself and not for some blind future goal or anything. It was just a day that I could completely spend in my own body.*

Assumedly, this is largely due to the fact that the acute effects of classic psychedelics last for a rather long duration: four to six hours in the case of psilocybin and six to twelve hours in the case of LSD. However, participants also reported that once the acute effects wore off, even more time is required to process the experience. In the words of Participant 2, after the ayahuasca wore off

*I was just kind of in awe of all that happened because the experience itself is just so intense and I think it just— I was just processing it and trying to understand it.*

#### *Time Required to Process*

As the quote from Participant 2 illustrates, once the acute psychedelic effects wear off, the rest of the day is generally dedicated to resting and processing the experience. Moreover, all participants reported spending days, and in some cases months and years, making sense of their experience. As reported by participants, this amount of time required to process a single psychedelic experience limited when they felt ready for their next trip. Participant 1, for example, had wanted to do psychedelics again for some time after her first experience with LSD but, despite this desire, she had to wait for the “right time” before using psychedelics again; in her case, about a year later and with mushrooms.

While all participants ( $n = 10$ ) reported that they would like to do psychedelics again at some point, most ( $n = 6$ ) described the time needed to process an impactful trip as a limiting factor in deciding when to use psychedelics again. As Participant 7 puts it, the intensity of her first experience has made her careful about every

subsequent use:

*I had never been that high before, so to get caught up in a leaf on a tree or to feel like you cannot stop crying uncontrollably, is kind of uncomfortable— it's very uncomfortable. You're put in this state that you would not ever normally feel. And so the next day... it made me appreciate [sober] reality and not being on drugs. And not being high and not being on psychedelics because I was like... "this is beautiful as well, this is nice, this is calm, this is comforting to me, I am no longer pushed emotionally to the state of such rapture and also confusion and just intensity...." It kind of taught me what it meant to get very, very high, and so I was like, "Okay, I would have to be very confident that this is the state that I feel comfortable getting to before I do something like this again and before I do it to this extent."*

### **Adverse Reactions**

As mentioned in *Varieties of the Golden Bear Psychedelic Experience*, most participants reported having some kind of undesirable effect from psychedelics of varying degrees and intensities, with two recalling a challenging trip as their most significant experience. Acute negative psychological effects reported by interviewees included feelings of anxiety, panic, paranoia, fear, overwhelm, and psychological discomfort, revisiting of past traumas, loss of the ability to speak, and suicidal ideation. Self-reported unpleasant physiological effects included eye strain due to pupil dilation, increased heart rate, nausea, vomiting, and dizziness. In all cases, however, these physical effects were treated as qualitatively insignificant when compared to the unpleasant psychological effects. As addressed earlier in *Limits to Use*, the uncomfortable features of the psychedelic experience can play a big role in curbing how often students choose to trip.

#### *Acute Adverse Reactions*

Out of the aforementioned acute adverse reactions, the most commonly reported by far was some degree of fear ( $n = 8$ ). Qualitatively, this fear largely appeared due to unease or confusion as consequence of their altered state of consciousness. Participants 1, 3, and 10 reported having frightening thoughts and/or hallucinations that were more severe than unease. Participants 3 and 10 were the only students that recounted experiences that were psychologically challenging throughout. The other participants mentioned negative effects as a lesser aspect of an overall positive experience.

Despite the prevalence of unpleasant effects of any duration, a theme observed in the interviews was that acutely negative experiences could coincide with personally meaningful moments. As Participant 1 put it,

*The discomfort is also what made it so powerful, like when I felt this extreme connection to nature and "this is all that matters," I was sobbing. But it felt so good to cry about it.*

Moreover, Participants 3 and 10 narratively transformed their predominantly challenging trips into profound, beneficial insights into their psyches. Participant 3's experience helped catalyze some major life changes, like their return to school. Participant 10 made sense of his challenging trip in the following way:

*Challenging experiences elucidate a whole other part of myself, which is a really resilient part of myself. And so challenging experiences, negative experiences, had a lasting impact on me. They allowed me to grow. That's the dichotomy of the psychedelic experience: it can be profoundly negative, but it can also point out sources of tension. So it's hard to define something as one of those two, like poles, either positive or negative. It was both.*

#### *Lasting Adverse Reactions*

While Participant 10 found positives in his negative experience, he also reported a correlation with starting to experience anxiety for the first time.

*I didn't really experience physiological anxiety before then. And since then, I have. It's been four years. I won't say that's a causation because there's no causation that I can really point towards, but I think that was the beginning of my battle with anxiety.*

Other participants reported less marked but potentially problematic consequences of psychedelic experiences. Half of the students ( $n = 5$ ) experienced the challenging task of living with newfound personal insights. Two participants other than Participant 10 (total  $n = 3$ ) also reported challenges in processing a newfound awareness of their emotions following an intense trip. Participant 4 typifies the dually positive and negative nature of this experience:

*I think that it honestly made me experience emotions on a greater level, because I feel like before I ever did psychedelics I just would not feel as much. I would not think about the emotions I had. I would just try to keep a stable "me" instead of letting myself feel all these emotions. I feel like after I'd done psychedelics, I allow myself to feel the emotions that I need to feel more because it kind of forces you to. So I think that it has definitely impacted my mental health in both positive and negative ways.*

Another potentially challenging outcome typified by Participant 4 was the recognition of living a life that is not reflective of one's true priorities:

*I was raised by immigrant parents who put a strong emphasis on material ways in order to succeed, so they were very persistent about college, so... that's how I felt about college before. I think that after I've done psychedelics, I have definitely broken away from that very much— honestly, completely three-sixtied, [to the point] where I don't think college was a good choice for me.*

### **Lasting Impacts**

In the *Varieties* section, I reported how all participants described a lasting impact of psychedelics use qualifying as improved self-awareness. I categorize the lasting impact of the acute insights which arise during a profound psychedelic experience into two groups: "affirmations" and "realignments." According to IPA methodology, interview subjects' own words should be used to designate a theme name (Pietkiewicz & Smith, 2014).<sup>51</sup> As such, this categorization is derived from quotes from Participant 1 and 5. Participant 5 quoted the impact of his experience with LSD as an "affirmation." "Realignment" comes from Participant 1's statement that psychedelic use can "put you into a new state of consciousness and really realigns the way that you're thinking." I use this term to encompass the several ways in which participants described the impact of psychedelics as change-inducing.

#### *Affirmations*

As reported earlier, Participant 7 described a feature of the psychedelic experience as revealing one's true thoughts and feelings. Based on their report, I defined the lasting impact of a psychedelic experience as an "affirmation" wherein the true thoughts and feelings which arose during a trip are congruent with the ones that the participant is already consciously aware of in their sober state. Participant 7, for example, reported this affirmational experience:

*My psychedelic experience was one part of a greater whole of my understanding of what it takes to be able*

51 I. Pietkiewicz, and J. A. Smith, "A practical guide to using interpretative phenomenological analysis in qualitative research psychology," 7-14.

*to experience the things that I know versus someone just telling them to me. The tree was one of those things I want to point to and say, “Oh, that was a catalyst for my understanding of Inter-being.”*

“Inter-being” is a term coined by Zen Master Thich Nhat Hanh. It refers to the interconnectedness and interreliance of all things, living and nonliving, in order to exist.<sup>52</sup> Participant 7 went on to study the meditation practice of Thich Nhat Hanh at Plum Village. This practice solidified some of the feelings that arose when she looked at the leaves on the tree while on psilocybin mushrooms. In this study, affirmations were marked by accelerating a participant’s process in reaching a foreseeable conclusion or understanding. Phrases such as “I don’t think it was a major turning point” (Participant 5) and “they’ve kind of fit in with where I’ve been changing in general” (Participant 9) denoted affirmations occasioned by psychedelics. I qualified three participants’ lasting impressions from their experiences with psychedelics as an affirmation. These students may not have appreciated psychedelics as a life-changing experience, but as a life-affirming one. For example, while Participant 9 sees his psychedelic experiences in congruence with the rest of his overall college journey, they are some of his most distinct memories:

*It did fit into my gentle journey of college. I’m very glad that I did it. Despite it being only two experiences, I think it was a significant life moment in college... something I will think about when I reflect even years from now about college... Honestly in terms of specific moments, I wouldn’t be able to think of too many that are as significant. With other experiences — yeah like a club that I joined that impacted me a lot, there are some people that I met there — those are more like continuous-scale things. I don’t think I can point to as many discrete moments and be like, “Okay that moment was very significant in my college life.” I can’t think of moments — maybe a few here and there. A few good hikes and trips with friends, but not in the same way, I guess.*

### *Realignments*

I defined “realignments,” on the other hand, as true thoughts and feelings that were in some way incongruent with the ones that the participant was already consciously aware of in the sober state. Realignments were experienced by participants who reported their psychedelic experience as behavior-changing (some described their experiences as “life-changing” even) in some way. Seven participants reported the types of lasting impacts that I broadly categorized as realignments. Participant 8, for example, reported the following about how she started approaching her anxiety after using psychedelics:

*I definitely [feel] more compelled to address them [her negative feelings]... especially since being in college and down a lot more, depressed, and just feeling like this is just how it’s going to be forever. Being able to have these experiences [with psychedelics]... now I’m going to therapy - that was actually initiated because of that first experience [with psychedelics] and things like that, so they’ve literally impacted me.*

Some reported realignments were less marked as Participant 8’s, but still a realignment, nonetheless. Participant 1, who typified the student experience of being connected with nature, has used her experiences with psychedelics as “reference points” for the type of person she wants to strive to be. One such quote depicting her experience is the following:

*It’s something that has continued to ground me, y’know, in this non-psychedelic state of consciousness. I’ll be like, “Why am I in school, why am I doing this, what is the point?” And I can kind of go back to those moments — like one specific moment, I was sitting under a big tree and just looking up at it and feeling so profoundly entranced by the power of nature. It felt like a very feminine energy to me. I can’t really explain why, but it felt very meaningful in that way. So in very nuanced ways, I feel like it helped dictate my day-to-day things, making me more mindful of my individual choices and also making me want to encourage other people to do things that are more mindful towards the environment and the Earth that we share. It*

*also pushes me to put more work into things like my education.... It's just like a whole different ballpark. Looking back to my life before psychedelics... the way that I do things now in general seems so out of reach from that old version of myself... just like how I think about things now."*

For her psychedelics serve to reorient her back onto the path she wants to be on for when she veers off course.

### *A Note on Turning On and Dropping Out*

Unlike Timothy Leary's infamous urges of the 1960s counterculture to "turn on, tune in, and drop out," none of the participants' reports suggested that their use of psychedelics has led them to drop out of college or stop participating in society.<sup>53</sup> More broadly, these 10 student experiences suggest that their use of psychedelics has allowed them to get more in touch with their authentic selves — all ( $n = 10$ ) reported having some kind of personal insights. Participant 4 characterized a broader theme in the data, saying "I think that those thoughts are already there and it [psychedelics] just took the curtains off." Some ( $n = 3$ ) participants' experiences brought up feelings that may suggest a deprioritization of school at worst, but even these students' experiences suggest that they did not stop caring about school per se, but have taken less pressure off of academics to the benefit of their mental health. For example, Participant 2 reported the following:

*Especially at Berkeley... it's so easy to just be like, "Oh I don't have an internship." It's so easy to compare yourself, because everyone here is so incredible and doing such crazy things. And I feel like that can really get to you. But I feel like my experience with ayahuasca just allowed me to be so comfortable with my own individual experience and not feel any anxiety, or comparison, or anything like that... And also not be as stressed as I think other people are. I just realized that it doesn't matter if I work for a startup and what matters is if I'm happy and if that will help me be happy, in the future... I think it [ayahuasca] just helped me to be self-validating of my own experience, and what I want to do to not feel any shame or guilt surrounding that.*

The three students who reported experiences similar to this said that while their psychedelic experiences have taken pressure off of school, it is because they are prioritizing their values, passions, or simply engaging more in their emotional wellbeing. They believe that psychedelics have helped them better navigate an internal contradiction that, for whatever reason, school does not best allow them to pursue in an authentic manner.

Some students ( $n = 4$ ), however, reported the opposite — that psychedelics led to a reinvigorated appreciation of UC Berkeley and how it supports their authentic personal expression. Participant 3 reported a challenging mixed-psychedelic experience (several drugs involved, but predominantly a large amount of LSD) that catalyzed his decision-making process to return to school that eventually resulted in his enrolling at UC Berkeley. Moreover, Participant 4 reported the following after a moderate, single dosage of LSD,

*I really, really did care about things like academics, for example, things like my career and other things. If anything, it [LSD] really forced me to be real with myself about what I really enjoy about school, and so I felt like I took a lot coming away from that experience and thinking, "Yeah, I feel like I really need to focus on what I like..." I've always had the attitude where I want to have a lot of enjoyment in what I'm learning and what I'm doing, but I feel like that experience, if anything, reaffirmed, rather than drastically changed, the way that I see school. I feel like this [LSD] was more of an affirmation of a lot of my college experience.*

Different from the aforementioned experiences, Participant 1 reported a psychedelic experience that did not deprioritize school, nor did it affirm her appreciation of school. Her experience helped her find meaning and purpose within a degree that she is passionate about but has a community that she characterized as otherwise being competitive and inauthentic to her values. Her quote, "Why am I in school, why am I doing this, what is the

point?” from the section on realignments, illustrates these sentiments.

## Discussion

National surveys of American college students have demonstrated that students use psychedelic drugs, and yet, despite the wave of research demonstrating their efficacy in a number of clinical outcomes, the existing quantitative research on college students' use of psychedelic drugs is essentially limited to how their use does not correlate with higher rates of mental health challenges.<sup>54,55,56</sup> While it has been speculated that the psychologically beneficial effects of psychedelics can only be reliably occasioned in a setting designed to facilitate such an experience, there is no existing research exploring this speculation in college students.<sup>57,58</sup> This qualitative analysis of UC Berkeley students' impactful experiences with psychedelics illuminates the student perspective in a way that quantitative instruments, surveys, and speculation have not. Participant descriptions of before, during, and after their use of psychedelics provide further context for the data acquired by population surveys. The results of this study demonstrate that use of psychedelics by college students can lead to a wide variety of outcomes perceived as overall positive and insightful, regardless of particular substance (e.g. LSD versus psilocybin mushrooms) and prior experience with psychedelics.

This study did not seek to qualify rates of substance use as problematic, or concerned with rates of use as an outcome measure at all, as ACHA and NIDA do. Rather, one of the idiographic topics explored herein is why students reported choosing to use psychedelics at all. While overall motives were complex and multiple within subjects, broad categories describing first-time and subsequent use were extracted from the interviews. For first-time use, these categories were novelty, thrill-seeking, influence from peers, self-exploration, and the perception that the use of psychedelics was a necessary feature of the “college experience.” The first three categories were interesting, but not necessarily surprising as they are in congruence with prior research about why adolescents use any type of drug.<sup>59</sup> I was surprised both by participants who reported hoping that psychedelics would elucidate something important about themselves and participants who just wished to try psychedelics before they graduate. The themes of self-exploration and the college experience, rather than the rest of their lives as a time to try psychedelics, is consistent with the idea of the American college experience as a self-initiated rite of passage.<sup>60</sup> I found it interesting how using psychedelics was cited as a way to mark students' progression into and through college — and according to Blumenkrantz and Goldstein's framework, thereafter into adulthood and society-at-large.<sup>61</sup> I recommend that future research into college students' use of psychedelics look at it as a self-initiated rite of passage with the student's ultimate goal of finding themselves and their place in society, rather than as pathologized behavior. This study has reported potential adverse and deleterious effects, but the overall picture is more complex than that.

For subsequent use, the only identified theme connecting multiple motives was an increased level of intentionality — that subsequent use of psychedelics can be utilized to serve a particular purpose for these students. This contrasts highly with NIDA's and ACHA's conceptualization of young people's use of “hallucinogens.” NIDA's strategic plan presents drug use as a “major public health challenge,” whereas ACHA specifically looks

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54 ACHA, “National college health assessment survey: University of California Berkeley executive summary spring 2017.”

55 K. A. A. Andersen, et al., “Therapeutic effects of classic serotonergic psychedelics: A systematic review of modern-era clinical studies,” 101-118.

56 P. O. Johansen, and T. S. Krebs, “Psychedelics not linked to mental health problems or suicidal behavior: A population study,” 270-279.

57 R. L. Carhart-Harris, et al., “Psychedelics and the essential importance of context,” 725-731.

58 D. E. Nichols, “Psychedelics,” 264-355.

59 J. Novacek, R. Raskin, and R. Hogan, “Why do adolescents use drugs? age, sex, and user differences,” *Journal of Youth and Adolescence*, no. 20(1991): 475-492. doi:10.1007/BF01540632.

60 D. G. Blumenkrantz, and M. B. Goldstein, “Seeing college as a rite of passage: What might be possible,” *New Directions for Higher Education*, no. 166(2014): 85-94. doi:10.1002/he.20098.

61 D. G. Blumenkrantz, and M. B. Goldstein, “Seeing college as a rite of passage: What might be possible,” 85-94.



into negative “academic impacts” as a consequence of drug use.<sup>62,63</sup> Furthermore, results on limitations to frequency of psychedelics use is in line with their demonstrated lack of physical addiction — students are at a much higher risk of alcohol abuse than psychedelic abuse.<sup>64,65</sup> The fact that students reported discovering subsequent use of psychedelics to be of particular utility also reflects a degree of intentional and responsible use, not seen in other research on college student substance abuse.<sup>66</sup> It is therefore important to recognize that psychedelics can be used by students in a relatively safe and healthy manner that uniquely satisfies specific psychological needs. With that in mind, the issue becomes a matter of how to maximize these positive experiences while minimizing harmful consequences.

All participants in this study reported having positive lasting outcomes as a result of their psychedelic experiences, whether as a result of the experience itself or subsequent processing of the experience. A study focusing on “bad trips” found that participants are quite effective in narratively transforming negative psychedelic experiences into valuable positive insights.<sup>67</sup> While this was reflected in the eight participants who reported momentary unpleasant experiences, it was especially salient in two participants, who reported a predominantly challenging experience that can confidently be qualified as a “bad trip.” Regardless of whether the trip was overwhelmingly positive or negative, I posit that the degree to which students are able to process, or “integrate,” their experiences directly corresponds with how lasting and how valuable any gained insights are. Drug-free “integration” has long been an important component of indigenous ceremonial psychedelic use and modern psychedelic therapy paradigms.<sup>68,69</sup> William Richards describes the sober integration of a prior psychedelic state as a “repetitive, intentional movement within awareness between memories from alternative states of consciousness and the demands and opportunities of everyday existence, including former habits of thought or action that may feel out of sync with the new knowledge or self-concept.”<sup>70</sup> I suggest that the same concept applies to college students’ use in ecological settings, as seen by Participant 1’s usage of her experiences as “reference points,” versus Participant 5, who reported not having any “super serious” takeaways, and yet also said:

*Basically, I felt like the insight that I took away from the experience was being happy with myself, being happy with who I am. I feel like that’s something that I thought a lot about in the actual experience itself... and the day afterwards... that [I] just want to be someone who isn’t afraid to be happy.*

From my perspective, being unafraid to be happy seems like a pretty “serious” takeaway that could be recognized as such had the student had proper integration.

There are some clear limitations to this study. First, the sample size is not representative of the entire UC Berkeley student body. As I distributed the eligibility survey via my classes’ course pages and emailed fellow club members, my recruitment was clearly limited to the community of students with similar academic interests as myself. Students were also specifically asked on the survey if they had had a personally meaningful psychedelic experience, meaning all the stories presented were expected to be profound. In terms of selection for the interview, there is also no existing way to select interview participants that would cover all the different types of psychedelic experiences had by UC Berkeley students. Even so, I do think that future research would be better off working

62 ACHA, “National college health assessment survey: University of California Berkeley executive summary spring 2017.”

63 N. D. Volkow, “2016-2020 NIDA strategic plan,” 2016, <https://www.drugabuse.gov/about-nida/strategic-plan/directors-message>.

64 J. G. Murphy, N. P. Barnett, and C. J. Correia. College student alcohol abuse: A guide to assessment, intervention, and prevention. John Wiley & Sons, 2012.

65 D. E. Nichols, “Psychedelics,” 264-355.

66 J. G. Murphy, N. P. Barnett, and C. J. Correia. College student alcohol abuse: A guide to assessment, intervention, and prevention.

67 L. Gashi, S. Sandberg, and W. Pedersen, “Making ‘bad trips’ good: How users of psychedelics narratively transform challenging trips into valuable experiences,” 102997.

68 G. Bravo, and C. Grob, “Shamans, sacraments, and psychiatrists. Journal of Psychoactive Drugs,” no. 21(1989): 123-128. doi:10.1080/02791072.1989.10472149.

69 J. Hamill, et al., “Ayahuasca: Psychological and physiologic effects, pharmacology and potential uses in addiction and mental illness,” 108-128.

70 W. A. Richards. Sacred knowledge: Psychedelics and religious experiences. New York: Columbia University Press, 2015.

with a more representative sample.

Another limitation of this study is that I wrote the interview questions, personally selected eligible survey respondents for the interview, and conducted, transcribed, and analyzed the interview. With that in mind, there is clearly a degree of inseparable bias, no matter how much I tried to “bracket” them.<sup>71</sup> That said, no matter how much top-down bias went into my analyses, the actual content that arose from the interview data was far beyond what I could have expected — which is one of the reasons why psychedelics are particularly well-suited for the methodologies of qualitative research.<sup>72</sup>

The final identified limitation of this study is my own unavoidable bias beyond the limitations of research methodology. This bias comes from the fact that at the time of writing this, I am myself a currently enrolled UC Berkeley student who has had profoundly meaningful experiences with psychedelics. Considering this and given my methodology of choice, I have utilized the tools of science to look through as objective of a lens as possible, but total objectivity is impossible here. That said, it has been recommended that clinical researchers doing psychedelic-assisted psychotherapy try psychedelics themselves so that they can recognize the features of the psychedelic experience and therefore do more productive therapy.<sup>73</sup> My identity as a college student who has had this type of psychedelic experience serves a similar benefit to my research. I can recognize and understand the landscape of the students’ psychedelic experiences, their best attempts at using ordinary language to describe ineffable states of consciousness, and how they fit it into their passage through college and into responsible adulthood.

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71 L. Tufford, & P. Newman, “Bracketing in qualitative research,” 80-96.

72 D. Biggerstaff, and A. R. Thompson, “Interpretative phenomenological analysis (IPA): A qualitative methodology of choice in healthcare research,” 214-224.

73 E. M. Nielson, and J. Guss, “The influence of therapists’ first-hand experience with psychedelics on psychedelic-assisted psychotherapy research and therapist training,” *Journal of Psychedelic Studies*, no. 2(2018): 64-73. doi:10.1556/2054.2018.009.

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## Appendix

### A. Semi-Structured Interview Guideline

1. Go over the consent document.
2. If “yes” → click record.
3. Start with the “Introduction of interviewer” and continue with the rest of the guide below.

#### Introduction of interviewer

Hello, my name is NAME and I will be interviewing you today.

During the interview, I would like to discuss the following topics: the general nature of your experience, as well as subjects that may have arisen during the experience itself, such as autobiographical content, emotional experiences, insight and meaning, spiritual and/or religious experiences, aspects of the experience related to your college experience, and how you have integrated your experience into your life.

4. After introduction, before psychedelic experience
  - a. How would you describe yourself? If it’s easier, how would a friend describe you?
  - b. How would you compare yourself amongst your Berkeley peers?
  - c. How would you describe your friends that use psychedelics?
  - d. How would you compare yourself amongst your psychedelics-using peers?
5. Going into psychedelic experience → “now take a moment to reflect on your overall experience with psychedelics. Let me know when you are ready.
  - a. Would you mind describing your overall experience? We’ll get into more specific questions later, so don’t worry about covering everything.
6. Then go into questions below:

Interview Guide	Clarification questions
<b>Beforehand, intentions</b>	<ul style="list-style-type: none"> <li>• Can you expand a little on this?</li> <li>• Can you tell me anything else?</li> <li>• Can you provide some examples?</li> </ul>
How did you first decide to use this particular substance?	
What were your expectations?	
What were your intentions?	
What were you hoping for or looking for?	
<b>The psychedelic experience itself</b>	
Specify which particular substance	
Can you describe in detail your experiences during this experience?	
What perceptual changes did you experience (see, feel, hear)?	

What internal changes did you experience?	
What insights or new understandings did you gain?	
What emotions arose during your experiences? What memories arose during your experience?	
How would you describe your experiences after the session ended and later that evening?	
<b>Post-psychedelic experience</b>	
In what ways do you feel the experience(s) has affected your life since the sessions?	
In what ways has do you feel your participation in the study has changed your mental health?	
How has the experience changed your perception of or attitude toward college?	
In your experience, how do you think the substance works to create such changes?	

<b>Other Questions</b>	<ul style="list-style-type: none"> <li>• Can you expand a little on this?</li> <li>• Can you tell me anything else?</li> <li>• Can you provide some examples?</li> </ul>
Where do you see this experience in the context of the rest of your life?	
Is there anything you wish had been different?	
If given an opportunity, would you repeat the experience?	
Is there anything else that you would like to share?	

**B. Full Theme Table**



**Frame 2:** table of all the themes reported within the thesis with reference of where to find the quotes in the transcripts.

Cluster	Emerging Theme	Brief Quote	Timestamp (min:sec)	Participant ID(s)
<b>Why Use</b>  <b>*bold = most significant experience</b>	First: Novelty	"I was curious"	15:35 - 17:00	3
		"I heard a lot"	14:52 - 15:16	4
		"something new."	16:10 - 16:22	5
		"the intrigue"	23:09 - 23:20	6
		<b>"I hadn't done it"</b>	<b>10:54 - 11:05</b>	7
		<b>"we haven't done this"</b>	<b>5:33 - 6:44</b>	8
		"very interesting and fascinating"	10:41 - 11:02	9
		"my first LSD trip"	1:48 - 2:17	10
	First: Thrill-Seeking	"part of my own experiment"	22:44 - 23:25	3
		"body high"	15:06 - 15:16	4
		"it'll be really fun"	23:09 - 24:27	6
		<b>"Disneyland for Grad Night"</b>	<b>11:05 - 11:17</b>	7
		"it's always exciting"	10:41 - 11:45	9
		"my first LSD trip"	1:48 - 2:17	10
	First: Peers	"they brought me in"	15:41 - 16:02	3
		"freshman year roommate"	23:29 - 24:06	6
		<b>"my brother told me"</b>	<b>11:05 - 11:17</b>	7
		"his housemates used"	9:59 - 10:22	9
	First: Self-Exploration	<b>"before I started to live independently"</b>	<b>8:01 - 8:20</b>	2
		"get to know myself"	13:43 - 14:08	3
		"malleable your own mind"	11:35 - 11:55	9
	First: College	<b>"I just saw UC Berkeley as"</b>	<b>14:55 - 15:05</b>	2
		"before college ended"	12:31 - 12:39	5
		"when I came into college"	10:14 - 10:22	9
	Subsequent: Intentional	<b>"searching for a connection"</b>	<b>20:18 - 22:08</b>	1
		"honor the power"	48:11 - 48:22	2
		<b>"not see it as a game"</b>	<b>60:06 - 60:25</b>	3
		<b>"intentional use out of it"</b>	<b>25:45 - 26:55</b>	4
<b>"anytime we get back together"</b>		7:53 - 8:11	6	
<b>"very careful about the people"</b>		40:01 - 40:12	7	
<b>"keep growing as well"</b>		32:12 - 32:52	8	

	Subsequent: Repeat	<b>"I'm gonna do this last run"</b> <b>"repeat a previous experience"</b>	<b>43:47 - 44:44</b> <b>1:38 - 1:46</b>	<b>3</b> <b>10</b>
<b>Experience</b>	Nature	"connected to nature and my"	6:17 - 8:12	1
		"how beautiful the experience"	8:20 - 8:43	5
		"the beauty of the nature around"	9:07 - 9:33	7
		"connected to people and nature"	21:45 - 22:33	9
	Trauma	"purging the emotional trauma"	23:58 - 24:15	2
		"like trauma basically"	36:06 - 37:00	4
		"through collective trauma"	3:21 - 4:24	8
	Self-Awareness	"opened another door for me"	35:06 - 36:28	1
		"what is important for me"	32:36 - 34:12	2
		"humbled me to know that you're"	28:29 - 29:08	3
		"personal journey in exploring myself"	22:15 - 23:05	4
		"a few things in my control"	30:07 - 31:28	5
		"versus what's in my head"	34:07 - 35:05	6
		"writing in my journal"	16:46 - 17:09	7
		"feel and process all these emotions"	9:54 - 10:15	8
		"I learned a lot"	26:06 - 26:18	9
		"elucidate a whole other part"	6:09 - 8:57	10
	Presence, Gratitude	"very, very present"	26:48 - 27:13	5
		"in the present with this"	18:30 - 19:04	7
		"being alive, being in that moment"	24:45 - 25:05	9
Challenging Trips	"lot of uncomfortable, unpleasant"	35:06 - 36:28	1	
	"you literally purge"	24:47 - 26:02	2	
	"making me psychotic-ish"	41:16 - 42:06	3	
	"how much I repressed"	28:04 - 28:23	4	
	"I couldn't keep up"	21:44 - 21:51	5	
	"very dark experiences with them"	47:03 - 47:17	6	
	"it's very uncomfortable"	20:54 - 21:06	7	
	"physical death"	1:20 - 8:57	10	

<b>Limits</b>	Uncertainty	"random stressors"	6:17 - 8:12	1
		"never fully what you expect"	31:09 - 31:23	2
		"always just like an uncertainty"	34:16 - 34:31	4
		"fear or uncertainty"	13:47 - 13:54	5
		"you honestly have no idea"	42:45 - 43:15	7
		"feeling very dissociative"	4:51 - 5:28	10
	Timing (to trip)	"a day that I could completely"	20:18 - 22:08	1
		"allotted basically just a day"	16:45 - 19:44	5
		"the whole day"	7:31 - 7:43	6
		"set aside a day"	5:33 - 5:44	8
	Timing (in between trips)	"waiting for the drug to choose"	22:25 - 23:29	1
		"it took me time to understand"	29:43 - 30:30	2
		"I use it more as medicine"	74:50 - 75:01	3
		"I don't think that I am ready yet"	41:23 - 41:34	4
		"have to be very confident"	22:26 - 22:38	7
"the next day was"		16:36 - 17:20	8	
<b>Adverse</b>	Acute	"really intense hallucinations"	23:59 - 26:09	1
		"uncomfortable aspects of my"	18:29 - 18:57	2
		"I felt people were after me"	41:54 - 42:06	3
		"Negative in immediate ways"	36:36 - 37:00	4
		"fear inducing part"	21:44 - 21:51	5
		"confusion and just intensity"	21:34 - 21:59	7
		"don't want to go there"	28:42 - 29:07	8
		"it can be profoundly negative"	8:36 - 8:42	10
	Longer-term	"it feels really out of touch to me"	47:12 - 48:45	1
		"hyper aware of when I am anxious"	33:49 - 34:00	4
		"fucked up my head"	44:37 - 44:58	6
		"difficult emotionally"	16:36 - 17:20	8
		"my battle with anxiety"	9:05 - 9:33	10
		<b>Lasting</b>	Affirmations	"don't think it was a major turning"
"that was a catalyst"	32:21 - 32:50			7
"changing in general"	26:53 - 27:15			9

	Realignments	"what is the point?"	9:04 - 10:48	1
		"I just don't align with a lot of that"	42:38 - 42:59	2
		"I am who I am today"	13:34 - 14:08	3
		"the internal change"	22:06 - 23:16	4
		"very tough lesson for me"	45:11 - 45:42	6
		"I'm going to therapy"	21:22 - 21:38	8
		"this had a lasting impact on me"	8:23 - 8:57	10
	College	"Why am I in school"	9:04 - 11:38	1
		"especially at Berkeley"	37:16 - 39:08	2
		"brought me to school and college"	4:58 - 5:17	3
		"don't place a lot of emphasis"	39:06 - 39:26	4
		"affirmation of a lot of my college"	41:38 - 42:16	5
		"it's led me to my current job"	47:49 - 48:35	6
		"an experience of understanding"	38:43 - 39:13	7
	"I can power through it"	24:39 - 25:02	8	
	"my motivation to study the brain"	9:44 - 10:38	10	

*Frame 2 description:* An cleaned-up version of the full theme table I used to organize my reported results, edited to compile theme clusters, rather than be organized by participants. Clusters, along with their nested emerging themes, are arranged in the order that they appear in the thesis. The brief quotes, along with the timestamps and participant number, are sufficient to locate where in the transcript the extended quote is.