



A Transformative Trip? Experiences of Psychedelic Use

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Abstract Psychedelic experiences are often compared to “transformative experiences” due to their potential to change how people think and behave. This study empirically examines whether psychedelic experiences constitute transformative experiences. Given psychedelics’ prospective applications as treatments for mental health disorders, this study also explores neuroethical issues raised by the possibility of biomedically directed transformation—namely, consent and moral psychopharmacology. To achieve these aims, we used both inductive and deductive coding techniques to analyze transcripts from interviews with 26 participants in psychedelic retreats. Results indicate that psychedelic experiences can constitute transformative experiences. Twenty participants reported experiences or insights that were seemingly inaccessible or impossible to attain if not

for the psychoactive effects of psychedelics. All participants besides one reported some change in identity, values, beliefs, desires, and behavior—changes in behavior being the most common. Participants also reported feeling capable deciding to use psychedelics in part due to information seeking prior to their retreats. Finally, several participants reported an enhanced capacity for enacting changes in their lives. Our results underscore both the importance of subjective embodiment to transformation and the role of transformative agency in shaping outcomes of the psychedelic experience. We examine our results relative to neuroethical issues and advocate for centering the person in psychedelic research and neuroethical inquiry about psychedelics to avoid pitfalls associated with psychedelics’ potential as moral psychopharmacological agents.

Keywords Psychedelics · Transformative Experience · Agency · Moral Neuroenhancement · Decision Making · Psychedelic Retreats

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Introduction

Psychedelics have garnered significant attention over the last decade largely due to the expansion of research into their medical applications. Several studies indicate that psychedelics administered in conjunction with a psychotherapeutic protocol—psychedelic assisted psychotherapy (PAT)—can be effective

for indications such as depression, post-traumatic stress disorder (PTSD), anxiety, and problematic substance use [1, 2]. Psychedelics' potential as novel therapeutics has attracted investment from several venture capital funds focused on biotechnology [3], and federal regulatory and research agencies have acted to reduce the burden on researchers and facilitate clinical investigations [4, 5]. In the USA, multiple cities and states have started decriminalizing, deprioritizing policing of, or even facilitating adult access to psychedelics [6]. FDA approval of psychedelics as treatment for PTSD and depression, and possibly other conditions, appears increasingly likely in the coming years [7]. This contemporary psychedelic science movement is generally grounded in the idea that psychedelics can facilitate radical shifts, or *transformations*, in how one thinks and behaves. This paper empirically examines whether psychedelic experiences constitute “transformative experiences.”

L.A. Paul's (2014) *Transformative Experience* [8] inaugurated a body of research spanning the humanities and social sciences that explores how knowing transforms us and, more specifically, how knowing can transform us in ways we cannot rationally predict, much less anticipate. Paul distinguishes between *epistemic transformation*, coming to know something new that could not be known except by experiencing it, and *personal transformation*, significant changes to one's point of view, way of being, or perception of self that transform one as a person. Within Paul's framework, epistemic transformations stem from new *types* of experience that bestow novel understanding or information [8, pp. 10–11]. Paul offers the example of eating a durian. No matter how many books you read or people you talk to, you can't know what durian tastes like except by tasting it [8, pp. 17, 35–36]. Although learning what a durian tastes like is a trivial illustrative example, epistemic transformations stem from experiences that produce novel understanding *and* are attributed subjective value, which “carries weight” in future decision making [8, pp. 11–16]. Personally transformative experiences, by contrast, produce substantial changes either to one's core preferences or to how one experiences being oneself, or both [8, p. 16].

Personally transformative experiences play a special role in Paul's framework because they change the very agents who make decisions. Your core preferences, values, behaviors, as well as a host of other

aspects of oneself, change. An example of a personal transformation occurring is when you become a parent. You cannot know what it is like to be a parent until you are one, but by becoming a parent, you become *a different person* [8, 9]. Thus, knowing what it is like to be a parent is simply inaccessible to those who are not parents because they have not been changed through becoming and being one. Personally transformative experiences such as this pose a serious problem for the theory and practice of rational decision making; one cannot rationally choose to become a parent, for instance, because:

The experience can be life changing in that it changes what it is like for you to be you. That is, it can change your point of view, and by extension, your personal preferences, and perhaps even change the kind of person that you are or at least take yourself to be [8, p. 16].

Paul typically takes *transformative* experiences (sans any qualifier) to be those experiences that are both epistemically and personally transformative [8, p. 17].

Transformative experiences, while intrinsically interesting for what they can tell us about what we know and who we are, are of special interest to psychedelic research for two reasons. First, there is a resemblance between psychedelic experiences and Paul's notion of transformative experience in terms of the subjective impact on the individual. The non-ordinary states of consciousness occasioned by taking psychedelics can entail a wide range of possible effects including changes in the character of visual, auditory, or somatic perception, fluctuations in emotional content and intensity, changes to the character of cognition, elementary and complex hallucinations, and altered self-experience [10–12]. Together, these phenomena may culminate in peak experiences that are variously interpreted and described as “ego dissolving”, “oceanic”, “self-transcendent”, “mystical”, and “sacred” [13]. While religious and near-death experiences are similar to psychedelic experiences in both phenomenology and subjective impact [14–17], psychedelics can be viewed as one pathway to such experiences that may produce greater subjective intensity and impact. Nevertheless, some argue that psychedelic experiences are sufficiently distinct from the experiences of ordinary life to make them epistemically transformative [18]. Similarly, because

these qualities of the psychedelic experience can lead to profound and rapid shifts in values, beliefs, and behaviors, consuming psychedelic substances may also be personally transformative [18].

The second reason transformative experiences are relevant to psychedelic research is the distinct neuroethical issues raised by the use of psychedelics as technologies for medically directed transformation—specifically issues of 1) consent and 2) moral psychopharmacology or moral neuroenhancement. Regarding issues of consent, Smith and Sisti suggest that psychedelics may require “enhanced consent” procedures to ensure that individuals administered psychedelics in controlled settings are fully aware of the possible outcomes [19]. Part of the necessity of enhanced consent is the possibility for effects such as alterations to beliefs [20], personality domains [19], and subjective meaning attribution [21], which may be taken as evidence supporting the notion that psychedelic experiences can be personally transformative [18]. However, Jacobs argues that the potentially transformative effects of psychedelics make values-aligned decision making, and therefore informed consent, impossible for PAT, even with enhanced disclosure [18]. Kious, Peterson, and McGuire, on the other hand, question whether the psychedelic experience is empirically any more transformative than other common medical experiences, and even if it is, they argue that this does not preclude the possibility of providing valid informed consent for PAT [22].

Psychedelics’ potential to facilitate effects corresponding to features of transformative experiences, such as alterations to beliefs, personality, and meaning attribution, also poses neuroethical issues pertaining to moral psychopharmacology—an area of neuroethics dealing with questions surrounding the possibility of biotechnical enhancement of moral dispositions. Psychedelics’ clinical efficacy is tied to their capacity to enhance or reshape meaning, a property that is both common across several psychological explanations for psychedelics’ effects and specifically leveraged in PAT for the purposes of modulating meaning attribution in relation to specific therapeutic targets [23–26]. Inherently, this proposed mechanism underlying psychedelics’ transformative potential raises concerns about whether psychedelics could be used to modulate meaning in a variety of ways that are more or less ethically justifiable and the ethics of medically directed meaning-modulation. For

example, the vulnerable and suggestible states occasioned by psychedelics could expose participants in PAT who are under the supervision of facilitators to various forms of undue influence or manipulation [27, 28]. Using psychedelics as pharmacological agents for transformative change is also complicated by the context dependence of psychedelic effects. Since psychedelic effects are influenced by “set and setting,” which generally refer to the characteristics of the person taking the substance and the social-environment wherein psychedelic use takes place [29–31], psychedelic use can lead to highly variable experiences. While psychedelics may be posed as moral “enhancers” [32, 33], outcomes of psychedelic use are indeterminate and therefore raise questions about how and under what circumstances psychedelics could function to influence moral cognition.

The following analysis uses empirical data obtained from participants who attended psychedelic retreats to explore whether and how psychedelic experiences may constitute “transformative experiences” according to LA Paul’s framework. While there is a plethora of indirect evidence that psychedelics can facilitate transformative experience, no study, to our knowledge, has empirically examined whether psychedelic experiences are transformative according to Paul’s theory or asks participants themselves if, how, and in what ways they perceive the experience to be transformative. Furthermore, no study to date has investigated participants’ decision-making processes surrounding their psychedelic experiences. In turn, we also explore participants’ perceptions about whether they were able to make an informed decisions regarding psychedelic retreat attendance, as well as how their experiences impacted subsequent decision-making.

Of course, understanding whether and how psychedelic experiences can be transformative also has implications beyond the philosopher’s armchair. Psychedelics are actively and widely used among the populace and explored as investigational drugs for a growing list of clinical indications. Thus, due to the potential for transformative effects and the immediacy of the issues they pose relative to neurotechnologies that are far-fetched or will remain unrealized until some far off point in time [29, 32, 33], psychedelics are an ideal case for exploring neuroethical issues surrounding biomedically directed transformation. Moreover, as psychedelics near FDA approval and

additional applications follow, the need to interrogate neuroethical issues and establish norms regarding the appropriate circumstances for psychedelic transformation takes on greater importance. Towards this end, we conclude by examining how our results shed light on neuroethical issues and imperatives associated with medically directed psychedelic transformation through PAT and make recommendations for further neuroethical inquiry.

Data and Methods

To explore whether experiences with psychedelics constitute transformative experiences as defined by Paul [8], we conducted interviews with psychedelic retreat participants. Individuals were eligible for the study if they were at least 18 years of age, English-speaking, and had participated in at least one psychedelic retreat held domestically or internationally.

Participants were recruited using both convenience and purposive sampling [34]. Participants were initially identified by a member of the research team through personal networks and email recruitment through a Psychedelics listserv. The remainder of the participants were recruited using a flyer distributed to several organizations that offer psychedelic retreats and agreed to share it with their retreat participants. Participants from both groups were provided a link to a brief online interest form administered through Qualtrics. The form asked for contact and demographic information including age, gender, race and ethnicity, and location. Interested participants were contacted by email with up to three reminders. The email informed them of the purpose of the interview, that it was voluntary, and that the information would be kept confidential. Individuals were offered a \$50 online gift card for participation. This study was approved by the Baylor College of Medicine Institutional Review Board (protocol H-53561) and received a certificate of confidentiality from the National Institutes of Health (number CC-OD-23-4760).

Data Collection

Semi-structured in-depth interviews were conducted using a guide consisting of questions pertaining to psychedelic use history, characteristics of psychedelic retreats attended, motivations for attending, the

subjective quality of their psychedelic experience, the impact of the psychedelic experience, and opinions about policy issues surrounding psychedelics. The interview guide was developed among the study team and revised based on its performance in initial interviews. Specific items geared towards obtaining information relevant to Paul's theory of transformative experience addressed whether the participant 1) learned anything from their psychedelic experience(s) and if they felt there were other ways to attain that knowledge, 2) felt like a different person after the experience(s), 3) perceived changes in their identity, values, or beliefs following their experience(s), and 4) considered their experience to be "transformative".

Three different members of the research team (AM, JOR, LNS) conducted interviews in person and via Zoom between June and October 2023. Following interviews, recordings were professionally transcribed and subsequently reviewed by members of the research team (JOR, LNS, CSB) to check for fidelity to the audio recording and remove identifying information.

Data Analysis

The coding team analyzed transcripts using qualitative content analysis, which incorporated both inductive and deductive approaches to coding [35]. An initial coding scheme was inductively developed based on emergent themes. Coders individually coded each transcript, marking sections to indicate how codes would be applied. The coding team (LNS, CSB, JOR) then met to compare coding results and reach consensus about code applications. Once the coding scheme was settled, the scheme and interview transcripts were uploaded to the Dedoose qualitative data analysis program (Dedoose Version 9, SocioCultural Research Consultants LLC, Los Angeles, CA).

The second phase of our analysis took on a more deductive approach. Members of the coding team analyzed excerpts from the codes in Dedoose to evaluate participants' accounts of their psychedelic experiences and their downstream impacts. We then determined whether those self-described impacts fit the criteria of a transformative experience as outlined by Paul [8]. To do so, two coders (LNS, CSB) analyzed excerpts to identify and record passages suggesting participants experienced an "epistemic transformation" and/or "personal transformation."

Although it may be said there are no objective criteria for identifying transformation in either sense [18], Paul's work is suggestive of several characteristics that we used to guide analysis. Specifically, for each participant, the coders looked at five types of change indicative of personal transformation, including perceived changes to identity, values, and beliefs, as well as reported changes in desires and behavior. These five types of change were selected as approximate indicators of individual changes to "point-of view", "personal preferences", or "the kind of person [they] are or at least take [themselves] to be" [8, p. 16]. For epistemic transformation, coders identified reports of novel understanding, information, realizations, or perspective attributed to participants' psychedelic experiences. These encompassed both references to novel phenomena experienced after using psychedelics and the subjective values participants attributed to their psychedelic experiences. To explore participants' own understanding of their experiences, coders also recorded whether the term "transformative experience" resonated with participants, what language participants used to describe the impact their psychedelic experiences had on them, and whether participants felt able to make an informed decision about taking psychedelics while at the retreat. Coding decisions were then compared between the two coders in pursuit of consensus. Subsequently, two other members of the research team (JMR, KB) validated decisions and resolved discrepancies.

Results

Participant Characteristics

In total, the research team contacted 37 interested participants and completed 26 interviews (response rate=70.2%). We were unable to complete interviews with 11 participants due to scheduling conflicts, and lack of response to recruitment emails. Nine participants were recruited through personal contacts and the remaining seventeen were identified and recruited from flyers that were sent via retreat organizations. Most participants were female ($n=20$) and White ($n=17$), with a smaller number of participants who identified as Hispanic or Latino ($n=5$) and Asian or Asian-American ($n=1$). The sample was generally older than 30 years of age ($M=48$ years $SD=14.3$).

Table 1 Characteristics of psychedelic retreat participants

Characteristic	n(%), unless noted
Age, in years, $n = 24$	
Mean (SD)	48.3 (14.3)
Min—Max	30—79
Gender, $n = 26$	
Female	20 (76.9%)
Male	6 (23.1%)
Race and ethnicity, $n = 22$	
Asian American	2 (8.3%)
Hispanic	4 (16.7%)
White	17 (70.8%)
White and Hispanic	1 (4.1%)
Substance consumed, $n = 26$	
Ayahuasca	11 (42.3%)
Psilocybin	7 (26.9%)
Both	8 (30.8%)
Motivations for retreat seeking ($n = 26$)	
Curiosity	9 (34.6%)
Peer influence or recommendation	8 (30.8%)
Personal development	21 (80.8%)
Professionalization	2 (7.7%)
Relationship issues	5 (19.2%)
Self-medication	19 (73.1%)
Spiritual/religious practice	6 (23.1%)

The youngest participant was 30 years old and the oldest was 79 years old (Table 1).

Participants had varied experience with psychedelics and participation in psychedelic retreats. Half ($n=13$) of the interviewed participants had only ever attended one psychedelic retreat, whereas the other half ($n=13$) had attended two or more psychedelic retreats. Out of the thirteen participants who had attended at least two retreats, five (38%) participants attended either two or three retreats, and eight (62%) participants reported attending four or more.

Participants' history using psychedelics was also wide ranging. Six (23%) participants reported experience with only one type of psychedelic—taken in the context of a retreat—prior to interviews. Twenty (77%) reported use of two to as many as eight different types of psychedelics. The psychedelics that participants reported using during and outside retreats included: Ayahuasca, *bufo alvarius* venom (5-MeO-DMT), DMT, Huachuma/San Pedro, kambo, ketamine, LSD, MDMA, mescaline, psilocybin, and 2-cb.

Participants primarily discussed experiences with Ayahuasca and/or psilocybin since these substances are commonly featured as the main substance offered on retreats. Eleven (42%) participants reported attending retreats where Ayahuasca was the main offering and seven (26%) reported participating in psilocybin retreats. Eight (31%) participants reported attending both Ayahuasca and psilocybin retreats.

Participants reported attending retreats in domestic and international locations. Eleven participants (42%) reported attending retreats located in the United States, while nine (35%) reported participating in internationally held retreats. Six (23%) participants indicated participation in retreats held both in the United States and internationally.

When asked about their motivations, participants offered responses that were categorized into seven types of reasons for attending psychedelic retreats. Most participants offered more than one reason. Twenty-one (81%) participants reported seeking out psychedelic retreats for personal development purposes. Nineteen (73%) participants reported seeking out psychedelic retreats to self-medicate for a variety of conditions such as depression, anxiety, trauma, addiction, or grief. Nine (35%) participants reported curiosity as a reason for seeking out psychedelic retreats. Eight (31%) participants reported seeking out psychedelic retreats due to some peer influence or recommendation. Six (23%) participants reported seeking out psychedelic retreats for spiritual or religious purposes. Five (19%) participants reported seeking out psychedelic retreats to gain insight on or to resolve relationship issues. Finally, two (8%) participants reported participating in psychedelic retreats as part of their professionalization and training to become psychedelic therapists.

Transformative Experience Among Psychedelic Retreat-goers

Due to participants' diverse levels of experience attending psychedelic retreats, interviewers asked participants to describe their most impactful experiences when responding to questions about the quality or outcome of psychedelic use. Despite wide variation in the reported phenomenological qualities and social-psychological impacts of their psychedelic experiences, several participants' accounts of the acute experience and the subsequent changes that

followed were representative of characteristic features of a transformative experience. Table 2 displays the definitions of each type of change, an example quote, and the frequency of these changes as reported by participants in our sample. In the sections below, we explore how participants' experiences variously represent epistemic and personal transformations.

Epistemic Transformation Following Psychedelic Use

Twenty participants (77%) described experiences representative of *epistemic* transformation. Epistemic transformations refer to receipt of knowledge or understanding through novel experiences, which can only be learned experientially, and which holds subjective value that can "carry weight" in future decision-making [8]. The phenomenological qualities and idiosyncratic content characterizing the subjective effects of psychedelics can make for experiences that seem inaccessible or even impossible in normal waking consciousness.

For example, one participant recounted an experience in which she encountered another version of herself. She experienced interactions with herself and with her children that would not have been possible if not for the subjective effects of psychedelics. She states, "I recall seeing my younger self and telling her that it was okay, that she was safe now...almost it felt like my younger self and my adult self made peace. They connected." (108) In addition to this encounter wherein she made peace with her younger self, she also reported experiencing the world as a child again.

I had times with both of my children. At one point, I was a child again, a young child, and I played with my children as children and that was very happy. And I remember my mother too. It was a feeling of how connected I was with my children, with my own mother. It was beautiful. (108)

Participants also reported other types of experiences made possible through the non-ordinary states of consciousness facilitated by psychedelics, including: repeatedly reliving traumatic experiences (126), visualizations (105, 109, 118), encountering deceased significant others or non-human entities (109, 112, 114, 118), near-death experience (117), and viewing one's significant other as deceased (113).

Table 2 Features of transformative experience reported by participants in psychedelic retreats

Theme	Definition	Example quote (Participant number)	n who reported	% of total ($n=26$)
Epistemic Transformation	Receipt of knowledge or understanding through novel experiences	"Unless my [deceased] friend came down from wherever he is, and spoke to me... I don't think there'd be any other way I could have opened up my mind to these possibilities. And I don't think there would be any other way for me to experience profound, divine gratitude... I felt thankful in the past. I thank people, I'm glad they're in my life. I love people, and so forth. But to find gratitude is something else. And I don't think I would have ever experienced that, if I hadn't done this trip." (112)	20	77%
Personal Transformation	Changes to one's outlook, world-view, or disposition following personally impactful experiences (i.e. turning points)			
Change in Identity	Alterations to one's sense of self	"I feel like a different person, which is weird. But yeah, I actually feel like I know myself more. Part of that is because I know my consciousness more, but I actually just feel more okay with myself, and I think that's probably a big piece of it. So yeah, my identity has definitely changed." (119)	12	46%
Change in Values	Changes in the rank or content of what one determines to be important	"I would say values have changed in terms of who I decide to spend my time with. I have ended some long-term friendships because they didn't feel like they were connective in the way that I wanted." (125)	13	50%
Change in Beliefs	Changes in the content or stability of one's beliefs or belief systems	"I wasn't a spiritual or a religious person. I would not have considered myself either of those, but I feel like I'm getting more closer [sic.] to spirituality or to finding its meaning, what it means to me. And I think that that's the only belief I can think of that has really changed inside of me" (126)	10	38%

Table 2 (continued)

Theme	Definition	Example quote (Participant number)	n who reported	% of total (n = 26)
Change in Desire	Alterations to one's wants or the ideals to which one aspires	"it has definitely changed my trajectory of where I feel like I need to be moving towards. And I've been thinking that for a while. But this really just, it was almost like, it's not like I had voices in my head, but it was like I was talking to myself and I was arguing with myself like, 'No, you need a career because you need the job.' It's like, 'No, you need to be happy. Cut the shit.' So, I was arguing with myself over it. And the one voice, that one was the one that was been gnawing at me for a while. And that is, 'Do what makes you happy.'" (122)	18	69%
Change in Behavior	Alterations to habits or patterns of action or interaction with others	"I think I'm the same person with different habits. I would say I was a moderate drinker before. Now, I just haven't really wanted to consume alcohol. I feel alcohol kind of dissociates me from myself." (108)	19	(73%)

In addition to gaining access to non-ordinary experiences, participants also reported gaining new knowledge or insights from those experiences. For instance, one participant described how her experience with psilocybin provided new perspective about her relationship with her mother.

I didn't realize how much resentment I had towards my mom. And so, during the ceremony, I felt this huge connection to my mom. I actually started feeling like I was going through labor... I had to keep changing my position. It wasn't so overwhelming pain though...But because of that pain, I felt so grounded, and connected to my mom. There was a point, where I was laying on my side, and I just was thinking, "I love you mom," ... I didn't realize how much that resentment was getting in the way, of that relationship with her. (119)

The knowledge gained by this participant through her experience of faux-labor resulted in enhanced

feelings of being grounded and connected to her mother. She later mentioned that the insights derived from her experience led to a new behavior: the participant reported calling her mother after the retreat to say that she loved and forgave her.

When asked directly, participants often stated that they could only have attained the knowledge or insight gained experientially from their psychedelic experiences. For example, to the question of whether they would have been able to arrive at the changes they experienced by means other than psychedelics, the participant who described faux-labor answered, "No, absolutely not" (119). Similarly, another participant whose Ayahuasca experience resulted in the felt realization that "I am loved" suggested that this statement could not have been meaningfully received in other ways.

No, nobody could have told me that. Nobody could have come up to me and go, "[Participant 105], you're so loved. You've got all these

friends. You've got this great business." But I'd be just, "Whatever." But it was a feeling I got during the hallucinogen's effect that made me feel that way. (105)

The feeling of being loved that the participant experienced during her Ayahuasca journey was something she claimed she was not open to previously. The qualitative characteristics of the Ayahuasca experience allowed her to feel this realization in a more tangible way. This participant's account highlights how insights or knowledge previously unattainable to respondents are *felt* more meaningfully through psychedelic experiences. For instance, despite her prior ability to articulate common sense platitudes like "forgive yourself", another participant suggested that neither mere reasoning about such insights nor prior experiences of things like "self-forgiveness" equated to the knowledge gained from directly experiencing them through psychedelics.

I just had some really amazing, I guess, things that you would say common sense, and the average person would say, "Okay, yeah, forgive yourself. That's important for healing." But, until you actually feel it, you can say it to yourself, you can write it down, you can think about it, but when you deeply feel it, it's very different. It's such a real experience. (118)

Highlighting the importance of subjectively embodied experience to epistemic transformation, she suggests that the knowledge becomes more "real" by feeling it (self-forgiveness) deeply.

Thus, the acute effects of psychedelics can provide experiences consistent with epistemic transformation. Although epistemic transformation was the most frequently observed form of change reported by participants, not every psychedelic experience is conducive to epistemic transformation. One participant (110) maintained that she did not experience a "fundamental paradigm shift through psychedelics", nor did we observe any other indication of epistemic transformation throughout her interview. In total, six participants (23%) did not report any form of epistemic transformation.

Personal Transformation Among Psychedelic Retreat-goers

We measured personally transformative experience using five categories of change, including change in identity, values, beliefs, desires, and behavior. Four (15%) participants perceived or described personal changes across all five categories. Six (23%) participants described changes across four of these categories, and another five (19%) reported three different types of personal change following their psychedelic experiences. Three (11%) participants mentioned two types of change, and seven (27%) participants mentioned only one out of the five types of personal change. Only one (4%) participant did not describe any changes that met our criteria for a personally transformative experience.

Twelve (46%) participants reported changes in identity. Many who described these changes in identity remarked how the change was characterized by a restoration to a previous version of their self. One participant who described his identity changing since participating in both Ayahuasca and psilocybin ceremonies, was certain the change was due to psychedelics.

A hundred percent. Yeah. ...I was basically all about just chasing money. I didn't necessarily prioritize my time with my kid or my family as the most important thing, or even experiences with them. It was more like out of fear of like, "No, no, no, I have to work because I need to make money. If you want to enjoy these things, then you have to understand, I need to work in order to have money to do that," but never really making the time to do that... the [person] that you see now is pursuing his master's in psychology because I'm driven by this work. (114)

The shift in how this participant perceived himself contributed to several changes in behavior. In addition to pursuing a new degree, he went on to describe how he also reprioritized family and worked on improving relationships with significant others.

Negative responses to the question of whether participants' identities changed following their experiences included replies such as "no" (112), "I'm a better person... but no, I'm me." (113), or "I'm the same person with different habits" (108). Even in negative responses, some participants

reported personal developments and self-knowledge. One participant responded, “I don’t think my identity has changed, I think my identity has been revealed” (107). Yet, most participants responded that they did not feel like their identity had shifted such that they are a fundamentally different person after participating in a psychedelic retreat.

Thirteen (50%) participants indicated some change in values following their experiences attending psychedelic retreats. For example, one participant reported being more selective with his relationships after going on both psilocybin and Ayahuasca retreats.

I would say values have changed in terms of who I decide to spend my time with. I have ended some long-term friendships because they didn’t feel like they were connective in the way that I wanted. It felt like they were mainly focused on the past and I want people who are focused on the present and even the future. (125)

Others who mentioned shifts in their values described changes such as renewed commitments to family, caring more for or being more authentic to oneself, and a strengthening of existing values. Those who did not report changes in their values responded with a “no” or replies such as “I would say probably not. They’ve always been there whether I’ve followed them or not” (121).

Ten (38%) participants responded that their beliefs had changed to some extent following their psychedelic experiences. Some participants mentioned changes to their spiritual beliefs. For instance, one participant (108) reported that she was no longer beholden to the “narrow” religious beliefs with which she was raised.

I would say I’ve always struggled with the way I was raised. I had a lot more questions than there ever seemed to be answers... I think now my view of God is broader than the way I was raised, “This is your narrow set of beliefs. This is what we believe.” That’s all gone by the wayside for me. I have a much more broader [sic] idea of what I think God is and my place in all of that. So yes, belief systems definitely have changed. (108)

Others who reported alterations to their beliefs described greater inquisitiveness about their beliefs and openness to changing them, changes to political beliefs, or a clarification of existing beliefs. Those whose beliefs did not change provided a range of explanations. One participant suggested that while their beliefs didn’t change, they became more open.

I don’t think it’s a change of belief. I think it is more of an openness to believe what I want to believe, not what I’ve been told. (101)

Others stated that their existing beliefs became clearer to them.

No, I don’t think they’re different. I think that they’ve just been validated with my psychedelic experiences. My beliefs are actually more real, they seem more real. (109)

Another participant (115) echoed this and suggested that her vegetarianism, ecological consciousness, and spirituality were “crystallized more” following her Ayahuasca experience. Aside from these instances where participants mentioned strengthening of existing beliefs, several respondents ($n=16$) simply indicated no changes to their beliefs or did not offer a response.

Eighteen (69%) participants described changes in desires after participating in psychedelic retreats, including changes in desires around use of alcohol and other drugs like cannabis. One participant suggested a considerable shift in her desire to use alcohol.

I mean, I’ve been drinking alcohol since I was 17 years old, and it’s just a huge thing for me. I mean, I can remember thinking when somebody would get some sort of diagnosis that they were going to take a medicine that then they couldn’t drink, and I thought, “Oh God, I could never quit alcohol.” And basically, the psilocybin, for me, or that journey or whatever that experience was, basically made alcohol irrelevant for me. (113)

Changes in desire also manifested as modified preferences for relationships, what things one wants to spend time on, and ways of acting and interacting in the world, for example. Most of the participants who did not exhibit any change in their desires ($n=8$) did not offer any relevant information to evaluate

this aspect of transformation. Oftentimes, changes in desires corresponded to changes in behavior, as in the cases of reduced drug cravings or changes to what one desires out of relationships. Out of the eighteen participants who expressed changes in desires, sixteen (88.8%) also described some changes to their behavior following their psychedelic retreats.

Nineteen (73%) participants overall described changes in behavior after participating in psychedelic retreats. One participant described changes to pre-existing habits and the adoption of habits that began in preparation for her Ayahuasca experience.

A lot more movement. Whether it's like... I like to dance. It's a lot more movement-based kind of exercises or activities, being in nature more. I still journal a lot 'cause I enjoy it and music. And there's things that I've done because of the journeys... I cut my cable. I was a big time TV watcher. Whether I was watching it or not, the TV had to be on. That was one of the first messages I got was, "get rid of your TV, turn it off." So, I think the message was just like, I have had a whole lot of distractions. I still do. A whole lot of distractions that were making me miserable and keeping me inauthentic. So, stuff like that. No TV. Now I'm playing music. (121)

Several others reported changes in behavior, such as reduced drug and alcohol consumption or enacting changes in how they relate to others. The remaining six participants did not provide any information indicating behavioral changes resulting from their psychedelic retreat attendance.

Paul defines transformative experiences as those that facilitate both epistemic and personal transformations. There was considerable overlap between epistemic transformation and the five types of personal changes we measured. Specifically, all twenty participants who reported experiences representative of epistemic transformation also reported change in at least one category used to measure personal transformation.

Terminology Used to Describe the Psychedelic Experience

In addition to analyzing the various ways that the psychedelic experiences of retreat-goers may constitute epistemically and/or personally transformative

experiences, we were also interested in what terms participants used to describe these experiences. Participants used several descriptors organically throughout interviews. We also directly asked whether they considered their experience to be "transformative". We did not explain Paul's theory of transformative experience but rather inquired whether the experience was subjectively interpreted as transformative as that term is understood in common language.

Everyone we interviewed said the experience had some impact on them. Sixteen participants said they would describe their experience as transformative. Eight of those sixteen did not specify in what ways it was transformative, but generally talked about it changing them as a person.

Four people who described the experience as transformative, and seven who did not, stated that they felt the experience allowed them to become a "better version of themselves". Participants' "better versions" were described in several ways. For instance, they described themselves as more open, less critical, having a lighter touch, having more psychological insight, happier, less controlling, more accepting, more authentic, more empathetic, more connected, calmer, more patient, more loving, warmer, more forgiving, more grateful, and softer.

Two people (one who called their experience transformative and one who did not) said they felt like the experience allowed them to "return to who they once were". Two others described the experience as a "reset". Finally, four participants who either described their experience as transformative or described it not as transformative but as allowing them to become a better version of themselves explained that it gave them a "new or different perspective" on life.

Information Seeking and Informed Decision Making

Due to the apparently transformative potential of psychedelic retreat experiences, we explored participants' perceptions of their ability to make an informed decision about taking psychedelics in the context of a retreat. Although subjective evaluations of decisional capability do not directly speak to whether transformative experiences interfere with rational decision making as Paul suggests, we contend that self-assessment of the quality of a decision made is more relevant to informed consent in bioethics and clinical practice. Informed consent does not

require full or professional-level knowledge [22], but if one does not feel they were able to make an informed decision based on lack of access to relevant information, then the validity of informed consent to PAT would be called into question.

Twenty-one (80%) of our participants said they had access to sufficient information and felt capable of making an informed decision to use psychedelics on retreat. Participants frequently suggested they were able to make an informed decision based on independent research they had done prior to their retreat. For example, when asked whether she felt capable of making an informed decision, one participant confirmed that she was able to make an informed decision based on her personal research.

I do. I spent a lot of time, I'd say over four or five years just reading about it... then I guess I just got more curious and just went more down the rabbit hole. Of course, the past couple years... the whole kind of psychedelic renaissance has been happening again. So, I feel like I spent a lot of time trying to inform myself. I'm not a super academic like y'all are, but just try to read studies or read literature or read real stuff, not anecdotal things. I feel like I tried to be responsible for my own learning on that. (108)

Some participants reported seeking out scientific sources for information about psychedelics, whereas others emphasized using podcasts, popular books, articles, documentaries, and social media. Participants frequently cited these sources as informing their decisions to seek out psychedelic retreats, and in some cases, informing the selection of a specific retreat organization.

I listened to a lot of podcasts. ... I heard [retreat organizer] interviewed on a podcast. That's how I found out about him. Mostly, [the information I got] was online. (113)

Six participants credited retreat organizers for providing necessary details about the experience that enabled them to make an informed decision. Specifically, participants mentioned organizers being available for phone or video calls or distributing information directly or through social media. For instance, some credited their ability to make an informed decision to structured engagements with retreat staff.

The following participant felt he was able to make an informed decision due to both his prior experience using psychedelics and preparatory meetings prior to the retreat. When asked, he said:

Yeah. I think so, and because I'd had experience on my own before with psychedelics, I knew what to expect with myself during the trip experience. That and when I first started talking to [Retreat Name], they have two-hour Zoom meetings... They go over a lot of information. The way that they talk about it too, it just felt really comfortable. They weren't just trying to take my money or get me to sign over my will while I was there. (116)

Interestingly, this participant and one other (115) were the only ones to suggest that having prior experience with psychedelics was relevant to their ability to make a decision to use psychedelics on a retreat.

The accessibility of retreat organizers or facilitators to answer questions or provide information about the retreat experience helped assure some participants about their decisions. One participant (126) reported that she felt more "secure" in her decision because she was able to ask retreat organizers questions. Another felt that she was able to make an informed decision, not only because of the information she had access to but because she felt the retreat organizer was well-informed, which allowed her to trust that the experience was safe. When asked if she was able to make an informed decision, she confirmed:

Yeah, totally. Because the information that [retreat organizer] shares on her Instagram, the information and the coaching and guidance that she shares on her social media is already enough to trust that she's well-informed in a lot of different areas, so that we are entirely safe going through the experience. (109)

Two (8%) participants indicated that they did not feel like they were fully aware of the potential effects and did not "technically" provide informed consent by signing an official document.

Well, technically no. There's no informed consent sheet, you know. What I had were friends who knew what they were doing and actually did help to keep me safe and feel supported. But it wasn't like, here's a little sheet to sign. (107)

One (4%) participant did not answer the question directly, but instead answered that she felt safe and that the retreat was run “carefully”. Two (8%) participants did not provide responses to this question.

Transformative Agency

Given the circumstances surrounding participants’ psychedelic use—travelling abroad or attending underground retreats in the United States and uncertain outcomes—participants’ decisions were often part of a deliberate process of seeking. For our participants, the decision to attend a psychedelic retreat frequently entailed pursuit of self-change, personal and sometimes legal risk, and considerable cost and effort. While not all retreat-goers we interviewed experienced transformative changes or considered their experiences to be transformative, some described conscious efforts to initiate change. Below, we explore cases in greater depth to present emergent findings regarding the role intentionality plays in transformative change, as well as how participants’ experiences attending psychedelic retreats influenced their ability to make decisions in everyday life.

The process involved in attending a psychedelic retreat was very intentional. One participant sought out and attended her first ayahuasca retreat to help her get off drugs after using opiates for almost 15 years. When asked whether she was able to make an informed decision about attending a retreat, she responded:

Yeah, it was as informed a decision I think as somebody could make. It was as intentional a decision as somebody could make. That is about as much work as I can imagine someone putting into making that decision. (123)

Part of the “work” she described was implementing her own tapering schedule to get off several pharmaceutical medications she was using. This participant linked the benefits of her psychedelic retreat participation to both her “self-guided” efforts to prepare for the retreat and the subsequent actions she took following her first retreat, which included attending more retreats to do “inner work”.

It was a grueling, grueling path but I learned that the medicine rises to meet you when you rise to meet the medicine. And that has been one of the biggest gifts that I’ve received, is that the work that I put in is met and rewarded. (123)

This participant’s efforts ultimately led to several changes to her life and self that she described as transformative. In addition to staying off opiates since her initial retreat, this participant reported becoming a “warmer” person and rekindling her relationship with her father.

In a similar way, several other participants described a heightened sense that they can implement changes to their thinking and lives in general after attending psychedelic retreats. In other words, one result associated with the psychedelic seeking described by participants is enhanced feelings of self-efficacy. For example, one participant sought a “controlled environment” for psychedelic use hoping it would help manage her anxiety, depression, and PTSD, which led her to attend a local Ayahuasca retreat. When asked whether she felt able to make an informed decision, she emphasized the accessibility of retreat organizers.

Yes, and I think it helped that I was able to reach out to the church as well to get a sense of how it will be. (126)

Following up about how her preparatory actions helped her make an informed decision, she said:

I had read a lot and I had seen a lot of YouTube videos and some documentaries that I could find about people going to Ayahuasca....I have anxiety, so I need to be as prepared as I am. It helps me. So I did do all of that a lot. And so I think through my research I felt like I was able to, and the amount of questions I asked everyone, I think it was bothering them, but it was definitely making me feel more and more secure for my decision. (126)

This participant felt assured in her capacity to make an informed decision because she could reach out to the retreat organizers to verify information she had learned in her own research. She also reported working with her psychiatrist to address safety concerns by tapering off her antidepressant medication. Although she reported using antidepressants again following her retreat due to concerns about safety and her mental health history, this participant described her Ayahuasca experience—which enabled her to “re-live trauma” and “process it as many times as I need to, so that it wouldn’t affect me as much as it did before”—as

transformative. The result of her transformative Ayahuasca experience was a reported improvement in her ability to make decisions and “stick by them.” She manifested this in her everyday life by taking steps to divorce her husband by communicating her decision in couple’s therapy and speaking to lawyers.

Several others also reported feeling more capable of asserting and enacting their values in everyday life following their psychedelic retreats. For instance, one participant, after attending an Ayahuasca retreat for the purposes of general healing and personal development, expressed greater confidence in prioritizing her well-being in her everyday life.

My wellbeing is on top of the list. It has always been, but I feel now I’m more assertive. So, for example, I’m naturally not inclined to eat meat... My husband and my two children, they’re carnivores. They love meat. And I used to be like, “Oh, whatever,” just to make things simple at home. Now, I’m like, “You know what? I really don’t like it.” I’m fine with them eating it, but I’m going to make my own salad... I actually take the time to put myself at the same level of priority ... so I feel I’m more assertive on my own wellbeing, my diet, my sleep as well. I don’t overcommit to social gatherings. I think my decision-making is—I have more clarity. (103)

This participant claimed her experience, which she described as transformative, led to more clarity in her decision making. Others similarly reported greater capacity to act confidently according to their values. For instance, one participant who began attending retreats for therapeutic and spiritual purposes suggested that the impact on her ability to act in accordance with her values is what made her experiences transformative.

I think I could classify my experiences as transformative. They transformed me into something new... They were part of the process of me becoming a truer version or a more authentic version of myself. And they certainly had a big impact in me rejecting more strongly certain practices and behaviors and people who I then saw as clearly not being

aligned with what I value in my life. In that sense, they helped me to make these changes, and that’s very transformative. (110)

Although this participant later reported that she did not undergo “one fundamental paradigm shift through psychedelics,” she reported a greater capacity to enact her values in everyday life through her behaviors and relationships.

Participants’ self-perceived changes to their ability to act intentionally and according to their values took on several other forms. For example, one participant described herself as more “confident”, “willing to take up space”, and “honoring of myself” following her Ayahuasca experience, which she considered to be “absolutely” transformative (111). When asked to describe herself since initiating psychedelic use, another participant, who had extensive experience using psychedelics in a variety of contexts beyond retreats, said: “Choiceful, my life is very choiceful now versus being on autopilot.” (120). Finally, one participant who sought out psychedelics for chronic PTSD and relationship issues decided to “go no-contact” with her family, make an effort to improve her relationship with her husband, and modify how she relates to food and her work (115).

The enhanced capacity to enact changes in one’s life by acting confidently and in accordance with personal values was an outcome of the broader process of seeking out psychedelics and self-transformation. The woman who interpreted certain effects of psilocybin as an experience of labor highlighted how the research informing her decision to attend psilocybin retreats helped her develop intentions for the experience. When asked about whether she was able to make an informed decision based on her research, she responded:

Yeah... especially for the second one, it really helped me come up with how I wanted to integrate. It led me to what I wanted to focus on during ceremony, and that helped me go so deep during my journey. During the first one, I got through some shit that I really needed to, and that was just thanks to the teacher [psilocybin mushrooms], but I feel like the second one, I was able to really guide myself, and that was really important. (119)

Here, this participant described a feeling of self-efficacy associated with doing research, setting intentions, developing a plan to make a change, and guiding herself through her psilocybin experience. When asked whether these experiences impacted her values, she expressed how her experience seeking out and using psilocybin on retreats gave her more confidence to live according to her values.

I think they're more clear now, and I think I'm able to honor them more, because a big part is I always... A lot of my values dealt with kindness and compassion, but I wasn't really honoring those before, because I spend a lot of time not doing those things, towards myself, or maybe not always doing those things towards other people. But that's really changed now, so I can honor my beliefs, and my values, a lot more now. (119)

This participant's efforts to seek out psychedelics to make a life-change resulted in a clarification of her values, which reportedly improved her ability to enact them in everyday life. Describing her experiences with psilocybin as transformative, she reported feeling like a different person who is "more okay with myself", "spends less time being cruel to myself", and "spends more time sending love out to my loved ones."

Although many participants reported greater capacity to make decisions and enact changes in their daily life following their experiences attending psychedelic retreats, some participants' retreat experiences did not result in changes they intended. One participant, who sought out Ayahuasca to treat her depression, anxiety, and PTSD, suggested she was fully prepared for what she experienced during her Ayahuasca retreat.

I felt very well-informed. I felt like there was a lot of information out there...I also really did feel like I knew who to ask to get the information if I had questions, and I didn't feel discouraged from asking them by the people who organized the retreat... I knew about the GI distress... nothing like that was a surprise to me going into this. (102)

This participant was confident in her decision due to the information and resources made available to her by the retreat organizers. However, she did not

consider her experience to be transformative. When asked to elaborate, she responded:

I don't think I gave my life space to change... I was coming back to business as usual, and I did go back to business as usual, and if I hadn't done that, maybe there could have been more profound changes that really took root. I could see the potential for it. I don't think I took that opportunity. (102).

While feeling very well-informed about her decision and ultimately gaining "useful insights about ways to move forward", this participant reported not returning from her retreat "cured" or "transformed." Instead, she detailed feeling like she required mental health supports and antidepressants to help "with the everyday grind of getting through the day."

Another participant who sought out psychedelics to help with her anxiety and depression felt like she was able to make an informed decision, despite reporting two "bad trips" during her three-day Ayahuasca retreat.

My own personal research for Ayahuasca was through just the internet. I listened to podcasts, all types of podcasts, looking at people's personal experiences and documentaries on YouTube, their vlogs, and also a book that this lady wrote... She has her own page on social media about her book, and she's kind of guiding people through the experience before, the during and the after. So it was through social media that I just did my research. (117)

When asked whether her research enabled her to make an informed decision, this participant confirmed.

Yeah, I feel like it gave me a lot of insight—and I wasn't going to go in blindsided—and gave me a perspective of what I was about to encounter, even though now I feel like my experience was nothing at all. (117)

Similar to the case above, this participant did not label her experiences on an Ayahuasca retreat as "transformative". Instead, she mostly described them as "dark" due to experiences on both her second and third day, when she drank a second cup of Ayahuasca during a ceremony. She cited three things as reasons for taking a second cup in those ceremonies: the

leader of the retreat being “adamant that I go deeper”; “my own curiosity”; and “because other people that I had listened to through podcasts or videos, they were very adamant that we also go deeper and do more Ayahuasca.”

This participant still reported notable changes following her negative experience. She felt that her anxiety had subsided, although she was still experiencing a “manageable depression.” She continued to stay off several psychiatric medications she was using prior to attending the retreat. She also considered herself to be interacting with others in ways she described as more “cold-hearted”, “more confrontational”, and “more standing up for myself”—a change she did not interpret positively. Despite expressing dissatisfaction with how her experience turned out, this participant ultimately felt that her research prepared her to make an informed decision about taking psychedelics on retreat.

Discussion

Analysis of interviews with psychedelic retreat-goers indicates that psychedelic experiences can constitute “transformative experiences” according to LA Paul’s criteria, which requires both epistemic and personal transformation. The majority of participants interviewed reported epistemic transformation, which often took the form of insights, shifts in perspective, or greater awareness of personal thought-patterns or interpersonal dynamics. All participants besides one reported some change consistent with the notion of personal transformation following their psychedelic retreats. Out of the five types of changes relevant to personal transformation that we observed, changes in behavior were the most common change amongst our participants. Participants reported changes to how they relate to significant others, how they interact with others generally, how they spend their free time, diet, and/or patterns of drug consumption. Some participants also changed their behaviors by taking on new practices like meditation, reading, or new professional or educational pursuits. Participants also frequently reported experiencing changes in their desires, such as reduced desire to use drugs, increased desire for knowledge, or desiring something different out of their relationships. Relatedly, changes to or clarification of values was another prominent

manifestation of personal transformation, as half of our participants reported adopting new values or clarifying old values to better enact them in everyday life. Fewer participants reported that their beliefs or identity changed or feeling like a different person after their psychedelic retreats.

The importance of subjective embodiment to epistemic transformation and transformative experience was a notable emergent finding from our analysis. Participants frequently reported learning things from their psychedelic experiences that could not have been learned in other ways. For those who reported experiences during the acute effects of psychedelics that would otherwise not be possible, the sense of knowledge associated with such experiences often exceeded a familiarity with what it is like to take a psychedelic. While in some cases epistemic transformation meant learning about novel sensations associated with psychedelics’ effects, many reported transformations stemming from a newfound understanding of insights with which they were previously only generally aware. In such cases, participants indicated that even though they previously could have intellectually understood certain insights, the realizations they had felt more meaningful and could be internalized more effectively through their embodied, psychedelic experience. Although it is possible that the specific insights reported may have been achieved through other means such as psychotherapy, participants explicitly attributed their insights to experiences with psychedelics. Some participants also reported drawing knowledge from specific experiences that were only made possible by psychedelics’ psychoactive effects. For instance, participants reported both visionary and somatic experiences wherein they endured a faux-labor, met themselves as a child, or repeatedly relived a traumatic event only to realize they were unable to influence the outcome. In cases like these, the epistemic transformations described extend beyond understanding the phenomenological character of the psychedelic experience and depend on the subjective value attributed to the personally relevant content of the experience (i.e. emotions, visualizations, realizations). In other words, the epistemically transformative experiences cited by participants were not tied to generalized psychedelic drug effects, such as changes to the character of cognition, seeing geometric patterns, or changes to visual perception. Rather, these epistemic transformations were

associated with the highly variable and personally relevant features of their experience—often occurring in part through emotionally charged visualizations.

The vital role of the intentional subject to an understanding of transformative experience also became apparent throughout our analysis. Specifically, participants we interviewed engaged in a process of seeking out psychedelic retreats intending to make changes in their life. In some cases, the process of researching, seeking out, and attending a retreat with an explicit purpose was associated with a sense of self-efficacy that supported participants' decision-making when they returned to everyday life. In turn, participants' experiences bolstered their capacity to enact transformative agency by following through on desired changes that motivate their psychedelic use and living in greater alignment with their values. Yet, this does not mean psychedelics capacitate individuals to make lasting changes to their life and personality ad-hoc and at will. The context or "setting" in which psychedelic use takes place can influence whether the experience is conducive to such change in the first place [30, 31, 36, 37]. Furthermore, integration—the process of making meaning about psychedelic-induced conscious shifts and assimilating the experience into one's everyday life—is also considered to be a vital part of psychedelic change [24, 38–41]. The social-environment in which a person lives and returns to following their psychedelic experiences may support or present several barriers to integration, and thus plays an important role in shaping whether individual users are able to enact transformative agency in pursuit of self-change [12, 36]. Some cases we observed highlight the interplay between the intentional subject and their social-environmental context in pursuit of transformative agency. For instance, one participant did not experience her preferred changes because she returned from her retreat and immediately went back to "business as usual." In other words, despite wanting to enact additional changes, the pressures of her "daily grind" prevented her from doing so. A second example was found with a participant who reported experiencing consecutive bad trips on her Ayahuasca retreat where she was encouraged to drink a second cup on two occasions and felt generally unsupported by facilitators after expressing that she was having a difficult time. These circumstances negatively impacted her experience and impeded her ability to enact desired change after returning home. On the

other hand, a participant who did report successfully enacting changes in daily life following her experience described social resources to support her desired changes, including a psychiatrist and a marriage counselor with whom she was working. Importantly, each of these cases suggests the social-environmental setting—either during or after their psychedelic experience—plays an important role in mediating whether an experience results in transformative change.

Our results—which support the notion that psychedelic experiences can constitute transformative experiences, highlight the importance of subjective embodiment to transformative experience, and illustrate the role of transformative agency in psychedelic experiences—have several implications for neuroethical issues surrounding psychedelics. First, the relevance of subjective experience to the benefits of psychedelics has been debated in recent years owing to findings in the basic neurosciences, which suggest that psychedelics can facilitate several forms of neuroplasticity [42–45]. Specifically, knowledge about psychedelics' neuroplastic-generating properties have led to proposals to isolate psychedelics' pharmacological effects from their subjective psychoactive effects [46–49]. While the potential implications of such proposals warrant their own neuroethical interrogation, the results shown here lend support to the notion that the psychedelic experience is linked to subjective benefits. Specifically, our participants associated their subjective psychedelic experiences, which were laced with personally meaningful content, with subsequent changes in understanding, outlook, behaviors, and conceptions of self. Although the co-occurring subjective and neurobiological effects are likely synergistic, the role of subjective embodiment in psychedelic transformation shown here ultimately lends support to suggestions that the acute subjective experience is important to individual perceptions of benefit.

Second, psychedelics' capacity to facilitate changes to values, beliefs, and desires raises questions and concerns about how these substances might constitute moral-psychopharmacological agents or "moral neuroenhancers." The primary issue associated with using psychedelics as pharmacological agents for moral change stems from both their capacity to enhance suggestibility and the degree to which psychedelics' effects are context dependent [29–31]. Both phenomena underscore the importance of agency and autonomy when considering biomedically

directed psychedelic use since they raise important questions about the appropriate role of social influence in psychedelic transformation. For instance, heightening suggestibility for the purposes of moral enhancement resembles previous applications of psychedelics as coercive or persuasive technologies [50, 51].

Our findings suggest that one way to avoid pitfalls associated with psychedelics' potential as moral-pharmacological agents is to advance a commitment to upholding individuals' transformative agency as an ethical obligation. Earp's notion of "agential moral neuroenhancement" provides a useful starting point for such a project [32]. Centering the person—an autonomous moral agent—in neuroethical inquiry about medically directed psychedelic use would have several implications. One benefit of centering the person as an autonomous moral agent in neuroethical inquiry is it circumvents issues associated with biomedical objectification of people as systems to be corrected or modified with technical precision independent of their life circumstances. This benefit extends well beyond neuroethics to psychedelic science generally. Keeping the "person" in view when developing explanatory models for psychedelics' therapeutic effects can also help account for the various entangled phenomena and levels of analysis relevant to understanding a person living in their social-environment [23]. In practice, such considerations would require development of models for PAT that focus on supporting individual attempts to enact transformative agency. If taken seriously, a commitment to support individual projects of transformative self-change in psychedelic medicine would also require pursuance of alternative systems of care built upon creative interprofessional collaborations geared towards supporting individually defined goals for self-change. Along these lines, further research could explore how different psychotherapeutic approaches can support PAT, how to support the integration efforts of individuals who may lack key social or economic resources, and how other professionals can assist in supporting individual projects of transformative self-change.

Finally, the prospect of psychedelic facilitated transformative experience has stimulated discussion around the issue of informed consent. Our findings suggest that individuals not only feel able to consent to psychedelic use and the accompanying self-changes, but they actively seek out transformation

and use psychedelics to achieve desired changes. The importance of seeking out the transformative experiences described here can shed light on issues of consent surrounding medically directed transformation with psychedelics. As Jacobs [18] points out, consent issues derive in part from the relationship between physician and patient, which is characterized by an imbalance of knowledge and power. The participants described here generally reported feeling capable of making decisions to use psychedelics based on information seeking they had done prior to retreats. Moreover, intentional pursuit of self-change by some participants suggests that individuals feel capable of making decisions about whether to go through with a potentially transformative experience [22]—and often do so with specific aims in mind. Since individuals seeking out psychedelics—whether in clinical or retreat contexts—will have access to information about psychedelics that may shape their aims and expectations, informed consent procedures should seek to temper expectations and inform individuals about the full range of possible effects [19]. Prospective patients and research participants ought to be made aware of the range of possible psychoactive effects, the potential for transformative self-changes, as well as the possibility of "dark" or unsettling experiences with psychedelics.

Limitations of this study stem from the sample, reliance on self-report, and lack of comparison between drug types or settings for psychedelic use. Specifically, given our convenience sample, we cannot purport to make generalized statements about the experience of psychedelic retreat-goers. Moreover, since this a difficult to reach population, it is unclear whether our majority White and majority female sample is representative of the majority of psychedelic retreat-goers. Most evidence suggests psychedelic users are overwhelmingly White and male with some indications that demographic patterns of use are changing parallel to public perceptions [52, 53]. However, the greater representation of females in our sample is consistent with evidence suggesting that female psychedelic use frequently occurs for self-medication purposes—a motivation reported by nearly three-quarters of our sample [54]. This study also relies on self-report, so the validity and durability of changes reported could not be systematically verified. Additionally, our analysis of epistemic and personal transformation through psychedelic experience is limited

because no objective criteria have been identified to guide empirical analysis. While there could be other approaches to explore, the criteria we developed to operationalize these concepts for a deductive qualitative analysis are rooted in our interpretation of Paul's theory.

Finally, the variable psychedelic use histories of our participants were not conducive to making comparisons between types of psychedelics or the distinct characteristics of retreat settings. Participants' use histories may also seem to impact the potential for transformative experience in Paul's account. Specifically, those with more experience with psychedelics may be less likely to undergo an epistemic transformation due to the familiarity with the basic phenomenology of the experience. However, this point requires further research for two reasons. First, Paul leaves open the possibility that experiences that are distinct from prior experience but not entirely novel or unfamiliar may still contribute to varying degrees of epistemic transformation.¹ Second, while certain phenomenological pillars of the psychedelic experience may remain consistent across discrete instances of psychedelic use, the emotional, cognitive, and sensory *content* of the experience can vary across experiences to a sufficient extent that would be conducive to epistemic transformation. For instance, an individual with a prior history of recreational psychedelic use may have a sufficiently novel and subjectively meaningful experience in the context of a retreat or PAT that is valued in a way to shape future decision-making.

Conclusion

Our findings suggest that psychedelics' non-ordinary, personally meaningful, and vividly embodied effects can constitute transformative experiences and can facilitate transformative change. As psychedelics become more publicly accepted and near approval for therapeutic use, there is an urgent need to interrogate neuroethical issues associated with their potential as transformative technologies, including issues related to agency and autonomy, as well as issues surrounding the prospect of moral psychopharmacology or

neuroenhancement. Furthermore, inquiry in this domain should work toward establishing norms regarding the appropriate circumstances for psychedelic transformation that can guide responsible integration of psychedelics in society.

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Data Availability The interview guide is available upon request.

Declarations

This study received human subjects approval from the Institutional Review Board at Baylor College of Medicine.

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¹ See page 11, footnote 11 in *Transformative Experience*.

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