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Naturalistic Entheogenics

Précis of *Philosophy of Psychedelics*

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Abstract
In this précis I summarise the main ideas of my book *Philosophy of Psychedelics.* The book discusses philosophical issues arising from the therapeutic use of "classic" (serotonergic) psychedelic drugs such as psilocybin and LSD. The book is organised around what I call the Comforting Delusion Objection to psychedelic therapy: the concern that this novel and promising treatment relies essentially on the induction of non-naturalistic metaphysical beliefs, rendering it epistemically (and perhaps, therefore, ethically) objectionable. I begin the précis by summarizing material from chapters two and three of the book, which review evidence for the therapeutic efficacy of psychedelics, and the facts about their clinical use that prompt the Comforting Delusion Objection. I then summarize materials from chapters four and five of the book, which argue that psychedelic therapy works neither by experience-independent processes of neuroplasticity, nor by inducing non-naturalistic metaphysical ideations, but by altering mental representations of the self. Next, I summarise the specific, speculative account of how this might work that is developed in chapters six and seven of the book. This account is based on the predictive processing theory of brain function and the self-binding theory of self-representation. Chapters eight and nine of the book argue, on the basis of this account, that psychedelic therapy can have significant epistemic and spiritual benefits that are compatible with a naturalistic worldview. I summarize this material, and then, finally, the overall conclusions about psychedelic therapy drawn in the tenth and final chapter of the book.

Keywords
Ayahuasca · DMT · Epistemology · LSD · Mescaline · Philosophy · Predictive processing · Psilocybin · Psychedelics · Self-representation · Spirituality

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1 Introduction

In this précis I summarise the main ideas of my book *Philosophy of Psychedelics* (Letheby, 2021). The book discusses philosophical issues arising from the therapeutic use of "classic" (serotonergic) psychedelic drugs such as psilocybin and LSD. The book is organised around what I call the *Comforting Delusion Objection* to psychedelic therapy: the concern that this novel and promising treatment relies essentially on the induction of non-naturalistic metaphysical beliefs, rendering it epistemically (and perhaps, therefore, ethically) objectionable. In the book I develop a response to the Objection which involves naturalizing the *Entheogenic Conception* of psychedelics: showing that a traditional conception of psychedelics as agents of insight and spirituality is both consistent with a naturalistic worldview and plausible in light of current scientific knowledge.

Besides the introduction and conclusion, the book contains eight substantive chapters, which fall naturally into pairs. In chapters two and three I review the history and phenomenology of psychedelic therapy, and evidence for its safety and efficacy. These chapters set up the problem to which the rest of the book responds, citing evidence that psychedelics' therapeutic benefits are mediated by transcendent "mystical-type" experiences, and arguing that there is a need for a naturalistic account of psychedelic therapy that responds to this fact. I summarise this material in section 2 of the present précis. In chapters four and five of the book, I consider various theories of the mechanisms of psychedelic therapy. I argue for the following simple hypothesis: psychedelic therapy works mainly by disrupting and revising mental representations of the self. This is a genuinely psychological mechanism which involves the psychedelic experience itself—it is not a mere matter of experience-independent neurobiological changes—but it does not depend on non-naturalistic metaphysical ideations. I summarise this material in section 3 of the précis.

In chapters six and seven of the book, I outline a theory of how psychedelics might cause therapeutic benefits by disrupting self-representation. This is the *predictive self-binding* account of psychedelic ego dissolution developed in collaboration with Philip Gerrans (Letheby & Gerrans, 2017). I summarise this material in section 4 of the précis. In chapters eight and nine of the book, I argue that, if the predictive self-binding account is on the right track, then it is plausible to regard psychedelic as reliable agents of epistemic and spiritual benefit; in other words, to embrace a naturalized Entheogenic Conception of these substances. The thesis of chapter eight is that the epistemic profile of psychedelic therapy, given naturalism, is fairly good, involving less risk and more benefit than one might suppose. The thesis of chapter nine is that transformative psychedelic experiences illustrate the core features of a viable *naturalistic spirituality*. I summarise this material in section 5 of the précis. Finally, in section 6 of the précis, I recapitulate some material from the conclusion of the book.

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2 Setting up the problem

Chapter two of the book is entitled 'On the need for a natural philosophy of psychedelics'. I begin this chapter by reviewing the history of psychedelics in science and psychiatry. The book focuses solely on the class of psychoactive substances known as "classic psychedelics" or "serotonergic hallucinogens", the most famous examples of which are LSD, psilocybin, mescaline, and DMT. These substances, and others of their class, are believed to share a common neuropharmacological mechanism: they all alter consciousness primarily by agonism of the serotonin-2a (5-HT2A) receptor (Carhart-Harris, 2019). This distinguishes them from other drugs that have sometimes been called "psychedelic" on phenomenological grounds, such as the dissociative anaesthetic ketamine and the "entactogen" MDMA. In the book and in this précis I reserve the term "psychedelic" for the classic, serotonergic psychedelics that are the exclusive target of my analysis.

I begin chapter two by reviewing the history of psychedelics in science and psychiatry. Psychedelics have long histories of ceremonial and medicinal use in various societies. They came to widespread scientific attention throughout the 1950s and 60s after Albert Hoffman's 1943 discovery of the psychoactive effects of LSD. Throughout the 50s and 60s these drugs were used in many different ways, including as research tools for studying psychiatric pathologies and religious experiences, and as therapeutic agents in psychiatry. The latter, somewhat surprising, use was prompted by some psychedelic subjects' reports of transformative religious or mystical experiences leading to positive behavioural change. Many clinicians and researchers believed that psychedelics had considerable therapeutic potential in various conditions, including addiction, mood disorders, and existential distress accompanying terminal illness. However, much early research suffered from methodological shortcomings. The heyday of psychedelics in science and psychiatry was cut short by the prohibition of psychedelics and the declaration of the War on Drugs in the late 1960s. After this, very little human research with psychedelics took place until the 1990s (Sessa, 2012).

Since the 1990s there has been a "renaissance" of psychedelic research in human subjects (Sessa, 2012) using modern research methods and following strict safety guidelines. In the book I summarise certain core findings from this wave of research. First and foremost is the finding that psychedelics can be administered safely in moderate-to-high, profoundly consciousness-altering doses, to suitably screened and prepared volunteers under carefully controlled conditions. No evidence of serious, lasting physical or psychological harm has been reported in recent clinical trials. A second important finding is that psychedelics may indeed have therapeutic potential. Several studies—many, admittedly, small and preliminary—have reported lasting psychological benefits resulting from one to three administrations of a psychedelic. These benefits encompass reductions in symptoms of anxiety, depression, and addiction, and positive personality change and increases in self-reported well-being in mentally healthy volunteers (Aday et

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al., 2020). These findings cannot yet be regarded as conclusive. However, there is enough evidence to take seriously the hypothesis that one to three administrations of a psychedelic can, under conducive circumstances, lead reliably to lasting psychological benefits. For the purposes of the book, I assume that this hypothesis is correct and investigate its philosophical consequences.

A third finding provides an intriguing clue about the mechanisms underlying these remarkable effects. Psychedelics' effects on consciousness are highly variable, being affected not just by the dose but by the "set and setting": the psychological state of the person taking the drug, and the environment in which they take it. Under conducive conditions, as many as half to two-thirds of volunteers who receive a relatively high dose seem to have a specific type of experience: a *mystical-type experience*. This is defined by standard psychometric questionnaires as involving a sense of unity and transcendence of individual selfhood, as well as noetic feelings of directly encountering ultimate reality, a transcendence of time and space, a sense of sacredness, ineffability, and paradoxicality, and a deeply felt positive mood. Across many studies involving different substances, doses, and populations, a pattern has emerged: the lasting psychological benefits of psychedelics seem to be mediated by the occurrence of this specific type of experience. Subjects who have a mystical-type experience during the drug action tend to be the ones who experience lasting benefits, and often their psychometric ratings of the degree of mystical-type experience correlate with the degree of benefits that they experience.

In sum, psychedelics seem safely and reliably to induce lasting psychological benefits by inducing transformative mystical-type experiences (James et al., 2020). It is these findings that give rise to the Comforting Delusion Objection. The worry underlying the Objection arises most clearly when we consider the best-studied therapeutic use of psychedelics: the alleviation of anxiety, depression, and existential distress accompanying terminal illness. Several studies, including double-blind, placebo-controlled trials, have found that psychedelics can occasion lasting reductions in distress in patients with a terminal diagnosis. Consistent with the pattern described above, these reductions seem to be mediated by the occurrence of a mystical-type experience during the drug action (Griffiths et al., 2016; Ross et al., 2016). Some patients speak of (re-) discovering a connection to a spiritual principle, or feeling strongly that consciousness is not intrinsically tied to the body and continues in some form after physical death. Reflecting on these findings, Michael Pollan (2015) wondered: "Is psychedelic therapy simply foisting a comforting delusion on the sick and dying?"

This is the basic concern that prompts the arguments in my book. I believe the intuitive concern that Pollan is expressing can be articulated as a formal argument against the therapeutic use of psychedelics (not that I think Pollan would ultimately endorse this argument):

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(P1) Naturalism is true.
(P2) If the epistemic status of psychedelic therapy is poor, then we should hesitate to recommend or prescribe it.
(P3) If naturalism is true, then the epistemic status of psychedelic therapy is poor.
(C) Therefore, we should hesitate to recommend or prescribe psychedelic therapy.

In this argument I use "naturalism" to refer to a metaphysical, rather than a methodological, doctrine: the conjunction of a generic physicalism or materialism about the mind with a denial of the existence of "paradigmatically non-natural *entities* such as God, angels or Cartesian souls or non-natural *properties*" (Horst, 2009, p. 225, emphasis original).

There are three popular responses to the concerns embodied in this argument. One is to deny premise 1, asserting that there really *is* a cosmic consciousness or divine Ground of Being that subjects encounter during the drug effects. One exponent of this view is the late Huston Smith, who claimed "the basic message of the entheogens[1] [is] that there is another Reality that puts this one in the shade" (Smith, 2003, p. 133). A second response is to deny premise 2, arguing that the epistemic profile of psychedelic therapy is relatively unimportant compared to its capacity to improve psychological well-being (Flanagan & Graham, 2017). A third response is to accept the conclusion and hold that we should, indeed, hesitate to recommend or prescribe psychedelic therapy due to its poor epistemic profile (Lavazza, 2017).

In the book I take the relatively untrodden path of arguing against premise 3. Personally, I think that premises 1 and 2 of the argument are quite plausible. My concern is to show that the Comforting Delusion Objection fails even if these two assumptions are granted—the worst-case scenario for a defender of psychedelic therapy. My strategy is to assume the truth of metaphysical naturalism and, within that constraint, show that the epistemic status of psychedelic therapy is still reasonably good: even given naturalistic assumptions, its epistemic risks are smaller, and its epistemic benefits larger, than they initially appear. In doing this I also try to show that the Entheogenic Conception of psychedelics as agents of insight and spirituality can be naturalized.

Although the sense of "naturalism" in the argument above is metaphysical, methodological naturalism also plays a role in my project. I believe that philosophy is, or ought to be, continuous with the natural sciences, and that philosophical conclusions, when possible, ought to be based upon and integrated with relevant scientific findings. As such, I propose to develop a *natural philosophy* of psychedelics: a trans-disciplinary synthesis of empirical findings with theoretical ideas and conceptual considerations that can answer distinctively philosophical

[1] Another name for psychedelics; sometimes applied to any psychoactive substance when used for religious or spiritual purposes, but often treated as synonymous with "psychedelic" as I use the latter term.

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questions about psychedelics. In the spirit of such a natural philosophy, I begin with a close examination of the phenomenon under investigation: the therapeutic and transformative use of psychedelics.

Chapter three of the book is entitled 'The phenomenology of psychedelic therapy'. In it I provide a selective overview of experiences commonly reported by people who take psychedelics in controlled and structured settings such as clinical trials and religious rituals. In the first half of the chapter I review a variety of typical changes to perception and the sense of self. Psychedelic subjects often report a distinctive set of changes to perceptual experience, especially in the visual modality. These changes can involve intensification or alteration of endogenous percepts, or novel (pseudo-) hallucinatory percepts with no apparent basis in the physical environment. The intensity of these changes can range all the way from a slight brightening and sharpening of visual experience to total immersion in other worlds, ancient civilizations, or alien realms. Intensification, alteration, and novelty also occur with varying frequency in other sensory modalities. A wide variety of changes to bodily experience is reported, including alterations in the experience of body ownership, changes to internal sensations, and distortions of body image. The experiences of space and time characteristically change, with time dilation a commonly reported effect. Finally, a variety of changes to the phenomenal sense of self can occur, ranging from a reduction in self-referential thought to an apparently total obliteration of all forms of self-awareness (Pollan, 2018).

In the second half of the chapter I review qualitative evidence concerning patients' impressions of the therapeutic process. Patients who receive psychedelics in clinical trials sometimes, but not always, describe non-naturalistic metaphysical epiphanies concerning the existence of a cosmic consciousness, spirit world, or divine Reality. More consistently emphasised are experiences of psychological insight, beneficial changes to the sense of self or identity, intense and cathartic emotional experiences, and feelings of connectedness and acceptance (Breeksema et al., 2020). This evidence provides initial clues that psychedelics' therapeutic effects may not be due entirely to the induction of non-naturalistic metaphysical ideations.

3 Narrowing down the mechanism

Chapter four of the book is entitled 'The mechanisms of psychedelic therapy'. In this chapter I consider two diametrically opposed hypotheses about psychedelics' therapeutic mechanisms. The first of these, the Molecular Neuroplasticity Theory, ascribes the lasting benefits to psychedelics' experience-independent effects on the molecular mechanisms of neuroplasticity. On this view, the remarkable changes

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to consciousness surveyed in chapter three are therapeutically epiphenomenal—a mere cluster of "psychotomimetic side effects" (Yang et al., 2015) [2].

The second hypothesis ascribes lasting benefits to the psychedelic experience itself—indeed, to a specific component of it: the non-naturalistic metaphysical ideations that it sometimes involves. On this view, psychedelics' therapeutic benefits stem directly from their ability to induce transcendent visions of another Reality: a spirit world, divine Ground of Being, or Joyous Cosmology. This hypothesis comes in two versions. The first is the Metaphysical Belief Theory, according to which these non-naturalistic ideations only cause psychological benefits when subjects believe that they are veridical. The second version is the Metaphysical Alief Theory, according to which the transcendent vision of a Joyous Cosmology, and subsequent recollection thereof, causes psychological benefits irrespective of whether it is believed.

I begin the chapter by considering the Molecular Neuroplasticity Theory. According to this theory, psychedelics' agonist action at 5-HT2A receptors has many distinct effects. One cluster of effects is the changes to cognitive processing and phenomenal consciousness that constitute the psychedelic experience itself; another, distinct cluster of effects includes enhancements to the molecular mechanisms of neuroplasticity. Ly et al. (2018) have reported that multiple serotonergic psychedelics promote the growth of dendritic spines and increase the density of dendritic arbours in cultured mammalian neurons. This suggests that psychedelics do, indeed, increase plasticity at the level of individual neurons, independently of the many specific and variable changes to consciousness that they can induce in dependence on set and setting.

While it seems likely that these low-level, experience-invariant neuroplastic effects contribute to psychedelics' therapeutic potential, I argue that they are not the central mechanism. My grounds are simple: across multiple studies with different populations and different psychiatric conditions, the strongest predictor of lasting therapeutic benefits is not the dosage of the drug, but the occurrence of a mystical-type experience. This seems hard to account for on a pure Molecular Neuroplasticity Theory. If the core therapeutic mechanisms were purely biological, experience-independent, and experience-invariant, then why should the most consistent predictor of good outcomes be a somewhat dose-independent variable quantifying a specific cluster of "psychotomimetic side-effects"? On the other hand, this correlation can readily be explained by the contrary hypothesis: that psychedelics durably reduce psychiatric symptoms mainly by inducing specific clusters of *beneficial experiential effects*—even if non-experiential effects contribute as well. I conclude that the bulk of the therapeutic benefits are caused by some aspect(s) of the psychedelic experience itself.

According to the Metaphysical Belief and Alief Theories, the relevant aspect is the non-naturalistic metaphysical content of the mystical type experience: the

[2] Yang et al. discuss ketamine, not classic psychedelics; I am citing them simply as one source of this evocative phrase.

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transcendent vision of a cosmic consciousness or Joyous Cosmology (and, perhaps, subsequent belief in its veracity). In my view, both theories struggle to account for the qualitative evidence surveyed in chapter three. This evidence shows that some successfully treated patients do not undergo any non-naturalistic metaphysical ideations. This fact undermines the Metaphysical Belief and Alief Theories, but also creates a puzzle: given the correlation between mystical-type experiences and lasting benefits, how can successful treatment occur without non-naturalistic metaphysical ideations?

The answer is simple: the psychometric construct of a mystical-type experience, as operationalized in recent psychedelic research, is not specific to experiences with non-naturalistic metaphysical contents. There are experiences which satisfy all psychometric criteria for a mystical-type experience, but do not involve any non-naturalistic ideations. The psychometric instruments cast a broad net. This fact is exemplified clearly by Michael Pollan's description of a psilocybin-induced experience that satisfied the psychometric criteria for a mystical-type experience, but did not tempt this avowed naturalist to believe in a cosmic consciousness or anything non-naturalistic (Pollan, 2018, p. 284). All of this suggests to me that there must be some experiential factor, *other than non-naturalistic ideations,* that (a) correlates reasonably well with the psychometric construct of a mystical-type experience, and (b) is responsible for the bulk of the therapeutic benefits.

The conclusion of chapter four, then, is that psychedelics cause lasting benefits via some aspect of the psychedelic experience that correlates with the construct of a mystical-type experience, but is independent of non-naturalistic metaphysical ideations. In chapter five I argue that the relevant factor is changes to self-representation (i.e. to mental representations of the self). This is an independently plausible idea. Changes to the sense of self[3] have long been singled out as one of the most consistent, distinctive, and theoretically significant features of the psychedelic state. Moreover, the sense of *unity*, whose corollary is a profound diminution of the ordinary sense of self, is widely regarded as the cardinal feature of the mystical-type experience, and is common to such experiences both with and without non-naturalistic contents. Finally, the sorts of pathologies for which psychedelic therapy shows promise—depression, anxiety, and addiction—have all been linked to changes in self-representation (Sui & Gu, 2017).

Besides the considerations just mentioned, three lines of evidence from recent psychedelic research support the idea that psychedelic therapy works mainly by changing self-representation. The first consists in a set of studies linking good clinical outcomes to acute experiences of *psychological insight.* The second consists in a set of studies showing that psychedelics can increase *mindfulness-related capacities.* And the third consists in a set of studies linking good clinical outcomes to modulation of the *Default Mode and Salience networks.* I describe these three lines of evidence, and how each of them implicates changes to the sense of self, in turn.

[3]Here I use the terms 'self-representation' and 'sense of self' more or less interchangeably, even though, strictly speaking, the former is a cognitive and the latter a phenomenological term.

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On the first count, although the most well-established predictor of lasting benefits is the mystical-type experience, a small set of studies has linked these benefits to experiences of *psychological insight*. One online survey study introduced a new measure called the "Psychological Insight Questionnaire" and found that this measure was a stronger predictor of post-psychedelic reductions in depression and anxiety than the oft-used Mystical Experience Questionnaire (Davis et al., 2020). Importantly, nearly every item on the PIQ describes some kind of change to narrative or autobiographical forms of self-awareness. The four items most commonly endorsed by participants in the survey—each endorsed by more than 95% of participants—were (Davis et al., 2020, p. 41):

- Discovered how aspects of my life are affecting my well-being
- Gained a deeper understanding of previously held beliefs and/or values
- Awareness of information that helped me understand my life
- Discovered ways to see my problems with more clarity

Clearly the kind of "psychological insight" quantified by this questionnaire has a lot to do with gaining, or seeming to gain, new information or awareness pertaining to aspects of oneself and one's life. In other words, this psychological insight experience centrally involves changes to the narrative self.

On the second count, psychometric measures have been developed and validated to quantify the effects of mindfulness meditation training. One capacity quantified by these measures is *decentering*—the ability to disidentify with one's thoughts and feelings, viewing them with a certain measure of detachment and objectivity, rather than identifying strongly with them and accepting their contents uncritically. Other measures quantify the capacities to be aware of mental events, such as thoughts, feelings, and perceptions, as they happen, and to adopt a non-judgemental or non-reactive stance towards them. Several studies have found that a single psychedelic experience, without any accompanying mindfulness training, can increase these mindfulness-related capacities for anywhere from one week to three months (Heuschkel & Kuypers, 2020; Madsen et al., 2020). In some cases, these increases have been found to correlate with therapeutic effects, such as reductions in psychiatric symptoms (González et al., 2020; Mian et al., 2020). And, importantly, these mindfulness-related capacities all involve changes to the sense of self—to the phenomenal experience of the subject, its boundaries, and its relations to its own mental and physical states.

On the third and final count, neuroimaging findings implicate changes to self-representation in psychedelics' therapeutic effects. Neuroimaging of the psychedelic state in general has produced somewhat heterogeneous results, but when we focus on studies probing neural correlates of lasting therapeutic and transformative effects, matters become a little clearer. Every relevant study that I know of has found changes to one, or both, of two key neural systems: the Default

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Mode and Salience networks. The Default Mode Network (DMN) is so-called because it tends to be highly active in conditions of task-free, wakeful rest. Its major hubs are densely connected, high-level association areas in the brain's cortical midline whose activity typically quietens during externally-oriented or impersonal cognitive tasks. High levels of DMN activity have been observed during introspective, social, and self-referential tasks, leading to the association of this network with social cognition, mental time travel, and narrative or autobiographical forms of self-representation (Davey et al., 2016). Meanwhile, the Salience Network (SN) is named for its putative role in attributing salience (i.e. importance or behavioural relevance) to stimuli across multiple modalities and flagging these stimuli for further processing (Seeley, 2019). The SN is centred on cortical midline regions implicated in a multitude of functions, including emotion, interoception (sensing the internal condition of the body), nociception (pain perception), and error detection. In contrast to the DMN, this network has been linked to more basic, pre-reflective, "minimal" or "embodied" forms of self-awareness. The consistent connection between clinical benefits and modulation of the DMN and SN is readily explained by the hypothesis that psychedelic therapy works by disintegrating and revising mental representations of the self harboured by these systems.

Having reviewed psychological and neuroscientific evidence concerning the mechanisms of psychedelic therapy, I conclude chapter five by outlining a metatheoretical framework for integrating these different kinds of evidence. This is the framework of *neurocognitive psychiatry* (Gerrans, 2014) which aims at generating integrative, multi-level explanations of psychiatric disorder and treatment based on the computational theory of mind. The central idea is that the cognitive/computational or information processing level of analysis provides a necessary explanatory bridge between neurobiology and phenomenology in the study of abnormal mental states. We can explain changes to aspects of conscious experience (such as the narrative sense of self) in terms of changes to the behaviour of neural structures (such as hubs of the DMN) by theorizing the computational functions that are normally performed by those structures and how the performance of those functions is altered under the abnormal conditions in question. This means that the task of chapters 6 and 7 is to say something plausible about the computational functions of the DMN and SN, how the performance of these functions is altered by psychedelics' pharmacological action, and how this alteration leads to the remarkable experiences reported by subjects and the symptom reductions quantified by diagnostic questionnaires.

4 Unbinding the predictive self

Chapter six of the book is entitled 'Resetting the brain'. I begin this chapter by considering yet another theory of psychedelic therapy: the Reset Theory advanced by Carhart-Harris et al. (2017) and Nichols et al. (2017). This theory starts from

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the observation that the core nodes of the DMN and SN are densely connected "hub" regions which (a) are thought to facilitate communication and functional integration between multiple systems throughout the brain and (b) exhibit abnormal patterns of connectivity in pathological conditions. This observation prompts the following simple idea: Perhaps psychedelics bring about therapeutic benefits by dismantling rigid and dysfunctional connectivity patterns in these pivotal connector hubs. Then, "as the effect of the drug wears off, [large scale] networks can reconnect in 'healthy' ways, in the absence of the pathological driving force(s) that originally led to hub failure and disease" (Nichols et al., 2017, p. 215).

My verdict is that the Reset Theory, as it stands, is plausible but incomplete. On its own it does not illuminate the links between dysfunctional patterns of connectivity and psychiatric symptoms, between "hub dismantling" and mystical-type experiences, and between "healthy" network reconnection and symptom reduction. To cross this explanatory gulf, as I suggested at the end of chapter 5, we need *neurocognitive theories* that connect changes in the activity of neural structures to changes in the contents of conscious experience via changes to the performance of specific cognitive or information-processing functions by those neural structures.

To that end, I introduce the influential predictive processing (PP) theory of brain function. PP depicts the brain as organ for prediction error minimisation, which builds models of the world and uses these to predict sensory inputs. Predictively successful models are reinforced, while unpredicted inputs generate an error signal that must be cancelled by updating the model or acting in the world. Importantly, the "generative models" harboured by the predictive brain have a hierarchical structure, with lower levels modelling more concrete features of the world over smaller spatiotemporal scales, and higher levels modelling increasingly large, durable, and abstract features (Hohwy, 2013). The highest levels encode the brain's most fundamental assumptions concerning self, space, time, causality, and so forth: the basic parameters of our phenomenal worlds.

On one interpretation of PP, conscious experience is a kind of "controlled hallucination" generated by this modelling process. All the furniture of our experiential worlds—the tables, chairs, and people that we encounter from day to day—are the products of a thoroughly internal process of world-simulation or virtual-reality modelling. However, these mental models exhibit a feature known as *phenomenal transparency*: we do not experience them as models, but simply as the world itself (Metzinger, 2014). It is as though we "look through" the models to their referents. As Antti Revonsuo (2006) puts it, our brains give us a thoroughly realistic and convincing "out-of-brain experience". Most of the time we cannot easily regard the constituents of our experiential worlds as virtual entities, or as products of a modelling process. Phenomenologically speaking, they simply appear as reality, and we automatically regard them as such: transparency in action. Occasionally, however, this transparency is undermined, such as in lucid dreams or stubborn perceptual illusions, and our mental representations move from transparency to *phenomenal opacity*: we can, unusually, experience them as representations—at least to an extent. In my view, the controlled hallucination view of consciousness

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and the concepts of phenomenal transparency and opacity are indispensable for a naturalistic understanding of psychedelic experience and its transformative effects.

Carhart-Harris and Friston (2019) have proposed a PP-based explanation of psychedelic experience known as the REBUS model ("RElaxed Beliefs Under pSychedelics"). According to this model, psychedelics alter consciousness by disrupting the neural substrates of the highest levels of the brain's predictive models. The cognitive effect is to diminish the brain's confidence in its most abstract and fundamental beliefs: to "relax" these beliefs by "decreasing their precision weighting", in the jargon. Carhart-Harris and Friston argue that this simple model can explain the most distinctive and important effects of psychedelics—especially at moderate-to-high doses.

When it comes to therapeutic effects, the REBUS model suggests that the pathologies for which psychedelics show promise are characterised by deleterious high-level beliefs, and that psychedelics, by temporarily relaxing these beliefs, afford an opportunity to revise them for the better. What kinds of beliefs are at issue? The evidence reviewed in chapter 5 suggests that self-related beliefs are the most plausible candidate. So, in chapter 7 I pursue this suggestion in more detail. The basic idea is that (a) deleterious self-related beliefs become rigidly entrenched in anxiety, depression, and addiction, and (b) psychedelics durably alleviate symptoms of these pathologies by temporarily relaxing these beliefs and thereby facilitating their beneficial revision. This is consistent with an account of psychedelics' effects on self-representation that I developed in earlier collaborative work with Philip Gerrans (Letheby & Gerrans, 2017).

Chapter seven of the book is entitled 'Unbinding the self'. In it I outline the predictive self-binding theory of psychedelic ego dissolution introduced by Letheby and Gerrans (2017), and show how this theory can explain important facts about psychedelic therapy. The predictive self-binding theory and the REBUS model share a number of key ideas. Both accounts attribute core phenomenological effects of psychedelics to the disruption of predictive models implemented in high-level cortical networks, and both accounts hold that this disruption creates an opportunity to revise these models in beneficial ways. However, the predictive self-binding theory has three distinctive, additional emphases. One is that predictive models of the self play a cognitive *binding* function, integrating multimodal information by attributing it to a persistent underlying entity. Another is that the predictive self-model has a *hierarchical* structure, with lower levels implemented in cortical nodes of the SN and higher levels in nodes of the DMN. A third is that the predictive self-model functions as a *centre of representational gravity*, attributing salience and allocating attention in accordance with the represented goals and interests of the self. I unpack these three emphases in turn, before putting them to work in the explanation of psychedelic therapy.

Letheby and Gerrans' theory combines ideas from PP with the concept of *self-binding* introduced by Sui and Humphreys (2015). In a series of studies, these researchers documented an "integrative advantage" for self-representation, find-

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ing repeatedly that self-relevant information was integrated more rapidly and efficiently than self-irrelevant information, and was more difficult or costly to disintegrate later. In light of this, they posited that a key function of self-representation is to serve as an "integrative hub" for information processing, ensuring that information relevant to the self is processed efficiently across multiple modalities and tasks, by relating it to a single, core self-representation. They link this integrative function to the idea of cognitive binding—the integration of representational parts into representational wholes—resulting in the concept of self-binding. Letheby and Gerrans suggest that this concept can fruitfully be combined with the PP account of cognitive binding. According to PP, binding is a matter of top-down probabilistic inference (Hohwy, 2013). Properties are bound or integrated by models that attribute them to a single, underlying, persisting object, because such models predictively out-perform their rivals. If we apply this conception of binding to Sui and Humphreys' theory of self-representation, we arrive at the idea of a representation or model that binds, or integrates, stimuli across multiple modalities by attributing these stimuli to a single, underlying, persistent entity: the self. Thus, Letheby and Gerrans argue that predictive models achieve functionally important integration of self-related mental representations by a binding process that generates a phenomenology of Cartesian selfhood: the experience as of being a unitary, indivisible subject of experience that thinks thoughts, feels feelings, authors actions, and persists through time despite changes in its properties.

This basic idea of predictive self-binding promises to explain the psychedelic-induced experience of ego dissolution. If predictive self-models integrate self-related stimuli by representing the existence of a bounded, persistent, and unified entity, then it is no wonder that disruption to these models should lead to the phenomenal experience as of disintegrating, dying, or merging with the environment. But according to Letheby and Gerrans, further light can be shed on psychedelic phenomena if we posit that the predictive self-model has a hierarchical structure that maps onto distinctive neural substrates. Neuroimaging studies of psychedelic ego dissolution have not found consistent results: some studies link this experience to modulation of the DMN, and others to modulation of the SN. Qualitative reports also suggest that the ostensibly unitary category of "ego dissolution" is heterogeneous, encompassing such diverse phenomena as the blurring or dissolution of bodily boundaries, the loss of the sense of agency over thoughts, and perhaps even the total abolition of all forms of self-consciousness. One possible resolution of these issues is as follows: the predictive self-model, like the brain's predictive models in general, has a hierarchical structure. Lower levels model more concrete features, and higher levels more abstract. Specifically, cortical nodes of the SN keep track of more immediate embodied and affective dimensions of selfhood, giving rise to the experience of the "minimal self", while nodes of the DMN keep track of temporally extended, conceptual, and autobiographical dimensions, giving rise to the experience of the "narrative self". Psychedelics disrupt these different networks to different extents in different conditions—depending, no doubt, on set and setting—and thereby induce qualitatively distinct varieties of ego dissolution experience with distinct neural correlates.

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The third and final emphasis of the predictive self-binding account is on the function of the self-model as a "centre of representational gravity". Daniel Dennett (1992) famously described the self as a "centre of narrative gravity"; however, Letheby and Gerrans emphasise that the binding function of the predictive self-model pervades all levels of cognitive processing, not just that of explicit narrative reflection. At the perceptual level, our phenomenal worlds are egocentrically structured in relation to the body; at higher levels, they are affectively, attentionally, and narratively structured in relation to the subject's (hypothesized) goals, interests, past, and future. The hierarchical predictive self-model implemented by the DMN and SN does not just parse the world into "me" and "not-me", into "self-relevant" and "self-irrelevant", but also ensures that stimuli attract precious attentional and motivational resources in accordance with their putative self-relevance. The result is a phenomenal world thoroughly structured around, and filtered through, the perspective of a hypothesized subject underlying and persisting through the flow of experience.

As mentioned above, this account can readily explain not only the experience of ego dissolution, but also the variability of its neural correlates and phenomenological details. However, the account also promises to explain more therapeutically relevant experiences, such as the forms of psychological insight and increases in mindfulness-related capacities canvassed in chapter five. On the first count, the story is fairly straightforward: by weakening the brain's confidence in its fundamental hypotheses about who "I" am, psychedelics induce different forms of self-modelling. Under the influence, patients can gain new perspectives on their lives, see things differently, and access information usually filtered out or ignored. They can thereby discover new, healthier self-conceptions. This sort of process is described clearly by patients in clinical trials:

> Lisa was a Latin-American female in her 50s with a family history of alcoholism, physical and emotional abuse, abandonment, and neglect. Her problematic drinking began around the age of thirty and resulted in social isolation, hangovers, strong feelings of guilt and shame, and severe self-critical thoughts. [...] In the second [psilocybin] session, Lisa [...] experienced an amplification of thought moving her into a confused and chaotic state. Underneath the chaotic thinking, she identified a deep well of overwhelming sadness. She was able to eventually surrender control over her thoughts and entered into a state of peacefulness, until her thoughts quieted completely. She heard her own inner voice rupturing the quiet, whispering into her ear: "I'm going to tell you a secret. It's the worst-kept secret in the universe because everyone knows it but you. You are a perfect creation of the universe." At that moment she felt that everything in existence was unified and was made of love, though a part of her remained reluctant to fully believe this to be true. The voice repeatedly presented her with this reality, asking "do you believe this?" over and over until each one

> of her objections had been addressed and dismissed. She examined herself and found that she finally did accept this to be true, which propelled her into a state of profound self-acceptance and wellbeing. She later said, "All there is is love, this is all that you are, this is all that matters."
>
> Following her [psilocybin] session, Lisa reported that her self-critical thoughts had dissolved and that alcohol had lost almost all of its appeal. She said that the [psilocybin] sessions had illuminated how she had been unkind to her body and had been harming herself with alcohol. She noted her ability to manage stress and found that she was making time to care for herself through socialization, relaxation, and a resumed meditation practice. She reported improved concentration, a lack of negative self-talk, decreased anxiety, and a spacious quality of mind. [...] At 54 weeks, Lisa reported a persisting reduction in alcohol consumption and alleviated anxiety.
> (Bogenschutz et al., 2018, p. 5)

When it comes to explaining the increases in mindfulness-related capacities, the concept of phenomenal opacity introduced in chapter 6 becomes important. As we have seen, predictive models in general exhibit the property of phenomenal transparency: they are not experienced as models or representations, but simply as reality itself. However, when the contents of self-related mental models, such as thoughts and feelings, are "unbound" from the self-model, they tend to move along the continuum from transparency to opacity. This connects with an important observation from the phenomenology of mindfulness meditation: to see thoughts and feelings as mere thoughts and feelings is *ipso facto* to disidentify with them (Albahari 2006, pp. 63-64). Unbinding and phenomenal opacity go hand-in-hand: when specific mental contents are no longer attributed to the subject of experience, they become (phenomenologically) an object of experience—a transient and fallible appearance in consciousness. By reducing the brain's confidence in its hypotheses about who, what, and where "I" am, the boundaries of the phenomenal self can be shifted to exclude many of the thoughts, feelings, and perspectives with which we usually identify. These mental contents can then enter an open, spacious attention in the phenomenal guise of *mere* thoughts and feelings; no longer identified with so strongly, they evoke less defensiveness and reactivity. Once again, this process of disidentifying with self-related mental contents and thereby coming to see their contingency and fallibility is described clearly by patients:

> Two related feelings were present. One was a tremendous freedom to experience, to be I. It became very important to distinguish between "I" and "Me", the latter being an object defined by patterns and structures and responsibilities—all of which had vanished—and the former being the subject experiencing and feeling. My normal life seemed to be all Me, all demands and responsibilities, a rushing burden which destroyed the pleasure and freedom of being "I". Later in the evening

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> the question of how to fit back into my normal life without becoming a slave of its patterns and demands became paramount.
> (Durr, 1971, p. 79, my emphasis)

> For a few seconds, it was just like 'I'm me, and there are no defining characteristics!' [...] that made me realise that I'm not a 'smoker'.
> (Noorani et al., 2018, p. 759)

After discussing how increased mindfulness-related capacities can be explained in terms of self-unbinding, I take a brief detour and show how the predictive self-binding account and the concept of phenomenal opacity can shed light on the non-naturalistic metaphysical epiphanies that sometimes occur during psychedelic therapy (cf. Metzinger, 2003). Then I return to the main focus of the chapter and ask: what overall picture of psychedelic therapy falls out of the account I have developed? I argue that this account supports a *two-factor theory* of psychedelic therapy. The first factor is the induction of plasticity, at multiple levels: experience-independent stimulation of the mechanisms of neuroplasticity, the induction of cognitive plasticity by relaxing prior beliefs, and a phenomenal sense of freedom, an appreciation of the possibility of change, that is bound up with increased opacity of the self-model. However, the induction of plasticity alone is not sufficient for truly durable change. Patients must also discover new, healthier forms of self-modelling during the psychedelic experience, and consolidate these during the subsequent period of integration; otherwise, neurocognitive business-as-usual will inexorably resume.

I conclude the chapter by briefly considering philosophical issues to do with self and self-consciousness. I have argued elsewhere that psychedelic evidence supports two controversial theses: that the self does not exist (Letheby & Gerrans, 2017) and that there can be states of phenomenal consciousness that totally lack all forms of self-consciousness (Letheby, 2020). However, both claims face considerable obstacles, and for present purposes I content myself with two weaker, but still extremely interesting, psychedelic-supported conclusions: (i) there can be states of consciousness lacking anything like the *ordinary* sense of self, and (ii) the *kind* of self that we ordinarily experience ourselves as being does not exist. Theoretically and existentially, this is plenty to be getting on with.

When it comes to the central thesis of the book—that the Comforting Delusion Objection fails—the upshot of chapters four to seven is this: the epistemic risks of psychedelic therapy, given naturalism, are smaller than they initially appear. This treatment, despite first appearances, does not work centrally by inducing comforting metaphysical beliefs, but by changing how patients see themselves and relate to their own minds and lives.

However, the conclusion that the Comforting Delusion Objection fails is based not only on the claim that the epistemic risks of psychedelic therapy, given naturalism, are relatively small, but also on the claim that its epistemic benefits, given naturalism, are relatively large. Arguing in detail for this latter conclusion is the task of chapter 8. And the other major thesis of the book is that the Entheogenic

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Conception of psychedelics can be naturalized, which depends on the claim that naturalists can and should view psychedelics, not just as agents of epistemic benefit, but also as agents of spiritual benefit. Arguing for *this* conclusion is the task of chapter 9.

5 Naturalizing the Entheogenic Conception

Chapter eight of the book is entitled 'Epistemology'. I begin this chapter by rebutting some general arguments for the impossibility of psychedelic-facilitated epistemic benefit. One of these, the Argument from Drug Use, alleges that psychedelics, as drugs, are *ipso facto* unable to provide epistemic benefit. This is easily refuted by pointing out the widespread practice of pharmacological cognitive enhancement, a live ethical issue in tertiary education today. A second argument, the Argument from Impairment, appeals to the fact that psychedelics impair the brain's reality-representing mechanisms: they demonstrably cause perceptual misrepresentation of the external world. However, on one reading of the premise, such impairment is just one effect of psychedelics, which is consistent with some of their other effects being epistemically beneficial. On another reading, impairment is psychedelics' only epistemically relevant effect; but on this reading, the premise is question-begging. After considering one final argument (from Alterity) I conclude that "master arguments" cannot settle the question. Specific proposals about putative psychedelic-facilitated epistemic benefits need to be considered individually, on their own merits.

The type of knowledge most commonly discussed in epistemology, the philosophical study of knowledge, is *propositional knowledge* or "knowledge that". This can be glossed, roughly, as justified true belief: holding a true belief about reality on the basis of sufficient reasons or evidence. The most obvious psychedelic candidate, from a naturalistic standpoint, is psychodynamic insight. Many psychedelic subjects report epiphanies about their own previously unconscious, or otherwise unknown, mental states, such as hidden, forgotten, or repressed beliefs, memories, or desires. As Thomas Metzinger (2003) points out, many such subjects also show clinical improvement, and a simple explanation is that the apparent insights are genuine. However, following David Jopling (2001), I note that we cannot discount the possibility of "placebo insights": apparent insights that cause clinical benefits despite being spurious. I offer some suggestive but inconclusive reasons for thinking that such psychedelic-facilitated insights are likely to be accurate reasonably often. My conclusion is that the psychedelic experience alone never provides adequate justification for beliefs of this kind, but sober reflection in the post-session period can close the epistemic gap. Probably, psychedelic subjects often gain justified true beliefs about their own mental states, through the process of (a) undergoing a psychedelic experience and (b) subsequently reflecting critically on it.

A more promising candidate is *ability knowledge* or "knowledge how". Psychedelic subjects often report having gained some kind of new cognitive or

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attentional skill, or ability, through their experiences. This dovetails with a body of evidence, surveyed in chapter 5, showing lasting increases in mindfulness-related capacities for decentering, non-judging, awareness, and so forth after a single psychedelic experience. Interpreting a suggestion made by Benny Shanon (2010) in light of this evidence, I argue that psychedelic experiences very often do promote a kind of knowledge how that is essentially identical to the mindfulness-related capacities measured by psychometric questionnaires. Through experiences of self-unbinding and altered patterns of attention, subjects learn how to pay attention and relate to their own mental contents in decentered, psychologically flexible ways of the kind that are systematically cultivated in mindfulness practice. I consider a sceptical objection which raises the possibility that psychedelics do not really induce the acquisition of mindfulness *skills*, but rather cause the typical cognitive *effects* of those skills via a non-experiential mechanism. I do not answer this objection conclusively, but I appeal to subjects' testimony, and to arguments developed earlier in the book, to suggest that these psycho-epistemic benefits of the psychedelic state really are brought about by a conscious process of learning and not (solely) by low-level, non-experiential pathways.

One epistemological category of obvious relevance to the psychedelic experience is *knowledge by acquaintance*. On an intuitive level, this is the sense of "knowledge" at issue when we claim to know *someone*, rather than knowing that something is the case, or knowing how to do something (Pavese, 2021). The idea of knowledge by acquaintance was formulated originally by Bertrand Russell (1910). However, I adopt a definition given by Earl Conee (1994) according to which one has knowledge by acquaintance with some fact if and only if one knows that fact in the most direct way possible. Using this definition, I argue that psychedelic experience often facilitates the acquisition of knowledge by acquaintance with two important facts about the subject's mind: that it has vast, normally unrealized potential, and that the ordinary sense of self is contingent, constructed, and mutable. (Both of these, in philosophical parlance, are *modal facts*: facts about what is possible, necessary, impossible, and so on.) On the first count, it is possible to know that one's mind has the potential for states of mystical bliss, wonder, and awe by reading books and hearing others' testimony. But the most direct way to know that one's mind has this potential is for that very potential to become manifest in that very mind—a state of affairs that psychedelics often induce. On the second count, it is possible to know in similarly indirect ways that one's ordinary sense of self is contingent and mutable. But the most direct way to know that one's ordinary sense of self can be altered radically, or altogether absent, is for that very possibility to be actualized within one's mind. Thus, psychedelic experience often involves the acquisition of knowledge by acquaintance with important (and, indeed, therapeutically relevant) modal facts about the subject's mind.

A fourth type of epistemic benefit that I argue psychedelics often induce is the acquisition of "new knowledge of old facts". Here, the philosophical terminology is quite intuitive: someone acquires new knowledge of an old fact when (a) there

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is some fact that they already know, but (b) they come to know that fact in an importantly new and different way. One important example concerns the difference between knowing in a merely intellectual fashion that one is mortal, and having the vivid, motivating, often life-changing awareness of mortality that a brush with death can induce (Baillie, 2020). Psychedelics seem routinely to bridge this sort of gulf. One patient, when asked whether her religious and spiritual beliefs had changed since her psilocybin session, replied:

> "[The psilocybin experience] brought my beliefs to life, made them real, something tangible and true – it made my beliefs more than something to think about, really something to lean on and look forward to."
> (Malone et al., 2018, p. 4)

Once again, Benny Shanon (2010, p. 268) has suggested something like this as a possible epistemic benefit of the ayahuasca experience (though he does not use the terminology of "new knowledge of old facts"). Indeed, many subjects describe gaining new knowledge of a specific and important old fact: our radical interconnectedness with the natural world:

> "Before [my psychedelic experience] I enjoyed nature, now I feel part of it. Before I was looking at it as a thing, like TV or a painting. [But] you're part of it, there's no separation or distinction, you *are* it."
> (Watts et al., 2017, p. 534, emphasis original)
>
> During the psilocybin session, one cancer patient experienced feelings of "being connected to everything, I mean, everything in nature [...] and *it wasn't like talking about it, which makes it an idea. It was experiential.*"
> (Swift et al., 2017, p. 497, my emphasis)

Of course, caution is warranted here, since psychedelics can also induce new "knowledge" (i.e. vivid and motivating phenomenal simulations) of old "facts" that are not actually facts at all. But in cases where there *is* a fact that a subject knows, very often the psychedelic experience can allow them to understand or grasp that fact more fully, or feel its significance more deeply, than they previously had. In my view, this constitutes a significant epistemic benefit.

Fifth, and finally, I argue that *indirect* epistemic benefits often result from therapeutic psychedelic administration. These indirect benefits are mediated by lasting psychological benefits. Here I draw on Lisa Bortolotti's (2015, 2020) work on epistemic benefits of suboptimal cognitive states such as delusions. Bortolotti points out that certain epistemically faulty cognitions, such as so-called "motivated" or "defensive" delusions, are thought to have psychological benefits: by shielding patients from painful truths, these delusions can preserve psychosocial functioning and stave off debilitating despair. Insofar as this is the case, Bortolotti argues, these delusions are likely to have epistemic benefits too, for the simple reason that epistemic and psychosocial functionality are deeply intertwined in humans. We gain knowledge by exploring the world, talking to others, exposing our beliefs to

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scrutiny, and so forth. Thus, any cognition that preserves our propensities to explore and interact *ipso facto* helps to preserve epistemically beneficial capacities and behaviours. I argue that the same is true of therapeutic and transformative psychedelic experiences. People with reduced symptoms of anxiety, depression, or addiction, or with increased Openness to Experience or mindfulness-related capacities, are more likely to explore their world and engage with other people, and therefore more likely to gain various kinds of knowledge. Thus, psychedelics' lasting psychological benefits have flow-on epistemic benefits as well.

The ultimate conclusion of chapter eight is that therapeutic psychedelic experiences are, in Bortolotti's parlance, *epistemically innocent*: they have real epistemic flaws, but also offer significant epistemic benefits that are typically unavailable by any other means.

Chapter nine of the book is entitled 'Spirituality'. The central thesis of this chapter is that psychedelic experiences reveal a viable form of *naturalistic spirituality*: a set of practices and experiences that (a) deserve the name "spirituality" and (b) can be pursued in good faith by those with a naturalistic worldview and a commitment to intellectual honesty (cf. Metzinger, 2013).

Intuitively, the idea of a naturalistic spirituality might seem absurd, or even outright contradictory. The term "spirituality" would seem to connote belief in the spiritual—as opposed, metaphysically, to the natural. However, recently the term has acquired other connotations, often being used to describe an approach to matters of meaning, purpose, and transcendence that is practical, experiential, and non-dogmatic, as opposed to the (merely) doxastic and dogmatic orientation often associated with organised religion. In light of this shift, several philosophers and philosophically-inclined thinkers have wondered whether a naturalistic spirituality might be possible. In an important review article, Jerome Stone surveys several recent accounts of naturalistic spirituality, and extracts the following core set of ideas:

> We are spiritual, first, when our sense of connection is enlarged. Second, we are spiritual when we aspire to greater things, when we attempt to realize our ideals. Finally, we are spiritual when we ask the big questions. Note that these three—connection, aspiration, and reflection on profound questions—are all forms of enlarging our selves, of breaking through the narrow walls of the ego.
> (Stone, 2012, p. 492).

In my view, the renaissance of psychedelic research provides a golden opportunity for an empirically-based, neurophilosophical inquiry into naturalised spirituality, because psychedelics reliably induce *paradigmatically* spiritual experiences: experiences that evoke that appellation consistently from those with otherwise divergent views about the topic. Committed religious practitioners (Griffiths et al., 2006) and atheistic "reluctant psychonauts" (Pollan, 2018) alike find "spiritual" the most suitable word to describe their transformative psychedelic experiences. So if we want to know whether spirituality is compatible with naturalism, I suggest

that one approach is to examine closely the paradigmatically spiritual experiences that psychedelics induce, and see whether undergoing those kinds of experiences is compatible with a naturalistic outlook. This seems like a sensible and direct way to learn about the actual nature of the experiential phenomenon that is referred to by "spirituality" in its recent sense.

Of course, once this methodological proposal is made, answers flow naturally from the arguments of the preceding chapters. In at least some studies, subjects' willingness to describe their experiences as "spiritually significant" correlates with psychometric ratings of mystical-type experiences (Griffiths et al., 2008). This suggests that it is mystical-type experiences, in the psychometric sense, that are the paradigmatically spiritual ones, so our question becomes: are psychedelic-induced mystical-type experiences compatible with naturalism? And I have argued in earlier chapters that they are. Through an analysis of qualitative evidence, I showed that there are subjects who undergo profound and transformative experiences that satisfy the definition of a mystical-type experience but do not involve any non-naturalistic metaphysical ideations. Instead, these experiences feature changes to the sense of self, profound feelings of unity and connectedness, psychological and existential insights, and deeply significant emotional shifts.

Not only does the account developed in the preceding chapters support the claim that spirituality can be naturalized—it also converges with the results of philosophical inquiry as summarised by Stone. Stone's three pillars of naturalistic spirituality are an enlarged sense of connection, an aspiration to realize our values, and reflection on profound or ultimate questions. All three are hallmarks of psychedelic-induced mystical-type experiences, whether or not any non-naturalistic ideations are involved. Moreover, Stone contends that all three are "all forms of enlarging our selves, of breaking through the narrow walls of the ego"—and this, too, is consistent with the account that I have developed, which explains these hallmarks in terms of psychedelic-induced disruption to self-binding processes and consequent expansion and liberation of attention.

Thus, I argue that a close examination of the paradigmatically spiritual experiences induced by psychedelics, and the features in virtue of which they count as "spiritual", supports the claim that spirituality can be naturalized. This, in turn, supports the claim that psychedelics can legitimately be regarded as agents not just of epistemic benefit, but also of spiritual benefit, from a naturalistic perspective—and, therefore, that the Entheogenic Conception can be naturalized.

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6 Conclusion

In the tenth and final chapter of the book, the 'Conclusion', I summarise the foregoing discussion, draw out some testable predictions, and suggest some directions for future research. The account I develop in the book entails several testable predictions, e.g., predictions about which variables will predict good clinical outcomes most strongly. However, I will not enumerate these predictions here; see *Philosophy of Psychedelics* section 10.1.

Despite its somewhat presumptuous title, *Philosophy of Psychedelics* leaves untouched many important philosophical questions about psychedelics. There are outstanding issues in the philosophy of mind, science, medicine, and psychiatry. There are a host of outstanding ethical issues. There are even many epistemological issues that I have not explored, with my focus on the possible involvement of non-naturalistic metaphysical beliefs. Once again, I will not enumerate these here; see *Philosophy of Psychedelics* section 10.2.

Perhaps the most important, if the least precise, philosophical question about psychedelics is this: What should we make of these enigmatic substances, and how should we regard the remarkable experiences that they induce—experiences which many count among the most important of their lives? I believe that I have made some progress toward answering this question in *Philosophy of Psychedelics*. I close the book by saying what I think this progress amounts to. In brief, the Comforting Delusion Objection fails: even given naturalism, the epistemic status of psychedelic therapy is fairly good. And, the Entheogenic Conception can be naturalized: even given naturalism, it is plausible to regard psychedelics as effective agents of epistemic and spiritual benefit.

Contra the late Huston Smith, the "basic message of the entheogens" is not that there is another *metaphysical* Reality that puts this one in the shade. It is that there are other *phenomenological* Realities, many of which put our ordinary, default mode in the shade. Many of these other Realities, especially the salutary ones, result largely from a reduction in the constraining influence of the predictive self-model. Induced skilfully, more-or-less "selfless" forms of consciousness can show us what is possible in terms of wonder, awe, insight, acceptance, and connectedness.

Psychedelic therapy is not an experience-independent pharmacotherapy, nor is it primarily a matter of metaphysical conviction and consolation. Rather, it is an "existential medicine", in Charles Grob's (2007) phrase, since it constitutively involves a transformative, experiential re-appraisal of basic assumptions concerning the self, the world, and the relations between the two. Unconstraining cognition by unbinding the self-model; revealing the vast potential of consciousness by exposing the constructed and mutable nature of our phenomenal worlds—this is the essence of psychedelic therapy, and it is perfectly consistent with a naturalistic worldview.

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References

Aday, J. S., Mitzkovitz, C. M., Bloesch, E. K., Davoli, C. C., & Davis, A. K. (2020). Long-term effects of psychedelic drugs: A systematic review. *Neuroscience & Biobehavioral Reviews*, *113*, 179–189. https://doi.org/10.1016/j.neubiorev.2020.03.017

Albahari, M. (2006). *Analytical Buddhism: The Two-tiered Illusion of Self.* Palgrave.

Baillie, J. (2020). The recognition of nothingness. *Philosophical Studies*, *177*(9), 2585–2603. https://doi.org/10.1007/s11098-019-01329-6

Bogenschutz, M. P., Podrebarac, S. K., Duane, J. H., Amegadzie, S. S., Malone, T. C., Owens, L. T., Ross, S., & Mennenga, S. E. (2018). Clinical interpretations of patient experience in a trial of psilocybin-assisted psychotherapy for alcohol use disorder. *Frontiers in Pharmacology*, *9*. https://doi.org/10.3389/fphar.2018.00100

Bortolotti, L. (2015). The epistemic innocence of motivated delusions. *Consciousness and Cognition*, *33*, 490–499. https://doi.org/10.1016/j.concog.2014.10.005

Bortolotti, L. (2020). *The Epistemic Innocence of Irrational Beliefs.* Oxford University Press.

Breeksema, J. J., Niemeijer, A. R., Krediet, E., Vermetten, E., & Schoevers, R. A. (2020). Psychedelic Treatments for Psychiatric Disorders: A Systematic Review and Thematic Synthesis of Patient Experiences in Qualitative Studies. *CNS Drugs*, *34*(9), 925–946. https://doi.org/10.1007/s40263-020-00748-y

Carhart-Harris, R. L. (2019). How do psychedelics work? *Current Opinion in Psychiatry*, *32*(1), 16–21. https://doi.org/10.1097/YCO.0000000000000467

Carhart-Harris, R. L., & Friston, K. J. (2019). REBUS and the anarchic brain: Toward a unified model of the brain action of psychedelics. *Pharmacological Reviews*, *71*(3), 316–344. https://doi.org/10.1124/pr.118.017160

Carhart-Harris, R. L., Roseman, L., Bolstridge, M., Demetriou, L., Pannekoek, J. N., Wall, M. B., Tanner, M., Kaelen, M., McGonigle, J., Murphy, K., Leech, R., Curran, H. V., & Nutt, D. J. (2017). Psilocybin for treatment-resistant depression: fMRI-measured brain mechanisms. *Scientific Reports*, *7*(1), 13187. https://doi.org/10.1038/s41598-017-13282-7

Conee, E. (1994). Phenomenal knowledge. *Australasian Journal of Philosophy*, *72*(2), 136–150. https://doi.org/10.1080/00048409412345971

Davey, C. G., Pujol, J., & Harrison, B. J. (2016). Mapping the self in the brain's default mode network. *NeuroImage*, *132*, 390–397. https://doi.org/10.1016/j.neuroimage.2016.02.022

Davis, A. K., Barrett, F. S., & Griffiths, R. R. (2020). Psychological flexibility mediates the relations between acute psychedelic effects and subjective decreases in depression and anxiety. *Journal of Contextual Behavioral Science*, *15*, 39–45. https://doi.org/10.1016/j.jcbs.2019.11.004

Dennett, D. C. (1992). The self as the center of narrative gravity. In F. Kessel, P. Cole and D. Johnson (Eds.), *Self and Consciousness: Multiple Perspectives* (pp. 275–288). Psychology Press.

Durr, R. A. (1971). *Poetic Vision and the Psychedelic Experience.* Syracuse University Press.

Flanagan, O., & Graham, G. (2017). Truth and sanity: Positive illusions, spiritual delusions, and metaphysical hallucinations. In J. Poland & S, Tekin (Eds.). *Extraordinary Science and Psychiatry: Responses to the Crisis in Mental Health Research* (pp. 293–313). MIT Press. https://doi.org/10.7551/mitpress/9780262035484.003.0013

Gerrans, P. (2014). *The Measure of Madness: Philosophy of Mind, Cognitive Neuroscience, and Delusional Thought.* MIT Press.

González, D., Cantillo, J., Pérez, I., Farré, M., Feilding, A., Obiols, J. E., & Bouso, J. C. (2020). Therapeutic potential of ayahuasca in grief: A prospective, observational study. *Psychopharmacology*, *237*(4), 1171–1182. https://doi.org/10.1007/s00213-019-05446-2

Griffiths, R. R., Johnson, M. W., Carducci, M. A., Umbricht, A., Richards, W. A., Richards, B. D., Cosimano, M. P., & Klinedinst, M. A. (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), 1181–1197. https://doi.org/10.1177/0269881116675513

Griffiths, R. R., Richards, W. A., McCann, U., & Jesse, R. (2006). Psilocybin can occasion mystical-type experiences having substantial and sustained personal meaning and spiritual significance. *Psychopharmacology*, *187*(3), 268–283. https://doi.org/10.1007/s00213-006-0457-5

Griffiths, R., Richards, W., Johnson, M., McCann, U., & Jesse, R. (2008). Mystical-type experiences occasioned by psilocybin mediate the attribution of personal meaning and spiritual significance 14 months later. *Journal of Psychopharmacology*, *22*(6), 621–632. https://doi.org/10.1177/0269881108094300

Grob, C. S. (2007). The use of psilocybin in patients with advanced cancer and existential anxiety. In M. Winkelman and T. B. Roberts (Eds.), *Psychedelic Medicine: New Evidence for Hallucinogenic Substances as Treatments* (pp. 205–216). Praeger Publishers.

Heuschkel, K., & Kuypers, K. P. C. (2020). Depression, mindfulness, and psilocybin: Possible complementary effects of mindfulness meditation and psilocybin in the treatment of depression. A review. *Frontiers in Psychiatry*, *11*. https://doi.org/10.3389/fpsyt.2020.00224

Hohwy, J. (2013). *The Predictive Mind*. Oxford University Press.

Horst, S. (2009). Naturalisms in philosophy of mind. *Philosophy Compass*, *4*(1), 219–254. https://doi.org/10.1111/j.1747-9991.2008.00191.x

James, E., Robertshaw, T. L., Hoskins, M., & Sessa, B. (2020). Psilocybin occasioned mystical-type experiences. *Human Psychopharmacology: Clinical and Experimental*, *35*(5), e2742. https://doi.org/10.1002/hup.2742

Jopling, D. A. (2001). Placebo insight: The rationality of insight-oriented psychotherapy. *Journal of Clinical Psychology*, *57*(1), 19–36. https://doi.org/10.1002/1097-4679(200101)57:1%3C19::AID-JCLP4%3E3.0.CO;2-Z

Lavazza, A. (2017). Ways of being well: Realistic and unrealistic well-being. In L. Taddio and K. W. Molin (Eds.), *New Perspectives on Realism* (pp. 237–252). Mimesis International.

Letheby, C. (2020). Being for no-one: Psychedelic experience and minimal subjectivity. *Philosophy and the Mind Sciences*, *1*(I), 1–26. https://doi.org/10.33735/phimisci.2020.I.47

Letheby, C. (2021). *Philosophy of Psychedelics*. Oxford University Press.

Letheby, C., & Gerrans, P. (2017). Self unbound: Ego dissolution in psychedelic experience. *Neuroscience of Consciousness*, *2017*(1). https://doi.org/10.1093/nc/nix016

Ly, C., Greb, A. C., Cameron, L. P., Wong, J. M., Barragan, E. V., Wilson, P. C., Burbach, K. F., Soltanzadeh Zarandi, S., Sood, A., Paddy, M. R., Duim, W. C., Dennis, M. Y., McAllister, A. K., Ori-McKenney, K. M., Gray, J. A., & Olson, D. E. (2018). Psychedelics promote structural and functional neural plasticity. *Cell Reports*, *23*(11), 3170–3182. https://doi.org/10.1016/j.celrep.2018.05.022

Madsen, M. K., Fisher, P. M., Stenbæk, D. S., Kristiansen, S., Burmester, D., Lehel, S., Páleníček, T., Kuchař, M., Svarer, C., Ozenne, B., & Knudsen, G. M. (2020). A single psilocybin dose is associated with long-term increased mindfulness, preceded by a proportional change in neocortical 5-HT2A receptor binding. *European Neuropsychopharmacology*, *33*, 71–80. https://doi.org/10.1016/j.euroneuro.2020.02.001

Malone, T. C., Mennenga, S. E., Guss, J., Podrebarac, S. K., Owens, L. T., Bossis, A. P., Belser, A. B., Agin-Liebes, G., Bogenschutz, M. P., & Ross, S. (2018). Individual experiences in four cancer patients following psilocybin-assisted psychotherapy. *Frontiers in Pharmacology*, *9*. https://doi.org/10.3389/fphar.2018.00256

Metzinger, T. (2003). *Being No One: The Self-Model Theory of Subjectivity*. MIT Press.

Metzinger, T. (2013). *Spirituality and Intellectual Honesty*. Self-published manuscript. https://philarchive.org/rec/METSAI

Metzinger, T. (2014). How does the brain encode epistemic reliability? Perceptual presence, phenomenal transparency, and counterfactual richness. *Cognitive Neuroscience*, *5*(2), 122–124. https://doi.org/10.1080/17588928.2014.905519

Mian, M. N., Altman, B. R., & Earleywine, M. (2020). Ayahuasca's antidepressant effects covary with behavioral activation as well as mindfulness. *Journal of Psychoactive Drugs*, *52*(2), 130–137. https://doi.org/10.1080/02791072.2019.1674428

Nichols, D., Johnson, M., & Nichols, C. (2017). Psychedelics as medicines: An emerging new paradigm. *Clinical Pharmacology & Therapeutics*, *101*(2), 209–219. https://doi.org/10.1002/cpt.557

Noorani, T., Garcia-Romeu, A., Swift, T. C., Griffiths, R. R., & Johnson, M. W. (2018). Psychedelic therapy for smoking cessation: Qualitative analysis of participant accounts. *Journal of Psychopharmacology*, *32*(7), 756–769. https://doi.org/10.1177/0269881118780612

Pavese, C. (2021). Knowledge how. In E. Zalta (Ed.) *The Stanford Encyclopedia of Philosophy*. https://plato.stanford.edu/archives/sum2021/entries/knowledge-how/

Pollan, M. (2015). The trip treatment. *The New Yorker*. http://www.newyorker.com/magazine/2015/02/09/trip-treatment

Pollan, M. (2018). *How to Change Your Mind: the New Science Of Psychedelics*. Penguin Books.

Revonsuo, A. (2006). *Inner Presence: Consciousness As A Biological Phenomenon*. MIT Press.

Ross, S., Bossis, A., Guss, J., Agin-Liebes, G., Malone, T., Cohen, B., Mennenga, S. E., Belser, A., Kalliontzi, K., Babb, J., Su, Z., Corby, P., & Schmidt, B. L. (2016). Rapid and sustained symptom reduction following psilocybin treatment for anxiety

Letheby, C. (2022). Naturalistic Entheogenics: Précis of *Philosophy of Psychedelics*. *Philosophy and the Mind Sciences*, *3*, 4. https://doi.org/10.33735/phimisci.2022.9627

and depression in patients with life-threatening cancer: A randomized controlled trial. *Journal of Psychopharmacology*, *30*(12), 1165–1180. https://doi.org/10.1177/0269881116675512

Russell, B. (1910). Knowledge by acquaintance and knowledge by description. *Proceedings of the Aristotelian Society*, *11*, 108–128. https://www.jstor.org/stable/4543805

Seeley, W. W. (2019). The salience network: A neural system for perceiving and responding to homeostatic demands. *Journal of Neuroscience*, *39*(50), 9878–9882. https://doi.org/10.1523/JNEUROSCI.1138-17.2019

Sessa, B. (2012). *The Psychedelic Renaissance: Reassessing The Role of Psychedelic Drugs in 21st Century Psychiatry and Society*. Muswell Hill Press.

Shanon, B. (2010). The epistemics of ayahuasca visions. *Phenomenology and the Cognitive Sciences*, *9*(2), 263–280. https://doi.org/10.1007/s11097-010-9161-3

Smith, H. (2003). *Cleansing the Doors of Perception: the Religious Significance of Entheogenic Plants and Chemicals*. Sentient Publications.

Stone, J. A. (2012). Spirituality for naturalists. *Zygon: Journal of Religion and Science*, *47*(3), 481–500. https://doi.org/10.1111/j.1467-9744.2012.01279.x

Sui, J., & Gu, X. (2017). Self as object: Emerging trends in self research. *Trends in Neurosciences*, *40*(11), 643–653. https://doi.org/10.1016/j.tins.2017.09.002

Sui, J., & Humphreys, G. W. (2015). The integrative self: How self-reference integrates perception and memory. *Trends in Cognitive Sciences*, *19*(12), 719–728. https://doi.org/10.1016/j.tics.2015.08.015

Swift, T. C., Belser, A. B., Agin-Liebes, G., Devenot, N., Terrana, S., Friedman, H. L., Guss, J., Bossis, A. P., & Ross, S. (2017). Cancer at the dinner table: Experiences of psilocybin-assisted psychotherapy for the treatment of cancer-related distress. *Journal of Humanistic Psychology*, *57*(5), 488–519. https://doi.org/10.1177/0022167817715966

Watts, R., Day, C., Krzanowski, J., Nutt, D., & Carhart-Harris, R. (2017). Patients' accounts of increased "connectedness" and "acceptance" after psilocybin for treatment-resistant depression. *Journal of Humanistic Psychology*, *57*(5), 520–564. https://doi.org/10.1177/0022167817709585

Yang, C., Shirayama, Y., Zhang, J., Ren, Q., Yao, W., Ma, M., Dong, C., & Hashimoto, K. (2015). R-ketamine: A rapid-onset and sustained antidepressant without psychotomimetic side effects. *Translational Psychiatry*, *5*(9), e632–e632. https://doi.org/10.1038/tp.2015.136