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Neşe Devenot, Aidan Seale-Feldman, Elyse Smith, Tehseen Noorani, Albert Garcia-Romeu, Matthew W. Johnson

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Neşe Devenot
Postdoctoral Associate, Institute for Research in Sensing, University of Cincinnati
Affiliate Scholar, Center for Psychedelic Drug Research and Education, The Ohio State University

Aidan Seale-Feldman
Assistant Professor, Department of Anthropology, University of Notre Dame

Elyse Smith
Doctoral Researcher, Department of Anthropology, University of Connecticut

Tehseen Noorani
Senior Lecturer, Clinical and Community Psychology, University of East London

Albert Garcia-Romeu
Assistant Professor, Department of Psychiatry and Behavioral Sciences, Johns Hopkins University School of Medicine

Matthew W. Johnson
Professor, Department of Psychiatry and Behavioral Sciences, Johns Hopkins University School of Medicine

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ABSTRACT: While the literature on psychedelic medicine emphasizes the importance of set and setting alongside the quality of subjective drug effects for therapeutic efficacy, few scholars have explored the therapeutic frameworks that are used alongside psychedelics in the lab or in the clinic. Based on a narrative analysis of the treatment manual and post-session experience reports from a pilot study of psilocybin-assisted treatment for tobacco smoking cessation, this article examines how therapeutic frameworks interact with the psychedelic substance in ways that can rapidly reshape participants' identity and sense of self. We identified multiple domains relating to identity shift that appear to serve as smoking cessation mechanisms during psilocybin sessions, each of which had an identifiable presence in the manualized treatment. As psychedelic medicine becomes mainstream, consensual and evidence-based approaches to psychedelic-assisted identity shift that respect patient autonomy and encourage empowerment should become areas of focus in the emergent field of psychedelic bioethics.

1. INTRODUCTION

As a class of drugs with a wide array of potential implications in health, spirituality, and creativity, psychedelics entered clinical research in the United States in the late 1940s (Rucker, Iliff, and Nutt 2018). Despite their non-addictive nature and the growing medical acceptance of their medicinal potential, a wave of widespread naturalistic use outside of the clinic, alongside stricter regulations for clinical trials, sparked their placement in the Drug Enforcement Administration's most restrictive, Schedule I category by the early 1970s with Nixon's Controlled Substances Act (Nutt, King, and Nichols 2013; Oram 2018, 9–10). The difficulty of obtaining permissions—alongside the chilling effect of professional marginalization of the topic—resulted in a longstanding virtual moratorium of human psychedelic research (Johnson, Richards, and Griffiths 2008, 606; Strassman 2001, 28–29). We are now in a "psychedelic renaissance" of clinical research and greater cultural exploration into this class of substances, which is reported to dramatically and reliably alter perception, cognition, emotion, and sense of identity (Devenot 2016).

While lysergic acid diethylamide (LSD) and mescaline were the primary psychedelic drugs of medical investigation in the first wave of research, the therapeutic effects of a number of other psychedelics and related compounds have been studied since then, including 3,4-methylenedioxymethamphetamine (MDMA), psilocybin, ibogaine, and ayahuasca. Both MDMA-assisted psychotherapy for post-traumatic stress disorder (PTSD) (Mitchell et al. 2021) and psilocybin-assisted psychotherapy for major depression (Carhart-Harris et al. 2021; Davis et al. 2021) have received the Breakthrough Therapy designation from the FDA based on preliminary evidence of increased efficacy over existing treatments. In addition to other indications, including obsessive-compulsive disorder, anorexia, and pain disorders, recent psychedelic studies have focused mainly on psilocybin, LSD, and ayahuasca for their apparent rapid and sustained anti-depressive, anxiolytic, and anti-addictive effects (Anderson 2012; dos Santos and Hallak 2020).

While the literature on psychedelic medicine generally emphasizes the importance of set and setting and the quality of subjective drug effects for therapeutic efficacy, few scholars have explored the therapeutic frameworks and modalities that are used alongside psychedelics in the lab or the clinic. The myopic focus on the psychedelic substance itself in some media reporting gives the impression that sessions consist of little else

beyond the administering of psychedelics and the crafting of a supportive "set" (participant mindset) and "setting" (physical and interpersonal context), yet a range of therapeutic modalities and frameworks are almost always present. In the scientific literature on psychedelic medicine, these frameworks are typically relegated to footnotes and passing mentions. This article explores how such therapeutic frameworks interact alongside psychedelic medicine in ways that may shape participants' identity and sense of self.

In the burgeoning field of psychedelic medicine, powerful mind-altering chemicals are being explored for their capacities to "reprogram" canalized cognitive habits and potentially reopen "critical periods" of plasticity wherein rapid learning of new behaviors and self-concepts can take root. Yet as the neuroethics of psychiatry has shown, scholars must attend to the "normative implications of developing a drug that may have a major impact on a person's sense of self, agency, and role in society" (Murphy and Illes 2007, 800). Such issues point to the need for "enhanced consent" processes in psychedelic-assisted therapy (P-AT) (Smith and Sisti 2021). Psychedelic bioethics has addressed a range of issues, including appropriation of Indigenous knowledge, consent for therapeutic touch, and the need for the field to consult psychedelic-using communities to guide normative considerations of psychedelic medicalization.[1] In particular, psychedelic neuroethics has focused on issues of cognitive or moral enhancement (Earp 2018). We argue that in the context of the rapid expansion of psychedelic medicine, consensual and evidence-based approaches to psychedelic-assisted identity shift should become a key issue in psychedelic neuroethics.

In this article, we begin our analysis by comparing the treatment manual for an open-label pilot study of psilocybin-assisted smoking cessation to patient experiences during the study. Based on similarities between the treatment manual and patient reports, we highlight three major themes of identity shift that were primed by the study's therapeutic framework. We analyze these therapeutic suggestions in light of PRIME theory in the smoking cessation literature, which emphasizes the role of identity change in disrupting addictive behaviors. After highlighting the range of clinical practices involved in new therapeutic technologies of self-transformation, we situate our findings in relation to the neuroethics debates on identity changes caused by deep-brain stimulation (DBS), arguing that psychedelic-assisted identity shift is sufficiently distinct as to require new developments in normative and theoretical neuroethics.

2. METHODS

The principal investigators—Matthew W. Johnson and Albert Garcia-Romeu, researchers at Johns Hopkins University (JHU)—collected narrative data during an open-label pilot study of psilocybin-assisted smoking cessation between 2008 and 2014. This historic and highly influential study showed high rates of efficacy for smoking cessation, with 80% of participants demonstrating biologically verified abstinence six months after their "Target Quit Date" (TQD), 67% of participants abstinent at 12 months, and 60% abstinent at long-term follow-up (16–57 months after completion; Johnson et al. 2014; Johnson, Garcia-Romeu, and Griffiths 2017). These rates all exceed the typical rates of abstinence for behavioral and/or pharmacological therapies for smoking cessation, which typically show less than 35% efficacy at six months (Johnson et al. 2014).

From 2019 to 2020, Neşe Devenot, Elyse Smith, and Aidan Seale-Feldman analyzed 43 anonymized narrative "experience reports" written by 15 study participants describing their psilocybin session experiences. Their methodology combined approaches to narrative analysis in anthropology (Bernard 2011, 463) and close reading in literary studies (Allen 2017) influenced by Interpretive Phenomenological Analysis (Vangeli and West 2012). Data analysis involved triangulating the treatment manual, reports, and published articles about the study by Johnson, Garcia-Romeu, and Tehseen Noorani. Devenot, Seale-Feldman, and Smith coded these sources for emergent themes, which included "smoking" and "quitting," as they related to reflections on self, identity, and personal responsibility. The manual was a key source of data for the current analysis, as it articulated the ways in which cognitive behavioral therapy (CBT) modalities for smoking cessation—specifically, aspects of the interventions modeled after the "Quit for Life" (QFL) program—were used synergistically alongside the phenomenology of psilocybin. We argue that psychedelic substances are always enmeshed in practices of use that entail particular therapeutic models (with their own ideologies of change), whether or not these are made explicit. Given the rapid expansion of P-AT, it will be necessary to attend more closely to the therapeutic models used alongside psychedelics and to the ideologies of change such models promote.

As Nikolas Rose (1998) has shown, fields such as psychology, psychotherapy, and the self-help industries have historically played a strong role in constituting productive, responsible, entrepreneurial subjects within neoliberal society. In the context of addiction treatment programs

in particular, therapeutic practices are especially morally valanced as they seek to help "addicts" become "clean" (Zigon 2011, 2018). By attending to the therapeutic framing of P-AT, it becomes possible to track the ways that various therapeutic discourses of addiction and recovery interact with mystical experience and ego dissolution to produce new forms of identity and subjectivity.

3. THEORIZING PSYCHEDELIC SELF-TRANSFORMATION

Like other forms of psychological therapeutics, the use of psychedelics in the clinic serves as a mechanism to reshape the self. In the Euro-American cultural context, such techniques of self-transformation can be traced back to early Greek and Roman practices of "care for the self," in which aspects of the self were taken up as objects of transformation under the guidance of an expert and in relation to a particular *telos* (Foucault 1997). Such practices of self-transformation included forms of discipline, writing, and spiritual exercises that would serve to guide and produce ethical ways of living. Today, practices of self-transformation are especially visible in the psychological and self-help industries. As Rose (1998) points out, "contemporary individuals are incited to live as if making a project of themselves: they are to work on their emotional world . . . to develop a 'style' of living that will maximize the worth of their existence to themselves" (157). Therapeutic experts play a central role in this milieu by guiding individuals to shape their ideal vision of a healthy self.

Although the psychological mechanisms of action for therapeutic outcomes with psychedelics remain unknown, preliminary quantitative analyses have associated therapeutic outcomes with acute subjective drug effects, including mystical-type experiences (Garcia-Romeu, Griffiths, and Johnson 2015; Bogenschutz et al. 2015; Griffiths et al. 2016; Ross et al. 2016; Hendricks 2018; Noorani et al. 2018; Roseman, Nutt, and Carhart-Harris 2018; Griffiths et al. 2018; James et al. 2020). Clinical trials have indicated "broad anti-addictive qualities in the treatment of various dependence disorders," with "positive effects on patients' self-efficacy and motivation to change" (Forstmann and Sagioglou 2017, 975–976). While several research programs are currently underway to determine whether psychedelic analogs can demonstrate therapeutic efficacy in the absence of subjective psychedelic effects (Dong et al. 2021), existing scholarship largely associates positive outcomes with the personally meaningful experiences that psychedelics reliably facilitate (Forstmann and Sagioglou 2017; Noorani et al. 2018).

Kočárová and colleagues (2021) assert that in a supportive context, psychedelics' therapeutic efficacy results from their ability to strengthen protective factors like mental and neural plasticity. Plasticity is defined as "the ability to change or be shaped by surrounding conditions," which opens a "window for healthy change" (Kočárová, Horáček, and Carhart-Harris 2021, 2–3). These authors conceptualize canalization as the inverse of plasticity, referring to the rigid "maintenance of a trajectory (e.g., a style of thinking, feeling, relating, and/or behavior) that is resistant to change" (2). They argue that canalization is the "core common denominator" undergirding a majority of mental illnesses, and that psychedelics are well-suited to modify these deeply engrained styles of cognition and behavior. Indeed, the CBT approach used in this smoking cessation study—a widely adopted standard across contemporary Western psychotherapeutic practice in treatment domains including substance dependence and mood and anxiety disorders—aims to facilitate an individual's ability to transform maladaptive, habituated patterns. Because researchers now propose that psychedelics open a space of possibility by underemphasizing the power of prior beliefs (Carhart-Harris and Friston 2019), it is possible that the introduction of new patterns of cognition suggested by CBT might be more readily adopted during and after a psychedelic experience. Under the supportive conditions of a therapeutic context, the potential plasticity-enhancing effects of psychedelics are thought to magnify the role of suggestibility (Ly et al. 2018; Shao et al. 2021).

Even without a therapeutic application, psychedelics are recognized as suggestibility-enhancing agents. For instance, one study found that LSD increased the subjective intensity of suggestions made by researchers that included one's arm becoming heavier, reexperiencing oneself as a child, and drinking especially refreshing water (Carhart-Harris et al. 2015, 786). In a 2008 article on hallucinogen safety in clinical trials, Johnson et al. (2008, 613) note that suggestibility has been cited as a possible mechanism for psilocybin's therapeutic efficacy. The authors emphasize that any conceptual frameworks and examples used to prepare trial participants can influence the kinds of experiences later reported by participants during treatment. As Forstmann and Sagioglou (2017) have argued, "psychedelics may further aid psychotherapeutic efficiency by enhancing suggestibility in patients" (976; see also Carhart-Harris et al. 2015; Noorani and Martell 2021). The concept of "set and setting" holds that the response to a psychedelic substance is directly influenced by nonpharmacological factors, such as intention, preparation, and expectation (set), and the social, cultural, and

physical environment in which the substance is administered (setting). The deliberate consideration of set and setting distinguishes P-AT from other forms of psychiatric treatment (Garcia-Romeu and Richards 2018). In the context of P-AT, Hartogsohn (2017) argues that set and setting may amplify the placebo effect to purposefully enhance therapeutic efficacy of the psychedelic experience, which has bioethical implications for patient communication and consent (Miceli McMillan 2021a).

The unique qualities of psychedelics as "mind-enhancing" substances and their sensitivity to the impact of suggestibility via set and setting raise a number of ethical issues that merit continuing consideration. Bioethicists have argued that the effects of psychedelic drugs necessitate an "enhanced consent" process beyond the typical consent process used in medicine (Smith and Sisti 2021). Already, studies conducted by Garcia-Romeu and Johnson include a consent process that is substantially more extensive compared to studies involving the administration of other drug classes.[2] However, given the potential for psychedelic medicine to generate changes in personality and identity, suggestibility might be one such factor deserving of additional consent and preparation.

CBT-based interventions for smoking cessation sometimes incorporate guided imagery exercises as a form of "autosuggestion" (Zernig et al. 2008). Previous research on smoking cessation has supported the use of guided imagery to increase personal empowerment and self-control within the context of a smoking cessation program (Wynd 1992). In our study, the treatment protocol incorporated guided imagery exercises as preparations for "set" that aimed to change the participant's relationship toward smoking and their sense of identity as a smoker. This and other aspects of the treatment manual illustrate how the suggestibility of psychedelics may influence the response to CBT. Although it is not possible to make causal claims about the relationship between the phenomenology of psychedelic experience and therapeutic priming, the close parallels between experience reports and aspects of the preparatory material call for additional study of these dynamics.

Because of the unique phenomenology of psychedelic substances, P-AT involves dynamics that differ from more traditional modalities of psychotherapy. First, treatments revolve around a set of discrete dosing *events* followed by post-session integration sessions, as opposed to the slow, repetitive work on the self that might stretch over the course of months or years in—for example—psychotherapy or psychoanalysis. Secondly, psychedelics such as psilocybin—when used in a therapeutic

context—are dosed to reliably produce powerful mystical-type experiences, based on an observed link between intense "mystical experiences" and therapeutic efficacy. While the exact mechanism for change is not fully understood, much attention has been given to the important role that these intense experiences play in loosening "canalized" ways of thinking and behaving. As William James (1902) noted in *The Varieties of Religious Experience*, powerful mystical experiences "modify the inner life of the subject" and have the tendency to be "absolutely authoritative over the individuals to whom they come" (381, 422). In the clinic, the mystical experience is always embedded within a broader therapeutic "set and setting," which might include the use of CBT, guided imagery, and other behavioral techniques to further a specific therapeutic outcome. In cognitive behavioral approaches to addiction treatment, the alteration of identity is an explicit goal of the therapeutic framework. It seems likely that the combination of a therapeutic framework focused on identity shift, coupled with increased suggestibility, the enhancement of plasticity, a personal desire for change, and a profound ineffable experience overflowing with uncertain meaning, serves as a powerful recipe for the achievement of self-transformation.

In the sections that follow, we illuminate PRIME theory as the underlying logic that informs the leading CBT-based approaches to smoking cessation, including the approach employed in this study. This theory articulates how identity can serve as a powerful mediator between motivation and behavior, especially in the context of addiction. In the psychedelic literature, the concept of "ego dissolution" has been the leading way of conceptualizing changes to the self in clinical trials. By attending to how therapeutic frameworks shape psychedelic experience, we show how expectancy and priming may influence not only self-transformation, but also the phenomenology of ego dissolution itself.

4. TREATMENT MANUAL AND CONTEXT OF THE STUDY

This article is the first qualitative analysis to examine all of the participant reports generated during the study protocol for JHU's psilocybin-assisted smoking cessation study, which ran as an open-label pilot study with 15 participants in 2008–2014. We analyze participant narratives alongside Noorani's (2018) retrospective follow-up study as they relate to the study's treatment manual. Participant reports consisted of 43 written narratives from all 15 participants, which participants were asked to bring to the follow-up meeting held the day after each dosing session. This pilot study

served as the basis for an ongoing randomized controlled comparative efficacy study comparing psilocybin to a transdermal nicotine patch, with both groups receiving a similar CBT intervention to that used in the pilot study (#NCT01943994); in 2021, this work received the first federal (National Institutes of Health) grant for psychedelic medicine in 50 years (JHU 2021). Psilocybin was administered during two to three dosing sessions (20 mg/70 kg psilocybin for the first session followed by 30 mg/70 kg for the second and third sessions) alongside a CBT treatment program (Johnson et al. 2014).[3] These doses were specifically chosen to elicit a mystical experience and ego dissolution. The first psilocybin session corresponded with the TQD—the target date chosen to quit smoking.

The participant reports commonly referenced other dimensions of the study protocol besides the administration of psilocybin, such as the use of scented oil and personalized mantras. Many participants used similar language when talking about their relationship to smoking and quitting; in particular, the discourse of "quitting for life" appeared repeatedly, which raised the possibility that shared framing impacted participant interpretations of their experiences. Published articles about the study referenced these therapeutic variables, but publication conventions left little room for the analysis of the therapeutic approach that was used in tandem with the dosing of psilocybin (Garcia-Romeu, Griffiths, and Johnson 2015; Johnson et al. 2014; Johnson, Garcia-Romeu, and Griffiths 2017; Noorani et al. 2018). Such omissions are an artifact of the disciplinary norms of quantitatively oriented pharmacology journals, which condense methods sections and de-emphasize non-drug factors. Since the role of therapy in P-AT is significant, the development of novel publication conventions that elaborate on these details may be warranted (Muthukumaraswamy, Forsyth, and Lumley 2021, 1148).

The *Psilocybin-Facilitated Smoking Cessation Treatment Manual* is a document of over 100 pages. It outlines in detail the pre-session preparations, guided meetings after each session at one-week intervals for five weeks, and post-session integration activities for dosing sessions 1, 2, and 3. The manual served as the basis for guides to conduct semi-structured therapy, and guides paraphrased its content rather than sharing it verbatim. The document was largely based on QFL, a CBT self-help program for smokers that was evaluated in a randomized trial (Marks and Sykes 2002; Sykes and Marks 2001). While the use of psilocybin for smoking cessation was novel at the time of this study, its accompanying therapeutic

modalities were part of a standard approach for smoking cessation. The manual directed therapists to explain the study to participants as one which combines psilocybin therapy sessions with CBT to achieve and maintain smoking abstinence. The manual also notes that the treatment's efficacy is not thought to depend on the presence of explicit content about smoking during the psilocybin experiences.

Central to the manual are descriptions of the pre-session preparation activities and post-session weekly meetings, which aim to orient participants toward a shift in identity from smoker to non-smoker, and reinforce the desire to quit. Following the study, as Noorani et al. (2018) report, participants (405 and 413) mentioned that, "during the preparatory CBT, it was helpful to consider that their identities were not fixed as 'smokers,' because this reframed their relationship to cigarettes in ways that were later reinforced, or 'cemented' (405), during the psilocybin sessions" (761). Pre-session activities included scented oil prompts, body-scan training to reduce stress and anxiety, discussion of life background and worldview, the "NURD program," the "NOGO program," the "WEST-D" program, a smoking diary, a contract to quit smoking, and a series of guided imagery exercises.

For example, the "NURD program" is an acronym for a series of statements that were given to the study participants on a small card. Participants were instructed to recite these phrases every time they smoked between the start of treatment and their TQD:

*This cigarette is giving me **N**o satisfaction.*
*This is an **U**npleasant experience.*
*This cigarette is making me feel **R**otten.*
*I am losing the **D**esire to smoke.*

Similarly, the "WEST-D" program included the provision of another card and the following language, also to be recited when smoking prior to their TQD:

What's the trigger?
Each time I feel like smoking
Stop
Think
Deprogram

The manual explains NURD and WEST-D to participants as tools used for "reprogramming your brain" so that smoking is seen "as poison rather

than a reward." The brain-as-computer metaphor explains the desire to smoke as "running a pro-cigarette program." With NURD and WEST-D, participants are empowered to uninstall the program (Johnson 2013, 15).

Post-session activities involved integration discussions focused on how the session related to the participant's smoking alongside a review of coping techniques and a series of guided imagery exercises. The guided imagery exercises, which were adopted from Zernig et al.'s (2008) randomized trial of bupropion for smoking cessation, were titled "Freedom," "Protected," "Healthy Organs," "Value," "Sovereign," and "Shadow." Each exercise guided the participant through an imaginal landscape in which they confronted different aspects of smoking and quitting and visualized the effects of smoking.

5. BECOMING A NON-SMOKER

Due to high incidences of relapse following quit attempts, the creation of the non-smoker identity has become central to contemporary smoking cessation programs. A series of Cochrane Reviews—initiated in 2003 and updated most recently in 2019—concluded that previously tested behavioral relapse-prevention interventions provided no additional benefit for maintaining smoking cessation when compared to no treatment intervention or to basic smoking cessation support without a relapse-prevention component (Livingstone-Banks et al. 2019; McDaniel et al. 2015). Relapse rates remain high for both aided and unaided attempts to quit smoking. While relapse risk is particularly high within the first weeks after a quit attempt (Hughes, Keely, and Naud 2004), approximately 70% of smokers who successfully maintain four weeks of abstinence eventually relapse within a year (Ferguson et al. 2005; García-Rodríguez et al. 2013). In light of these findings, researchers have been investigating identity change as potential protection against relapse (Pickard 2021). Based on observations of cases where smokers have adopted a non-smoker identity, researchers have developed several theories of behavior change that underscore the potential mechanisms involved in this relationship between identity and addiction.

Notable among theories of behavior change, Robert West's (2007) PRIME theory of motivation provides a framework for conceptualizing addictive behaviors based on the integration of five interacting levels of motivation, including plans, responses, impulses, motives, and evaluations (see also Ahmad et al. 2019). Although the QFL program was developed prior to the formal articulation of PRIME theory by West in 2006, the QFL

program is broadly compatible with PRIME theory's recommendations for treatment protocols. PRIME theory was designed to synthesize the interacting influences of multiple conscious and non-conscious systems, ranging from reflective decision-making to the emotional and habitual drivers of behavior (Tombor et al. 2013). The theory cites the importance of personal identity as a significant mediator of motivation, defining identity as "[m]ental representations (thoughts and images) of the self as one is or aspires to be and feelings associated with these" (West and Brown 2013, 182).[4] According to this model, identity is comprised of "labels (i.e., the categories we use to define ourselves), attributes (i.e., the characteristics that arise from labels) and rules (i.e., the behaviors we permit ourselves)" (Callaghan et al. 2021, 2).

To illustrate how categorical labels can impact behavior, West and Brown (2013) point to the example of someone who decides to self-identify as a vegetarian. For someone who still enjoys the taste of meat but wants to avoid eating it, identifying as a vegetarian can help to draw a "red line" that facilitates complete cessation. They use this example to suggest how categorical self-labeling can protect against "behavior creep," which refers to "the tendency for single activities [such as an instance of relapse] to become a regular pattern that the individual wants to avoid" (West and Brown 2013, 215). According to this theory, an individual's identity functions to direct behavior by generating motives capable of "overrid[ing] an impulse" (Callaghan et al. 2021, 2). Some formulations of PRIME theory have gone so far as to suggest that adopting a non-smoker identity may even be "necessary" for achieving long-term abstinence (Vangeli and West 2012, 171). As West (2007) notes,

> Psychological techniques can be used to try to engender a radical change in identity—a kind of conversion experience leading to a fundamental change in the evaluations underpinning the addiction, and to try to engender new habits of thought, feeling, and behavior . . . We are seeking to reshape the addict's motivational system—to change the addict as a person. In some cases this may go to the root of his or her being. (33)

While there has not yet been any direct application of PRIME theory to P-AT for the treatment of addiction, this is precisely the sort of transformative experience that psychedelics have been theorized to reliably facilitate (Letheby 2021, 53–61).

Recent studies have supported PRIME theory's hypothesis about the relationship between addiction and identity. A study of behavior change techniques across 43 English Stop Smoking Services, for instance, found that manualized techniques for strengthening an ex-smoker identity

were associated with higher quit rates one month post treatment (West et al. 2010). Another study of participants in England's Smoking Toolkit Study (STS) found that a "positive smoker identity"—measured by agreement with the statement "I like being a smoker"—represented the strongest prediction of failure to make a quit attempt by six months after participating in the STS, which led the authors to theorize that a positive smoker identity poses a significant barrier to quitting (Tombor et al. 2013). Another study of 574 STS participants found that a non-smoker identity was associated with continued abstinence in a three-month follow-up survey (Tombor et al. 2015). A qualitative, longitudinal study of smokers who intended to quit found that participants who transitioned to an identity of "non-smoker" found it easier to maintain abstinence than those who identified as a "smoker who does not smoke" (Meijer et al. 2020). Finally, in a study of 544 participants in smoking cessation surveys from Australia and the UK, smoker identity significantly predicted smoking relapse (Callaghan et al. 2021). Those who identified as a "smoker trying to quit" had the highest rates of relapse when compared to those who identified as a "smoker who has chosen to no longer smoke," as a non-smoker, or as an ex-smoker. The authors conclude that "the identity of a smoker was the most influential predictor of relapse" (Callaghan et al. 2021). Noting that addiction is "theorized to be rooted in the rigid maintenance of certain maladaptive personality traits (Ball 2005; Swendsen et al. 2002)," psychedelic researchers Forstmann and Sagioglou (2017) suggest that psychedelics may facilitate the treatment of addiction by altering a patient's sense of self or "core personality" (976). Given the focus on personality and identity across psychedelic trials, it is striking that few connections have been made between these allied fields.

Like PRIME theory, the QFL literature places a significant emphasis on encouraging program participants to adopt a non-smoker identity. Versions of the QFL program disseminated by insurance companies and state health agencies often prominently display the catchphrase, "Don't just quit, become a non-smoker" (Quit Now Indiana 2002; Free & Clear, Inc. 2006; Umpqua Health Alliance 2017). As this slogan emphasizes, the QFL program is focused on restructuring who the participant *is* (their identity as a smoker or non-smoker) rather than just changing what the participant *does* (the individual actions of quitting or smoking/relapsing).[5] In the following four sections, we examine narrative reports alongside the treatment manual to explore how themes of identity, smoking, and quitting emerged in the clinical trial for psychedelic-assisted smoking cessation.

6. NARRATIVE THEMES

6.1 The Incredible Simplicity of Quitting

In the personal narratives from the first, second, and third psilocybin dosing sessions, many people reported a similar reflection: they were shocked that they had simply become a non-smoker. As participant 401 put it in their report after session 1, "I still feel a little dazed and slow and wanting to just rest and sleep. I don't know how much of this is from the psilocybin or just feeling shocked that I'm a non-smoker." Similarly, after session 1, 405 wrote:

> During the session I felt as though I had already completed my withdrawal from smoking. I felt that all the work had already been accomplished. I felt amazed, grateful, and giddy about everything being so simple. I felt that I had made the idea of quitting smoking difficult and painful. The reality was and is that quitting smoking is easy.

In 405's report, they emphasize the incredible simplicity of quitting smoking. Like 401, there was a sense that the psilocybin experience had initiated a sudden and total ontological transformation from smoker to non-smoker. Participants reflected on the simplicity of quitting with a mix of awe and amazement. As 405 reported,

> The message is that I can feel and believe whatever I choose to about quitting smoking. I can choose to feel the cravings and be miserable, I can feel them yet be detached from them, or I can choose to not feel them at all . . . During my session I tried to imagine having a full blown craving to smoke . . . I was delighted to discover that I could not induce a craving. That made me giggle. It seemed that cravings are not real. I tried to feel cravings several times during the session. The concept seems firmly cemented into my reality even today, that cravings are not something that are real . . . that simple.

For 405, the session enabled them to think in radically new ways about quitting, craving, reality, and desire. During the session, they tried to experience the sensation of craving, desiring a cigarette, and yet could not. The realization that "cravings are not real" opened up a new conceptualization of reality for 405.

Other participants described similar realizations of the nature of craving during their sessions. After session 1, 422 wrote, "I remember feeling I could consciously sense my nicotine urges and was able to almost hold it and not succumb. I am hoping that this distance I gained between my conscious state and my desire to smoke will continue." Similarly, after

session 1, 423 wrote in an almost offhand way, "By the way, with regards to smoking cessation, when the thought occurs that I'd like one now, it seems that the craving/need can easily be overcome." Or, as 424 wrote after session 1, "Cigarettes no longer feel like a part of my daily life, and my urge to be healthy has overtaken my urge to smoke." Likewise, 416 wrote: "A couple of times I thought of smoking, but I didn't linger on the thought, and didn't feel the need to." Across various participant narratives, the desire to smoke is described as suddenly easy to control. For lifelong smokers who had tried to quit smoking multiple times before enrolling in this study, the reported sense of the simplicity of quitting is striking. As 421 wrote after session 1, "P.S. (Saturday morning)—I don't really feel like smoking. I usually smoke one by now—pretty cool." The sudden cessation of the desire to smoke seemed to radically shift participants' relationship to cigarettes with little effort.

For a number of participants, the cultivation and establishment of a "non-smoker" identity was a key attribute in their explanations of their treatment success. In 413's experience report addendum, they listed "all the little things used to create and drive [their] desire to quit smoking," such as the characteristic CBT element of modifying "verbal cues to reposition thought process." As an example, the participant mentioned, "I wasn't going to 'quit smoking'; rather, I would become a 'Non-Smoker'. Simple ideas. Huge impact." Part of this participant's cessation process involved reframing their actions as stepping into a new identity; the capitalization of "Non-Smoker" as a proper noun suggests an identity shift as opposed to simply ceasing a behavior.

Some participants continued to struggle with smoking urges despite their newly adopted non-smoker identity, but many described an abrupt cessation of cravings after their psilocybin sessions. Several participants commented on the swiftness with which they established a "non-smoker" identity. As 413 wrote rather matter-of-factly after their second psilocybin session:

> I don't miss smoking and I have no desire to ever smoke again. I am experiencing some anxiety but seem able to cope. Interestingly, I did not seem to go through any symptoms of withdrawal, nor was I actively seeking to replace normal smoking habits . . . I simply became a non-smoker!

This narrative presents the idea of a profound and rapid smoking cessation that involves a transition to a non-smoker identity by the end of session 2. And yet, beyond the perceived "simplicity" of becoming a non-smoker, 413's supplemental addendum emphasized specific aspects of the study

protocol that allowed them to enact the non-smoker identity shift on an ongoing basis: "The creation and use of a 'personal quit-smoking mantra' . . . mine being 'I'm so proud to have quit smoking for life'. Repeated often. Never to be forgotten." This consistency of language across participant reports indicates the potential impact of the psychotherapeutic framework of P-AT.

6.2 "I'm Shocked That I'm a Non-Smoker"

The treatment manual's NOGO program encouraged complete abstinence from smoking and provided a mnemonic device to help quitters develop a cognitive strategy for instances when they found themselves rationalizing the urge to smoke even one cigarette:

> When you find yourself rationalizing a reason to smoke:
> **N**o matter what you say
> There is **O**nly one way
> To win the argument **G**ame
> There are n**O** good reasons to smoke

This perspective is a common feature in the QFL literature, as Schlosberg (2013) describes in a section titled, "No, You Can't Have 'Just One Cigarette'": "Just as alcoholics can't have 'just one drink,' cigarette addicts can't have just one smoke. Not even a puff. Ever. This is your number one rule as a former smoker." The NOGO section of the manual provides examples of the sorts of rationalizations that might tempt a participant away from complete abstinence, including thoughts like "I'll only smoke one cigarette," and "I can smoke occasionally" (Johnson 2013, 56). NOGO attributes these rationalizations to the "external" agency of the nicotine addiction, which implicitly demarcates them as separate from the participant's true self and their real desires: "This is the old nicotine addiction and pro-cigarette programming trying to trick you into relapse . . . Don't be fooled" (Johnson 2013, 56).

For Participant 402, this conceptual theme from the treatment manual was visually rendered within the imaginal content of their first psilocybin session, as described in both their post-session narrative report and long-term follow-up interview. As Noorani et al. (2018) wrote of the interview,

> A specific image from her first session led Participant 402 to the insight that to smoke at all was to be 'a smoker': "It was me in the red coat, lighting up a cigarette, and then it spread into a grid. So it was like that one cigarette was 1000 cigarettes." (760)

The immediate post-session report supports the notion that this idea appeared to 402 as a sudden insight:

> I remember myself first thinking that focusing on smoking wasn't even important because I hadn't even thought about it since i started feeling the effects of the psilocybin so i must not need to smoke. Then I saw an image of my lighting a cigarette and saw that image duplicated many time[s] over and tried to "count" all the cigarettes I've had in my lifetime. I tried to remember specific ones but mostly I just kept coming back to that one image duplicated and saw that there's no such thing as "just one"—one cigarette is never enough—1,000 is never enough[…] 1 and 1,000 are the same, having 1 cigarette is the same as smoking 1,000, etc.

This insight took the form of a surprise, interrupting and appearing tangential to the previous train of thought. Specifically, 402 had been thinking that the subject of smoking "wasn't even important" to focus attention on, since 402 was not experiencing their habitual cigarette cravings while the acute psilocybin effects were developing. Despite this apparent lack of concern, a sudden upwelling of insight regarding 402's relationship to smoking interrupts the surface-level cognition. The new insight is associated with a condensed, visual metaphor that maps closely onto the primed material presented in the treatment manual. The image is a diachronic, iterative visualization of the act of smoking, where the long-term consequences of a single action are represented multidimensionally ("spread into a grid") as inseparable from the first act itself.

The historical record from the first era of P-AT during the 1950s and 1960s includes other examples where primed psychotherapeutic concepts appear suddenly and unexpectedly within the imaginal, visual content of acute psychedelic effects. This phenomenon was noted explicitly by Thelma Moss (writing under the pseudonym Constance A. Newland), who published a record of her experiences as a volunteer in an LSD therapy study during the late 1950s (Newland 1962). Describing her Freudian psychoanalysis that preceded the LSD dosing sessions, she wrote:

> En route, naturally, I learned the terminology: the Oedipus complex, and latent homosexuality, and penis envy, and castration anxiety, and sibling rivalry, and so on and on. But I never came to grips with those concepts except intellectually. Hence, unconvincingly . . . Early in psychoanalysis I had been initiated into the mysteries of the Oedipus complex, cornerstone of Freudian theory. (Newland 1962, 21–22)

Despite feeling "unconvinced" and resistant to these Freudian concepts during psychotherapy, each concept appeared seemingly autonomously within the content of her LSD visions. In many cases, she was surprised to realize *in medias res*—as a hallucinatory story was unfolding—that a vision seemed to confirm an aspect of the therapeutic priming that she had previously dismissed or not taken seriously. The potential influence of primed concepts on psychedelic experiences relates to Erik Davis's notion that in the process of interpreting extraordinary experiences and making them meaningful, individuals draw on available "building blocks . . . of existing beliefs, learned patterns of perception, and available cultural scripts or authorized explanations" (Davis 2019, 28). Davis argues that even in cases where these "scripts" or primed concepts are contingent or fictional, they can still structure the content of psychedelic experiences in ways that register subjectively as genuine and autonomous (i.e., without the experiencer's planning or intent). In the next section we explore how such priming plays out through the use of guided imagery exercises that purposefully incorporate suggestibility as a tool to shift participants' relationship to smoking.

6.3 "Revealing the Real Me"

Although not formally aligned with the QFL program, Joseph Patrick Green and Steven Jay Lynn's book, *Cognitive-Behavioral Therapy, Mindfulness, and Hypnosis for Smoking Cessation: A Scientifically Informed Intervention*, explains the logic of incorporating guided imagery into a CBT-based smoking cessation program. Like the treatment manual, it emphasizes the application of autosuggestion techniques through the incorporation of guided imagery scripts alongside other conventional CBT approaches to behavior change. On a list of behavioral change techniques, their foremost recommendation is to "strengthen ex-smoker identity" (Green and Lynn 2018, 8). As a means of doing so, they incorporate extensive reinforcement of the non-smoker identity through verbal affirmations and autosuggestion.

The treatment manual incorporated six guided imagery exercises at various points throughout the duration of the clinical trial. The "Shadow Guided Imagery" exercise occurs at the end of the first dosing session while the participant is potentially in the "afterglow" of an intense experience (Majić, Schmidt, and Gallinat 2015), directly prior to the "ritual" of lighting and stubbing out what is intended to be the participant's last cigarette. The Shadow Guided Imagery script reinforces the notion that

smoking addiction is an extrinsic, parasitic agency that is separate from the participant's "true" or core self. The script begins with a calm, beatific landscape to establish a joyful baseline from which the smoking addiction will later deviate: "I sit down on a meadow, enjoy the beautiful view, and breathe the pure air. With every breath, the fragrance of flowers fills me, I become free and wide, and power flows into me" (Johnson 2013, 51). The baseline purity of the surrounding environment extends to the description of a non-smoker friend who is suddenly introduced into the scene:

> I see a friend approach me. Full of joy we greet each other. And begin to chat joyfully. I take a cigarette. And while I smoke the cigarette I suddenly realize: My friend is a non-smoker. I watch him and I see: He is bright and clear. I direct my attention towards myself and notice the difference. I stand in a shadow. Amazingly, I actually find myself in a shadow! The shadow looks familiar. I watch it more closely and recognize its nature: It is nicotine addiction: foggy, grey. With surprise I realize: The shadow wants me to smoke. It wants a cigarette. And I thus experience: I want a cigarette! (Johnson 2013, 51)

In this passage, "nicotine addiction" is anthropomorphized as an external agency—complete with its own motivations and desires—that has managed to hijack the behavioral system of the smoker. Like the *Cordyceps* fungi that functionally transform insects into "zombified" marionettes to serve the fungi's own reproductive purposes, smoking behavior is characterized as a form of parasitic manipulation: an "extended phenotype" designed to reproduce and reinforce the nicotine addiction at the expense of the smoker's true self (Fredericksen et al. 2017; Dawkins 1982).

As the guided imagery continues in a hypnotic and repetitive rhythm, the participant is directed to focus their full attention on each of the unpleasant aspects of smoking, which are now stripped of the positive illusions that had previously been installed to serve the parasitic nicotine addiction:

> Completely consciously I feel how the smoke burns down my throat from my mouth, how it constricts my breath. My smell is unpleasant. My breath stinks. My tongue feels furry. My blood is thick. The nicotine constantly robs my body of energy. My fitness is bad. I am tired and listless. I am used up and without power. I am dissatisfied and drained. I am constantly afraid of having too few cigarettes. The shadow holds my life in its hand! It is living my life . . . Quite clearly I realize how selfishly the shadow nicotine addiction uses my body. (Johnson 2013, 51)

This representation of smoking is aligned with mainstream approaches to tobacco control, such as those spearheaded by the World Health Organization, which frame smoking as a problem caused primarily by tobacco companies who use powerful marketing tools to enslave smokers for life. According to Bell and Dennis (2013), public health approaches to smoking cessation rely on a model that understands the smoker-as-slave who merely needs to be educated in order to regain agency over tobacco. Because of the ordinariness of smoking, "denormalization" strategies and the stigmatization of smokers have also become a central dimension of public health approaches to tobacco control. In this way, public health campaigns have historically promoted the stigma against smoking so that the smoker and the act of smoking are re-signified not only as dangerous but also as irresponsible, shameful, humiliating, and immoral. Even though CBT-based interventions emphasize empowerment and agency, they do so by constructing smoking as deviant and repulsive in order to motivate smokers to quit and thus reduce the overall public health burden. This motivation is internalized in the formation of a new non-smoker identity that is reinforced by CBT-based therapeutic modalities.

In the next scene of this guided imagery, the participant is confronted with the danger of relapse. The non-smoker friend intervenes to assist the smoker in freeing their true self by formally exorcizing the nicotine addiction:

> My friend says: "Look, it is shaped like a giant balloon and you are standing in the middle of it. Now listen: I'll hold this balloon with my hands and you just step out." . . . I try the first step . . . Another step . . . Further and further. I notice that I am right now stepping out of this balloon. I really am stepping out! . . . I experience a whole new world! I am so bright and so clear! I feel so light and so free.

After further encouragement from the friend, the guided imagery exercise concludes with a final act of releasing the balloon, which metaphorically reinforces the idea that the smoker is born anew as a non-smoker:

> I take the balloon and closely look at it once more and know at this moment: "Now I am free!" I open my hands and the balloon floats away. Higher and higher, further away from me. I look after it. It gets smaller, ever smaller—I hardly can see it. It disappears.

The language of the Shadow Guided Imagery is closely mirrored in narratives of participants after the second dosing session. For example, 406 wrote:

> I realized that I was holding all of these issues in the cigarettes that I have been smoking and slowly poisoning myself with this pent up emotion that I had been hiding from myself for so long. By letting go of the smoking I was in fact opening up to the world again and revealing the real me.

Similarly, a questionnaire distributed three weeks post-TQD sought feedback from participants on psilocybin's perceived role in supporting smoking cessation based on their assessments of the impact of the first two dosing sessions. One participant added a write-in item specifically addressing changes to self-concept, stating that psychedelics assisted their quitting "By helping me understand that my true self is and always has been a non-smoker."

The third preparatory meeting (held two weeks before TQD) included a CBT module described in the parent study as "Withdrawal framed as 'recovery'" (Johnson et al. 2014, 985). The manual explains that this verbal reframing of withdrawal symptoms as "recovery" encourages a positive interpretation of otherwise unpleasant physical and emotional sensations, since these sensations are reconceptualized as indicators of a healthy process of returning to the participant's original condition as a non-smoker:

> Your body has been used to nicotine for years and your body has accommodated it eventually as a natural part of its biology rather than a poison. When you first quit, your body is still tricked into thinking it needs nicotine, and it will be in the process of readjusting so that it gets used to nicotine being gone. These symptoms are therefore a sign that your body is indeed adjusting to its new life as a nonsmoker. Although they can be unpleasant, you should welcome them as concrete proof that your body is beginning the metamorphosis of becoming a non-smoker. (Johnson 2013, 36)

As this module shows, the themes of the guided imagery exercise are replicated throughout the treatment manual, reinforcing the central idea that "your body is [being] tricked" into craving nicotine (Johnson 2013, 36). Since the same ideas are presented in different ways, from guided imagery to information sessions, behavior change is reinforced along multiple avenues across both experiential and conceptual domains. Given evidence that aspects of the therapeutic process are primed by the treatment manual, in the next section we consider the possibility that the experience of ego dissolution—often described as the primary mediator of therapeutic efficacy in psychedelic medicine—may be similarly shaped by study context.

6.4 Priming the Efficacy of Ego Dissolution

In psychedelic clinical trials, many studies have shown a strong correlation between mystical experience (defined in terms of ego dissolution or loss of one's sense of self) and therapeutic outcomes. This correlation was first identified during the early phases of psychedelic research in the 1960s through a number of North American and European studies of psychedelics and the mystical-type experiences they occasioned (Pahnke 1969; Gearin and Devenot 2021). As a result of this consistent finding, popular accounts of psychedelic therapy have encouraged an expectation of ego dissolution as the key contributor to efficacy. This view that psychedelics' therapeutic efficacy is linked to the experience of ego dissolution is a central tenet of Michael Pollan's (2018) blockbuster book on the subject. As Pollan writes,

> What is striking about this whole line of clinical research is the premise that it is not the pharmacological effect of the drug itself but the kind of mental experience it occasions—involving the temporary dissolution of one's ego—that may be the key to changing one's mind. (11)

A dominant operating assumption among many psychedelic researchers is that ego dissolution is a transformative experience involving the disruption of the sense of self, which is followed by the subsequent reconstitution of a new self-model (Letheby 2021, 136–38). However, we demonstrate that changes to self-concept are not reducible to the standard ego dissolution construct, which indicates the need to broaden understanding of the mechanisms involved in psilocybin's efficacy. In this section, we trace representations of ego dissolution and other varieties of identity shift as they appear across the manual and in experience reports. Given the similarities between these contexts, we raise the possibility that aspects of the experience of ego dissolution may be primed by the therapeutic framing.

In the treatment manual, participants were advised of the possibility of ego dissolution in a section titled "Specific Psilocybin Preparation" during the final preparatory meeting before the first dosing session. Here the contours of ego dissolution were described in detail:

> Dying, melting, dissolving, exploding, going crazy, etc.—go ahead. Death/Transcendence of the everyday self, always followed by Rebirth/Return to the normative world of space & time. Safest way to return to normal is to entrust self unconditionally to the emerging experiences. Trust in the wisdom of your own mind; trust in our relationship; trust in God/Transcendence/Higher Power/Ground of Being/Force/Source, etc. (Johnson 2013, 44)

Following established frameworks of prior dose–response research, the smoking cessation study implemented the 32-item Hood's (1975) Mysticism Scale (M-scale) to measure the mystical-type experiential dimension of the psychedelic experience. In the M-scale, ego dissolution is narrowly defined based on two items listed under the "Ego Quality" criterion, each in affirmative and negative form: "I have had an experience in which something greater than myself seemed to absorb me"; and "I have had an experience in which everything seemed to disappear from my mind until I was conscious only of a void" (Hood 1975, 31). Although there were significant overlaps with this description of ego dissolution among many participants, their reported experiences also pointed to other non-ordinary experiences of self and identity that went beyond those measured by the M-scale, yet which may also have contributed to therapeutic identity shift.

Although ego dissolution is commonly understood in a binary fashion as a "complete loss of subjective self-identity" (Johnson, Richards, and Griffiths 2008, 613), recent research has developed an alternate framework that conceptualizes the ego as a multidimensional construct, with different components of self-concept grouped into the general categories of "narrative" and "multisensory" (or embodied) aspects of selfhood (Millière et al. 2018). According to this multidimensional model, each aspect that makes up the overall sense of self can be independently influenced in different ways and to different degrees over the course of a given psychedelic experience. As such, ego dissolution can occur along narrative aspects of self-consciousness (loss of access to autobiographical information; reduced self-related thoughts and mental time travel) and/or along multisensory or embodied aspects of self-consciousness (loss of body ownership; loss of bodily awareness; loss of self-location). Since "complete" experiences of self-loss along each of these domains are rare and temporally constrained, the binary conception of mystical-type ego dissolution may not be the best metric to correlate with therapeutic effects in psychedelic studies, including the smoking cessation study under consideration here.

Nine study participants indicated an experience that approached the conventional understanding of ego dissolution as a "complete loss of subjective self-identity." For instance, participant 402 reported of their second dosing session:

> I started to feel confused about who I was and where I was and different thoughts were coming rapidly in and out of my head. I felt like I was

> disintegrating and then after that complete bliss. emptiness. not having anything to thin[k] about and not feeling the need to think about anything at all and just enjoying the experience. I remember thinking I wanted that feeling to last forever.

The other examples come from 410, who described "a feeling of being set free, of becoming one with something so beyond my understanding"; 413, who "felt my body melting . . . this slow fuzzy feeling of dissolving into nothingness"; 416, who described feeling as if they were "disintegrating, but yet whole, or flowing"; 417, who noted that "'I' was lost, all distinctions were lost, there was nothing—no time, no memory, nothing distinct—just total absorption"; 423, who wrote "all in harmony and connected . . . ego gone?"; 424, who described "the sense of unity and love like I've never experienced before"; 426, who "Felt at one with the . . . universe (?)"; and 427, who wrote, "The goddess, the life force is me. Her full power filled me with ecstasy and I tried to take it all, breathe it all in until there was no me/Her—it was just the feeling." Without additional information, however, it is not possible to determine how closely any of these participants came to an experience of "complete" self-loss across all of the narrative and multisensory domains described by Millière and colleagues.[6]

Experiences of interconnection with others was a common theme, although these passages did not usually include the conventional "absorption" into "something greater" that the M-scale specifies. Participant 403 described feeling "Expansive in sense of space, place, time, and in sense of self," emphasizing a feeling of interconnection with other people throughout history. Likewise, 405 felt that their experience was shared with all of humanity, implying an expanded sense of self that includes interconnection with others: "Yes, 'I' was the one that was having the experience yesterday and it was all designed in my mind, but it actually belongs to everyone that ever was and ever will be." Participant 410 similarly commented on "The integrative nature of all things within the universe," and 417 emphasized a feeling of multiplicity within selfhood: "there was no 'me' in the normal sense of what we mean by 'I'/'me'. . . It seemed much more like 'we' than 'me.'"

Beyond the construct of ego dissolution, participants frequently described *alterations* to self-concept that differed sharply from their ordinary conceptions and experiences of selfhood. After their second dosing session, for instance, 405 felt as though their body was communicating messages or information that arrived from beyond their conscious mind

or normal identity, as if a separate agency was animating their body. They also described a realization that the narrative self's ordinary personality is an intentional configuration (something "I chose") that is separate from the true self or "soul," but which ideally "allows the soul to shine through it." This sense that the personality is an intentional configuration is echoed by 410, who also suggests that personality is multiple: "Facing one's personalities—what to keep." Participant 406 described an indeterminate shift in their sense of self following their first dosing session: "I feel that I am somehow fundamentally different to yesterday. I guess I feel like some sort of metamorphosis has taken place!" They describe that session as "reveal[ing] my true self to me," while their second session emphasized a distributed sense of self, wherein personal identity incorporated aspects of their relationships with others: "I saw glimpses of myself e.g. in my dog, in my son, in the forests where I worked."

Reflecting on the accumulated impact of three dosing sessions, 413 observed that "Your sense of self is significantly modified." Participant 416 described a sense of "bec[oming]" the little girl they used to be during childhood, and she describes "the inner child" as possessing attributes and agency separate from her ordinary personality. Participant 424 also experienced herself as a little girl: "Then Grandma showed up . . . I was little and she was holding me on her lap and playing jump horse with me." Participant 416 came to the realization that they ordinarily hide their feelings behind an outward-facing, "calm" persona, but that they can no longer maintain this bifurcated sense of self: "It seems that I can't show only the side I want to be seen anymore." Similarly, 423 acknowledges the existence of "repressed" personalities that are "in me" and yet separate from their ordinary, conscious mind. Participant 427 transitions from experiencing herself as a "small lost little girl" to a powerful and confident "goddess," and she reflects on how she contains multiple facets within her "true self." As recounted in Noorani et al. (2018), 427 also "became" a technicolor vine that she had first encountered as a seemingly "external" entity:

> The image was me sitting there, smoking, all hunched over, stupid, smoking. And the vine just rising up and this purply flower face thing looking down at me like, 'how ridiculous!' And then I'm not really that [person], I'm really this vine, that's really me. (759)

This broad array of alterations to self-concept has potential implications for psilocybin's therapeutic efficacy beyond the conventional paradigm of ego dissolution. As proposed by Vangeli and West (2012), increased

awareness of the fluidity of identity might afford additional therapeutic benefits by encouraging self-compassion, especially in relation to shifting preferences that might otherwise cause cognitive dissonance. As those authors suggest, an overly rigid or monolithic self-concept might encourage denial or repression of conflicting urges and desires (such as a sudden desire to smoke) that may occur for some participants, given that the self is conceived as "a complex system of different constructs that are generally considered to be continuously changing in light of our experiences" (Vangeli and West 2012, 172).

The multiplicity and fluidity of identity are also common themes in historical and cross-cultural accounts of psychedelic experiences that are not reducible to the paradigm of ego dissolution. As Thelma Moss observed in her account of LSD psychotherapy,

> I wish I could convey how real is this sensation of becoming something or someone other than one's self while under the drug . . . [I]t is always extraordinary. To retain one's own identity, yet to become another being or animal or object. (Newland 1962, 162)

This felt experience of "becoming other" than one's ordinary sense of self and personality is also common in non-Western contexts:

> Among the wide anthropological literature on "ayahuasca" and other psychedelic substance use by [I]ndigenous Amazonian societies, there is no mention of ego dissolution but rather the switching of ego positions in acts of becoming animal, plant, or other beings . . . Ayahuasca users, in this context, are not dissolving their egos and becoming one with Nature, God, or the All, but are [rather] metamorphosing into alternate beings . . . that embody alternate moral perspectives and capacities. (Gearin and Devenot 2021, 929)

The field of P-AT has begun investigating therapeutic possibilities in exploring the self as a multiplicity, such as in the case of Internal Family Systems approaches to psychedelic medicine (Mithoefer and Mithoefer 2021, 255–256) or the incorporation of psychosynthesis concepts (Assagioli 1965; Firman and Gila 2002), but more research remains to be done in this vein. While the phenomenology of ego dissolution may have been influenced by expectations primed by the manual, there were also significant aspects of participant experience that were not reducible to the therapeutic priming. Opening up the definition of ego dissolution could allow for exploration of a wider range of experiences that may serve as potential mediators of identity change and therapeutic efficacy.

7. CONCLUSION

In light of preliminary evidence suggesting that P-AT might be a leading way of promoting identity and personality changes within a clinical setting (MacLean, Johnson, and Griffiths 2011), psychedelic-assisted identity shift represents a theoretical mechanism for the efficacy of psychedelics in the treatment of addiction. Despite the therapeutic potential for cultivating identity shift within psychedelic research trials, this connection between psychedelic action and identity shift priming within addiction treatment protocols remains undertheorized in existing scholarship on psychedelic therapeutics.

Within the neuroethics literature on identity changes linked to medical interventions, the most prominent analyses have attended to the use of deep-brain stimulation, especially in the context of treating Parkinson's Disease, which is a chronic and progressive neuro-degenerative disorder. Since the first neuroethics paper on this topic in 2006, bioethicists have examined the implications of DBS on self-related characteristics, the full range of which have been discussed with the acronym "PIAAAS," which stands for personality, identity, agency, authenticity, autonomy, and self (Gilbert, Viaña, and Ineichen 2021). Neuroethicists have expressed concerns about the potential to shift identity based on examples of impulsive decision-making and feelings of self-estrangement and reduced authenticity (Glannon 2009; Gilbert 2013).

The phenomenon of psychedelic identity shift demands new developments in normative and theoretical neuroethics given the gulf between psychedelics and DBS. In the DBS literature, potential identity shifts are often conceptualized as unwanted side effects of the intervention—a harmful tradeoff that might be justified by the extent of physiological benefits resulting from stimulation (e.g., reduction in tremors, improved gait, etc.). Whereas DBS has been associated with a reduced sense of authenticity, patients in P-AT have described feeling more like their authentic selves following psilocybin administration. As we have shown, P-AT patients in this study described an increased sense of agency with greater control over their actions, instead of acting at the behest of their addictions.

More empirical evidence is needed to determine the nature and extent of identity and personality changes with both DBS and P-AT. Gilbert and colleagues have cited the need for better instruments to measure postoperative changes to PIAAAS in the context of DBS. In the psychedelic research literature, meanwhile, most studies have examined "Big 5"

personality changes rather than conducting a systematic assessment of PIAAAS alterations. Within the DBS literature, the measurement of these alterations has been complication by nonidentical definitions of selfhood. Among philosophers who have traded the notion of a stable, core, "authentic" self for a notion of selfhood that is dynamic and continually evolving, the possibility of such a shift in identity is continuous with other significant life experiences, such as the death of a parent or the birth of a child (Baylis 2013). In particular, more empirical research will be necessary to determine the impacts of these interventions on narrative identity—the autobiographical stories through which subjects create meaning, situating themselves as persisting in relationships across time and space.

Within the literature on identity shift theories for smoking cessation—which has not previously been brought into conversation with the literature on P-ATs—multiple leading researchers have expressed caution about the potential dangers in developing techniques for shifting one's sense of identity within the context of a clinical trial (West 2007, 33; Borland 2014, 201). PRIME theory's West (2007) concludes his contribution to the anthology *Addiction Treatment: Science and Policy for the Twenty-First Century* with the following warning:

> In all this, we need to recognize that except in rare cases we are not carrying out the psychological equivalent of surgically removing a tumor from an otherwise healthy body. We are seeking to reshape the addict's motivational system—to change the addict as a person. In some cases this may go to the root of his or her being. Perhaps we had better hope that our techniques for doing this never become too successful because in the wrong hands…. (33)

West ends with an ellipsis here to allude to the harms that could be caused by developing technologies aimed at changing identity. Although the transformation from a smoker to a non-smoker identity that we have explored here is not particularly controversial, it is not difficult to imagine other applications of psychedelic identity shift that could be harmful. As history shows, the first wave of Western psychedelic research featured numerous experimental programs directed at changing behavior by shifting identity, many of which are now recognized as dangerous, unethical, ineffective, and often illegal, ranging from sexual orientation conversion therapy (Cavnar 2014, 253–54) to Ewen Cameron's MKUltra-funded research on "depatterning" and "psychic driving" (Lee and Shlain 1992, 23). As P-AT is fine-tuned for increased efficacy, the forms of identity shift it enables will require new levels of ethical consideration. Some researchers have begun to raise this issue: in their recommendations for

additional "enhanced consent" processes, Smith and Sisti (2021) note that ethicists will need to grapple with psychedelics' unparalleled potential to alter personality.

In the context of the mainstreaming of psychedelic medicine, it will be important to demarcate consensual and evidence-based approaches to psychedelic-assisted identity shift that respect patient autonomy and encourage empowerment. Future research could formalize the study of psychedelic identity shift by incorporating validated measures, such as the Positive Smoker Identity Questionnaire (PSmoQi) (Ahmad et al. 2019) and the Self-Concept and Identity Measure (SCIM) (Kaufman et al. 2019). Furthermore, use of different consent language or preparation materials can be systematically tested to examine their impact on subjective effects during psychedelic sessions. Since psychedelic effects are theorized to depend upon the contextual factors of "set and setting," we argue along with Muthukumaraswamy et al. (2021) that future clinical research should make treatment manuals publicly available, as quantitative data are less meaningful when abstracted from the context of a study's conceptual priming and associated expectancies. Access to treatment manuals would enable interdisciplinary researchers to explore whether some aspects of psychedelic experience that are assumed to be universal may be a partial reflection of priming, suggestibility, set, and setting. Our research has shown that the analysis of psychedelic clinical trials should take a critical approach to set and setting that examines the impact of the full treatment context on clinical outcomes. Such an approach requires attending to the assumptions embedded in the treatment manuals and the unique psychotherapeutic modalities that are used alongside psychedelic substances to enact behavioral change.

NOTES

1. The nascent field of psychedelic bioethics has encompassed several areas of inquiry. Broader examinations of the bioprospecting and biopiracy of Indigenous cultural and intellectual resources (Shiva 1997) have been used to critique Western appropriation and inequitable commercialization of Indigenous psilocybin healing traditions within psychedelic therapeutics, drug development, and patenting (Marks and Cohen 2021; Gerber et al. 2021; Williams et al. 2022). An area of increasing attention has been the protection of patients' bodily autonomy and consent to therapeutic touch in P-AT, with legal and ethical considerations and recommendations directed at researchers and clinicians (Ali et al. 2021; Pilecki et al. 2021; McLane et al. 2021;

Devenot et al. 2022). Finally, psychedelic bioethicists have utilized work such as Hartogsohn's (2017) model of psychedelics as meaning-enhancers to question the normative ethical justification for these medicalized psychedelic "technologies" (Miceli McMillan 2021a, 2021b). Miceli McMillan (2022) has additionally argued that psychedelic-using communities should be consulted in the implementation and evaluation of psychedelic developments in society.

2. At JHU, the consent process covers the potential for personality change, for unearthing psychological issues that may necessitate additional therapy, and for experiences described by some as ineffable.
3. To ensure participants' ongoing commitment to quitting, the second dose was administered two weeks post-TQD so long as a minimum of four consecutive days of abstinence were maintained. The third dose was optional, with 3 of 15 participants opting out of the final session.
4. Related "identity theories" of addiction, which emphasize the importance of self-identity in creating and maintaining addiction, include identity shift theory (Walters 1996; Kearney and O'Sullivan 2003), the prototype–willingness model (Gerrard et al. 2008), and self-affirmation theory (Harris and Epton 2009; from West and Brown 2013). CEOS theory (an acronym for Context, Executive, and Operational Systems) is another comprehensive theory of behavior change that stresses the potential efficacy of identity change in shifting addictive patterns of behavior: "In principle, if people can change their higher level goals and values (i.e., their sense of who they are), it can percolate down to affect the value they gain from many of the things they do and thus facilitate change in potentially quite profound ways" (Borland 2014, 201).
5. While the study did not directly use the QFL program, it drew elements from *The Quit for Life Programme* by Marks (1993).
6. Even if a moment of "complete" self-loss did occur during the period described by 402 as "emptiness," this aspect of the experience is explicitly temporally delimited since it is succeeded by an expressed (narrative) desire to remain with that feeling, followed by a full return to autobiographical concerns relating to the narrative aspect of selfhood: "Pretty quickly, I began to feel a profound loneliness and/or feeling sad that no one really understands me or that I'm just not close with anyone. Isolated. That seemed to last for a long time. I thought about current and past relationships and my family and about my friends xxxx and xxxx."

REFERENCES

Ahmad, Mohd, Mohd Ibrahim, Azriani Ab Rahman, Kamarul Musa, Faridah Mohd Zin, Rehanah Mohd Zain, Ruhaya Hasan, Noraryana Hassan, Imran Ahmad, and Nur Idris. 2019. "Development and Validation of Positive Smoker Identity Questionnaire (PSmoQi): A New Instrument for Smoking Cessation Correlates." *International Journal of Environmental Research and Public Health* 16 (3): 351. https://doi.org/10.3390/ijerph16030351.

Ali, Ismail Lourido, Geoff J. Bathje, Roxanne R. Hallisey, Leslie Booher, Brooke Novick, and Allison Feduccia. 2021. "Practical and Ethical Considerations for Psychedelic Therapy and Integration Practices." *Journal of Psychedelic Psychiatry* 3 (3): 1–20.

Allen, Mike. 2017. *The SAGE Encyclopedia of Communication Research Methods*. 4th ed. Thousand Oaks, CA: SAGE. https://doi.org/10.4135/9781483381411.

Anderson, Brian T. 2012. "Ayahuasca as Antidepressant? Psychedelics and Styles of Reasoning in Psychiatry." *Anthropology of Consciousness* 23 (1): 44–59. https://doi.org/10.1111/j.1556-3537.2012.01056.x.

Assagioli, R. 1965. "Psychosynthesis: Individual and Social." *Psychosynthesis Research Foundation* 16. http://synthesiscenter.org/articles/0116.pdf.

Ball, Samuel A. 2005. "Personality Traits, Problems, and Disorders: Clinical Applications to Substance Use Disorders." *Journal of Research in Personality* 39 (1): 84–102. https://doi.org/10.1016/j.jrp.2004.09.008.

Baylis, Françoise. 2013. "'I Am Who I Am': On the Perceived Threats to Personal Identity from Deep Brain Stimulation." *Neuroethics* 6 (3): 513–26. https://doi.org/10.1007/s12152-011-9137-1.

Bell, Kirsten, and Simone Dennis. 2013. "Towards a Critical Anthropology of Smoking: Exploring the Consequences of Tobacco Control." *Contemporary Drug Problems* 40 (1): 3–19. https://doi.org/10.1177/009145091304000102.

Bernard, H. Russell. 2011. *Research Methods in Anthropology: Qualitative and Quantitative Approaches*. 5th ed. Lanham, MD: AltaMira Press.

Bogenschutz, Michael P., Alyssa A. Forcehimes, Jessica A. Pommy, Claire E. Wilcox, P.C.R. Barbosa, and Rick J. Strassman. 2015. "Psilocybin-Assisted Treatment for Alcohol Dependence: A Proof-of-Concept Study." *Journal of Psychopharmacology* 29 (3): 289–99. https://doi.org/10.1177/0269881114565144.

Borland, Ron. 2014. *Understanding Hard to Maintain Behaviour Change: A Dual Process Approach*. Hoboken, NJ: Wiley-Blackwell, Addiction Press.

Callaghan, Laura, Hua-Hie Yong, Ron Borland, K. Michael Cummings, Sara C. Hitchman, and Geoffrey T. Fong. 2021. "What Kind of Smoking Identity Following Quitting Would Elevate Smokers Relapse Risk?" *Addictive Behaviors* 112 (January): 106654. https://doi.org/10.1016/j.addbeh.2020.106654.

Carhart-Harris, R.L., and K.J. Friston. 2019. "REBUS and the Anarchic Brain: Toward a Unified Model of the Brain Action of Psychedelics." *Pharmacological Reviews* 71 (3): 316–44. https://doi.org/10.1124/pr.118.017160.

Carhart-Harris, R.L., Bruna Giribaldi, Rosalind Watts, Michelle Baker-Jones, Ashleigh Murphy-Beiner, Roberta Murphy, Jonny Martell, Allan Blemings, David Erritzoe, and David J. Nutt. 2021. "Trial of Psilocybin versus Escitalopram for Depression." *New England Journal of Medicine* 384 (15): 1402–11. https://doi.org/10.1056/NEJMoa2032994.

Carhart-Harris, R.L., M. Kaelen, M.G. Whalley, M. Bolstridge, A. Feilding, and D.J. Nutt. 2015. "LSD Enhances Suggestibility in Healthy Volunteers." *Psychopharmacology* 232 (4): 785–94. https://doi.org/10.1007/s00213-014-3714-z.

Cavnar, Clancy. 2014. "The Effects of Ayahuasca Ritual Participation on Gay and Lesbian Identity." *Journal of Psychoactive Drugs* 46 (3): 252–60. https://doi.org/10.1080/02791072.2014.920117.

Davis, Alan K., Frederick S. Barrett, Darrick G. May, Mary P. Cosimano, Nathan D. Sepeda, Matthew W. Johnson, Patrick H. Finan, and Roland R. Griffiths. 2021. "Effects of Psilocybin-Assisted Therapy on Major Depressive Disorder: A Randomized Clinical Trial." *JAMA Psychiatry* 78 (5): 481–89. https://doi.org/10.1001/jamapsychiatry.2020.3285.

Davis, Erik. 2019. *High Weirdness: Drugs, Esoterica, and Visionary Experience in the Seventies*. London: Strange Attractor Press.

Dawkins, Richard. 1982. *The Extended Phenotype: The Long Reach of the Gene*. Oxford: Oxford University Press.

Devenot, Ne e. 2016. "Psychedelic Drugs." In *Gender: Nature*, edited by Iris van der Tuin, 361–78. Farmington Hills, MI: Cengage Learning.

Devenot, Ne e, Emma Tumilty, Meaghan Buisson, Sarah McNamee, Davis Nickles, and Lily Kay Ross. 2022. "A Precautionary Approach to Touch in Psychedelic-Assisted Therapy." *Bill of Health*, March 9. http://blog.petrieflom.law.harvard.edu/2022/03/09/precautionary-approach-touch-in-psychedelic-assisted-therapy/.

Dong, Chunyang, Calvin Ly, Lee E. Dunlap, Maxemiliano V. Vargas, Junqing Sun, In-Wook Hwang, Arya Azinfar, et al. 2021. "Psychedelic-Inspired Drug Discovery Using an Engineered Biosensor." *Cell* 184 (10): 2779-92.e18. https://doi.org/10.1016/j.cell.2021.03.043.

dos Santos, Rafael Guimarães, and Jaime Eduardo Cecilio Hallak. 2020. "Therapeutic Use of Serotoninergic Hallucinogens: A Review of the Evidence and of the Biological and Psychological Mechanisms." *Neuroscience & Biobehavioral Reviews* 108 (January): 423–34. https://doi.org/10.1016/j.neubiorev.2019.12.001.

Earp, Brian D. 2018. "Psychedelic Moral Enhancement." *Royal Institute of Philosophy Supplements* 83 (October): 415–39. https://doi.org/10.1017/S1358246118000474.

Ferguson, Janet, Linda Bauld, John Chesterman, and Ken Judge. 2005. "The English Smoking Treatment Services: One-Year Outcomes." *Addiction* 100 (April): 59–69. https://doi.org/10.1111/j.1360-0443.2005.01028.x.

Firman, John, and Ann Gila. 2002. *Psychosynthesis: A Psychology of the Spirit*. Albany: State University of New York Press.

Forstmann, Matthias, and Christina Sagioglou. 2017. "Lifetime Experience with (Classic) Psychedelics Predicts Pro-Environmental Behavior through an Increase in Nature Relatedness." *Journal of Psychopharmacology* 31 (8): 975–88. https://doi.org/10.1177/0269881117714049.

Foucault, Michel. 1997. "Technologies of the Self." In *Ethics: Subjectivity and Truth*, edited by Paul Rabinow, translated by Robert Hurley et al., 223–52. New York: The New Press.

Fredericksen, Maridel A., Yizhe Zhang, Missy L. Hazen, Raquel G. Loreto, Colleen A. Mangold, Danny Z. Chen, and David P. Hughes. 2017. "Three-Dimensional Visualization and a Deep-Learning Model Reveal Complex Fungal Parasite Networks in Behaviorally Manipulated Ants." *Proceedings of the National Academy of Sciences* 114 (47): 12590–95. https://doi.org/10.1073/pnas.1711673114.

Free & Clear, Inc. 2006. "About the Free & Clear® Quit For Life™ Program." Citadel. https://www.citadel.edu/root/images/human_resources/qflprogram.pdf.

García-Rodríguez, Olaya, Roberto Secades-Villa, Ludwing Flórez-Salamanca, Mayumi Okuda, Shang-Min Liu, and Carlos Blanco. 2013. "Probability and Predictors of Relapse to Smoking: Results of the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC)." *Drug and Alcohol Dependence* 132 (3): 479–85. https://doi.org/10.1016/j.drugalcdep.2013.03.008.

Garcia-Romeu, Albert, Roland R. Griffiths, and Matthew W. Johnson. 2015. "Psilocybin-Occasioned Mystical Experiences in the Treatment of Tobacco Addiction." *Current Drug Abuse Reviews* 7 (3): 157–64. https://doi.org/10.2174/1874473708666150107121331.

Garcia-Romeu, Albert, and William A. Richards. 2018. "Current Perspectives on Psychedelic Therapy: Use of Serotonergic Hallucinogens in Clinical Interventions." *International Review of Psychiatry* 30 (4): 291–316. https://doi.org/10.1080/09540261.2018.1486289.

Gearin, Alex K., and Neşe Devenot. 2021. "Psychedelic Medicalization, Public Discourse, and the Morality of Ego Dissolution." *International Journal of Cultural Studies* 24 (6): 917–35. https://doi.org/10.1177/13678779211019424.

Gerber, Konstantin, Inti García Flores, Angela Christina Ruiz, Ismail Ali, Natalie Lyla Ginsberg, and Eduardo E. Schenberg. 2021. "Ethical Concerns about Psilocybin Intellectual Property." *ACS Pharmacology & Translational Science* 4 (2): 573–77. https://doi.org/10.1021/acsptsci.0c00171.

Gerrard, Meg, Frederick X. Gibbons, Amy E. Houlihan, Michelle L. Stock, and Elizabeth A. Pomery. 2008. "A Dual-Process Approach to Health Risk Decision Making: The Prototype Willingness Model." *Developmental Review* 28 (1): 29–61. https://doi.org/10.1016/j.dr.2007.10.001.

Gilbert, Frederic. 2013. "Deep Brain Stimulation for Treatment Resistant Depression: Postoperative Feelings of Self-Estrangement, Suicide Attempt and Impulsive–Aggressive Behaviours." *Neuroethics* 6 (3): 473–81. https://doi.org/10.1007/s12152-013-9178-8.

Gilbert, Frederic, J.N.M. Viaña, and C. Ineichen. 2021. "Deflating the 'DBS Causes Personality Changes' Bubble." *Neuroethics* 14 (S1): 1–17. https://doi.org/10.1007/s12152-018-9373-8.

Glannon, W. 2009. "Stimulating Brains, Altering Minds." *Journal of Medical Ethics* 35 (5): 289–92. https://doi.org/10.1136/jme.2008.027789.

Green, Joseph P., and Steven Jay Lynn. 2018. *Cognitive-Behavioral Therapy, Mindfulness, and Hypnosis for Smoking Cessation: A Scientifically Informed Intervention*. Chichester, UK: John Wiley & Sons. https://doi.org/10.1002/9781119139676.

Griffiths, Roland R., Matthew W. Johnson, Michael A. Carducci, Annie Umbricht, William A. Richards, Brian D. Richards, Mary P. Cosimano, and Margaret A. Klinedinst. 2016. "Psilocybin Produces Substantial and Sustained Decreases in Depression and Anxiety in Patients with Life-Threatening Cancer: A Randomized Double-Blind Trial." *Journal of Psychopharmacology* 30 (12): 1181–97. https://doi.org/10.1177/0269881116675513.

Griffiths, Roland R., Matthew W. Johnson, William A. Richards, Brian D. Richards, Robert Jesse, Katherine A. MacLean, Frederick S. Barrett, Mary P. Cosimano, and Maggie A. Klinedinst. 2018. "Psilocybin-Occasioned Mystical-Type Experience in Combination with Meditation and Other Spiritual Practices Produces Enduring Positive Changes in Psychological Functioning and in Trait Measures of Prosocial Attitudes and Behaviors." *Journal of Psychopharmacology* 32 (1): 49–69. https://doi.org/10.1177/0269881117731279.

Harris, Peter R., and Tracy Epton. 2009. "The Impact of Self-Affirmation on Health Cognition, Health Behaviour and Other Health-Related Responses: A Narrative Review: Self-Affirmation and Health." *Social and Personality Psychology Compass* 3 (6): 962–78. https://doi.org/10.1111/j.1751-9004.2009.00233.x.

Hartogsohn, Ido. 2017. "Constructing Drug Effects: A History of Set and Setting." *Drug Science, Policy and Law* 3 (January): 1–17. https://doi.org/10.1177/2050324516683325.

Hendricks, Peter S. 2018. "Awe: A Putative Mechanism Underlying the Effects of Classic Psychedelic-Assisted Psychotherapy." *International Review of Psychiatry* 30 (4): 331–42. https://doi.org/10.1080/09540261.2018.1474185.

Hood, Ralph W. 1975. "The Construction and Preliminary Validation of a Measure of Reported Mystical Experience." *Journal for the Scientific Study of Religion* 14 (1): 29–41.

Hughes, John R., Josue Keely, and Shelly Naud. 2004. "Shape of the Relapse Curve and Long-Term Abstinence among Untreated Smokers." *Addiction* 99 (1): 29–38. https://doi.org/10.1111/j.1360-0443.2004.00540.x.

James, Edward, Thomas L. Robertshaw, Mathew Hoskins, and Ben Sessa. 2020. "Psilocybin Occasioned Mystical-Type Experiences." *Human Psychopharmacology: Clinical and Experimental* 35 (5): e2742. https://doi.org/10.1002/hup.2742.

James, William. 1902. *The Varieties of Religious Experience: A Study in Human Nature*. London: Longmans, Green, and Co.

Johns Hopkins University (JHU). 2021. Psilocybin-Facilitated Smoking Cessation Treatment: A Pilot Study." Clinical trial registration NCT01943994. https://clinicaltrials.gov/ct2/show/NCT01943994.

Johnson, M. W. 2013. "Psilocybin-Facilitated Smoking Cessation Treatment Manual." Unpublished manuscript, last modified January 15, 2013. Microsoft Word file.

Johnson, M.W., W.A. Richards, and R.R. Griffiths. 2008. "Human Hallucinogen Research: Guidelines for Safety." *Journal of Psychopharmacology* 22 (6): 603–20. https://doi.org/10.1177/0269881108093587.

Johnson, Matthew W., Albert Garcia-Romeu, Mary P. Cosimano, and Roland R. Griffiths. 2014. "Pilot Study of the 5-HT2AR Agonist Psilocybin in the Treatment of Tobacco Addiction." *Journal of Psychopharmacology* 28 (11): 983–92. https://doi.org/10.1177/0269881114548296.

Johnson, Matthew W., Albert Garcia-Romeu, and Roland R. Griffiths. 2017. "Long-Term Follow-up of Psilocybin-Facilitated Smoking Cessation." *American Journal of Drug and Alcohol Abuse* 43 (1): 55–60. https://doi.org/10.3109/00952990.2016.1170135.

Kaufman, Erin A., Megan E. Puzia, Sheila E. Crowell, and Cynthia J. Price. 2019. "Replication of the Self-Concept and Identity Measure (SCIM) Among a Treatment-Seeking Sample." *Identity* 19 (1): 18–28. https://doi.org/10.1080/15283488.2019.1566068.

Kearney, Margaret H., and Joanne O'Sullivan. 2003. "Identity Shifts as Turning Points in Health Behavior Change." *Western Journal of Nursing Research* 25 (2): 134–52. https://doi.org/10.1177/0193945902250032.

Kočárová, Rita, Jiří Horáček, and Robin Carhart-Harris. 2021. "Does Psychedelic Therapy Have a Transdiagnostic Action and Prophylactic Potential?" *Frontiers in Psychiatry* 12 (July): 661233. https://doi.org/10.3389/fpsyt.2021.661233.

Lee, Martin A., and Bruce Shlain. 1992. *Acid Dreams: The Complete Social History of LSD: The CIA, the Sixties, and Beyond*. New York: Grove Weidenfeld.

Letheby, Chris. 2021. *Philosophy of Psychedelics*. Oxford: Oxford University Press.

Livingstone-Banks, Jonathan, Emma Norris, Jamie Hartmann Boyce, Robert West, Martin Jarvis, Emma Chubb, and Peter Hajek. 2019. "Relapse Prevention Interventions for Smoking Cessation." *Cochrane Database of Systematic Reviews* 13 (10): CD003999. https://doi.org/10.1002/14651858.CD003999.pub6.

Ly, Calvin, Alexandra C. Greb, Lindsay P. Cameron, Jonathan M. Wong, Eden V. Barragan, Paige C. Wilson, Kyle F. Burbach, et al. 2018. "Psychedelics Promote Structural and Functional Neural Plasticity." *Cell Reports* 23 (11): 3170–82. https://doi.org/10.1016/j.celrep.2018.05.022.

MacLean, Katherine A., Matthew W. Johnson, and Roland R. Griffiths. 2011. "Mystical Experiences Occasioned by the Hallucinogen Psilocybin Lead to Increases in the Personality Domain of Openness." *Journal of Psychopharmacology* 25 (11): 1453–61. https://doi.org/10.1177/0269881111420188.

Majić, Tomislav, Timo T. Schmidt, and Jürgen Gallinat. 2015. "Peak Experiences and the Afterglow Phenomenon: When and How Do Therapeutic Effects of Hallucinogens Depend on Psychedelic Experiences?" *Journal of Psychopharmacology* 29 (3): 241–53. https://doi.org/10.1177/0269881114568040.

Marks, David F. 1993. *The Quit for Life Programme: An Easier Way to Stop Smoking and Not Start Again*. Leicester: British Psychological Society.

Marks, David F., and C.M. Sykes. 2002. "Randomized Controlled Trial of Cognitive Behavioural Therapy for Smokers Living in a Deprived Area of London: Outcome at One-Year Follow-Up." *Psychology, Health & Medicine* 7 (1): 17–24. https://doi.org/10.1080/13548500120101513.

Marks, Mason, and I. Glenn Cohen. 2021. "Patents on Psychedelics: The Next Legal Battlefront of Drug Development." *Harvard Law Review Forum* 212(2022). https://doi.org/10.2139/ssrn.3948757.

McDaniel, Anna M., Katrina A. Vickerman, Timothy E. Stump, Patrick O. Monahan, Jeffrey L. Fellows, Michael T. Weaver, Beatriz H. Carlini, Victoria

L. Champion, and Susan M. Zbikowski. 2015. "A Randomised Controlled Trial to Prevent Smoking Relapse among Recently Quit Smokers Enrolled in Employer and Health Plan Sponsored Quitlines." *BMJ Open* 5 (6): e007260. https://doi.org/10.1136/bmjopen-2014-007260.

McLane, Hannah, Courtney Hutchison, Daniel Wikler, Timothy Howell, and Emma Knighton. 2021. "Respecting Autonomy in Altered States: Navigating Ethical Quandaries in Psychedelic Therapy." *Journal of Medical Ethics Blog*, December 22. https://blogs.bmj.com/medical-ethics/2021/12/22/respecting-autonomy-in-altered-states-navigating-ethical-quandaries-in-psychedelic-therapy/.

Meijer, Eline, Eleni Vangeli, Winifred A. Gebhardt, and Colette van Laar. 2020. "Identity Processes in Smokers Who Want to Quit Smoking: A Longitudinal Interpretative Phenomenological Analysis." *Health: An Interdisciplinary Journal for the Social Study of Health, Illness and Medicine* 24 (5): 493–517. https://doi.org/10.1177/1363459318817923.

Miceli McMillan, Riccardo. 2021a. "Prescribing Meaning: Hedonistic Perspectives on the Therapeutic Use of Psychedelic-Assisted Meaning Enhancement." *Journal of Medical Ethics* 47 (10): 701–05. https://doi.org/10.1136/medethics-2020-106619.

Miceli McMillan, Riccardo. 2021b. "Global Bioethical Challenges of Medicalising Psychedelics." *Journal of Psychedelic Studies* 5 (2): 57–64. https://doi.org/10.1556/2054.2021.00188.

Miceli McMillan, Riccardo. 2022. "Psychedelic Injustice: Should Bioethics Tune in to the Voices of Psychedelic-Using Communities?" *Medical Humanities* 48 (3): 269–72. https://doi.org/10.1136/medhum-2021-012299.

Millière, Raphaël, Robin L. Carhart-Harris, Leor Roseman, Fynn-Mathis Trautwein, and Aviva Berkovich-Ohana. 2018. "Psychedelics, Meditation, and Self-Consciousness." *Frontiers in Psychology* 9 (September): 1475. https://doi.org/10.3389/fpsyg.2018.01475.

Mitchell, Jennifer M., Michael Bogenschutz, Alia Lilienstein, Charlotte Harrison, Sarah Kleiman, Kelly Parker-Guilbert, Marcela Ot'alora G., et al. 2021. "MDMA-Assisted Therapy for Severe PTSD: A Randomized, Double-Blind, Placebo-Controlled Phase 3 Study." *Nature Medicine* 27 (6): 1025–1033. https://doi.org/10.1038/s41591-021-01336-3.

Mithoefer, Michael, and Annie Mithoefer. 2021. "MDMA." In *Handbook of Medical Hallucinogens*, edited by Charles S. Grob and Jim Grigsby, 233–63. New York: Guilford Press.

Murphy, Emily R., and Judy Illes. 2007. "Neuroethics and Psychiatry: New Collaborations for Emerging Challenges." *Psychiatric Annals* 37 (12): 798–804. https://doi.org/10.3928/00485713-20071201-03.

Muthukumaraswamy, Suresh D., Anna Forsyth, and Thomas Lumley. 2021. "Blinding and Expectancy Confounds in Psychedelic Randomized Controlled Trials." *Expert Review of Clinical Pharmacology* 14 (9): 1133–52. https://doi.org/10.1080/17512433.2021.1933434.

Newland, Constance A. 1962. *Myself and I: The Explosive Experiences of Constance A. Newland Who Took Twenty-Three Doses of the Dangerous New Mind Drug*. New York: Signet.

Noorani, Tehseen, Albert Garcia-Romeu, Thomas C. Swift, Roland R. Griffiths, and Matthew W. Johnson. 2018. "Psychedelic Therapy for Smoking Cessation: Qualitative Analysis of Participant Accounts." *Journal of Psychopharmacology* 32 (7): 756–69. https://doi.org/10.1177/0269881118780612.

Noorani, Tehseen, and Jonny Martell. 2021. "New Frontiers or a Bursting Bubble? Psychedelic Therapy Beyond the Dichotomy." *Frontiers in Psychiatry* 12: 727050. https://www.frontiersin.org/article/10.3389/fpsyt.2021.727050.

Nutt, David J., Leslie A. King, and David E. Nichols. 2013. "Effects of Schedule I Drug Laws on Neuroscience Research and Treatment Innovation." *Nature Reviews Neuroscience* 14 (8): 577–85. https://doi.org/10.1038/nrn3530.

Oram, Matthew. 2018. *The Trials of Psychedelic Therapy: LSD Psychotherapy in America*. Baltimore: Johns Hopkins University Press.

Pahnke, Walter N. 1969. "The Psychedelic Mystical Experience in the Human Encounter with Death." *Harvard Theological Review* 62 (1): 1–21.

Pickard, Hanna. 2021. "Addiction and the Self." *Noûs* 55 (4): 737–61. https://doi.org/10.1111/nous.12328.

Pilecki, Brian, Jason B. Luoma, Geoff J. Bathje, Joseph Rhea, and Vilmarie Fraguada Narloch. 2021. "Ethical and Legal Issues in Psychedelic Harm Reduction and Integration Therapy." *Harm Reduction Journal* 18 (1): 40. https://doi.org/10.1186/s12954-021-00489-1.

Pollan, Michael. 2018. *How to Change Your Mind: What the New Science of Psychedelics Teaches Us About Consciousness, Dying, Addiction, Depression, and Transcendence*. New York: Penguin Press.

Quit Now Indiana. 2002. "Quitapedia." https://www.quitnowindiana.com/quitapedia.

Rose, Nikolas S. 1998. *Inventing Our Selves: Psychology, Power, and Personhood*. Cambridge, UK: Cambridge University Press.

Roseman, Leor, David J. Nutt, and Robin L. Carhart-Harris. 2018. "Quality of Acute Psychedelic Experience Predicts Therapeutic Efficacy of Psilocybin for Treatment-Resistant Depression." *Frontiers in Pharmacology* 17. https://www.frontiersin.org/article/10.3389/fphar.2017.00974.

Ross, Stephen, Anthony Bossis, Jeffrey Guss, Gabrielle Agin-Liebes, Tara Malone, Barry Cohen, Sarah E. Mennenga, et al. 2016. "Rapid and Sustained Symptom Reduction Following Psilocybin Treatment for Anxiety and Depression in Patients with Life-Threatening Cancer: A Randomized Controlled Trial." *Journal of Psychopharmacology* 30 (12): 1165–80. https://doi.org/10.1177/0269881116675512.

Rucker, James J.H., Jonathan Iliff, and David J. Nutt. 2018. "Psychiatry & the Psychedelic Drugs. Past, Present & Future." *Neuropharmacology* 142 (November): 200–18. https://doi.org/10.1016/j.neuropharm.2017.12.040.

Schlosberg, Suzanne. 2013. *Quit Smoking for Life: A Simple, Proven 5-Step Plan*. Pasadena, CA: Raymond Press.

Shao, Ling-Xiao, Clara Liao, Ian Gregg, Pasha A. Davoudian, Neil K. Savalia, Kristina Delagarza, and Alex C. Kwan. 2021. "Psilocybin Induces Rapid and Persistent Growth of Dendritic Spines in Frontal Cortex in Vivo." *Neuron* 109 (16): 2535–44.e4. https://doi.org/10.1016/j.neuron.2021.06.008.

Shiva, Vandana. 1997. *Biopiracy: The Plunder of Nature and Knowledge*. Boston: South End Press.

Smith, William R., and Dominic Sisti. 2021. "Ethics and Ego Dissolution: The Case of Psilocybin." *Journal of Medical Ethics* 47 (12): 807–14. https://doi.org/10.1136/medethics-2020-106070.

Strassman, Rick. 2001. *DMT: The Spirit Molecule: A Doctor's Revolutionary Research into the Biology of Near-Death and Mystical Experiences*. Rochester, VT: Park Street Press.

Swendsen, Joel D., Kevin P. Conway, Bruce J. Rounsaville, and Kathleen R. Merikangas. 2002. "Are Personality Traits Familial Risk Factors for Substance Use Disorders? Results of a Controlled Family Study." *American Journal of Psychiatry* 159 (10): 1760–66. https://doi.org/10.1176/appi.ajp.159.10.1760.

Sykes, Catherine M., and David F. Marks. 2001. "Effectiveness of a Cognitive Behaviour Therapy Self-Help Programme for Smokers in London, UK." *Health Promotion International* 16 (3): 255–60. https://doi.org/10.1093/heapro/16.3.255.

Tombor, Ildiko, Lion Shahab, Jamie Brown, Caitlin Notley, and Robert West. 2015. "Does Non-Smoker Identity Following Quitting Predict Long-Term Abstinence? Evidence from a Population Survey in England." *Addictive Behaviors* 45 (June): 99–103. https://doi.org/10.1016/j.addbeh.2015.01.026.

Tombor, Ildiko, Lion Shahab, Jamie Brown, and Robert West. 2013. "Positive Smoker Identity as a Barrier to Quitting Smoking: Findings from a National Survey of Smokers in England." *Drug and Alcohol Dependence* 133 (2): 740–45. https://doi.org/10.1016/j.drugalcdep.2013.09.001.

Umpqua Health Alliance. 2017. "Umpqua Health Alliance Offers OHP Members Free Tobacco Cessation Program," April 6. https://www.umpquahealth.com/wp-content/uploads/2017/05/news-04-17-qfl.pdf.

Vangeli, Eleni, and Robert West. 2012. "Transition Towards a 'Non-Smoker' Identity Following Smoking Cessation: An Interpretative Phenomenological Analysis." *British Journal of Health Psychology* 17 (1): 171–84. https://doi.org/10.1111/j.2044-8287.2011.02031.x.

Walters, Glenn D., and Susan J. Curry. 1996. "Addiction and Identity: Exploring the Possibility of a Relationship." *Psychology of Addictive Behaviors* 10 (1): 9–17. https://doi.org/10.1037/0893-164X.10.1.9.

West, Robert. 2007. "The PRIME Theory of Motivation as a Possible Foundation for Addiction Treatment." In *Addiction Treatment: Science and Policy Issues for the Twenty-First Century*, edited by Jack Henningfield, Patricia Santora, and Warren Bickel, 24–34. Baltimore: Johns Hopkins University Press.

West, Robert, and Jamie Brown. 2013. *Theory of Addiction*. 2nd ed. Chichester, West Sussex, UK: Wiley Blackwell/Addiction Press.

West, Robert, A. Walia, N. Hyder, L. Shahab, and S. Michie. 2010. "Behavior Change Techniques Used by the English Stop Smoking Services and Their Associations with Short-Term Quit Outcomes." *Nicotine & Tobacco Research* 12 (7): 742–47. https://doi.org/10.1093/ntr/ntq074.

Williams, Keith, Osiris Sinuhé González Romero, Michelle Braunstein, and Suzanne Brant. 2022. "Indigenous Philosophies and the 'Psychedelic Renaissance.'" *Anthropology of Consciousness* 33 (2): 506–27. https://doi.org/10.1111/anoc.12161.

Wynd, Christine A. 1992. "Personal Power Imagery and Relaxation Techniques Used in Smoking Cessation Programs." *American Journal of Health Promotion* 6 (3): 184–96. https://doi.org/10.4278/0890-1171-6.3.184.

Zernig, Gerald, Reinhild Wallner, Ursula Grohs, Norbert Kriechbaum, Georg Kemmler, and Alois Saria. 2008. "A Randomized Trial of Short Psychotherapy versus Sustained-Release Bupropion for Smoking Cessation." *Addiction* 103 (12): 2024–31. https://doi.org/10.1111/j.1360-0443.2008.02348.x.

Zigon, Jarrett. 2011. *HIV Is God's Blessing: Rehabilitating Morality in Neoliberal Russia*. Berkeley: University of California Press.

Zigon, Jarrett. 2018. *A War on People: Drug User Politics and a New Ethics of Community*. Oakland: University of California Press.