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ORIGINAL RESEARCH
PAPER

Four individuals' experiences during and following a psilocybin truffle retreat in the Netherlands

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ABSTRACT

This article reports on the experiences of four healthy individuals who attended a legal psilocybin truffle retreat in the Netherlands. The study employed a qualitative phenomenological approach, using semi-structured interviews to gain an understanding of participants' psilocybin experiences and their after-effects. The experiential themes that emerged from these case studies closely match themes that have been identified in previous studies of psilocybin, including variability of the experience, the presence of mystical-type features, significant changes to subjective sense of self, and a generalized sense of connectedness. Participants framed their narrative accounts around moments of key insight, and these insights were related to a sense of connection: to self, others, and to a broader relational ontology. Embodiment, currently an understudied topic in psychedelic research, also emerged as a theme. The case studies presented here provide preliminary evidence to suggest that for healthy individuals in a well-controlled and supportive retreat setting, a high dose of psilocybin can lead to enduring positive after-effects that last up to twelve months.

INTRODUCTION

Studies suggest that the psychedelic compound psilocybin may be an effective treatment for a variety of clinical issues, including treatment-resistant depression (Roseman, Nutt, & Carhart-Harris, 2018), anxiety and depression related to advanced stage cancer (Griffiths et al., 2016; Ross et al., 2016), obsessive compulsive disorder (Moreno, Wiegand, Taitano, & Delgado, 2006), tobacco use disorder (Garcia-Romeu et al., 2014; Johnson, Garcia-Romeu, Cosimano, & Griffiths, 2014; Johnson, Garcia-Romeu, & Griffiths, 2017) and alcohol use disorder (Bogenschutz et al., 2015, 2018). Psilocybin has also been associated with positive outcomes in healthy individuals. For example, a recent study by Madsen et al., 2020 found that a single dose of psilocybin had long lasting beneficial effects on mood, personality, and mindfulness in healthy volunteers. Additionally, Mason et al. (2019) found that a single administration of psilocybin in a social retreat setting may be associated with sub-acute enhancement of creative thinking, empathy, and subjective well-being.

Currently the mechanisms of action underlying the positive effects of psilocybin are unknown. Preliminary research suggests there are multiple mediators of action, and scholars from various disciplines have approached the issue from a number of perspectives. For example, some have focused on neuropharmacological mechanisms (e.g., Carhart-Harris & Friston 2019; Carhart-Harris & Nutt 2017), while others have investigated psychological change processes (e.g., Watts, Day, Krzanowski, Nutt, & Carhart-Harris, 2017). Several studies have found that psilocybin occasioned mystical experiences are related to long term beneficial outcomes (e.g., Doblin, 1991; Griffiths et al., 2018; Russ, Carhart-Harris, Maruyama, & Elliott, 2019). Possible mediators of this effect include ego dissolution experiences (e.g., Carhart-Harris et al., 2018), feelings of "awe" (James, Robertshaw, Hoskins, & Sessa, 2020), post-experience behavioral changes such as engagement with meditation and other spiritual practices (Griffiths et al., 2018), and significant changes to beliefs and worldviews

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such as decreased self-identified atheism (Davis et al., 2020; Griffiths et al., 2019) and increased nature-relatedness (Lyons & Carhart-Harris, 2018). Additionally, Hartogsohn (2018) has argued that psychedelics have a meaning-enhancing effect, so that under the influence of psychedelics, things appear to be profoundly more meaningful than usual.

Recently, a number of qualitative studies have analyzed the psilocybin experience; specifically, the phenomenology of the experience, the meanings that people attribute to the experience, and how the experience might facilitate subsequent after-effects (Belser et al., 2017; Bogenschutz et al., 2018; Malone et al., 2018; Nielson et al., 2018; Noorani et al., 2018; Swift et al., 2017; Turton, Nutt, & Carhart-Harris, 2014; Zamaria, 2016). Qualitative studies offer a hypothesis-generating mode of inquiry that may help to reveal underlying mechanisms of action and contribute to the development of theory. Such an approach is valuable in the field of psychedelic studies, where theoretical models are still underdeveloped (Belser et al., 2017). For example, in their systematic review of patient experiences in qualitative studies, Brecksema et al. (2020) report that qualitative psychedelic research may help to differentiate specific features of specific substances, which has implications for the treatment of specific psychiatric disorders.

In particular, qualitative case studies serve an important epistemological function, as over time they accumulate into a body of knowledge which can then guide clinical practice and suggest where research should turn to next. Case studies can be conducted at various points in the research process, and they may be particularly useful at early stages (e.g. pilot studies) as they can generate ideas for future research. The other benefit of the case study is that it captures the “lived reality” of an experience; case studies offer a rich and holistic account of a phenomenon and allow the researcher to explore the uniqueness of a single case (Simons, 2009).

This article reports on the experiences of four healthy individuals who consumed a high dose of psilocybin containing truffles at a legal retreat center in the Netherlands. The case studies presented here derive from a larger qualitative study that is currently examining the phenomenology of the psilocybin experience among healthy volunteers in a retreat setting. The case studies in this article were chosen because as a sub-sample they adequately represent the key themes that emerged from the entire data set.¹ These themes were identified by the researcher during the interview process and will be further investigated and developed in future research via thematic analysis. As such these case studies function as a pilot study for a more in-depth analysis of the larger data set.

METHOD

Participants

Participants were four volunteers who attended a three day legal psilocybin retreat at Synthesis in the Netherlands,

between the months of September 2019 and February 2020. All four participants (3 male, 1 female) self-identified as Caucasian and ranged between 43 and 55 years of age ($M = 51$). Participants were from Europe ($n = 2$), North America ($n = 1$) and Central America ($n = 1$). Religious affiliation was Atheist ($n = 1$) and Spiritual But Not Religious (SBNR) ($n = 3$). Reasons for attending the retreat included “heal a mental health condition (MH),”² “explore consciousness (EC),” “personal development (PD),” “increase creativity (IC),” and “have a mystical experience (ME).”

Prior to the retreat, all participants went through an extensive screening process, which included questionnaires and an interview, to check for any pre-existing health conditions that might preclude attendance, and to determine psychological readiness. In order to optimize set and setting, individuals had a number of online preparation sessions in the weeks leading up to the retreat, a full day of preparation the day before the psilocybin session (day one of the retreat), and a half day of preparation the day of the psilocybin session (day two of the retreat). Preparation activities included pre-reading, meditation, breathwork, and one-on-one sessions with an expert facilitator. After the psilocybin session (on day three of the retreat and for several weeks afterward), participants took part in a structured integration program which addressed somatic and social integration.

During the psilocybin session all participants took one high dose of psilocybin containing truffles (dose range = 30–40 g) in the form of a tea. About 90 minutes into the session participants could elect to take a second “booster” dose of truffles (an amount up to the same initial dose). One participant in this cohort elected to take the booster dose. None of the participants had used psilocybin or any other psychedelics prior to the retreat. All participants had good recall of the psilocybin experience and all reported enduring positive after-effects that had persisted since the retreat.

Interviews

Data was collected via a short online survey which gathered some basic demographic information, and a semi-structured interview of approximately 1 h duration. Each interview was conducted via Zoom and took a story-telling approach, which involves asking questions in such a way that participants respond with a story (Minichiello, Aroni, & Hays 2008, p. 95). The rationale for encouraging stories is that it enables the interviewee to feel comfortable with talking for extended periods, as stories are usually extended monologues. Because a psychedelic experience is often a difficult experience to describe, a loose structure was suggested. Participants were told that they could tell the interviewer about their experience in any way they liked, and that one possible approach could be to (1) start by talking about what

¹ $n = 11$ (at the time of writing).

²While the Synthesis three day retreat is not explicitly aimed at healing mental health conditions, and participants who have contraindicated mental illnesses are excluded via a screening process, one participant (Ben) reported that during his life he had experienced periods of mild to moderate depression.

brought them to the retreat, (2) describe the actual psilocybin experience, and (3) describe their journey since the retreat, including any significant after-effects and changes. All participants followed this general approach. Follow-up questions were used for clarification and to probe for more detail. Each interview was recorded and transcribed verbatim. Three participants (Jay, Carol, and Ben) also shared copies of journal entries that they had written immediately after, or in the days following, the psilocybin experience. All participant data was de-identified in order to preserve anonymity. All individuals mentioned in this article, including retreat staff members and individuals mentioned in the narratives, have been given pseudonyms.

RESULTS

Jay

Jay was a male in his 50s, who worked as a journalist. Jay had never taken a psychedelic before and said he found Synthesis after googling psychedelic retreats in Europe, and signed up “on the spur of the moment.” Going into the retreat, Jay hoped to gain insight regarding his relationship with fear and also regarding a creative block that he was experiencing. Specifically, Jay had been trying to write a book for the past ten years but reported that “It just wasn’t happening.” Jay described himself as a “very fact based person” who also had a “very spiritual side.”

During the interview, Jay highlighted several salient incidences that occurred during the psilocybin experience. One of these was a breakthrough regarding his creative block. Jay described a vision where he entered a space that was “very bright, very luminous, very beautiful and playful” and where he was dancing with giant gummy bears. He recounted, “I felt like a child, I felt like a happy, happy child.” Jay reported that during this vision:

The word “Calliope” just popped into my mind. Calliope, C A L L I O P E. I remember the impact of that word so vivid that I actually wrote it down. And the next day when I was reading my journal and I read that word, I looked it up and it turns out that Calliope is the name of the ancient Greek muse of creativity. I have it written down. It’s true. It’s amazing . . . what I interpreted from that was, the muse of creativity was saying to me, “listen, whenever you need me, you know I’m inside of you. Just call me and I’ll be there.” So that was the very first real “wow” moment that I had, you know, it was a very clear answer to my intentions about the creative flow in my life.

Jay also reported a significant experience where he met with two deceased loved ones; his grandmother and an ex-partner. Jay said his grandmother appeared to him as a young woman, dressed in clothes from the early 1900s, and he felt an overwhelming sense of love coming from her. She communicated to him, “we’re all here. All of us are here and we are all one. And none of us have ever gone because we’re all together.” Jay also felt the presence of his ex-partner, who was communicating to him, “listen, it’s all ok.” Jay described

this experience as, “kind of like looking at the circle of life and the message was: people come and people go and people die and people are born, but our essence is ever, ever, ever, ever present.” This was a highly emotional experience for Jay, and when he talked about it during the interview, he began to cry.

Another salient incident involved an insight that was delivered via an encounter with an oak tree. Jay gave an account:

The picture window was to my right and outside the picture window was a garden and there was a huge oak tree. When the tree saw me, she, and I say, “she”, because it was a feminine energy, started dancing for me. [Then] she suddenly withered up and died. Literally withered up and became dry, and all her leaves became dry and she died. But then she would start coming back to life. And so she’d go through this cycle of life and death, life and death for, I don’t know how long, but I kept staring at it. And the energy coming from her was just absolute love and compassion and comfort. And she was saying to me, “listen this is a perfect system that we’re in. And all the chaos in our lives is okay, because it’s part of this perfect system. So relax, everything’s going to be okay.”

Jay described a change to his sense of self that was persistent throughout the entire experience. He related, “I was just being, I wasn’t ‘a being’, I was just there . . . it was like me at my absolute essence.” He also reported feeling that his experience was significantly directed by the music, which would carry him to different situations. He said, “the musical notes at one point became guides . . . the music became a physical guide that would take me towards somewhere.”

In terms of after-effects, Jay described coming out of the psilocybin experience “with a lot of information, a lot of knowledge, a lot of insights, a lot of peace.” He started writing his book the following week, and at the time of the interview it was with a publisher. In the several months following the retreat, Jay experienced two significant losses in his life; he split with his romantic partner, and his father died. Jay credits the psilocybin experience with giving him an increased ability to handle these challenges, as “it just gave me this feeling of serenity and acceptance and confidence in myself that weren’t a constant before.” He said the psilocybin experience reminded him “you have everything in you that you need to deal with life. You have all those tools already in you.” Jay also revealed that the message he received from his grandmother helped him deal with his father’s passing, saying, “now I know that there’s another realm out there . . . and it might be within us . . . it was very comforting. I think I lost a lot of fear of death.” There were other changes to Jay’s spiritual life; after the retreat he developed a regular meditation practice and reported that he now connects to the “sacred aspect of nature.” He described being a “much more spiritually aware” person.

Finally, Jay expressed a desire to contribute to psychedelic research and to share his story with others. He said he believes that the psilocybin experience is very important and valuable, noting, “I can’t express enough how much gratitude I have and the respect I have for the substance itself and

for those who are managing it and using it properly in responsible terms.”

Ian

Ian was a male in his fifties, and was employed as the CEO of a company. He was a self-described atheist and had never taken a psychedelic before. After reading Michael Pollan’s book “How to Change Your Mind,” Ian researched psychedelics online and decided to attend a Synthesis retreat. His main motivations for attending the retreat were to explore consciousness, gain insight regarding his career and to become calmer and “more grounded.” Ian said that his psilocybin experience could be “split into three parts:” a “mystical” part, a “psychedelic” part, and a cognitive-psychological part. These parts were delineated based on a temporal structure, with the mystical part occurring during the first third of the experience, when the psilocybin effect was at its peak. What Ian described as the “typical psychedelic” part of his experience involved “traditional psychedelic visual effects” and occurred about halfway through his experience. One particularly salient effect he described was being able to “see the music in 3D,” noting “It’s beyond what you can explain. But I could kind of stop it [the music] and look at it from 360° . . . in a way you could stop time and look at music kind of stretched out as time.” The final part of Ian’s experience was more cognitive and involved “relaxing without the blindfold and contemplating.”

During his interview, Ian used the allegory of Plato’s Cave to explain and make sense of his psilocybin experience, which he described as being quite abstract yet incredibly profound. One of the most significant aspects of the experience was the presence of a light, which was always with him. Ian said “all the way through that trip, when I encountered something difficult or scary, or something I couldn’t push through, I could always look up to see a light.” Most of the time, the light seemed to be partially obscured by an opaque screen, however at a pivotal moment in the experience – what Ian described as the “mystical” part – the screen disappeared and the light “broke through.” When this happened, Ian heard a female voice say “you are not alone” and with this voice came a “feeling of love that is everywhere,” a sense of “togetherness,” and what he believes was an ego dissolution experience. Ian described a “very strong experience of not being alone . . . the certainty of not being alone and this feeling of light and love that was shining through everything . . . everywhere.” Ian described this feeling of love as both flowing through him and flowing from him, and said that he could “send out” this love to other people in the room. The emotional intensity of the experience was so strong that Ian’s voice began to quaver when he spoke of it during the interview, and he noted that almost twelve months later, he still gets emotional when talking about the experience.

Ian reported a number of significant life changes that occurred after the psilocybin experience. He said the experience gave him “a certainty of the importance of love” and

that since the experience he is “closer to the world, the people around me, more open, more warm, loving . . . at least my wife says so.” He also described career changes, including a significant revision of his work priorities and an increased sense of awareness regarding his interpersonal relationships with others. Ian also reported significant changes to his health and wellbeing; in particular, he lost 20 kg in the year following the retreat. Weight loss was not a specific intention going into the retreat, rather it was an unexpected “bonus.” Ian attributed the weight loss to several factors, including an absence of sugar cravings, a significant change to his sense of taste, so that “everything I tasted was much, much stronger,” and a period of effortless change that occurred in the month following the retreat. He reported that after the retreat “the ability to change was super easy. Those first three to four weeks, there was no effort at all.”

Ian also believed that his previous unhealthy behaviors were related to a feeling of “existential darkness” that he had felt since he was a teenager and that drove him to eat for comfort. After the psilocybin experience, this feeling of darkness disappeared:

obviously I’ve been eating less calories. So then you lose weight. So that’s some basic science there. But I think that the most profound change from the experience is that since I was a teenager, I think I’ve had some, I don’t like to use the word “depression” because that’s a clinical word and it’s not a clinical depression. But okay, let’s use the word just as a description of a “darkness” that’s always been there. And that has disappeared. I’m much happier.

He also said that he now understands how his behaviors and choices contributed to and influenced that sense of darkness and how: “I can foster that darkness and I can also choose not to have it.”

Almost twelve months later, Ian can still “tap into” and connect with the positive feeling associated with his psilocybin experience, and he reported that this feeling is often connected to sunlight, walking, running, or being outside. While he has only discussed the mystical aspect of the experience with the people closest to him, Ian has spoken to others about how the experience in general changed his priorities and other aspects of his life, noting “I’m a strong believer in understanding Plato in the sense that once you had seen the light in that cave, you had an obligation to go out and talk about it somehow, in a way to use that knowledge or that insight.” While Ian said he had “no plan of becoming a preacher for psychedelics,” he believed that sharing his experience might help others in the sense that his story could “open that door for someone who didn’t know that that door was here.”

Carol

Carol was a female in her fifties, who worked in marketing and had never taken a psychedelic before. Carol read about psychedelic retreats in a trend report and was gifted the Synthesis retreat by a friend. Carol’s intentions for her psilocybin experience were to gain clarity regarding relationships, self-love and anger. During the interview, Carol described two particularly salient aspects of the experience.

The first involved a significant change to her sense of self that occurred early on; specifically Carol described “becoming the room.” Carol found it difficult to articulate this aspect of the experience as she said it “didn’t make sense” to her. She explained, “I had trouble understanding that I had become the environment around me” and described “not understanding the expansiveness.” While Carol said she wasn’t sure if the experience was an ego dissolution, she expressed, “I wasn’t me anymore.”

The other significant part of Carol’s experience involved a connection she made with one of the guides, Jasmine. At one point during the session, Jasmine came over to comfort Carol during a moment of distress. During this encounter, Jasmine’s face changed so that she looked like Carol’s adoptive mother. Carol had been adopted as a baby, and her adoptive mother had died when Carol was fifteen years old, so this experience was very meaningful to her. Carol interpreted this visual effect not as a hallucination, but as a revelation of “truth.” She related:

I mean, she *really* looked like my mom ... the first thing I noticed is her face just like *fluidly morphed* ... And it was not like, “Oh my God, I’m being tricked.” It’s revealing: “this is the truth of that energy and that love.” And then she aged rapidly. I’m watching this happen. And then she just went into decrepitness and decay but it was okay. Because I had the experience that those things were all true at the same time. Every moment she’s alive, she’s dead. Like, same thing.³

The interaction with Jasmine also involved a boundary dissolution experience, which Carol described as a “physical experience of oneness:”

what I remember is that I was clenching her hand and that sometimes I would maybe go on a little journey inside and I would lose track of whose hand was whose, and where was the line? So there was a physical experience of oneness. And I would bring my other hand over to check because I had lost the boundary. And I’m like, “Oh, who is the boundary? Oh, it’s me. Okay got it.”

During the encounter with Jasmine, Carol had a number of insights; an experience she described as feeling like “mainlining the universe.” One key insight was the understanding that she was always taken care of, always loved and never alone. Part of this insight involved the realization that despite losing both her mothers, she had never been abandoned and actually had three mothers: her birth mother, her adoptive mother, and the universe, who had always been taking care of her. Other insights Carol reported were: “we are all connected/all one,” “intimacy is an act of surrender,” and “allow – just let things, situations, people, flow through and around me.” During the interview Carol said she has since come to understand this part of the experience as a

“rebirth,” explaining, “What I have come to know now is that I had just been reborn.” The day after the psilocybin experience, Carol had a conversation with one of the guides, David, who interpreted Carol’s interaction with Jasmine in terms of disconnection and reconnection. Carol recounted, “he [David] was like, ‘Birth is a disconnection.’ And mine especially [being adopted] was a disconnection. You get cut off from source and thrown into this world. And he was like, ‘What you had with Jasmine was reconnection.’”

Embodiment was a key theme that emerged from the interview with Carol. She described lying in the “fetal position” for quite some time during the session (a position she understood as being symbolic of her rebirth), and referred to her experience of insight as a “visceral understanding” that could be felt “in every layer and every cell.” Additionally, for weeks after the experience, Carol would “occasionally get little shakes,” which she interpreted as a type of therapeutic trembling, like something “working itself out” of her body. Although she cried throughout most of the session, Carol described the overall nature of the experience as being extremely positive, blissful and cathartic, like “fifty years of therapy in 5 h.” She expressed, “there were things that were healed, that therapy could never do.” Twelve months later, Carol can still reconnect to the psilocybin experience via music and via a scented room spray which contains the same fragrance that was used during the session; she said that when she smells the fragrance, she can “go back there.”

Carol reported a number of enduring positive after-effects from the experience. She stated that she is now happier, has a greater sense of ease around other people, experiences less anger, and has more peace in her life. She said that the experience, “revealed to me in a very clear and powerful way, ways for me to be more loving and accepting of myself.” When she shares her story with other people, Carol tells them that psilocybin is not a hallucinogen, rather, it is a “revelation-ogen:”

it’s a revelation. It’s a revelation-ogen. Because basically it’s showing you, what’s all true in there. And that too, I think is one of the reasons that people are so clear about remembering it. You’re like, “Oh no, *this is how it is*. This is the truth of the fabric of the universe right now.” You’re not dreaming.

Carol also reported changes to her spiritual beliefs; she now “really believes” in some spiritual and New Age ideas that before seemed questionable to her. She also reported reduced anxiety regarding death, noting “death is nothing to be afraid of.”

Ben

Ben was a male in his forties, who worked in finance and had never taken a psychedelic before. Ben attended the retreat because he wanted to “become more connected to nature and people” and to “love more.” In the years prior to the retreat, Ben had suffered with some depression, and he hoped the psilocybin experience might also lead to improved mental health.

One of the most significant parts of Ben’s psilocybin experience involved a period where he “became” his

³In follow-up email correspondence, Carol emphasized that during the experience Jasmine did not merely look like her mother, she *was* her mother. Carol explained that this is the reason she referred to psilocybin as a “revelation-ogen:” “I saw the truth, the actual thing – not the ‘looked like’ thing.”

pregnant wife. At some point during the experience, Ben felt that he was no longer in the session room, but was back in his bed at home. He noticed that he had developed a stomach ache, and when he felt his stomach with his hands he “realized it had become a lot bigger as well.” Ben then described realizing that he had become his wife:

So there I was, holding this big stomach and at this point, I wasn't actually lying in the [retreat] room. I was back in my room upstairs at home. And I was in our bed. I was rubbing my tummy and it was really hurting and I realized I was pregnant. I'm lying in bed pregnant and I'm hurting and I'm uncomfortable. And then I realized that I'm actually my wife at this point. I'm now my wife and “I” wasn't there.

Ben described the experience as feeling unquestionably real, saying “it's not like you're imagining you're there, you are literally there in your room at home.” He said the experience allowed him to understand life from his wife's perspective, noting “you become someone else and you're in their shoes and you actually feel what they're feeling, it was just incredibly powerful.” The experience gave him a new insight into his marriage, and as a result, he decided to replace his lost wedding ring:

for about 10 years I hadn't worn a wedding ring. And I didn't think that was that important . . . and then from being in her shoes, I actually realized there is a symbolism in it and it does matter . . . I bought a ring from a jewelry store in Amsterdam the day after [the experience] because it just felt like the right thing to do.

Another significant part of Ben's experience involved a period where he became an animal in a forest:

So there's quite an interesting period where I was in a forest and I was a really small animal in the forest. I was aware of the forest around me. And then I was becoming smaller and smaller. So, I started off as just a small animal, but then became a little ant or something. And then I was conscious, I was still getting smaller and smaller. So I ended up just being an atom basically, in this forest scape.

While in the forest, Ben described experiencing other people from his life as “roots of a tree.” He reported realizing that he was just “one tiny atom” in a “whole complex system” and how there was no need to judge other people because “they're just roots of a tree. At the end of the day they're just another organism in the whole scheme of things.” Ben's psilocybin experience contained other similar ecological themes. He related that at one point during the experience he looked up at the moon outside and saw it transform into the Earth: “I was looking at the Earth. Not crystal clear, but it was the Earth, spinning, with me on it – me, inconsequential yet a key component.” Ben also described a period where he felt that the psilocybin mushroom was speaking to him:

There was a period where it felt like nothing had happened for a long time. And I was starting to wonder why not loads of stuff was happening. And then I got this

sort of feeling or message that it's actually all right, that you actually don't need that much. It was as if the mushrooms were talking to me, and saying “you are okay, you know, everything's okay. You don't actually need much from me” . . . it was sort of telling me, “you're actually not that bad.”

Ben said that while he didn't think he had a “full mystical experience,” the experiences he did have “definitely changed my understanding of my place in the world and my human life and my connectedness to others.” He said he received clarification regarding “what it means to love” and that during the experience of becoming his wife he “almost fell in love again.” Ben said the experience has made him more tolerant, accepting and empathetic towards others. Since the retreat, depression “hasn't been a problem” and Ben attributed this improvement in his mental health to both the psilocybin experience and subsequent lifestyle changes including reduced alcohol intake, regular exercise, healthy eating, and a consistent meditation practice. Another significant after-effect that Ben reported was a new interest in spirituality, consciousness, psychedelics and quantum physics, which he said has been “life-defining,” explaining “it's given me a passion and something to learn about and drive towards.” Ben also reported feeling “more connected to nature,” and he cited examples such as experiencing more beauty in the sound of birdsong, increased awe at sunrises, less killing of insects, becoming more conscious of meat consumption and an increased sense of connectedness to natural cycles such as the moon cycle, tides and equinoxes. While Ben struggled to reconcile some of the more spiritual aspects of his psilocybin experience with his rational worldview, he said the experience made him more curious about spirituality and noted, “I'm not worried about dying so much”. (Table 1)

Table 1. Participant demographics

Pseudonym	Jay	Ian	Carol	Ben
Age	50s	50s	50s	40s
Gender	Male	Male	Female	Male
Identity				
Ethnicity	Caucasian	Caucasian	Caucasian	Caucasian
Prior	None	None	None	None
Psychedelic Use				
Education	Master's Degree	Master's Degree	Master's Degree	Bachelor's Degree
Religious Orientation	SBNR	Atheist	SBNR	SBNR
Psilocybin Dose	High	High	High	High + Booster
Reason/s for Attending	EC, IC, ME	EC, PD	IC, PD	MH, ME
Months Between Retreat and Interview	12 months	10 months	12 months	8 months

DISCUSSION

The case studies in this article represent a sample of themes that emerged during qualitative interviews. Each case study provides a brief summary of the participant's psilocybin experience, but does not capture all the themes that emerged for each participant; it only presents some of the highlights from the experience. Despite the passage of time (the interviews took place approximately eight to twelve months after the retreat), all participants reported that the significant moments from their experience were still quite vivid. Salient moments also appeared to be relatively easy to recall; for the most part, participants spoke in the form of an extended monologue, with very little prompting required from the researcher.

Based on these case studies, some general observations can be made. Firstly, as noted by other researchers (e.g., Bogenschutz et al., 2018), the content of each psilocybin experience was highly variable and each experience seemed to uniquely match the perceived needs of the individual participant. Sometimes the content of the experience related directly to the participant's specific intentions going into the retreat, and at other times the content was meaningful but unexpected. While the content of the experiences was diverse, all participants reported typical psychedelic effects including novel sensory-aesthetic effects, psychodynamic-autobiographical experiences, symbolic-archetypal experiences (particularly related to birth/death/rebirth and the universal quality of love), heightened emotion, time distortion, changes to sense of self, and mystical-type experiences (e.g., Garcia-Romeu & Richards, 2018).

A key theme that emerged for all participants was the experience of insight, both mystical and mundane. Participants framed their narrative accounts around key moments of insight and described how these insights were related to subsequent after-effects and significant changes in their lives. Insights were primarily concerned with the theme of connection: connection to self (e.g., increased self-confidence, self-love, self-acceptance, creativity, and resourcefulness), connection to others (e.g., insights that involved relationships with significant others, re-connecting with deceased loved ones, connecting with other people present during the session, and experiencing life from the perspective of others), and connection to a broader relational ontology (e.g., understanding that one is connected to a larger universe or ecological system). These findings are consistent with studies that have found that psilocybin promotes a generalized sense of "connectedness" to self, others and the world (Carhart-Harris et al., 2018; Watts et al., 2017). In these case studies, the concept of connection or connectedness appeared as a common theme that occurred throughout the general content of the experience, but was most clearly articulated in relation to pivotal moments of insight.

Distortions to the subjective experience of self (commonly termed "ego dissolution") have been consistently reported with high doses of psychedelics (e.g., Nour,

Evans, Nutt, & Carhart-Harris, 2016). Ego dissolution is characterized by a "reduction in the self-referential awareness that defines normal waking consciousness, ultimately disrupting self-world boundaries and increasing feelings of unity with others' and one's surroundings" (Mason et al., 2020, p. 2003). All participants in this study reported significant changes to self-other and self-world boundaries, a reduced sense of personal identity/narrative self, and a feeling of union with others and the world. Such findings are consistent with the phenomenon of ego dissolution. Interestingly, while all participants in this study were familiar with the term ego dissolution, some reported uncertainty regarding the validity of their own self-dissolution experiences. Specifically, due to the inherent nonverbal nature of such experiences, participants experienced difficulty when trying to articulate significant changes to sense of self. Additionally, participants all reported retaining a minimal sense of a basic self (i.e., a sense of "awareness" or of simply "being") throughout the experience, which made some participants question whether what they had experienced was truly ego dissolution.

Consistent with prior research on psilocybin occasioned mystical experiences, participants in this study reported a number of mystical-type experiences including noetic insights, a feeling of transcending time and space, a sense of passivity (feeling that they were not completely in control of the experience), a sense of ineffability (difficulty describing some aspects of the experience), and feelings of interconnectedness and unity. Some scholars of mysticism (e.g., Hood, 1975; Stace, 1960) have argued that the "unitive experience" (i.e., sense of "oneness" or "unity") is a key defining feature of the mystical experience. Further, it has been posited that the phenomenology of the unitive experience overlaps with that of ego dissolution, and scholars have found some support for this hypothesis (e.g., Nour et al., 2016). Carhart-Harris et al. (2018) argue that conceptually, the individual ego could be thought of as a "counter-force" to connectedness. Hence, the ego dissolution experience or mystical unitive experience may be one important factor that facilitates insights into connection.

The participants in this study also reported mystical-type content that aligns more closely with animistic or shamanic worldviews (e.g., ascribing a spirit or consciousness to a tree/mushroom; experiencing oneself as an animal) and with other anomalous experiences such as near death experiences (e.g., meeting with deceased loved ones). Such experiences might also play a significant role in facilitating or potentiating key insights regarding connection to others and to a broader relational ontology. Interestingly, only two participants mentioned a behavioral manifestation of nature-relatedness as an after-effect (i.e., Jay described connecting to the "sacred aspect of nature" and Ben noted a number of changes), however it is possible that this theme will emerge with a larger sample size or with direct questioning. For example, in follow-up email correspondence, Carol reported that she had experienced increased nature-relatedness and that part of her integration practice involves bringing a "fragrant botanical into my life every day – in sight and

smell and touch. When I do that it's like a little jolt of this experience. It's been one of the most powerful pieces of my integration practices." She explained that this practice allows her to retain a connection with her guide, Jasmine.

Embodiment was also a key theme. Participants reported experiences such as inhabiting the body of another, insights that were felt viscerally, and after-effects that involved changes to the physical body. All participants said the psilocybin experience was highly emotional, and all experienced periods of heightened emotion when relaying the experience during the interview. A common bodily response, both during the psilocybin experience and during the interview, was crying. However, while some participants recounted moments of confusion or transient distress, all said that the overall emotional tone of the psilocybin experience was overwhelmingly positive. Hence, the crying seemed to be related to a process of catharsis rather than sadness. Some participants mentioned being able to "tap into" or reconnect with the powerful positive feelings associated with their experience, and that this was achieved via bodily sensations (e.g., sense of smell) or through physical activity (e.g., walking or running). Recently there has been a growing recognition that the mind-body relationship is more profound than was initially thought, and research in the area of "embodied cognition" has demonstrated that the mind, rather than being an abstract and isolated entity, is grounded in embodiment (e.g., Varela, Thompson, & Rosch, 2016). In their study of psilocybin-assisted psychotherapy for cancer patients, Belser et al. (2017) also found that embodiment was a critical feature of psilocybin experiences. Similarly, in their study of psilocybin for treatment-resistant depression, Watts et al. (2017) reported embodiment of emotions as a theme. Embodiment is currently an understudied area in psychedelic research, and future studies might consider how psilocybin-induced novel bodily effects mediate the experience of insight.

In this study, no serious adverse events were reported.⁴ One participant mentioned a brief period of transient distress, which was then transformed into a cathartic breakthrough experience. This finding is consistent with the results of a recent survey study which found that 84% of psilocybin users who experienced a "bad trip" ultimately benefited from the experience (Carbonaro et al., 2016). Similarly, Belser et al. (2017, p. 379) suggest that periods of transient distress may function "as a necessary 'turning point' in an unfolding process, as feelings of fear, panic, and anxiety transmute into feelings of love, joy, and forgiveness."

The results from these case studies suggest there are benefits for healthy individuals taking a high dose of psilocybin. Participants reported a range of positive after-effects, including psychological changes (e.g., improved mood, increased resilience, reductions in anxiety and anger, feeling more at peace, being kinder to oneself), interpersonal changes (e.g., feeling more loving, tolerant, accepting and empathetic towards others; having an increased sense of awareness regarding others), and changes to health and

wellbeing (e.g., weight loss, exercise and dietary changes, reduced alcohol consumption, development of new interests). These after-effects were enduring and had persisted for up to twelve months, a finding which is consistent with other studies that have demonstrated that psilocybin has long-term positive after-effects (e.g., Barrett et al., 2020; Doblin, 1991). The three participants in this study who identified as "spiritual but not religious" (SBNR) also reported changes to their spiritual lives. These participants reported changes to, or reinforcement of, their spiritual beliefs, changes to spiritual practices (e.g., beginning and/or maintaining a regular meditation practice), an increased interest in spirituality, and becoming "more spiritual." All three SBNR participants reported a decreased fear of death, a finding that is consistent with several survey studies of psychedelic experiences (e.g., Davis et al. 2020; Griffiths et al., 2019; Yaden et al., 2017). Finally, an unexpected finding was that during the interview two participants (Jay and Ian) spontaneously reported a desire to share the story of their psychedelic experience in the hope that it might benefit others.⁵ Future research might investigate whether this is a reliable and robust finding, and if so, whether there is a link between psilocybin use and altruism.

In this article, case studies have been utilized to provide a detailed and in-depth report of a single psilocybin experience. However, it is important to point out that a key disadvantage of the case study approach is the potential for both researcher bias and lack of representativeness. For example, Guba and Lincoln (1981, p. 378) argue: "An unethical case writer could so select from among available data that virtually anything he [sic] wished could be illustrated." While this study has attempted to minimize bias by selecting four case studies that the researcher believes adequately represent themes that were common to the entire data set, it must be noted that the inherent variability of the psilocybin experience means that it is difficult to make generalizations based on a small sub-sample. In addition, there are sometimes outliers (e.g., experiences that are very abstract and have little to no narrative content). Hence, future research will involve a thematic analysis of the entire data set, which should contribute to a more comprehensive narrative.

Further, future analysis will take into account the impact of set and setting, which has been shown to play an important role in the psychedelic experience (e.g., Hartogsohn, 2017). Synthesis retreats involve extensive preparation (including guidance from facilitators before the retreat, the setting of intentions, suggested daily practices leading up to the retreat and suggested pre-reading), facilitator support during the experience, and post-experience integration (including integration workshops during the retreat, one-on-one integration coaching with facilitators, an additional group call after returning home, and the option of further integration coaching sessions after the retreat). The Synthesis retreat

⁴This was the case for both the sub-sample and the complete data set.

⁵It should also be noted that all four case study participants, in their debriefing conversations with the researcher, expressed their desire to contribute to psilocybin research in the hope that it might benefit others.

program is explicitly aimed at personal transformation and includes a number of supportive practices that may potentiate the psychedelic experience and direct it towards this aim. These practices include group workshops, meditation, self-reflective journaling and breathwork. While an in-depth analysis of how these factors might shape participant's experiences is beyond the scope of this article, future research will consider the influence of set and setting.

Finally, this study is unique in that it might be the first study to examine participant experiences where high dose psilocybin was consumed in the form of whole truffles. A recent study by [Mason et al. \(2019\)](#) utilized whole truffles consumed in a retreat setting when examining the sub-acute effects of psilocybin on creative thinking, empathy, and well-being. However, the [Mason et al. \(2019\)](#) study used a dose of 15 g, while in the present study the dose range was 30–80 g. The study of the effects of psilocybin when consumed in whole truffle form might be an important avenue for future research. Currently, clinical studies of psilocybin use synthetic psilocybin; however, there is evidence to suggest that psilocybin mushrooms contain other compounds which lead to an “entourage effect” (a synergistic interaction between two or more different molecules when those molecules are co-administered) and that this effect could influence both the nature of the psychedelic experience and its associated behavioral outcomes (e.g., [Gartz, 1994](#); [Matsushima et al., 2009](#); [Zhuk et al., 2015](#)). While the results of the present study were comparable to results obtained in studies using synthetic psilocybin, it is possible that future analysis of a larger data set might reveal subtle differences between truffles and synthetic psilocybin.

In conclusion, the experiential themes that emerged from these case studies closely match themes that have been identified in previous studies of psilocybin, including variability of the experience, the presence of mystical-type features, significant changes to subjective sense of self (i.e., ego dissolution), and insights related to a generalized sense of connection (to self, others, and to a broader relational ontology). Additionally, the theme of embodiment and its relationship to insight is an understudied area in psychedelic research and warrants further investigation. Finally, this study provides preliminary evidence to suggest that in a well-controlled and supportive retreat setting, a high dose of psilocybin can lead to enduring positive after-effects in healthy individuals. In such a setting, psilocybin appears to be safe and well tolerated. While further interviews with additional participants should provide more insight into key phenomenological themes, the case studies presented here provide preliminary evidence that complements existing studies of psilocybin and that could be used to generate new hypotheses for future research.

ETHICS STATEMENT

This study was approved by and carried out in accordance with the recommendations of The University of Sydney

Human Research Ethics Committee. Participation was voluntary and no incentive to participate was provided. All participants gave their written informed consent to participate and were told that they could withdraw from the study at any time.

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