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On the need for a natural philosophy of psychedelics

Central to the entire LSD controversy is: ‘With how much credence should the chemical experience be accepted?’ Should it be totally accepted as the real reality, or is it preferable to attempt to study the state, sorting out the veridical from the illusory? Evidently, a choice must be made. The state must be either taken on faith without examination or it must be subjected to sorting and analysis. The overgullible will be easily persuaded, the overcritical will analyse it out of existence. Perhaps a third approach is possible—an attempt to measure without changing, to evaluate without destroying.

Sidney Cohen, *Drugs of Hallucination*.

2.1 Introduction

In this chapter, I review the history of psychedelics in science and psychiatry, recent evidence for their safety and therapeutic and transformative efficacy, and the facts about them that give rise to the Comforting Delusion Objection. I describe the main extant responses to the Objection, introduce my response, and outline my plan for defending it in the subsequent chapters. Psychedelics have struck many researchers as raising significant philosophical questions (Smythies 1953, Smith 1964, Shanon 2001), yet until recently have been largely ignored in academic philosophy. I propose that what is needed in this age of interdisciplinarity is a *natural philosophy* of psychedelics: a trans-disciplinary synthesis that integrates empirical findings with theoretical and conceptual considerations, to address some of the fascinating and distinctively philosophical questions raised by these controversial substances.

2.2 The psychedelic renaissance

The term ‘psychedelic’, meaning, roughly, ‘mind-manifesting’ (Osmond 1957), has been applied to a wide variety of drugs that cause dramatic changes to perception, emotion, and cognition (Sessa 2012). Psychedelics, thus construed, form a pharmacologically heterogeneous class: the Mexican psychoactive sage, *Salvia Divinorum* (or

its active principle, Salvinorin A), acts by agonism of the kappa opioid receptor in the brain, for instance (Roth et al. 2002), while dissociative anaesthetics such as ketamine produce psychedelic effects at low doses by blockade of N-methyl-D-aspartate (NMDA) glutamate receptors (Krystal et al. 1994).

However, the term is sometimes reserved for a more restricted class: the ‘classic’ psychedelics, such as lysergic acid diethylamide (LSD), psilocybin (found in ‘magic’ mushrooms), mescaline (found in various cacti), and N,N-dimethyltryptamine (DMT, found in various plants and animals, and a key ingredient in the Amazonian beverage *ayahuasca*; Nichols 2016). These drugs, and others of this class, exert their psychoactive effects primarily by mimicking the action of the neurotransmitter serotonin (5-HT) at a specific receptor subtype: the serotonin-2a (5-HT_{2A}) receptor (Vollenweider et al. 1998, Halberstadt 2015, Carhart-Harris 2019). It is these *serotonergic* (serotonin-acting) psychedelics that are my focus in this book, and I will reserve the word ‘psychedelic’ for them henceforth.¹

Naturally occurring psychedelics have been used for religious, spiritual, and medicinal purposes for centuries, if not millennia, by various cultures around the world, especially in the Americas (Grinspoon and Bakalar 1979, Miller et al. 2019). Western scientists and intellectuals showed some interest in mescaline throughout the late nineteenth and early twentieth centuries (e.g., Mitchell 1896, Ellis 1897, Klüver 1926, Guttman 1936). But the story of modern psychedelic science really begins with the Swiss chemist Albert Hofmann’s accidental discovery, in 1943, of the potent psychedelic effects of LSD (Hofmann 1980). Hofmann was originally investigating LSD and related compounds for purely medicinal purposes, but he and his colleagues were struck by the dramatic and bizarre alterations to consciousness that this new molecule produced at utterly minute doses. In subsequent years, the similarity between the effects of LSD and mescaline was recognised. Following this, the amateur mycologist R. Gordon Wasson (1957) confirmed that *Psilocybe* mushrooms were still in regular ceremonial use in Mexico. Hofmann identified psilocybin as the active ingredient and worked out how to synthesise it (Hofmann et al. 1958). Psychedelic science began in earnest.

Throughout the 1950s and 1960s, psychedelics were studied and used in many different ways (Grof 1975, pp. 1–4). Early researchers were impressed by the similarity between some psychedelic experiences and naturally occurring psychoses, leading to a conception of the drugs as ‘psychotomimetic’ (psychosis-mimicking) or ‘psychotogenic’ (psychosis-causing). This led to two major applications: the study of psychedelics’ mechanisms of action, in the hope of uncovering the biochemical bases of mental illness, and the controlled ingestion of psychedelics by psychiatrists, to increase their empathy with their psychotic patients (Osmond 1957). The discovery of

¹ Note that the ‘entactogenic’ substance 3,4-methylenedioxymethamphetamine (MDMA or ‘Ecstasy’) does not count as psychedelic on this definition: Although its effects are partly serotonergically mediated, it differs both pharmacologically and phenomenologically from the classic psychedelics (Nichols 1986, Roseman et al. 2014).

LSD's serotonergic action was crucial in confirming that serotonin played a role in emotion and cognition. As such, it contributed to the 'psychopharmacological revolution' and the birth of modern biological psychiatry (Dyck 2010).

But stereotypically psychotic symptoms were not the only mental changes observed after psychedelic administration. Many subjects reported overwhelming experiences of a spiritual or religious nature: ineffable mystic union with the divine, direct experience of the primordial Good in existence, and transcendent visions of a 'Joyous Cosmology' (Watts 1962). Experiences of this type seemed to happen unbidden, even when expectations were quite different (Mangini 1998). Researchers who had thought that psychedelics might scare alcoholics sober by mimicking safely the terrifying symptoms of delirium tremens were surprised when many of their patients were moved to kick the bottle by powerful religious raptures. Experiences of this kind piqued the interest of intellectuals with a prior interest in mysticism, such as Aldous Huxley (1954) and Alan Watts (1960), whose writings laid the groundwork for the psychopharmacological spirituality of the 1960s counterculture.

Thus emerged a second, quite different conception of psychedelics, as agents of spiritual experience. Adherents of this approach looked to the drugs for clues about the nature of naturally occurring mystical states and even about the (pre-) historical genesis of religion. We can (anachronistically) dub this an 'Entheogenic Conception', using the neologism coined by Ruck et al. (1979) to foreground psychedelics' spiritual and religious uses: *generating the divine within*. The most famous academic application of the Entheogenic Conception was Walter Pahnke's (1963) 'Good Friday Experiment', in which psilocybin was administered to divinity students. While listening to a Good Friday service, one group of volunteers received psilocybin, and another an active placebo: those in the psilocybin group reported transcendent mystical experiences. Pahnke's experiment had serious methodological flaws (Doblin 1991) but was nonetheless a milestone in establishing the potential of drugs in the study of religious experiences. A recent, more rigorous replication (Griffiths et al. 2006) is discussed further in section 2.3.3. Recent research has also documented numerous commonalities between psychedelic experiences and meditative states, vindicating the basic intuitions of pioneers such as Huxley and Watts (Millière et al. 2018, Smigielski et al. 2019a, 2019b, Heuschkel and Kuypers 2020).

The third, *psychotherapeutic*, conception of psychedelics is implicit in what I have said about their apparently transformative effects on alcoholics. Startled by the fact that 'psychotomimetic' drugs seemed able to catalyse lasting positive behavioural change, researchers noted that psychedelic subjects often experienced a seeming 'up-surge' (Sandison 1954) of previously unconscious material: repressed memories, desires, and fantasies. In line with the dominant psychoanalytical orientation of the day, some researchers concluded that psychedelics weakened the barriers of repression in a way that could facilitate therapeutic progress, by allowing access to the unconscious and enhancing the therapist–patient bond (Sandison et al. 1954, Eisner and

Cohen 1958). Hence the 'psycholytic' (mind-loosening) form of therapy practiced in Europe: repeated sessions of classical psychoanalysis enhanced by low doses of psychedelics (Leuner 1967).

Psychiatrists in the US tended rather to practice 'psychedelic therapy': the administration of one (or very few) high doses, with considerable preparation and interpersonal support, aimed at facilitating an overwhelming and transformative mystical or 'peak' experience (Faillace 1966). Positive results were reported from this method. Although much of the research was methodologically problematic, with over-reliance on anecdotal evidence and under-reliance on control groups (Smart and Storm 1964, Mangini 1998), a recent meta-analysis of six randomised controlled trials (RCTs) from the 1950s and 1960s found evidence for the efficacy of a single high dose of LSD in the treatment of alcoholism (Krebs and Johansen 2012).

Psychotomimetic, entheogenic, and psychotherapeutic investigations were three prominent strands of psychedelic research, but by no means the only ones. Some researchers were interested in psychedelics' potential to enhance creativity (Harman et al. 1966; cf. Sessa 2008), others in their potential as a research tool for charting the human psyche (Osmond 1957). Aldous Huxley (1954) viewed the 'antipodes of the mind' disclosed in psychedelic experience as a promising region for disciplined scientific exploration. Later, Stanislav Grof famously compared psychedelics' 'potential significance for psychiatry and psychology to that of the microscope for medicine or the telescope for astronomy' (Grof 1975, pp. 32–33). This approach has connections with the recent interdisciplinary enterprise of 'philosophical psychopathology', which uses observations from non-ordinary conditions as a basis for conclusions about the structure and function of the ordinary mind (Graham and Stephens 1994). This 'telescopic' conception has been one of the most prominent rationales for the use of psychedelics in recent cognitive neuroscience (e.g., Carhart-Harris et al. 2014).

In a seminal 1957 article that introduced the term 'psychedelic' to the scientific lexicon, Humphry Osmond summarised these various lines of investigation:

Nearly everyone who works with [psychedelics] and allied compounds agrees there is something special about them. Such words as 'unforgettable' and 'indescribable' abound in the literature. Few workers, however, have emphasised that the unique qualities of these substances must be investigated in many directions at the same time, a consideration that makes work in this field all the more difficult. I shall try to remedy this deficiency by citing several reasons for ascribing importance to them ...

(1) The primary interest of these drugs for the psychiatrist lies in their capacity to mimic more or less closely some aspects of grave mental illnesses, particularly of schizophrenia. The fact that medical men have been preoccupied with transient states resembling mental illnesses that have been called model psychoses, however, does not mean that the only use for these compounds is in the study of pathological conditions ...

(2) Psychiatrists have found that these agents have a place in psychotherapy. This practice may sound like carrying the idea of ‘a hair of the dog that bit you’ rather far, but it seems to be justified.

(3) Another potentiality of these substances is their use in training and in educating those who work in psychiatry and psychology, especially in understanding strange ways of the mind.

(4) These drugs are of value in exploring the normal mind under unusual circumstances.

(5) Last, but perhaps most important: there are social, philosophical, and religious implications in the discoveries made by means of these agents.

(Osmond 1957, pp. 419–420).

Despite this wealth of promising research programmes, the heyday of psychedelic science was short-lived. LSD, in particular, became the topic of intense socio-political controversy after its highly publicised adoption by the hippie counterculture, exemplified by Timothy Leary’s notorious exhortations to ‘turn on, tune in, and drop out’ (Pahnke 1967). Psychedelics’ real but relatively manageable risks (more on which shortly) were both increased by reckless recreational use and exaggerated by sensationalistic journalism (Masters and Houston 1966), inextricably linking psychedelics in the public imagination to fried brains, damaged chromosomes, and delusional leaps from rooftops (Dyck 2010). The net result was that psychedelics were prohibited and virtually all research into their effects on humans stopped. Funding dried up, and displaying an interest in the topic became tantamount to career suicide for any respectable scientist or psychiatrist (Sessa 2005).

Since the 1990s, in a changed socio-political climate, human research on psychedelics has resumed. This line of research is promising and has been aided by the many methodological, technological, and theoretical developments that have occurred in the mind and brain sciences since the 1970s. It is relatively early days, but the field has matured sufficiently that it is now commonplace to speak of a ‘psychedelic renaissance’ (Sessa 2018, Kelly et al. 2019, Holoyda 2020). Indeed, in the past few years, the expansion of the field has accelerated dramatically (Aday et al. 2019a, Doblin et al. 2019). A new generation of researchers—and even some first-generation psychedelic scientists (e.g., Richards 2015)—have picked up the loose ends described above: psychotomimetic, entheogenic, psychotherapeutic, and other potential applications of psychedelics are being probed with a multitude of methods. I will now review recent findings about the therapeutic and transformative potential—and, crucially, the safety profile—of carefully controlled psychedelic administration in human volunteers.

2.3 Evidence for safety and efficacy

2.3.1 Safety

One of the main reasons given for the prohibition of psychedelics in the 1960s was that these drugs were just too dangerous to be used safely. Political discourse and media coverage surrounding LSD, in particular, painted an alarming picture of a substance capable of causing instant and permanent insanity, genetic defects, and moral corruption (Masters and Houston 1966, Dyck 2010, Mangini 1998). This broad picture of psychedelics as far too hazardous to contemplate using still holds great sway in the public imagination today. Moreover, in most countries, these drugs are classified in the most restrictive legal categories, due to their having ‘high abuse potential’ and ‘no accepted medical use’ (Nutt et al. 2013, Krebs 2015). So how can psychedelic therapy even be a prospect worth discussing?

The fact is that, while they are no more risk-free than any other intervention, the dangers of psychedelics seem to have been greatly exaggerated (cf. dos Santos 2014). In a review of the literature, Rick Strassman (1984) found that adverse psychological reactions to psychedelics were relatively rare and, when they did occur, typically transient and manageable with interpersonal support. In the relatively few cases of prolonged psychosis following exposure to a psychedelic, there is often evidence of a pre-existing latent vulnerability, such as a family history of psychotic illness. The incidence of prolonged psychotic episodes when stringent exclusion criteria are applied seems to be very low.

Strassman’s findings have been borne out by the dozens of studies conducted since the early 1990s in which psychedelics have been administered to healthy subjects and to psychiatric patients. Hundreds, if not thousands, of volunteers have now been carefully screened, selected, prepared, dosed, and followed-up, in accordance with strict safety guidelines (dos Santos et al. 2018a). These guidelines recommend, among other things, the exclusion of anyone with a personal or immediate family history of psychotic illness, in order to minimise the probability of serious adverse effects (Johnson et al. 2008). Subjects receive the drug in a comfortable, quiet setting, with therapists present to provide reassurance. Often they are given a carefully curated playlist of music to guide the experience (Kaelen et al. 2018). Typically, there are several preparation sessions before the first drug session in which subjects can develop rapport and trust with the supervising therapists, and be educated about the range of possible drug effects and how best to handle these psychologically (e.g., with an attitude of openness and curiosity).

The results by now are clear: when such guidelines are followed, psychedelics have an excellent physiological and psychological safety profile (Nichols 2016, Sessa 2018, dos Santos et al. 2018a.) These substances are physically non-toxic and non-addictive²

² Modak et al. (2019) provide an extremely rare, possibly unique, case report of apparent physical dependence on LSD. Stone et al. (2006) report findings concerning the existence of a ‘hallucinogen

at standard therapeutic and transformative doses. Human fatalities attributable to their direct action are virtually unknown, at least in the cases of LSD, psilocybin, mescaline, and DMT—barring a few massive overdoses at several hundred times the standard therapeutic dosage (Nichols and Grob 2018). They can acutely elevate heart rate and blood pressure, and thus are contraindicated for those with certain health conditions. Moreover, subjects sometimes report headaches in the days after the dosing session, but these are transient and relatively mild (Johnson et al. 2012). In a seminal paper that outlines safety guidelines for human psychedelic research, Johnson et al. summarise the drugs' physiological safety profile as follows:

Hallucinogens generally possess relatively low physiological toxicity, and have not been shown to result in organ damage or neuropsychological deficits... Nonhuman animal studies have shown MDMA (structurally similar to some classical hallucinogens, but with a substantially different pharmacological mechanism of action) to have neurotoxic effects at high doses, although MDMA has been judged to be safe for human administration in the context of several therapeutic and basic human research studies. In contrast, there is no evidence of such potential neurotoxic effects with the prototypical classical hallucinogens (i.e., LSD, mescaline and psilocybin). Some physiological symptoms may occur during hallucinogen action, such as dizziness, weakness, tremors, nausea, drowsiness, paraesthesia, blurred vision, dilated pupils and increased tendon reflexes... In addition, hallucinogens can moderately increase pulse and both systolic and diastolic blood pressure... However, these somatic effects vary and are relatively unimpressive even at doses yielding powerful psychological effects...

The physical adverse effects of these agents observed in cancer patients were manageable and similar to effects observed in physically healthy individuals. These researchers noted that any other symptoms experienced during sessions with cancer patients were symptoms already associated with their existing illness... Early clinical research also safely administered LSD to chronic alcoholics and cancer patients with considerable liver damage, suggesting hepatic concerns are 'negligible unless the dysfunction is of a critical degree' (Grob 1980, p. 164).

Participants and review committees may be concerned that LSD or other hallucinogens are associated with chromosomal damage. These concerns stem from an anti-LSD media campaign by the USA government in the late 1960s... However, many follow-up investigations soon squarely refuted the hypothesis that LSD use in humans was a significant risk for chromosomal damage or carcinogenic, mutagenic or teratogenic effects...

(Johnson et al. 2008, pp. 606–607).

dependence syndrome', in which physical dependence is not at issue, but rather problematic patterns of compulsive use. However, their definition of 'hallucinogen' includes substances other than classic psychedelics, such as MDMA and phencyclidine (PCP).

On the psychological front, subjects receiving high doses often experience considerable fear or anxiety during the dosing session (Griffiths et al. 2008), but this is managed with interpersonal support, and follow-ups in these studies have found no serious, lasting adverse effects (Garcia-Romeu et al. 2016). A recent study found that even quite high doses of psilocybin can be tolerated well by healthy volunteers (Nicholas et al. 2018). Writing in 2016, Ross et al. noted that over 2,000 doses of psilocybin had been administered in rigorous research trials during a 25-year period, with ‘no reports of any medical or psychiatric serious [adverse events], including no reported cases of prolonged psychosis or HPPD [hallucinogen persisting perception disorder]’ (Ross et al. 2016, p. 1176). In a more recent systematic review of psychedelics’ long-term effects, Aday et al. noted that ‘few subjects reported lasting negative side effects,’ citing the finding of Studerus et al. (2011) that:

1/110 participants who received psilocybin reported experiences of anxiety and depression in the weeks following administration which warranted treatment. Additionally, ‘a few’ noted less severe emotional instability—but all adverse effects were resolved within a month.

(Aday et al. 2020, p. 184).

Aday et al. conclude:

All in all, limited harm has been reported in the new era of research which utilizes extensive safety protocols ... and the drugs’ potential for dependency is low ... In subjective accounts, [patients] with depression ... and addiction ... have noted the lack of long-term adverse side effects as being a considerable benefit over previous treatments they had attempted (e.g., antidepressants).

(Aday et al. 2020, p. 184).

In non-clinical settings, the risks are no doubt greater, but there is still evidence that they have been exaggerated. An oft-cited multicriteria decision analysis rated LSD and psilocybin among the least harmful of 20 commonly used recreational drugs, taking into account multiple types and dimensions of harm (Nutt et al. 2010). Researchers have extensively studied members of religious organisations, such as the Native American Church and Santo Daime, that routinely use psychedelics such as peyote and ayahuasca in their rituals. There is now a large body of evidence that members of these communities have good mental and physical health relative to the broader population (Halpern et al. 2005, 2008, Bouso et al. 2012, 2013, Barbosa et al. 2009, 2012, 2016, Ona et al. 2019; cf. Jiménez-Garrido et al. 2020).

Religious contexts aside, population-level studies have found lifetime use of psychedelics to be either un-associated or *negatively* correlated with various mental health problems such as psychosis, psychological distress, and suicidality (Hendricks et al. 2014, 2015a, 2015b, Krebs and Johansen 2013, Johansen and Krebs 2015, Rougemont-Bücking et al. 2019). Similar studies have found psychedelic use to be associated with

lower levels of criminal behaviour (Hendricks et al. 2014, 2018), lower levels of opioid use (Pisano et al. 2017), decreased suicide risk among marginalised women who use prescription opioids (Argento et al. 2018), and decreased perpetration of intimate partner violence by men (Walsh et al. 2016, Thiessen et al. 2018). Correlations have also been found with higher levels of pro-environmental behaviour (Forstmann and Sagioglou 2017) and higher levels of liberal political beliefs (Nour et al. 2017; for a review of epidemiological studies, see Johnson et al. 2019).

On the other hand, one recent study found that psychedelic use was positively correlated with mental health and behavioural problems in a sample of university students (Grant et al. 2019). Furthermore, Shalit et al. (2019) found significant correlations between ‘hallucinogen’ use and various mental health problems, although their definition of ‘hallucinogen’ was not limited to classic psychedelics but included other substances such as PCP (an NMDA-antagonist dissociative) and *Salvia divinorum*. Like the above associational studies, these findings do not speak directly to questions of causality, but they do underscore the fact that uncontrolled use of psychedelics may have a poorer safety profile than controlled use.

One must also consider the ill-understood phenomenon of HPPD: the re-occurrence of psychedelic effects at some point after the acute experience has subsided (Halpern and Pope 2003, Skryabin et al. 2018, Nutting et al. 2020). The prevalence of HPPD is unknown but it seems to be more common in uncontrolled settings: no cases resulting from supervised clinical use have been documented in recent research (Ross et al. 2016, Aday et al. 2020). Clearly these drugs are not risk-free: their use, especially in uncontrolled settings, can sometimes have seriously adverse consequences (cf. Bienemann et al. 2020). Johnstad (2020) gives a historical description of harms that can result, even in clinical settings, when appropriate care is not taken. But the evidence suggests that psychedelic administration, especially of the careful and controlled variety, is far less hazardous than received wisdom and international drug policy would have it.

An important note on scope: the topic of this book is the phenomenon of rapid and lasting psychological transformation that seems often to occur when psychedelics are taken in moderate-to-high doses in structured and controlled environments, such as clinical trials and religious rituals. Henceforth, everything that I say about psychedelic use and its effects should be understood as referring to this specific phenomenon, unless otherwise indicated.

2.3.2 Therapeutic efficacy

Besides evidence for its safety, there is mounting evidence that supervised clinical use of psychedelics can have lasting psychological benefits (for comprehensive reviews, see dos Santos and Hallak 2020, Aday et al. 2020, Wheeler and Dyer 2020). I do not engage here with the emerging literature on ‘microdosing’—the practice of taking minute doses of psychedelics, insufficient to induce an altered state of consciousness,

for putative therapeutic or enhancement benefits (e.g., Johnstad 2018, Polito and Stevenson 2019, Fadiman and Korb 2019, Lea et al. 2020). Nor do I engage with proposals to examine psychedelics' effects on such conditions as age-related changes in cognition and affect (Aday et al. 2019b), cluster headaches (Sewell et al. 2006), and disorders of consciousness such as vegetative and minimally conscious states (Scott and Carhart-Harris 2019). My sole concern, as noted above, is the supervised administration of moderate-to-high, *consciousness-altering* doses for psychologically therapeutic or transformative purposes.

Moreno et al. (2006) conducted a small, open-label trial of psilocybin for obsessive-compulsive disorder (OCD). Nine patients with OCD, all of whom had failed to respond to standard treatments, each received four psilocybin sessions a week or more apart: a low, medium, and high dose, with a very low dose inserted randomly as a comparator. The psilocybin sessions were well tolerated, and every patient showed significant symptom reductions, lasting 24 hours or more, in at least one dosing session. So far, this is the only published clinical research on psychedelics for OCD. In this study, clinical outcomes were not significantly correlated either with drug dose or with qualitative aspects of the psychedelic experience. This finding can fairly be regarded as an anomaly. The study's open-label design and small sample size limit its evidential value and, as we will see, many other studies have found strong associations between qualitative aspects of the psychedelic experience and various lasting psychological benefits.

A somewhat better-studied indication is the treatment of addiction (Bogenschutz and Johnson 2016). As we saw in section 2.2, a meta-analysis of RCTs from the 1950s and 1960s found that a single high dose of LSD significantly outperformed placebo in the treatment of alcoholism (Krebs and Johansen 2012). It should always be borne in mind that effective double-blinding is a serious methodological challenge in psychedelic research, where the effects of the active treatment are usually (un-)blindingly obvious to the patient. This is one issue in psychedelic research that could usefully be analysed from a philosophy of science perspective.

Two recent open-label pilot studies have addressed the potential of psilocybin to treat alcohol and tobacco addiction, respectively. Bogenschutz et al. (2015) administered one or two doses of psilocybin in conjunction with Motivational Enhancement Therapy to 10 volunteers diagnosed with alcohol dependence. During the first four weeks of the programme, while the patients were only receiving therapy, there were no significant changes to drinking behaviour, but the first psilocybin session, at four weeks, was followed by significant improvements in drinking behaviour, as well as reduced craving and increased motivation to quit. In this instance, the clinical outcomes were correlated with psychometric ratings of mystical experience, as well as with the overall intensity of the drug experience. Remarkably, the changes were largely maintained at follow-ups 36 weeks after the psilocybin sessions.

Meanwhile, Johnson et al. (2014) administered psilocybin to 15 addicted cigarette smokers, with mean smoking rates of 19 cigarettes per day and a mean duration of 31 years' smoking. Each subject had previously made multiple failed quit attempts.

Six months after receiving a moderate and a high dose of psilocybin in the context of a structured smoking cessation intervention, 12 of the 15 (80%) were verified nicotine-abstinent by biomarkers. One year after the sessions, 10 subjects remained abstinent; more than 16 months after, 9 did (Johnson et al. 2017). Like the alcoholism trial, this open-label study requires replication in larger samples with placebo controls before firm conclusions can be drawn. Nonetheless, 80% is a remarkable six-month abstinence rate, far superior to current gold-standard treatments for tobacco addiction (West et al. 2015). In this study, those who responded to the treatment showed much higher rates of mystical experience than non-responders, independently of the overall intensity of psychedelic effects, suggesting that mystical experiences specifically were involved in causing clinical outcomes (Garcia-Romeu et al. 2014). One participant in this study commented:

It felt like I'd died as a smoker and was resurrected as a nonsmoker. Because it's my perception of myself, and that's how I felt. So I jumped up and I said 'I'm not a smoker anymore, it's all done.'

(Noorani et al. 2018, p. 759).

Psychedelics have also been studied for the treatment of depression (reviewed by Muttoni et al. 2019, Goldberg et al. 2020, Romeo et al. 2020). In an open-label pilot study, 17 patients with major depressive disorder received a single dose of ayahuasca and showed significant reductions in depressive symptoms lasting three weeks (Osório et al. 2015, Sanches et al. 2016). Eight patients participated in a follow-up interview, four to seven years later. Six of these ranked their ayahuasca session among the 10 most important experiences of their life (dos Santos et al. 2018b). Meanwhile, in a double-blind RCT involving 35 patients with treatment-resistant depression, half of the patients showed significant antidepressant effects lasting up to a week after a single dose of ayahuasca (Palhano-Fontes et al. 2019).

In another open-label study, 12 patients with treatment-resistant depression each received a moderate and a high dose of psilocybin with non-directive psychological support. Patients showed significant reductions in depressive symptoms (Carhart-Harris et al. 2016b), which were largely maintained six months after dosing (Carhart-Harris et al. 2018b). The magnitude of clinical improvement was correlated with distinctive changes to brain activity, discussed further in Chapter 5 (Carhart-Harris et al. 2017). One participant in this study commented:

[Through the psilocybin experience] I got a wider perspective, I stepped back. It helped me appreciate that the world is a big place [and] that there's a lot more going on than just the minor things that were going on in my head.

(Watts et al. 2017, p. 534).

Thus, there is preliminary evidence that one or two controlled psychedelic experiences can durably reduce depressive symptoms. Indeed, the U.S. Food and

Drug Administration (FDA) has granted ‘Breakthrough Therapy’ designation to psilocybin-assisted treatment of depression, lending its assistance to fast-track Phase 3 clinical trials that will rigorously test the treatment’s efficacy in hundreds of subjects across multiple study sites (Meikle et al. 2020).

The best-studied therapeutic application in the psychedelic renaissance has been the amelioration of psychosocial distress in terminally ill patients (reviewed by Reiche et al. 2018, Muttoni et al. 2019, Goldberg et al. 2020). Those with a terminal diagnosis undergo many forms of suffering, not least of which is considerable anxiety, depression, and existential distress relating to their illness and impending death. Effective ways of dealing with this distress are badly needed. In the 1960s and 1970s, psychedelics were used to ease the psychological suffering of terminally ill patients (Dyck 2019). Clinicians and patients alike reported that the treatment was extremely helpful (Pahnke and Richards 1966, Richards 2015):

One patient, after his LSD experience, wondered how he could have been so worried about death, which now seemed to be just another step in the life process. Others frankly and calmly stated that they would be ‘ready to go’ when the time to die came. This degree of acceptance and willingness to face the unknown was in strong contrast to the atmosphere of fear among the family and patient before psychedelic psychotherapy was started.

(Pahnke 1969, pp. 15–16).

Several clinical trials from this era are reviewed by Reiche et al. (2018). All studies reported positive results. In some, lasting benefits correlated with ratings of mystical or ‘peak’ experience. More recently, Grob et al. (2011) reported a pilot study in which 12 patients with anxiety relating to a terminal diagnosis each received one placebo session and one moderate-dose psilocybin session in double-blind fashion. Psilocybin sessions were followed by significant reductions in anxiety lasting three months and reductions in depressive symptoms that reached significance six months after dosing. Similar results were found in a study of LSD in 12 patients with terminal illness, with reductions in anxiety lasting 12 months. This was the first clinical trial of LSD-assisted psychotherapy in over 40 years (Gasser et al. 2014).

These findings have since been replicated in two larger, double-blind RCTs—one at New York University (NYU) and one at Johns Hopkins University. These are the ‘most rigorous controlled trials to date’ of psilocybin, perhaps of any psychedelic, for a therapeutic application (Nutt 2016, p. 1163). Between the two studies, a total of 80 terminal patients with clinically significant anxiety and depression received psilocybin and placebo sessions. High-dose psilocybin sessions led to significant decreases in anxiety and depression that were sustained six months after treatment, with the degree of mystical experience a strong predictor of clinical improvement (Griffiths et al. 2016, Ross et al. 2016). A long-term follow-up was conducted in the NYU study. Over half of the surviving patients who participated in the follow-up still showed significant anxiolytic and antidepressant effects, three to four years post-treatment

(Agin-Liebes et al. 2020). One patient in the NYU trial described the lasting effects of the treatment as follows:

I feel like a whole bunch of crap has been dumped off the surface. This stuff that made my world shut down so much and made me look at the ground and watch the clock numbers clicking by. There's life and so many things going on, just watching that tree over there blowing in the breeze, seeing people in the street, and all the different people in vehicles rushing by! I just feel good about being alive . . . It's always there; we just don't notice, and I'm trying to notice and not forget that I can see it at any time. I can hear it any time. It's like waking up in the most profound way, that this is really what life is, it's really like this. We're just not noticing.

(Belser et al. 2017, p. 375).

The success of these studies strengthens the basis for the Phase 3 studies described above. If these studies find compelling evidence of safety and efficacy, this will raise the possibility of psilocybin being approved for medicinal use by the FDA. Although there are significant financial, logistical, and cultural obstacles, psilocybin may well become a legal medicine within the next decade (Rucker et al. 2017, Nutt 2019). This lends further urgency to the issues I am discussing in this book. A coherent philosophical conception of what exactly these strange and controversial drugs offer could be extremely useful, if they are to be incorporated smoothly into mainstream psychiatry and society.

2.3.3 Transformative efficacy in healthy subjects

As we have seen, there is considerable preliminary evidence for the therapeutic efficacy of psychedelics in anxiety, depression, and addiction. Another set of studies suggests that controlled psychedelic use can have lasting psychological benefits for mentally healthy volunteers (reviewed by Elsey 2017, Gandy 2019; cf. Bouso et al. 2018). This builds on earlier claims that psychedelic experiences can be enriching and valuable for subjects who do not have a psychiatric diagnosis, but nonetheless may be seeking personal growth or have existential concerns regarding mortality, spirituality, and meaning in life (Masters and Houston 1966).

In a seminal study, Griffiths et al. (2006) administered high doses of psilocybin to 36 mentally healthy, psychedelic-naïve subjects, all of whom reported regular or semi-regular participation in religious or spiritual activities. The vast majority of these subjects were highly educated and gainfully employed. This study was an attempt to replicate more rigorously Pahnke's Marsh Chapel experiment mentioned in Section 2.2.

Approximately two-thirds of the subjects studied by Griffiths et al. had a 'complete' mystical experience, according to standard psychometric scales. Of those who did have such experiences, a clear majority rated their psilocybin session among the top

five most personally meaningful, or the top five most spiritually significant, events of their lives. Some even rated their session as the *single* most personally meaningful or spiritually significant event of their life. In written comments, reflecting on the meaningfulness and significance they ascribed to the psilocybin experience, volunteers made comparisons to such events as the birth of a child or the death of a parent. Subjects' impressions of the value of the experiences were maintained 14 months later (Griffiths et al. 2008). One subject described gaining:

[the] understanding that in the eyes of God—all people ... were all equally important and equally loved by God. I have had other transcendent experiences, however, this one was important because it reminded and comforted me that God is truly and unconditionally loving and present.

(Griffiths et al. 2008, p. 629).

Similar results were found in another study of 18 mentally healthy, mostly psychedelic-naïve participants administered multiple doses of psilocybin (Griffiths et al. 2011).

Remarkably, a pooled analysis of data from these two trials found that subjects who had a 'complete' mystical experience showed significant increases in Openness to Experience, one of the 'Big Five' personality domains in psychology (Digman 1990). These increases remained significant 14 months after the dosing session (MacLean et al. 2011).³ Subjects themselves, as well as community observers, reported improvements in well-being and interpersonal relationships that they attributed to the psilocybin sessions.

More recently, Griffiths et al. (2017) tested the combined effects of psilocybin and spiritual practices, such as meditation, on various measures of well-being in healthy subjects. There were three groups in this study. One group received a very low, essentially inactive, dose of psilocybin, plus a 'standard' (moderate) level of support and encouragement to engage in spiritual practices. A second group received a high dose of psilocybin and the same standard level of spiritual practice support. A third group received a high dose of psilocybin and a high level of spiritual practice support. At six-month follow-up, both high-dose psilocybin groups showed far greater improvements than the low-dose group on various positive outcome measures, such as self-reported increases in well-being and gratitude. The high-dose high-support group showed even larger improvements than the high-dose low-support group, suggesting that spiritual practices contributed somewhat to the outcomes. But the outcome differences between groups 1 and 2 were far greater than those between 2 and 3, suggesting that the psilocybin experience accounted for most of the difference. Persisting positive effects were correlated with both degree of engagement in spiritual practices

³ A recent correlational study found that recreational users of psychedelics showed higher levels of Openness to Experience than controls who used no drugs or preferred other drugs (Erritzoe et al. 2019), although of course this does not speak to questions of causality.

and psychometric ratings of mystical experiences under psilocybin, but more strongly with the latter.

Interestingly, Griffiths et al. reported that several subjective effects of psilocybin were rated more strongly by those in the high-dose high-support group than by those in the high-dose standard-support group, suggesting that engagement in spiritual practices affects the kinds of experiences one has when administered psychedelics. This hypothesis has received further support from a remarkable study conducted by Smigielski et al. (2019a). These researchers administered psilocybin or placebo to experienced practitioners of mindfulness meditation (in the Zen tradition) on the fourth day of a five-day silent group retreat. Subjects who received psilocybin underwent mystical-type experiences of ‘oceanic boundlessness’, with unusually low levels of anxiety. These researchers concluded that proficiency in meditation practice:

seems to enhance psilocybin’s positive effects while counteracting possible dysphoric responses ... [highlighting] the interactions between non-pharmacological and pharmacological factors, and the role of emotion/attention regulation in shaping the experiential quality of psychedelic states.

(Smigielski et al. 2019a, p. 1).

Immediately before and after the retreat, subjects completed a mindfulness questionnaire. Unsurprisingly, all subjects showed an increase in trait mindfulness from pre- to post-retreat. However, as the researchers had hypothesised, the increase was larger in the psilocybin than the placebo group. At four-month follow-up, those in the psilocybin group showed increases in psychological constructs such as ‘appreciation for life’ and ‘self-acceptance’. These increases correlated with the degree of oceanic boundlessness experienced under psilocybin.

The findings of Griffiths et al. (2017) and Smigielski et al. (2019a) suggest that psychedelic administration can enhance the beneficial effects of spiritual practices such as meditation, and vice versa. Other studies have found that psychedelic administration *alone* can promote some of the psychological capacities cultivated in such practices. For example, Madsen et al. (2020) found that capacities for mindful awareness, as well as the personality trait Openness to Experience, were significantly elevated in healthy, psychedelic-naïve participants three months after a single experience with psilocybin. Several other studies have found evidence of increased mindfulness-related capacities during and after a psychedelic experience (Soler et al. 2016, 2018, Sampedro et al. 2017, Mian et al. 2020, Uthaug et al. 2019, 2020); I discuss these in more detail in section 5.2.2. The commonalities between meditative and psychedelic states offer intriguing clues about the nature and consequences of the latter (Millière et al. 2018, Heuschkel and Kuypers 2020). I will return to this connection repeatedly in the later chapters of the book.

In another study, Carhart-Harris et al. (2012a) administered intravenous psilocybin or placebo to healthy volunteers. After administration, these subjects were prompted to recall autobiographical memories, while undergoing a brain scan with

functional magnetic resonance imaging (fMRI). Self-reported ratings of well-being were increased at two-week follow-up, and these increases correlated with enhanced vividness of memory recall under psilocybin. Memory recall under psilocybin also produced different patterns of neural response than recall under placebo, with increased activation in sensory, including visual, areas of the cortex.

At least one study has provided evidence that even quite high doses of psilocybin can lead to experiences that are positively valued by subjects and that have lasting beneficial effects. Nicholas et al. (2018) recruited volunteers with prior psychedelic experience and administered an escalating series of doses, with the highest being 0.6 mg per kg of body weight—a nearly 50% increase on the dose administered by Griffiths et al. (2006). Psilocybin sessions led to an increase in self-reported well-being and life satisfaction 30 days later, correlating with ratings of mystical experience during the session.

A couple of studies have also shown lasting psychological benefits of a single LSD session in healthy volunteers. Lebedev et al. (2016) reported that 19 subjects showed significant increases in Openness to Experience, and in measures of optimism, two weeks after a supervised LSD session. The extent of these increases was strongly correlated with an increase in the unpredictability or ‘entropy’ of brain activity during the drug experience. Meanwhile, Schmid and Liechti (2018) administered LSD to healthy volunteers who reported increases in well-being, life satisfaction, and other positive psychological effects at both 1- and 12-month follow-ups. These increases correlated with ratings of mystical experience while under LSD.

Many questions remain, and many findings require replication. But researchers have already amassed an impressive body of evidence that psychedelics can be administered safely in clinical settings, and reliably cause states of consciousness that are rated as highly valuable and meaningful, leading to lasting, positive psychological and behavioural changes in both psychiatric patients and healthy volunteers. A certain caution about these findings is warranted, given the general methodological difficulties of psychedelic research and the specific methodological limitations of several studies (Aday et al. 2020). However, for the purposes of this book, I will assume that the picture emerging from these studies with respect to safety, and therapeutic and transformative efficacy, is essentially accurate.

A second assumption of the book is that the therapeutic use of psychedelics for psychiatric symptom reduction, and their use by healthy subjects for positive psychological transformation, constitutes a single, more-or-less unified phenomenon, with common causal mechanisms. This is a substantive assumption, but it is one I hope to vindicate by the arguments that follow. I will typically use the term ‘psychedelic therapy’ rather than the umbrella term ‘psychedelic transformation’ (Letheby 2015), and will focus mainly on clinical applications, but my intention is that much of what I say will apply, *mutatis mutandis*, to transformative use by healthy subjects. As such, I will draw liberally on studies of healthy volunteers, as well as psychiatric patients, in developing my account of psychedelic therapy.

The question now becomes: what follows, philosophically, if this picture is accurate?

2.4 An existential medicine?

It should be clear that psychedelic therapy is an unusual psychopharmacological intervention, in a number of ways. One of the most obvious is the apparent causal role of the mystical experience in mediating positive results.

In several of the studies I have discussed, psychometric ratings of the degree of mystical experience predict clinical and behavioural outcomes. For example, such ratings correlated with increases in Openness to Experience in Griffiths et al.'s (2006, 2008) seminal studies of mystical experience (MacLean et al. 2011), and with various positive outcome measures in two studies of psilocybin and spiritual practices (Griffiths et al. 2017, Smigielski et al. 2019a). They also correlated with lasting psychological benefits in the studies of healthy volunteers carried out by Nicholas et al. (2018) and Schmid and Liechti (2018).

Granted, Lebedev et al. (2016) did not report rates of mystical experience in their LSD study of healthy volunteers. And, in the Moreno et al. (2006) study of psilocybin for OCD, outcomes seemed independent of specific experiential variables. But Bogenschutz et al. (2015) found that mystical experience was a key predictor of improvements in drinking behaviour—albeit so was the overall intensity of the psychedelic experience. Johnson et al. (2014) found that mystical experience predicted improvements in tobacco addiction independently of overall experience intensity (Garcia-Romeu et al. 2014). In the study of psilocybin for treatment-resistant depression, ratings both of mystical experience and of ‘insightfulness’ predicted positive outcomes (Roseman et al. 2018a, Carhart-Harris et al. 2018b). And in the two RCTs of psilocybin for psychological distress in terminal illness, mystical experience was strongly associated with reductions in anxiety and depression (Griffiths et al. 2016, Ross et al. 2016).

As well as such quantitative data, clinical wisdom among experienced psychedelic therapists suggests that psycho-spiritual or existential epiphanies are crucial in overcoming anxiety, depression, substance abuse, and other psychological maladies—consistent with the emphasis on spirituality in recovery programmes such as Alcoholics Anonymous (Pahnke and Richards 1966, Grof 1975, Kelly et al. 2011).

This is a far cry from standard psychiatric treatments, to say the least. The seemingly central role of the mystical experience has led Charles Grob to describe psychedelic therapy as an ‘existential medicine’. Referring specifically to its use in terminal illness, he writes:

Under the influence of hallucinogens, individuals transcend their primary identification with their bodies and experience ego-free states before the time of their actual physical demise, and return with a new perspective and profound acceptance of the life constant, change.

(Grob 2007, p. 213).

To examine this issue more closely, we need to be clear about what exactly constitutes a 'mystical experience'. Clearly, the term is vacuous if it simply refers to any experience that subjects feel moved to describe as 'religious' or 'mystical' (Masters and Houston 1966, p. 256). But in the psychology of religion and clinical psychedelic research, the term has a much more specific, standardised meaning. It refers to a distinct type of experience that has been reported by contemplative practitioners and religious devotees throughout the ages, and is often reported by those who take psychedelics in conducive settings.

The notion of mystical experience used in much psychedelic research derives from the work of W.T. Stace (1960), who conducted a thorough survey of the mystical literature of the world's religions. The current definition is based on Stace's analyses and operationalised in such instruments as the Pahnke-Richards Mystical Experience Questionnaire (MEQ) and the Hood Mysticism Scale (Griffiths et al. 2008, 2011, 2017, MacLean et al. 2012). According to this definition, there are seven phenomenological components of a mystical experience proper—as distinct from 'visionary' experiences and other related phenomena (Richards 2015, p. 78). These are internal and external unity, noetic quality, transcendence of time and space, ineffability, paradoxicality, sense of sacredness, and deeply felt positive mood.

Internal and external unity refers to the sense of 'oneness' or 'interconnectedness': either a 'pure consciousness event' (Forman 1998) allegedly lacking mental contents altogether, or a sense of profound union with the entire manifest universe. *Noetic quality* refers to a strong sense of gaining a genuine and unmediated insight, or of encountering ultimate reality; the mystical experience, by definition, is felt to be 'more real than real'. *Transcendence of time and space* is fairly self-explanatory, if not easy to grasp intellectually: subjects of mystical experience report a sense that time had slowed dramatically or stopped completely (an experience as of eternity or atemporality; being 'outside time'), and that normal spatial awareness was gone (either because there was no space, as in a pure consciousness event, or because they felt 'externally unified' with everything and thus not located in any specific spatial position).

Mystical experiences are described by subjects as being *ineffable*, in that existing language—perhaps any possible language—is utterly inadequate to their description. When attempts at description are nonetheless made, they typically feature *paradoxicality* of some kind, often reporting the simultaneous experience of apparently opposing or contradictory qualities: for example, the experience of an '*empty* unity which is at the same time *full* and complete' (Pahnke 1963, p. 70; emphasis original.) The *sense of sacredness* is a feeling that whatever reality is encountered in the mystical experience is highly, perhaps ultimately, valuable and worthy of reverence. Finally, *deeply felt positive mood* refers to the joy and rapture that accompany such revelations (albeit often preceded by, or intermingled with, awe and fear; cf. Wasson 1957). Despite the alleged futility of verbal description, first-person accounts offer the clearest illustrations of these seven features:

During this stage ... comes that experience called by the mystics 'the realization of the God within us'. This comes to many under these drugs, and is an indescribable, piercing, beautiful knowledge and knowing, which goes beyond the body, the mind, the reason, the intellect, to an area of pure knowing ... There is no sensation of time. God is no longer only 'out there' somewhere, but He is within you, and you are one with Him. No doubt of it even crosses one's awareness at this stage. You are beyond the knower and the known, where there is no duality, but only oneness and unity, and great love. You not only see Truth, but you are truth. You are Love. You are all things! It is not an ego-inflating experience, but on the contrary, one which can help one to dissolve the ego. It gives one a splendid flash of what can be, and what one must surely aim for. It resolves the goal, and the goal is found worthy of pursuit. The consciousness or awareness is expanded far beyond that of the normal state. And this level of consciousness, which actually is available to us at all times, is found to be that part of us which, for want of a better way to express it, might be called the 'God-ness' of us. And we find that this God-ness is unchangeable and indestructible, and that its foundation is Love in its purest form ...

(John W. Aiken 1962, quoted in Harman 1963).

I was plunged into ecstasy—an ecstasy infinitely exceeding anything describable ... There was awareness of undifferentiated unity, embracing the perfect identity of subject and object, of singleness and plurality, of the One and the Many. Thus I found myself (if indeed the words 'I' and 'myself' have any meaning in such a context) at once the audience, the actors and the play! Logically, the One can give birth to the Many and the Many can merge into the One or be fundamentally but not apparently identical with it; they cannot be *in all respects* one and many simultaneously. But now logic was transcended. I beheld (and myself was) a whirling mass of brilliant colors and forms which, being several colors and several forms, were different from one another—and yet altogether the *same* at the very moment of being different! I doubt if this statement can be made to seem meaningful at the ordinary level of consciousness. No wonder the mystics of all faiths teach that understanding comes only when logic and intellect are transcended! In any case, this truth, even if at an ordinary level of consciousness it cannot be *understood*, can, in a higher state of consciousness, be directly *experienced* as self-evident. Logic also boggles at trying to explain how I could at once *perceive* and yet *be* those colors and those forms, how the *seer*, the *seeing* and the *seen*, the *feeler*, the *feeling* and the *felt* could all be one; but, to me, all this was so clearly self-evident as to suggest the words 'childishly simple!' ... there was awareness of unutterable bliss, coupled with the conviction that this was the *only* real and eternal state of being, all others (including our entire experience in the day-to-day world) being no more than passing dreams. This bliss, I am convinced, awaits all beings when the last vestiges of their selfhood have been destroyed—or, as in this case, temporarily discarded.

(Blofeld 1966, pp. 28–30).

This is the type of experience that seems to be crucially involved in psychedelics' mechanism of therapeutic and transformative action. It is also the kind of experience that led intellectuals such as Aldous Huxley, Alan Watts, and Timothy Leary to connect psychedelics with the consciousness alterations aimed at by the meditative disciplines of Hinduism and Buddhism (Huxley 1954, Watts 1962, Leary et al. 1964). Detailed descriptions of psychedelic-induced mystical experiences are available elsewhere (e.g., Masters and Houston 1966, Shanon 2002, Estevez 2013) and I will discuss their phenomenology more in Chapter 3. For now, suffice it to say that, despite considerable debate, these drug-induced experiences seem to be very similar to prototypical mystical experiences that occur spontaneously or are occasioned by non-pharmacological methods. Not only are blind raters unable to distinguish reports of psychedelic and non-psychedelic mystical experiences (Smith 1964) but the former are experienced by those who undergo them as *more* intensely mystical and beneficially transformative than the latter (Yaden et al. 2017). It is the apparent centrality of such experiences to psychedelic therapy that invites the worry I am exploring in this book.

2.5 The Comforting Delusion Objection

There is no denying that many psychedelic experiences, especially overwhelming and transformative ones, involve subjectively compelling experiences of an apparently supernatural or transcendent dimension to existence. It is not for nothing that many traditional cultures view ritual psychedelic use as a method for communicating with deities or the spirit world (Metzner 1998, Shanon 2002). And such beliefs are not confined to participants in traditional rituals. In the clinical study of psilocybin for OCD mentioned earlier, nearly half of the subjects reported experiences such as 'exploration of other planets, visiting past-life reincarnations, and interacting with deities' (Moreno et al. 2006, p. 1739). It is unclear whether these subjects believed that their experiences were veridical or not. But some subjects do adopt metaphysical beliefs on the basis of psychedelic experiences. Consider the following report from a patient treated in the 1970s with the classic psychedelic dipropyltryptamine (DPT):

I seemed to transcend time and space and I lost complete identification with the 'real' world. The experience seemed to me to be as if I was going from this world back to another world before this life had occurred ... I felt that I had been in that mass of energy at one time before. When I was there everything seemed to make sense ... It was a very beautiful world, one in which love was very much a part ... The basic theme that I perceived ... was that life continues to go on and we are basically some form of essence from a Supreme Being and we are part of that Supreme Being ... The results of the use of the hallucinogenic drug on my life have been very profound. I seem to have a much deeper understanding of life and death. I don't have the fear of death that I once had ... I have found that everyday living