

A Phenomenological Examination of Psilocybin and its Positive and Persisting Aftereffects

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ABSTRACT

This study is an examination of the positive and persisting psychological and behavioral aftereffects in eight individuals who reported consumption of psilocybin-containing mushrooms. Mushrooms containing psilocybin have been used for healing and spiritual purposes for thousands of years, and the therapeutic applications of psilocybin were scientifically examined beginning in the mid-20th century. Research from this era suggested that psilocybin was indicated as an effective adjunct to psychotherapy for conditions such as depression, anxiety, chemical dependency, and obsessive-compulsive disorder. Recent research at the Johns Hopkins School of Medicine demonstrated that participants who consumed psilocybin reported having profoundly meaningful experiences, and that these participants experienced persisting and positive changes to their mood, attitude, and behavior at 1-month and 14-month follow up. However, there has not yet been ample research examining the mechanism of the connection between participants' experience with psilocybin and the existence of these positive and persisting aftereffects. This study employed a phenomenological approach, using an unstructured interview to gain an understanding of participants' description of this mechanism. Eight adults were interviewed who reported using psilocybin in the past. A within-case analysis and cross-case analysis were conducted on the data, producing 11 themes within three categories: Set (which included the themes of Preliminary Anxiety and Substantial Preparation); Experience of Psilocybin Effect (which included the themes of Profound Shift in Attention, Unity Consciousness, Increased Introspection, Positive Emotional State, and Transcendental Experience); and Persisting Aftereffects (which included the themes of Short Term Reduction in Anxiety, Persisting Insight, Assistance with Psychological Distress, and Inspired Behavioral Change). Participants maintained insights gained during their experience of psilocybin far beyond the course of the substance. This research suggests that the positive and persisting aftereffects related to the consumption of psilocybin may be useful for psychological healing and growth, and that these aftereffects should continue to be studied.

Key Words: psilocybin, psychology, positive, aftereffects, persisting, phenomenology, qualitative

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Introduction

Many scholars believe that mind-altering plants and fungi have been used by humans for thousands of years. Historical accounts exist of

cultures using such naturally-occurring psychoactive substances to induce altered states of consciousness, and there is reason to suspect that such use stretches back beyond historical record (Strassman, 1984; Stafford, 1992; Cohen and Inaba, 2004; Sessa, 2005, 2008; Griffiths *et al.*, 2006, 2008, 2011; Gasser *et al.*, 2014). Across these cultures, the function of these altered states is varied, but often includes spiritual healing, divination, and creative growth (Stafford, 1992; Cohen and Inaba, 2004; Sessa, 2005; Griffiths *et al.*, 2006, 2011).

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Mushrooms are the largest source of naturally occurring psychedelics (Stafford, 1992). Cave drawings suggest an early history of worship around and spiritual use of psychedelic mushrooms. Some scholars believe that psychedelic mushroom-worshipping cultures were in existence 6,000 years ago (Stafford, 1992), while according to Cohen and Inaba (2004) "sacramental use of mushrooms" (p. 8) can be dated to Paleolithic times or approximately 7,000 years ago. While there are other mushrooms that reportedly produce psychedelic effects, such as Fly Agaric and Panther Caps (Stafford, 1992), the most prolific psychedelic mushrooms are those containing psilocybin (Stafford, 1992; Inaba and Cohen, 2004). Mushrooms containing psilocybin were likely the most commonly used in an organized religious or spiritual manner for thousands of years (Stafford, 1992; Inaba and Cohen, 2004; Sessa, 2005; Griffiths *et al.*, 2006, 2008, 2011). Based on differing reports, there are somewhere between 80 and 200 species of psilocybin-containing mushrooms (Stafford, 1992; Inaba and Cohen, 2004), with more recent reports suggesting the latter number. These mushrooms are found in various places around the world, most prominently in Mexico, Central America, and the United States, and also in South America, Southeast Asia, and Europe (Stafford, 1992; Inaba and Cohen, 2004). More than half of these species are classified under the *Psilocybe* genus, and this is the genus that has most likely been used by ancient cultures such as the Aztecs and Mayans, though psilocybin is also found in the *Stropharia* and *Panaeolus* genera (Stafford, 1992). *Psilocybe cubensis* is the most widespread species of the *Psilocybe* genus (Stafford, 1992; Inaba and Cohen, 2004).

It was not until the 2000s that research into the therapeutic applications of psilocybin resumed, after such research was halted in the mid-20th century (Sessa, 2012; Studerus *et al.*, 2012). The rapidly decreasing stigma around the substance, aided by more complex scientific inquiry that could more fully demonstrate its relative safety, enabled researchers to begin thinking again about the states produced by psilocybin and to wonder at their transformative potential. Some studies from this period have explored the use of psilocybin in the treatment of obsessive-compulsive disorder, while others have built upon the work of previous studies, exploring its use to treat depression and anxiety that results

from terminal illness (Grob *et al.*, 2011). Other proposed uses for psilocybin include treatment for major depression, anxiety disorders, nicotine addiction, and cluster headaches (Sessa, 2005, 2012; Moreno *et al.*, 2006).

There seem to be several common themes in the research examining the therapeutic applications of psilocybin, which point the way to its greatest potential efficacy. First, when administered in a supervised environment, at an appropriate dosage, and with careful attention paid to set and setting, psilocybin appears to be safe to consume, rarely resulting in adverse effects. Second, it is fairly common for subjects who have consumed psilocybin to report persisting aftereffects that extend well beyond the course of the drug. Finally, the subjects who have had profound mystical experiences on the substance were most likely to see benefits of its use and were more likely to report these aftereffects to be positive (Doblin, 1991, 1998; Griffiths *et al.*, 2006, 2008, 2011; Grob *et al.*, 2011; MacLean *et al.*, 2011; Sessa, 2012).

The most prominent research on the connection between mystical experiences and therapeutic efficacy has emerged from the Johns Hopkins School of Medicine from 2006 until the present. In 2006, a study by Griffiths *et al.* was published that sought to evaluate the short-term and long-term psychological effects of psilocybin in 36 healthy adults. They concluded that psilocybin administration occurred safely, and that for the volunteers, the experience on psilocybin was personally meaningful, spiritually meaningful, and contributed to positive changes in attitudes and behavior (Griffiths *et al.*, 2006). Sixty-seven percent of volunteers rated the psilocybin experience as one of the top five most important experiences of their life (Griffiths *et al.*, 2011). Participants reported that the psilocybin experience was responsible for a sustained improvement in attitudes and behavior. According to data gathered by the Persisting Effects Questionnaire (PEQ), volunteers reported an increase in their sense of well being or life satisfaction, with 50% of participants reporting a "moderate" increase in these domains, and 29% of participants reporting that the experience improved these domains "very much." These improvements in attitudes and behavior were verified by community observers. Even considering the aforementioned adverse effects that can occur with psilocybin and that the volunteers experienced, including fear and



anxiety, no volunteers reported that the experience with psilocybin decreased the domains of well being or life satisfaction (Griffiths *et al*, 2011, p. 279).

In 2008, Griffiths *et al* conducted a follow-up on the same volunteers. At this 14-month follow-up, 64% of participants reported maintaining greater well-being or life satisfaction due to the psilocybin sessions. A majority of participants held that the psilocybin sessions were immensely meaningful. At the 14-month follow-up, 58% of participants rated the psilocybin experience as being “among the five most personally meaningful” experiences of their lives, and 67% rated the psilocybin experience to be “among the five most spiritually significant experiences of their lives” (Griffiths *et al*, 2008, p. 621). Also corroborating the suggestion that psilocybin experiences can have long-lasting and positive effects, MacLean *et al* (2011) found that *openness*, a “Big Five” personality trait that typically does not change much in one’s adult life, was significantly elevated after psilocybin use. This effect persisted in a follow-up that was done over a year after the psilocybin session.

In another study, Griffiths *et al* (2011) found that administration of psilocybin, at the two highest doses given, produced mystical-type experiences in 72% of volunteers. Both 1 month and 14 months after psilocybin administration, participants attributed ongoing improvement to domains such as mood, behavior, and attitudes to the psilocybin experience (Griffiths *et al*, 2011, p. 649). The following are examples of quotes from these participants, when they were asked to comment on their reported positive attitude and behavior changes: “I feel closer to family and friends,” “I try to judge less and forgive more,” “I am more aware and accepting [of everyone],” “I feel that I relate better in my marriage,” “Less fear of being wrong,” “More regular meditation, more mindful with family, more generous with strangers, started new yoga practice; more relaxation of pace of change” (Griffiths *et al*, 2011, p. 662).

There appear to be some commonalities between those participants that had mystical-type experiences due to psilocybin and those that reported the most persisting and positive aftereffects of psilocybin use. Though these quotes from participants in Griffiths *et al* (2011) study provide a brief window, a more extensive qualitative examination of the relationship

between psilocybin use and persisting positive aftereffects would be valuable.

Methods

Overview

The purpose of this study was to examine and describe the broad experiences of individuals’ past psilocybin use as it relates to the persisting aftereffects that may be attributed to that substance.

Design

A phenomenological approach was used, as it is most fitting in situations wherein exploring an individual’s experience is the focus of research (Creswell, 1998; Lester, 1999). Phenomenology is thought of as a qualitative method that allows for a “deep” exploration of information (Lester, 1999, p. 1). The focus of this kind of research is on the study of the meaning of one’s experience. The individual’s subjective viewpoint is addressed and valued.

Additionally, a phenomenological approach was used because it allowed sufficient open-endedness with which to examine the participants’ experiences. Given the highly varied responses that are characteristic of the effects of psilocybin use, a phenomenological approach allowed for the greatest flexibility in participant responses and the richest way to collect and examine this data.

Participants

Eight adult participants were recruited for this study based on several criteria. Of these, six were male and two were female. Six participants self-identified as Caucasian and two self-identified as people of color. All participants had at least a college-level education. Each participant had a history of consuming psilocybin. Even if participants had a history of using psilocybin on more than one occasion, for the purposes of this study, one particular instance of using psilocybin was examined. An attempt was made to recruit participants who used psilocybin in this particular instance for the purpose of psychological or spiritual growth and introspection, rather than for strictly recreational purposes. The researcher attempted to recruit participants who had not used other psychoactive substances while using

psilocybin, specific to this particular instance. Additionally, the researcher screened out potential participants who reported a history of suicidal thoughts due to psilocybin, as well as those who reported a history or current diagnosis of severe mental illness such as schizophrenia and bipolar disorder.

Effort was made to ensure that both male and female participants were recruited. Participants were required to be 21 years of age or older at time of study, and above age 18 at time of psilocybin use. This is due to the potential contraindications of psilocybin use in youths (Strassman, 1984). For logistical purposes, participants were recruited from the San Francisco Bay Area only.

When using a qualitative research method, a relatively low number of participants is needed before saturation is achieved. At the point of saturation, no new data is coming forward, further sampling is redundant, and themes within the constraint of the research question are fully developed. McCracken (1988) found that saturation could be achieved in qualitative research on specific topics after six to eight cases. Further cases may be collected in order to avoid overlooking themes or factors that may emerge.

Procedures

Recruitment

Participants were recruited through a number of means, including online advertising and community advertising. Flyers advertising for the study were placed in San Francisco Bay Area coffee shops, community centers, and colleges and universities. Online message boards, websites, and mailing lists that are related to the study of entheogens and psychedelics were also used. Finally, word of mouth was used to spread word of the study to potentially interested parties. Potential participants were encouraged to contact this researcher by email and asked to leave a phone number and a good time to call.

A total of eleven people expressed interest in this study. Of those eleven, three were screened out due to admission of usage of other psychoactive substances concurrently with reported psilocybin use. The remaining eight potential participants were contacted for an interview, and were able and willing to participate in the study. The participants' ages ranged from 27 to 43 years old, with a mean of 32, at the time

the interviews were conducted. Participants' reported age at time of psilocybin usage ranged from 19 to 38. All participants reported a particular instance of using psilocybin not for recreation, but for the purpose of psychological or spiritual growth, introspection, and/or exploration. All participants also endorsed not using psilocybin concurrently with other psychoactive substances in this instance.

Screening

Upon receipt of an interest email, this researcher called potential participants. A series of questions were posed to the potential volunteer in order to screen for age, gender, and amount of experience with psilocybin. Minor exclusion criteria were also implemented, notably if the potential participant endorsed using other substances concurrently with psilocybin during the specified instance. Other exclusion criteria included exclusively traumatic experiences with psilocybin, a diagnosis of a serious mental illness such as schizophrenia or bipolar disorder, or a current drug dependency.

Interview

Participants who were selected after the initial screening process participated in interviews, which were conducted in a quiet, private office setting. The interviews were unstructured and phenomenological, allowing for the most flexibility for participants to describe their experience. Using this method, two questions were asked; an initial question of "Can you tell me about your psilocybin experience?" and a second question of "Do you see any long-term differences in yourself as a result of using psilocybin?" In order to collect a maximum amount of data, this researcher formulated follow-up questions after these initial questions that had one of three purposes: concretizing, elaborating, or interpreting (Arfken, 2006).

Follow-up questions with the goal of concretizing called on the participant to move from a vague or abstract description of experience to a concrete or specific description of experience. In follow-up questions with the goal of elaborating, the interviewer asked the participant to reiterate in greater depth something that has already been described. Finally, in follow-up questions with the goal of interpreting, the interviewer put forth an interpretation of what the participant was attempting to say. The



participant was then allowed to accept or reject the interviewer's interpretation.

Prior to the interview, all subjects were given a pseudonym that was matched to their actual identity. The pseudonyms have been kept on a hard-copy piece of paper, which are stored in a locked file with a key held only by this researcher.

Interviews lasted between 45 and 75 minutes. All interviews were audio-recorded and then transcribed verbatim by a transcriber. To preserve anonymity, the researcher greeted each participant informally by their name and explained that he gave them a pseudonym which was introduced at the beginning of the audio recording. Thus the audio recordings contain no indication of the participant's real name. Therefore, the transcriber was not exposed to the disguised information.

Results

Theme Analysis

First, a within-case theme analysis was performed on each participant's transcription. This was for the purpose of identifying the key issues within each participant's interview. After these key issues were established, a cross-case analysis was performed for all eight participants. From this cross-case analysis, a total of three categories of themes emerged. These categories were based on temporal relationships to psilocybin usage – participants' mindset and preparation preceding the consumption of psilocybin, their experience while feeling the effects of psilocybin, and the persisting aftereffects of having consumed psilocybin. Within these temporal categories, 11 themes emerged. The themes were common to at least five of the eight participants. These categories and themes are listed and defined below.

Category 1 – Set (themes 1-2)

Set refers to the participants' mindset going into the experience of consuming psilocybin. This category includes a broad variety of factors such as the user's temperament, mood, affect, preparation for the experience, and general level of stimulation. Two emergent themes within the subcategory of set were common to participants: one involving the participants' mood, and the other related to the preparation that participants

undertook to get ready for psilocybin consumption.

Theme 1 – Preliminary anxiety

Substantial anxiety or similarly described feelings (e.g., nervousness, fear, concern, and worry) preceding the consumption of psilocybin were reported by seven of the eight participants. Notably, participants described feeling a wide range of emotions in addition to anxiety, such as happiness, excitement, and anticipation. However, anxious feelings were those most commonly reported.

Participant 7 stated that she "felt a lot of anxiety before getting started, because I had never [used psilocybin]." Participant 2 explained that his experience of anxiety affected him several days before consuming psilocybin. Like Participant 7, Participant 2's anxiety was focused on the idea of never having used psilocybin before. Additionally, he described his fears about being permanently psychologically altered by psilocybin, which he described as follows:

I was very anxious. . . I was afraid. . . because it was my first time, I was afraid there was going to be this risk of. . . losing my mind, not coming back. Being forever changed, in a bad way. I had a fear that my emotions were going to change in a way where I could no longer relate [to others]. I thought I was going to leave reality, in a way that I haven't [before].

Participant 5's description conveyed an expression of anxiety that was present but less severe and less specific than Participant 2's account. His description appeared to be largely related his feelings of uncertainty about the experience:

I was a little anxious that day because I had only had one prior experience with psilocybin. . . I think I just felt really good, but a little anxious in general, about...what this is going to feel like, what am I going to experience. Just a little concern or worry around what might show up or what is going to happen.

Theme 2 – Substantial preparation

Seven of eight participants described in some detail the considerable preparation that they

undertook before consuming psilocybin. This preparation encompassed a range of activities, including researching information about the effects of psilocybin (including duration, dosage, and contraindications) and speaking with friends and acquaintances who were familiar with psilocybin and its scope of effects. The participants reported that this served to mitigate some of their anxious feelings as well as described that this process was intellectually informative and helpful in refining their desired outcome of the experience.

Participant 2 discussed how he was with two others who were substantially experienced with using psilocybin. He shared his concerns with them, and they helped him to focus his goal of using psilocybin:

I was at a time in my life of trying to grow, and I felt like what I had available psychologically at my disposal, felt limited. And when I described that to [my friends] they said, "Maybe you should try mushrooms." They explained to me how it could help, and how it could allow me to maybe break out of my nervousness and my feelings of being stuck at the time. And I think that went a long way as far as, first of all, feeling like I had a better understanding of how psilocybin could help, and also just kind of making me feel a little bit safer and calmer going into the experience. That set me at ease, somewhat.

Category 2 – Experience of psilocybin effect (themes 3-7)

This category refers to the experiences that participants had while they were under the influence of psilocybin. The emergent themes in this category span a wide range of topics, with five total themes being described by the majority of participants.

Theme 3 – Profound shift in attention

Profound shift in attention refers to participants describing a notable and intense change in their perspective and attention during the course of their experience with psilocybin. This shift in attention seemed to lead to some of the experiences captured in the later themes within this category. Six of eight participants described in

some detail this major shift in attention and perspective. Participant 3 described how his experience with psilocybin was "really great at taking me out of my everyday thinking. . . I had this amazing experience where things felt so fresh and alive, it was almost like being a kid and experiencing something for the first time." Participant 6 commented on how she felt like she was "on a completely different wavelength," while Participant 2 explained that "I just started to notice all the intricacies in everything around me. There was a moment, right as the experience was getting very intense, where. . . I just experienced so much clarity."

Participant 5 discussed this profound shift in greater detail:

I feel like there was a major difference in my perception of the world. Things seemed a lot richer than I had noticed them before, any other time. It just felt like the veil was pulled back and that I could perceive life as a deeper, richer experience.

As did Participant 4:

I think a lot of times people learn about yoga or meditation and just do what the teacher tells them to do and they don't know what the goal, perhaps of some kind of peace or contentment, is like. It is like climbing a mountain without being able to see the top of it. In my experience with psilocybin, I was lucky, privileged enough to have what felt like a helicopter ride and to see the whole thing. It wasn't the same as actually climbing all the way to the top, but it was like I had some idea of what was up there.

Theme 4 – Unity consciousness

Six participants described an experience of unity consciousness. This theme includes feelings of ego dissolution which led to experiencing greater connection to nature, to other people, to all living things, and which sometimes led to feeling at one with the universe and all of existence. Most participants reported experiencing this unity consciousness sometime after experiencing Theme 3, the profound shift in attention.

Participant 1 related that he felt "more at one with the world around [him]," while

Participant 7 described her experience of unity consciousness as:

Feeling like I could feel every particle and movement that was happening, in and around me in the most subtle, beautiful way. . . every particle of existence felt like it was an extension of me, from me to the air and plants around me to all other things, everything was connected and I could see it and feel it.

Similarly, Participant 2 felt a connection with everything, explaining that “I realized how important it is for me to be aware of the idea that in some sense we are in relationship with everything. We’re all from the same thing.” When asked to elaborate further, Participant 2 stated that:

I was about to sit down in the shade of this tree, and when I went to sit, there were some ants crawling up onto me. I remember feeling like I was inviting the ants to crawl on me. The thought I had was, “My body is your body, come on board.” I think in a more familiar state of consciousness, I would have wanted to swat the ants off of me, but in this particular instance, I had no problem with these ants crawling on me and in fact I was inviting it. They were a part of me, and I a part of them, and we all were part of everything, the same thing. Existence, I guess. But it just seemed easier and more intuitive for me to notice that then.

Theme 5 – Increased introspection

The theme of increased introspection refers to participants’ description of feeling a greater capacity and motivation to self-examine. Six participants described this theme during their interview. This seemed to happen later on during the course of participants’ psilocybin experience, but this was not true for all participants who endorsed this theme. Participant 4 described how “during the peak, I was really thinking about my life and whether or not I enjoyed it. Kind of a self-assessment.” Participant 3 illustrated his experience of increased introspection as follows:

I remember feeling like I really wanted to kind of look at my life, and the main things were directing my attention to. . . if I am really happy in life. It was really a kind of self-inquiry. . . I really wanted to look at

myself. . . and in some ways, I felt like I could actually look at myself with much more objectivity.

He describes a later point during his psilocybin experience: “I felt like I had gotten these different insights from that more introspective part. . . I could just see myself more clearly, and was more honest with myself about what was there.”

In Participant 6’s description of increased introspection, she described a greater capacity to think about her usual problems, stating that:

I was inspired to think about myself and my life, and what I really want or what would really be good for me. Thoughts would just come to me that seemed to be coming from some wise place. I felt like I could think with a lot of clarity about the meaning of things as they relate to me. Words would come to me like poetry or philosophy about my life or my experiences.

Theme 6 – Positive emotional state

Positive emotional state refers to the presence of happiness or related feelings (e.g., joy, bliss, gratitude) during participants’ described experiences. This theme does not refer to participants’ emotional experience during the entirety of their psilocybin experiences at the exclusion of other feelings. In fact, most participants endorsed a range of emotional experience, including amazement, calmness, and fear. However, positive emotional state refers to an underlying baseline emotional feeling of contentment and happiness. This theme was endorsed and described by seven of the eight participants.

Each participant described this theme slightly differently. Participant 1 spoke of a “sense of immense happiness. . . a blissful happiness” at various points throughout his experience. Participant 2 stated that “it was a very happy [experience], because I was just so present.” Participant 3 described a “deep appreciation” and “sense of gratitude. . . gratitude and love” throughout the experience, eventually describing a feeling of being “overwhelmed with emotion, with this intense, beautiful feeling of love and joy and gratitude for everything.” Participant 4 explained that he experienced Positive Emotional State throughout his experience with psilocybin, culminating in a particular instance:

The trip helped me to feel so happy and grateful. I felt like time slowed down so much that I was just in one moment. The past and the future stopped existing and I felt this amazing feeling. It was like bliss or heaven or Nirvana.

Theme 7 – Transcendental experience

This theme refers to participants' self-described spiritual, mystical, divine, and otherworldly experiences. Five of the eight participants endorsed this experience.

Participant 7 explained that she had a significant spiritual experience that she had not experienced before:

I feel like I saw God and I think I had a tangible experience of. . . spirituality and I think that just became a reference point for me. I think I didn't really have a sense of my own connection with God or spirituality before then. It's funny. I feel like I don't like using the word God and when I think about the experience. . . it feels like the continuity or oneness was the feeling, and God is the way I would describe it. God is not just a good thing but a feeling state that I had.

Participant 3 described his transcendental experience as follows:

I was sitting and meditating, and I felt this. . . incredible calmness and stillness that was quite profound. It was this deeply spiritual experience. I've sat in meditation retreats before and I've had very powerful experiences doing that, so this was a similar experience of feeling this deep stillness in me, and connection to something. . . I don't know how else to put it than connection to something very spiritual.

Category 3 – Persisting aftereffects (themes 8-11)

This category refers to participants' reported aftereffects of their experience with psilocybin. Most themes in this category refer to the persisting and long-term aftereffects, except for one item (Theme 8 – short term reduction in anxiety). There is some crossover in the definition of these themes. For example, a persisting feeling

of having more self-awareness and insight may have led to participants feeling a reduction in depressive thoughts and may also have inspired a behavioral change.

Theme 8 – Short term reduction in anxiety

Five participants described feeling calmer the next day after their psilocybin experience. In some cases, this feeling of calmness and reduced anxiety persisted for up to a week. Participant 1 described feeling "better the next day than the day before." Participant 3 reported that he felt "calmer, more grounded, and more patient" for the week following his experience with psilocybin. Participant 2 explained that he felt:

This catharsis the next day. I was just mellow, relaxed. I felt so calm. The calmness stayed for a few days, actually. It was sort of a reduction in being too concerned about things. Things weren't as big a deal as they typically are for me, but not necessarily in a neglectful way, but in a way where I thought everything was going to be ok.

Participant 8 also felt a reduction in anxiety the following day, although he used somatic terms in addition to emotional phrases to describe his experience of this:

I felt pretty good the next day. Like something had been cleared or that a weight had been removed. I felt much lighter, kind of limber, energetic, you know, pretty happy. I had a strong sense of calm, clarity, and of being grounded.

Theme 9 – Persisting insight

The theme of persisting insight was endorsed by five participants, and it encompasses concepts such as greater self-awareness and a greater ability to understand what will bring happiness. Participant 5 explained how he experienced an insight about his own psychological process:

I feel that I have much more of an understanding of myself. I can see that I. . . have these kind of depressive qualities. An awareness of a kind of depressive state, and I didn't have that awareness before psilocybin.

Participant 1 initially described his experience of persisting insight as follows, relating to his path in life:

I have this sense of self-awareness. . . a kind of understanding what I'm here for and what I'm meant to do. I think I'm more aware of the things that will make me happy. . . the things that I believe will ensure a stable, happy, fulfilling life.

Participant 1 continued, describing how persisting insight also includes his awareness of his emotions and his ability to express them:

I'm also more aware of my emotions and how they affect me, and [more] able to articulate them to other people. I'm more articulate of what I'm thinking and feeling. . . and I can express how I'm feeling with my words more clearly.

Participant 6 described her experience of persisting insight due to her psilocybin experience:

I feel like [my experience with psilocybin] sped up my development. It helped with my connection to myself and what I believe to be true, like my core values. It allowed me to trust myself and my feelings and experiences. . . it helped open up parts of me or gave me access to parts of me that I didn't have clear access to before. . . gave me access to deeper parts of myself.

Theme 10 – Assistance with psychological distress

This theme encompasses experiences while on psilocybin which led to participants feeling some sort of tangible and relatively long-term reduction in psychological distress such as worry, anxiety, or sadness. Five participants endorsed this theme. Participant 4 stated that he has been happier since he has been able to accept his concern with aging and death:

Even to this day, I feel some. . . aftereffect of [my experience]. I didn't mind being intoxicated at the time, but. . . I wanted the happiness and calmness and insight to last long after the intoxication, and it did. . . I feel more comfortable with the fact that I'm getting older and I am going to die someday, and I think it is because of my experience. I was just thinking. . . I shouldn't deny that I am getting older and that I am going to die, and I would be

happier if I didn't pretend that isn't going to happen. I've found that to be true.

He continued on, stating:

I learned that obtaining happiness from within could be a useful skill. That inner happiness is something that [is] attainable and would probably give me the satisfaction that I have been looking for. I feel happy and grateful to exist and to be part of the universe.

Participant 5 explained how his experience with psilocybin helped improve his mental well-being:

I believe that there was a very long lasting and permanent change. At the time right afterwards I didn't have the language to describe it, but I just knew how I felt. . . I felt better. . . I felt more open. I feel more. . . I think I am experiencing. . . longer periods of happiness and joy. My persisting feeling of the experience has been an incredible complement to my [psychotherapy]. It feels like there is this opening. . . where I can explore myself more with someone else. I feel like the overall effect is better, longer periods of happiness and joy.

When asked to specify how his memory of his experience with psilocybin helped lead to longer periods of happiness, Participant 5 stated:

I think in a lot of ways, some of which I would have difficulty describing. But in one way, I think I just have this ability to understand [my depressive thoughts], and this ability to quiet them and shift my attention more to other things, to not get so overwhelmingly caught up in them. Even if I don't have psilocybin in my system I still have that perspective there.

Participant 7 described how she had noticed some depression and anxiety at the time in her life when she used psilocybin, and how her experience with psilocybin helped to mitigate some of those feelings:

I guess I had struggled with depression a lot around that time. . . and also was feeling troubled about what I was going to do with my life. I think [my experience with psilocybin] helped me to get over a bit of a hump in my depression. It kind of shifted my focus. I think it helped me to just not place so heavy a weight on every

choice that I was making and to just allow myself to enjoy life.

Theme 11 – Inspired behavioral change

This theme refers to the idea there was some sort of behavioral change, attributed to psilocybin that participants strongly considered and then implemented in the months following the experience. Six of the eight participants endorsed this theme. The behavioral changes that were inspired were varied, and included such changes as beginning a romantic relationship, changing a career, and starting or deepening a spiritual practice. Participant 4 stated that “I have a direction as to where to guide my emotions and what to aim for in life.” Participant 1 described how an idea that struck him during his experience with psilocybin inspired a change in his profession:

I remember thinking through, career wise, whether I should go do something more entrepreneurial and thinking that I really needed to do something like that in my life, and that I don't think I'd ever be fulfilled just doing what I did at that time. I've known I needed to make that change, but [my experience] helped to cement that a bit. And since then, it's been 8 or 9 months, but since then, I've moved in that direction and changed my career path.

When asked by the interviewer to elaborate on how his experience with psilocybin inspired this change, Participant 1 added:

I think it helped me to kind of push myself and force myself to make changes and make decisions that I was scared to, but that I knew would lead to happiness. Ultimately. . . it's kind of led me to lead a more fulfilling life down the road. I'm still kind of on that path, but I feel like I'm shifting in the right direction.

Participant 3 explained that his experience with psilocybin led him to reach out to friends and family whom he had not spoken with in a while.

I continued to think about [my experience] in the months that passed. . . I ended up calling my grandparents, who I hadn't called in a while, and I just called them to say hi. And to. . . tell them that I was thinking about them, that I love them. . . how grateful I am for the support

they've given me. I guess I would have happened to speak to them at some point in the future, but I wouldn't have called them without that experience.

More generally, he described this as a desire to express his feelings outwardly rather than keeping them internal:

I held on to my experience and my insight, and. . . I have just continued to have the feeling that it can be really valuable to actually tell someone what you feel about them, as opposed to just keeping it internal.

Participant 5 explained that his experience inspired him to begin a spiritual practice:

It got me interested in. . . pursuing more spiritual things. I felt better afterwards and I wanted to keep that feeling going. I supplemented the feeling through yoga, meditation, and other spiritual practices that have been ultimately healing for me.

Discussion

This study examined the experience of psilocybin consumption amongst eight participants, as well as participants' experience of the presence of positive and persisting aftereffects due to psilocybin consumption. The research of Griffiths and associates (2011) described the prevalence of significantly meaningful and mystical experiences, as well as the prevalence of positive and persisting aftereffects, in study participants who had consumed psilocybin. The goal of the current study was to examine the participants' experience with psilocybin, to provide a more extensive qualitative examination between the characteristics of the psilocybin experience and the persisting and positive aftereffects, and to determine if there are any common themes between specific circumstances of using psilocybin and the presence of aftereffects. The results of the study were found through the usage of within-case and cross-case theme analysis of interviews with these participants. Three categories were identified, which were based on temporal relationships to psilocybin use. From these three categories, 11 themes emerged, including preliminary anxiety, substantial preparation, profound shift in attention, unity consciousness, increased introspection, positive emotional state, transcendental experience, short-term reduction in anxiety, persisting insight,



assistance with psychological distress, and inspired behavioral change.

Participants' experiences seemed to follow a particular course. That is, participants had the intention of growth, development, or introspection when using psilocybin. This intention shaped participants' feelings and preparation before use. Due to this, participants were primed to self-reflect and introspect during their experience. Additionally, participants reported a process of mental preparation before using psilocybin. This preparation served to minimize the potential adverse effects of psilocybin while maximizing the positive effects.

Participants endorsed some degree of a shift in consciousness, which led to self-reflection and introspection. In the majority of cases, this introspection persisted, leading to future self-examination and the implementation of behavioral changes. Thus, this research has begun to describe particular aspects of the mechanism of psilocybin as those mechanisms relate to psilocybin's positive and persisting aftereffects.

Limitations and Suggestions for Future Research

Limitations to this study include the extraneous and non-controlled factors that affected each participant's experience using psilocybin. While the researcher successfully recruited participants who reported using psilocybin for the purpose of spiritual or psychological growth and insight and excluded participants who were concurrently using other psychoactive substances while using psilocybin, many other factors were not controlled for in the current study. Participants reported using psilocybin in different settings, both environmental and interpersonal. Some participants were alone, while others were with several people. Some participants were indoors, while others were in nature.

Additionally, because participants were attempting to recall the past consumption of psilocybin-containing mushrooms (and were not, instead, administered a controlled dose of the pure substance), and because the amount of psilocybin in any given amount of psilocybin-containing mushrooms can vary, it is possible that there was a notable difference in the amount of psilocybin consumed by each participant.

Another factor that was not controlled for was the amount of time that passed between each

participant's psilocybin experience and the time of interview for this study. Some participants were describing an experience they had that was only 9 months in the past, while others were describing an experience they had that was many years in the past.

Additionally, the sample of participants that responded to the call to take part in this study was self-selected. Even though the participants were encouraged by the researcher to share as much about their experiences as they felt comfortable with, it is possible that they had largely positive experiences that they wished to share. Individuals who used psilocybin for the purpose of psychological or spiritual growth and introspection, but who had negative or traumatic experiences with psilocybin, may have excluded themselves from this study. Finally, participants endorsed varying levels of experience with psilocybin. While five of eight participants described their first experience using psilocybin, the remaining three participants had used psilocybin prior to the experience described in their interview.

Future research may include a larger sample size in a broader geographical area, and may attempt to study more specific qualities of psilocybin experience. Continuing research may also attempt to control for some of the uncontrolled factors, such as recruiting participants who consumed psilocybin in a specific interpersonal and environmental setting. Future research may also attempt to standardize the amount of time that has passed between psilocybin consumption and interview.

Additionally, even if exact dosage information is unfeasible to obtain, continuing research may also make an attempt to collect some kind of dosage information from participants. Finally, future research may attempt to control for some of the previously mentioned factors, such as the amount of time passed between psilocybin use and interview.

Implications and Conclusion

This study examined the experience of eight individuals who used psilocybin for the purpose of psychological and spiritual growth or introspection. It seems that using psilocybin encouraged participants to process their life experiences and to understand themselves differently than in their normal state of



consciousness. This change in perspective seemed to allow participants to think about themselves quite differently, which elicited a deep and unique process of self-examination. In most instances, participants acknowledged that they were part of a larger system, which sometimes led to feeling at one with the universe and all of existence. Most participants also described their experience as mystical and transcendental, akin to a deep and profound state of meditation or an egoless state. All participants also endorsed some form of self-examination during their experience with psilocybin. Participants brought insights gained from their psilocybin experience into their normal lives, maintaining their awareness far beyond the course of the substance. Participants continued to consider their insights well after their experience with psilocybin, which in many cases allowed for a greater acceptance of self and a subsequent reduction in anxiety and other psychological distress. The insights that participants reported include an understanding of the importance of inner peace and happiness, an

understanding of their unique role and path in life, and an acceptance of aging and eventual death.

Furthermore, participants put their ideas gained through introspection into action, with the majority of participants effecting some behavioral change in their lives. While the endorsed behavioral changes varied, the participants that described these changes explained that those changes had a healthy and beneficial effect on their life. Examples of these behavioral changes include the initiation or deepening of spiritual practices such as yoga and meditation, the beginning of a romantic relationship in the face of significant obstacles, the pursuit of continued self-knowledge and introspection through psychotherapy, or making a difficult but imperative change to a career path. It seems possible that when used for the purpose of psychological and spiritual growth, psilocybin can serve as a tool to allow for a unique and profound type of self-reflection, leading to persisting insight and healthy behavioral changes.

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