

# Philosophical Considerations Concerning the Use of Hallucinogens in Psychiatric Treatment

CANDICE L. SHELBY

## ■ Introduction

One result of what Max Weber first called the “disenchantment of the world,”<sup>1</sup> the replacement of the belief in spiritual beings, absolute moral truth, and a just God, with a naturalistic understanding of our existence and meaning making, has been a kind of existential insecurity. William James (1917) says that a kind of essential sadness

lies at the heart of every merely positivistic, agnostic, or naturalistic scheme of philosophy. . . . For naturalism, fed on recent cosmological speculations, mankind is in a position similar to that of a set of people living on a frozen lake, surrounded by cliffs over which there is no escape, yet knowing that little by little the ice is melting, and the inevitable day drawing near when the last film of it will disappear, and to be drowned ignominiously will be the human creature’s portion. The merrier the skating, the warmer and more sparkling the sun by day, and the ruddier the bonfires at night, the more poignant the sadness with which one must take in the meaning of the total situation. (pp. 142–143)

If this is so, it is no wonder that patients are seeking treatments for anxiety and depres-

sion at record rates (Campbell, 2017); nor it is a surprise that clinical success has in these areas been persistently elusive (Turner & Rosenthal, 2008). As James (1917) also says, this kind of “soul sickness,” is not easy to unseat. Neither drugs, nor talking about it, nor a change of place or activities, nor, as is often recommended, a conscious effort to “buck up and get going” go very far toward healing this kind of sickness. The healing of this mind of malaise, as with any change in our fundamental beliefs or attitudes, James says, “must come to the individual with the force of a revelation” (p. 114).

What James means is that for something to really change someone’s mind, it must not merely be conveyed intellectually; it must hit at the very foundations of a person’s emotional life, and one’s entire perspective. For many, this kind of change has been sought through prayer, religious ceremonies, and/or meditative practices. For most sufferers in the Western World in recent decades, though, the most prevalent (and profitable) approach offered has been pharmaceuticals and/or talk therapy. Sadly, neither of these approaches has proven very successful at alleviating symptoms.

One approach that has been consistently successful, both throughout history in various parts of the world and recently in the West in scientifically studied contexts, involves the use of plant-based or synthesized hallucinogens. Lysergic acid diethylamide (LSD), 3,4-methylenedioxymethamphetamine (MDMA), psilocybin, ayahuasca, ibogaine, and other compounds have been effectively employed in the treatment of depression, anxiety, posttraumatic stress disorder (PTSD), and addictions of various kinds. Before being prohibited, beginning in the 1960s, these substances had been fairly widely employed in several countries in psychotherapy; and since permissions have once again begun to be granted to use these compounds in research studies, sufferers from an array of disorders have been treated with noteworthy success (Grob et al., 2011).<sup>2</sup> So, the questions arise, what do these substances do that other, more standard treatments do not do, and why is their therapeutic use regarded with such skepticism? In what follows, I argue that misgivings about psychedelic and psycholytic approaches are unwarranted, and that, in fact, these approaches should be embraced. Making that case, though, will require, in addition to consideration of how they might work to bring about psychological healing, reflection on fundamental concepts such as mind, self, identity, and mystical experience.

### ■ Consciousness, Mind, and Self

Philosophers have argued for at least 375 years about the natures of the mind and the self. According to Descartes and his long train of followers, the mind is a certain kind of entity, immaterial, freestanding and separate from the body. Although this kind of conception stems from a religious worldview and may in principle not be supported by empirical evidence, it is intuitively plausible and continues to remain popular even among some philosophers. On this sort of dualistic account, in principle, it would seemingly be impossible to change the mind's processing by making changes in the body, since the mind is essentially a different kind of stuff from the physical. A range of sometimes very creative explanations of how

physical changes could correspond to mental changes, given this radical difference, have been offered through the centuries. Perhaps most famous, or infamous, among these is Descartes' suggestion that mind and body interact in the pineal gland. On this picture, although the cognitive structures of the mind do receive input from the senses, those structures themselves are not alterable by physical or bodily changes. Immediately upon disseminating these ideas to his peers, however, Descartes was met with skepticism about the logical coherence of such interaction. Thomas Hobbes (and a long train of followers), for instance, rejected outright the notion that there exist two fundamentally different kinds of stuff constituting mind and body, insisting instead that mind is material. The brain is moved by transmitted impulses, Hobbes thought, then various bits move around various others, producing changes that we vainly think of as independent thinking. The dichotomy of either reifying the mind or eliminating it as a "real" entity was thus firmly established.

This dramatic division between conceptions of minds and bodies continued into the 20th century as scientists and philosophers began to consider the nature of consciousness. Some philosophers think of consciousness as a brute element of the universe, much like energy/matter, so that our brains do something, but whatever that something is, it is not producing consciousness. Perhaps brain activities and consciousness align, and they certainly seem to correlate in at least certain ways, but they are not the same kinds of things. Consciousness is, as David Chalmers says, unlike visual processing or auditory processing, a "hard problem," because even if we were to know in the most minute detail how the processing of sensory inputs occur, this would say nothing about why those inputs are *experienced*. Consciousness is categorically different from physical processes, and therefore cannot be explained in terms of them. Most philosophers, however, have thought of consciousness as either reducing to physical phenomena, or in terms of black-box functions of physical phenomena, or as illusory; more recently, some have characterized consciousness as emergent from physical phenomena. I will not bother outlining the myriad details distinguishing the

plethora of versions of these various theories here. Let us instead simply consider what neuroscience currently tells us about how brains function in the broadest sense, and use those insights to determine whether the kinds of change in consciousness that hallucinogens can bring about in a therapeutic setting would threaten the integrity of mind, self, or identity.

To begin with, then, one popular understanding of how the conscious mind works is, as Neal Levy (2018) puts it, akin to how a CEO operates in a business organization, with one central organizer delegating tasks to other mechanisms in the brain, but without ever giving up ultimate decision-making authority. On this kind of view, it would seem that the CEO is some sort of stable entity that, through its ultimate power over all the moving parts, constitutes the essence of the mind of an individual. Significant changes to an entity so conceived would mean a change in identity, which, as we shall see, many thinkers fear greatly (usually in connection with life after death issues; we consider those below). As it turns out, however, nothing like the CEO metaphor is supported by recent research. Rather, the view that the evidence suggests has come to be that the brain is modular, composed of many anatomically or functionally defined regions that constitute separate mechanical systems, each inflexibly performing a single task, sometimes with competing goals and often with no direct communication between them. This would imply that the mind is not an entity at all but something more like interacting levels of mostly unconscious processes. On this sort of view, one might worry that anarchy would seem to follow, and so it might appear a wonder that we (or any organisms with complex structures, for that matter) could even manage to stay alive, much less to think about things and experience the world as a particular self.

But we do. So the question then becomes how that might happen. Following neuroscientists such as Michael Gazzaniga (2018), some philosophers have argued that consciousness—and indeed for Gazzaniga, a morally responsible self—emerges from various “layers” of independent systems, each of which follows its own autonomous laws, operates on its own temporal and spa-

tial scales, and interacts preferentially with the layers just above or below it (Bassett & Gazzaniga, 2011).<sup>3</sup> That is, the mental, in one way or another, emerges from physical body/brain system dynamics. Although the term *emerge* has, since the mid-20th century, been rejected by many philosophers because of unclarity and old baggage associated with it, the term is widely used by physicists and neuroscientists, and I use it here, explaining and dismissing what I take to be the most significant objections offered against the notion that the mental emerges from the physical.

First of all, it is essential to understand that conscious experience relies on the development of neural systems initially directed by genetic encoding, but which is affected at every stage by interactions with the system’s local and global environments, and is deeply dependent on activity-based learning. The brain, in other words, is essentially a dynamically evolving system with basic default structures and functions dictated by genetic coding, but it is refined at every turn by interaction with the environment in which it unfolds. Multipotential neural structures develop into functional units but are constrained in their development by many factors, including environmental stimuli and activity, and these structures in turn subserve other systems at higher levels of organization.

So far, so good. Now we can see how a complex brain comprising a multitude of modules processing a huge mass of information might develop. But we have done nothing to account for the seeming unity of the consciousness that arises out of that multitude of independently operating functional entities; indeed, if anything, we ought to expect from what has been said at best a well-organized automaton, and at worst the anarchic mess of competing subsystems mentioned earlier. But an anarchic mess would seemingly self-destruct and certainly would not appear to be able to account for the kind of consciousness whose integrity might be threatened by treatment with hallucinogenic compounds. The unity that appears fundamental among the characteristics of consciousness seems to be explained by a mostly left-hemisphere lateralized module that is commonly referred to as the default mode network (DMN), al-

though Michael Gazzaniga seems to refer to the same module with his term the “interpreter.” This module, although it is well connected to other parts of the brain, is not the CEO of earlier philosophical speculation. It is a module. It does not sit as some kind of brain matter homunculus, some place which at which all processing “finishes,” controlling what all other parts of the brain do. Rather this network operates to make the activities of various other modules, which may or may not be coordinated or even coherent with one another, make sense in conscious experience with the “usual flow” of how things go. In other words, this module provides phenomenological unity. It creates the autobiography that constitutes a particular take on the world, develops a narrative about why we do what we do, functions in the creation of theory of mind, which we use with one another, and evokes a sense of self, or ego. The DMN, of course, comprises neurons, as do all other modules, each of which is composed of molecules, each of which has its own composition, and so forth, and it comprises part of a larger system, and systems of systems, which constitute what we experience as a conscious mind. This module, with its own systems-level operations, can evidently influence or control other modules—for example, it might stop me from eating the greasy French fries that I am considering—but it can also be influenced by other modules and end up providing me with a story of why it is OK today to eat those fries if I do in fact end up doing so.

Now we have a problem, though, and one that accounts for many of the various philosophical views of consciousness and mind that have been offered. How is it that a “higher” layer of organization can control a “lower” level if it is dependent on that lower level for its existence? This kind of question caused barrels of ink to be spilled at the end of the 20th century, with attempts to explain the mind/brain relation coming from all directions. Reductionists led the charge but were quickly challenged by eliminativist, supervenience, and epiphenomenalist approaches. Some philosophers, dissatisfied with the contortions of common sense that some of these views required, and recognizing that we clearly do control our behaviors with something more complex than indi-

vidual neurons or individual neural circuits, have avoided the causal question altogether, and focused on different kinds of issues. Functionalists, for instance, recognize that what a thing is depends on its role relative to other entities and systems with which it interacts. In their view, in accordance with the view of the emergentist, a neuron is not a neuron unless it plays the role of one in a system in which there are roles for neurons. Likewise, an “interpreter” cannot exist unless it has a role to play in a system in which it has a place. But within the complex systems that are human brain circuits (and brains, conscious minds, and selves), each element has a role to play, and in fact exists only because of its relations with all the others.

Philosophical and scientific objections to this picture arise largely, as was suggested earlier, because of the issue of causation. What causes what? Can causation be “top-down,” as well as “bottom-up”? Can it be cyclical? Reductionists and supervenience theorists consider these questions to be non-starters (although they admit that causation can *seem* to be other than bottom-up; in their view, however, that is just a matter of misinterpretation of the phenomena). Epiphenomenalists maintain that the mind has no causal efficacy whatsoever. Emergentism is rejected by all of these groups either on the grounds that it is “spooky,” that something seems to come from nothing, or on the grounds of overdetermination. If the neurons at the “bottom” are really the cause of an act or an experience, then something constituted of those neurons cannot also be the cause of that act or experience. That is just an incoherence, these philosophers say. The problem, though, seems to be not with the emergentist account of what happens, but rather with the notion of causation in use. The intuitive understanding of “cause” (and the one that underlies that ever-hawked distinction between correlation and causation) is a linear one derived from a Newtonian conception of the universe. On that understanding there can, by definition, be no such thing as top-down or cyclical causation, with emergent processes influencing (constraining or altering) the processes that brought the emergent ones about to begin with. But that understanding

is simply a mistake. Many kinds of causal questions may be asked, but people tend to conflate them. When we ask, “What caused X?,” we might be asking about the structures that made it possible for X to happen, or we might be asking about the mechanics of how X happened, among other things. As philosopher J. L. Mackie (1974) points out, when the fireman looks to see what caused the kitchen to burn down, he might seek an answer in terms of an overheated frying pan, the lack of a sprinkler system, curtains flapping from an open window, sufficient oxygen in the room, no one being at home to stop it, or all of these together in a particular sort of relationship. What counts as a cause depends largely on what question one asks. And in complex dynamic systems, with multiple scales of organization, massive parallel processing, and preponderant feedback loops, we should not be surprised to find that this is the case.

But if dynamic, mutually causal systems are the way to explain how consciousness and the sense of a persisting self are generated, how should we understand hallucinogen-induced experiences? Are they even real? Should we consider them as psychiatric treatments at all, or rather, as some say, as something more akin to a spiritual revelation? What would that latter even mean? Do the changes brought about by such experiences, particularly by psychedelic ones, because of the way that they are brought about, in a revolutionary manner rather than bit by bit over time, threaten the identity of a patient, making the treatments too radical to condone? None of us think that the changes we all undergo over a decade or two threaten our identity, but if those same changes happened over a day, would our view be different? These kinds of considerations, despite their supporters’ enthusiasm for them, fail to undermine the value or medicinal nature of treatment involving psychedelic substances; in fact, quite the contrary is true. The very questions that arise in the philosophical assessment of the healing that is brought about by psychedelic-assisted therapies show that these therapies are some of the best on offer as approaches to true healing. In order to make that case, let us consider some of the arguments on offer by opponents to this view.

### ■ Changing the Brain

“Those drugs change the brain” is one objection that people often make to the use of hallucinogens. Yes, they do. But so do the billions of dollars’ worth of antidepressants and anxiolytic medications dispensed every year. And so does meditation, exercise, water, and being awake. The difference generally alluded to here, though, is that while pharmaceutical drugs make a controllable difference with regard to certain, contained aspects of the self (Aristotle would call them “accidental properties”), and talk therapies bring about basically the same kinds of changes, only very gradually, hallucinogens make profound global changes to the brain and one’s “take” on the world, and thereby in some way make some sort of objectionable changes to one’s identity.

A few things could be said in response to this kind of charge. First, not all treatment involving hallucinogens is psychedelic therapy, in which significant doses are given in order to trigger intense, transformational experiences all at once. Although it is this model that has been most researched, it is not the only type of hallucinogen-assisted therapy extant. Psycholytic therapy, or the use of lower doses of hallucinogens for the purpose of increasing the impact of ordinary-length therapeutic sessions, has also been used both in the United States and in Europe, both prior to their prohibition in the last 1960s and since research has begun again. Ketamine-assisted therapy is, in fact, increasingly used in therapeutic sessions in the United States. Second, it is simply not true that pharmaceutical psychoactive drugs are controllable and therefore safe, while hallucinogens are not. It is not just that no one is certain of how these widely prescribed pharmaceuticals work, leaving their prescription to trial and error; what is more, people often have adverse reactions to them. It is now firmly established, for example, that antidepressants are associated with suicidal ideation in many teenagers. Third, it is not the case that pharmaceutical compounds make only (positive) localized differences in the brain. As is well known, many people have experienced severe problems with addiction to anxiolytic medications, especially those in the benzodiazepine class of drugs (e.g., consider the



1982 movie *I'm Dancing as Fast as I Can*, focused on one woman's attempts to recover from tolerance to and dependence on Valium). Furthermore, a recent *New York Times* article included interviews with numerous individuals who experienced debilitating effects from trying to withdraw from antidepressants (Carey & Geveloff, 2018). And, as science writer Robert Whitaker has pointed out, this is just what should be expected. Given our brains' (and our general) adaptability, long-term use of antidepressants can result in patients' experiencing worsening of depression; extra serotonin will eventually affect the expression of genes that determine the number of serotonin receptors, and fewer receptors for serotonin will make the patient worse off than before he or she began the treatment (Whitaker, 2010). Finally, if the permanence or semipermanence of changes in the brain is the argument against the therapeutic use of hallucinogens, then it misses the mark altogether, for not only do other types of drug treatments create changes just as long-lasting but so also do talk therapy and cognitive-behavioral therapy, when successful, and that is a good thing. Surely our conception of healing when we naively visit a surgeon, medical doctor, or psychiatrist, is not simply to control our symptoms for as long as we stay in treatment. That may be the best option available in some cases, but it is not the definition of "healing." We seek "to get better."

With the assistance of hallucinogens in therapeutic settings, many people by their own accounts do get better, for at least three potential sets of reasons, some or all of which may be related to the specific mechanism of action of a particular compound. One reason that profound shifts in emotional memory may come about in patients with PTSD through the use of MDMA, for example, concerns the biochemistry of the extinction of fear memory. Patients with PTSD have certain of their memories deeply entangled with fear responses. One way to think about how the changes that treatment with MDMA are brought about is through the phenomenon of fear extinction. Numerous research groups have focused on the effects that the serotonin 5-HT<sub>2A</sub> receptors on individual neurons have on enhancing fear extinction memory. By creating a greater

availability of serotonin, some researchers have found, the fearful emotional component of such memories is loosened, and the fear can be extinguished when an organism is exposed to the source of the fear, without the expected attendant negative event (Young, Andero, Ressler, & Howell, 2015; Young et al., 2017). When 5-HT<sub>2A</sub> receptors were blocked in experiments, the fear memory extinction enhancement associated with administration of MDMA was found to disappear, so the conclusion was drawn that these receptors were the key to understanding MDMA's effectiveness. But its effect on these receptors cannot be the whole of the story, for MDMA also enhances release and reception of dopamine, norepinephrine, the hormones oxytocin and cortisol, and other signaling molecules, all of which are involved in modulating emotional memory circuits. For this reason, although the receptor level is one way of understanding how MDMA may be operating, and it is certainly interesting and worthy of further study, it does not seem up to the task of explaining how these memories continue to be emotionally undistruptive for the long term after treatment, as they have recently been shown to be in humans.

Perhaps a better level of analysis for providing an answer to the question that we seek to answer—"Why do patients with PTSD seem to be truly healed through MDMA-assisted therapy?"—is the neural systems level. At this level we can ask whether all those molecules MDMA affects operate by extinguishing the fear memory that causes PTSD symptoms, or whether they interfere with the reconsolidation of memories that have been disrupted during administration of the compound. Although some researchers, as just mentioned, drew the conclusion that extinction was the phase in which MDMA did its work, a research group at the University of Colorado recently put that hypothesis to the test, and found that MDMA may instead operate by modifying fear memory during reconsolidation (Hake et al., 2019). This set of experiments showed that MDMA, when administered during the reconsolidation phase, but not when administered prior to the extinction phase or at any other time outside the reconsolidation phase, resulted in a delayed and persistent diminution in

conditioned fear. This result fits with earlier research that indicated propranolol affects the reconsolidation of emotional memories (Lonegan et al., 2013). Presumably, the way these substances work is that memories (tightened synaptic strengths between the neurons involved) originally created with the involvement of powerful negative inputs from emotion-producing modules are loosened during the treatment, then reconsolidated without those inputs. This would provide a mechanism for explaining how MDMA could change patients' experiences of their formerly fear-laden memories in a long-term way, without relapse.

A second reason why psychedelics may have such powerful effects on changing patients' overall outlook and mood long after treatment could be that learning occurs when patients experience new insights due to higher connectivity among different parts of the brain during the time that the medication is active in the system (Carhart-Harris et al., 2016). That is to say, rather than associations between ideas, and ideas and feelings running along the usual, well-worn lines, particularly with respect to the "DMN," during exposure to certain compounds, processing in the brain becomes much more integrated, allowing decidedly different perspectives to arise. Learning that happens from experiencing things in profoundly different ways from the usual may be maintained long after the treatment event due to the profundity of the insight (which would imply a large-scale change in one's overall conceptual framework) and/or powerful emotional experiences that may accompany those insights, as indicated in the James quotes in the opening paragraphs.

Finally, depression of the default mode network is correlated with the experience of "ego dissolution," or a feeling of the diminution or disappearance of the normal sense of self, in favor of a more encompassing sense of the unity of all things (Carhart-Harris et al., 2016). This is discussed more in the sections below. In each of these cases, brain systems are indeed changed, as are the systems that emerge from those systems, such as those responsible for conscious awareness during the time of treatment, and at a higher level of complexity and on a longer time scale, one's personal identity.

But, surely, not just these, but all powerful experiences, and indeed one might argue, all nontrivial learning changes conceptual frameworks and the self. That is a good thing. After all, many of us pay large sums to have our children changed through both profound experiences (travel to foreign places) and university training, and people for many centuries have practiced various forms of prayer and meditation in order to achieve the sense(s) of unity that use of hallucinogens can create under the right circumstances. Only in the case of conceiving of the self as a static entity that in some way forever defines an individual would changes in the self in any of these ways be understandable as some kind of threat to identity. For dynamic systems such as the organisms that we are, change is central to what it means to grow, to mature, and to develop wisdom.

### ■ Mysticism and Mystical Experience

"This isn't medical treatment at all!" some (medical doctors) might say with respect to hallucinogen-assisted psychotherapies. "What is happening here is a personal change, or a spiritual or mystical experience—brought about with the use of substances perhaps—but since its success depends on setting, guidance, and all kinds of things other than the ingestion of the drugs themselves, whatever it is, it is not medical treatment." Through this sort of reasoning, some have come to the conclusion that hallucinogen-assisted therapies ought to be left out of medical discourse. I do not see why such treatments cannot be both physiological medical treatments and mystical or spiritual experiences (or some other kind of experience that has positive outcomes), if the emergent view of mind outlined above is correct. In that view (the one, after all, suggested by the Greek etymology of *psyche*), it is medicine that has the incorrect understanding of mind, and therefore the incorrect (or at least incomplete) understanding of how mental health can be achieved. Surely spiritual or mystical (if there is a difference) experience must be *experienced* in order to exist, and unless one is an unrepentant dualist, that means it must be in some sense physiologically based, but including emer-

gent levels beyond just the neurons, ions, and whatnot that compose the brain. That is not to say that the spiritual, or mystical, is not a special category of experience; in fact, it seems to be. But this in no way implies that such experiences cannot form an important part of psychiatric treatment.

Mystical experience, since before recorded history, has been sought as a way of providing guidance in developing meaning and purpose in life, as well as for curing illness of all kinds, both physical and psychic, so before moving on, let us take a moment to consider its character. Accounts of mystical experience can be found throughout the literatures of diverse cultures around the world. Several characteristics of mystical experience are cited nearly universally. Perhaps the fullest list of such characteristics was identified by William T. Stace (1961). First of all, mystical experiences involve some type of undifferentiated unity. Stace distinguishes two types of unity: (1) internal unity (i.e., undifferentiated awareness, unitary consciousness) and (2) external unity (i.e., a sense of unity with the surrounding environment). The first, which Stace refers to as “introvertive unity,” we can characterize as nondiscursive consciousness, in which experience itself is undifferentiated. The second, which he calls “extrovertive unity,” involves the perception, as Stace puts it, that “all is one,” that everything in existence is connected. The experience of unity can happen with eyes closed and other sensory information blocked, or by experiencing the sensed world only as though transfigured—as though through an opening of the “doors of perception,” in Aldous Huxley’s term. Extrovertive mystical unity also involves a sense of the inner subjectivity of all (i.e., a sense of a living presence in all things; a sense of objectivity and reality (that the experience is not merely one’s own, but is an encounter with objective truth); a sense of “blessedness, joy, happiness, satisfaction, etc.,” as well as a feeling that what one is apprehending is somehow sacred (i.e., worthy of reverence, divine, or holy). This sort of mystical experience is also, according to Stace, marked by paradoxicality (i.e., needing to use illogical or contradictory statements to describe the experience), which for many involve an attendant feeling of the ineffability of the experience (Stace, 1961).

Although this last characteristic is the most tentatively included by many writers (which may be because the impossibility of expressing something and the difficulty of talking about paradoxes are related, but do not amount to the same thing), it is described by William James (1917) as the “handiest of the marks” by which to identify mystical experience. He agrees with Stace that mystical experience does not have the quality of a mere subjective feeling, but instead is marked by the noetic, as though it is revealing something objectively true and right about of the nature of things themselves. James also notes that these experiences are transient, and that they are passively undergone, that is, without a sense of the experiencer’s being in control once it begins, although it can be deliberately instigated.

More specific to our own aim here, Walter Pahnke (1971), well-known researcher in the clinical uses of LSD, specified a list of nine elements characteristic of mystical experiences, whether spontaneously or chemically generated. His list overlaps with those of the philosophers, but he adds to theirs a feeling of transcendence of time and space, and persisting positive changes in attitudes and behavior. With respect to the last, I cannot see how that could be a characteristic of the mystical experience itself, since such experiences by Pahnke’s own lights are transient, but in his much more specifically psychological account, we can consider the persisting positive changes a side effect of mystical experience, and for our purposes, one of the most important ones listed.

Note that nothing about the mystical experience as analyzed by either of our philosophers, as Pahnke shows with his clinic-based research, depends on free-floating souls or spirits, or the Divine (unless one counts all of existence together as something divine, a position taken by some philosophers and scientists alike). If the concept were referential in that way, there would be no way to know whether anyone had ever had a mystical experience, as there is, as far as we know, no way to know whether there are spirits or the Divine (again, monism aside). It is, first and essentially, an *experience*. Pahnke refers to it specifically as a psychological experience, and Einstein spoke of it as an emotion. These character-



izations suggest that mystical experience, whether the result of interoception alone or of interoception together with sensory perceptions, is the result of the operation of some level of the complex system that involves our atoms, molecules, cells, and systems of cells; our bodies, our selves, and our environments. In short, it need not require any more or fewer ontological assumptions than does any other psychological experience. As Robin Carhart-Harris's group showed, depressing the activity of the DMN allows all kinds of normally anticorrelated modules to communicate with one another, opening the doors to all kinds of connections not normally available to experience to become conscious, including quite plausibly a feeling of unity both in consciousness itself (becoming more oneself, as it is sometimes put), and in a sense of the unity of all things.<sup>5</sup>

### ■ The Self

Even if I have answered the objection that the mystical can also be psychological, and that psychiatric treatment with hallucinogens should not be rejected on the grounds that it is not properly a treatment at all, there still remains the question of whether psychedelic (in particular) experiences are objectionable on the ground that they alter or perhaps even dissolve the self, undermining the whole idea of psychiatric healing. As I mentioned earlier, this cannot be a viable objection unless we think of the self as a static entity that forever defines a person.

But for the purposes of answering the self-dissolving (and hence psychiatric healing-undermining) objection, there are at least two different senses in which we can think of the self. We can think of the self as simply whatever is consciously aware, a sense that babies seem to have from birth, a particular point of view, perhaps brought about in usual cases by proprioception, interoception, and perspective in sensory perception. It is what Descartes referred to when he said about himself, "I am a thinking thing," although whether he ever actually did or could achieve consciousness in just this sense is extremely doubtful. Kant, too, thought of our morality as arising from an "I" completely

separate from psychology, preferences, inclinations, or motivations of any kind. That is one sense of "self."

There is also, though, the "who" one is, the set of attitudes, character traits, dispositions, and, at an ever higher level of organization, the identity by which one recognizes oneself as one among others in the world, the "kind of person" one is, the persona, or ego. In this sense, the young child, whose personality, as we say, "is developing," hardly has any sense of self in this way. The child is very open to new ways of doing things, can learn any language (and thus any way of being in the world) as well as any other, and does not have any highly habituated responses, ways of solving problems, or strong sense of autobiography. As time goes on, however, and the default neural network becomes better established, and pruning events reduce the number of interconnections among modules in the brain, so do we become more "expert" at all kinds of things, develop dispositions to see things in certain ways, to solve problems in certain ways, and to think about "who we are" in the autobiographical sense, developing a temporal sense of self. Our memories say much about who we are in this sense, and so do our projects. The successful predictions that we have made in the past create attractor wells for similar situations in the future, so much so that we just automatically perceive situations in the familiar ways, and sometimes see things (e.g., explanations of our actions, or malicious intent) where there is nothing. But all this happens within a context of a world, including a social world, that gives us constant feedback. That feedback constrains our predictions in the future, as well as our understanding of who we are as social beings. Like every other level of organization, this system operates on its own spatial and temporal scales, according to an autonomous set of rules. Self in this sense emerges over a years-long time frame, and involves social relations, as well as awareness of our own conscious as the locus of all experience.

Although the loss of the self in the second sense is tragic when it disappears permanently, as we recognize in extreme cases of retrograde amnesia, for example, self in this sense is not threatened by use of hallucinogens. These substances, as discussed earlier,

can certainly contribute to *changes* in the self in the second sense, but they do not have as a side effect permanent amnesia. Hallucinogen-assisted therapies instead have their effect by suppressing one module in particular, the DMN, which results in the softening or dissolution of the sense of self (ego), not in forgetting the past that in part creates that ego. Consciousness, with the suppression of the activity of the default neural network is, in the term of the 1960s, *expanded*. For some, this is a mystical experience; for others, it is more of a shift in perspective, but in the vast majority of cases of those included in research studies completed so far, it is something positive, and lastingly positive for that very self that seems to be dissolved during the experience. Roland Griffiths reports, for instance, that subjects in his well-known psilocybin study expressed increased satisfaction with their social relations over a year after the treatment was completed. Many claimed that they were “more prosocial, more generous, and more loving,” and Griffiths comments that “caretaking of self and others emerges from this experience” (in Miller, 2017, p. 145). So, while the use of hallucinogens in psychotherapy may indeed be vulnerable to the charge that it “changes the self” or causes one to “lose oneself,” this is only a threat if one fails to be clear about what these terms mean. Loss of self in the sense that it happens during hallucinogen-assisted therapies is a positive thing that is in fact often actively sought and characterized as a good thing in many religious and meditative traditions, as well as in a variety of other activities, such as extreme sports, playing music, and sex.

## ■ Conclusion

William James cites the case of a man he treated with a sort of “spiritual cure.” The man reported satisfaction and overall improvement in his quality of life and his view of himself, despite the fact that he did not receive traditional talk therapy or anything like the pharmaceuticals that are widely used today. He reported that his experience was of personal growth. And, in his own words, “I may say that the growth has all been toward the elimination of selfishness.

I do not mean simply the grosser, more sensual forms, but those subtler and generally unrecognized kinds, such as express themselves in sorrow, grief, regret, envy, etc.” (James, 1917, p. 126). If that is a sense in which one can say that self was lost, it is not a bad thing. Indeed, it may be the cure for the very “essential sadness” that James recognized over 100 years ago as the unintended consequence of our culture’s rationalism.

## ■ Notes

1. Weber used the German word *Entzauberung*, which is translated into English as “disenchantment,” but which literally means rather “de-magic-ation.”
2. Also see Bogenschutz et al. (2015), Grob, Bossis, and Griffiths (2013), Johnson and Griffiths (2017), and Sessa (2017).
3. There is an abundance of research connecting the default mode network (DMN) to social aspects of cognition and behavior. For just one meta-review, see Mars et al. (2012).
4. I also argue for this position from a philosophical view in Shelby (2016).
5. For a lengthier discussion of mystical experience in the medical, psychiatric, and psychological treatment of illness, see journalist Michael Pollan’s (2018) *How to Change Your Mind: What the New Science of Psychedelics Teaches Us About Consciousness, Dying, Addiction, Depression, and Transcendence*.

## ■ References

- Bassett, D. S., & Gazzaniga, M. S. (2011). Understanding complexity in the human brain. *Trends in Cognitive Sciences*, 15(5), 200–209.
- Bogenschutz, M. P., et al. (2015). Psilocybin-assisted treatment for alcohol dependence: A proof-of-concept study. *Journal of Psychopharmacology*, 29(3), 289–299.
- Campbell, D. (2017). NHS prescribed record number of antidepressants last year. Retrieved from [www.theguardian.com/society/2017/jun/29/nhs-prescribed-record-number-of-antidepressants-last-year](http://www.theguardian.com/society/2017/jun/29/nhs-prescribed-record-number-of-antidepressants-last-year).
- Carey, B., & Geveloff, R. (2018, April 7). Many people taking antidepressants discover that they cannot quit. Retrieved from [www.nytimes.com/2018/04/07/health/antidepressants-withdrawal-prozac-cymbalta.html](http://www.nytimes.com/2018/04/07/health/antidepressants-withdrawal-prozac-cymbalta.html).
- Carhart-Harris, R. L., et al. (2016). Neural correlates of the LSD experience revealed by

- multimodal neuroimaging. *Proceedings of the National Academy of Sciences of the USA*, 113(17), 4853–4858.
- Gazzaniga, M. (2018). On determinism and human responsibility. In G. D. Caruso & O. Flanagan (Eds.), *Neuroexistentialism: Meaning, morals, and purpose in the age of neuroscience* (pp. 223–234). New York: Oxford University Press.
- Grob, C. S., Bossis, A. P., & Griffiths, R. R. (2013). Use of the classic hallucinogen psilocybin for treatment of existential distress associated with cancer. In B. I. Carr & J. Steel (Eds.), *Psychological aspects of cancer: A guide to emotional and psychological consequences of cancer, their causes, and their management* (pp. 291–308). New York: Springer.
- Grob, C. S., et al. (2011). Pilot study of psilocybin treatment for anxiety in patients with advanced-stage cancer. *Archives of General Psychiatry*, 68(1), 71–78.
- Hake, H. S., et al. (2019). 3,4-Methylenedioxy-methamphetamine (MDMA) impairs the extinction and reconsolidation of fear memory in rats. *Physiology and Behavior*, 199, 343–350.
- James, W. (1917). *The varieties of religious experience: A study in human nature: Being the Gifford Lectures on Natural Religion delivered at Edinburgh in 1901–1902*. New York: Longmans, Green, and Co.
- Johnson, M. W., & Griffiths, R. R. (2017). Potential therapeutic effects of psilocybin. *Neurotherapeutics*, 14(3), 734–740.
- Levy, N. (2018). Choices without choosers. In G. D. Caruso & O. Flanagan (Eds.), *Neuroexistentialism: Meaning, morals, and purpose in the age of neuroscience* (pp. 111–125). New York: Oxford University Press.
- Lonergan, M. H., Olivera-Figueroa, L. A., Pitman, R. K., & Brunet, A. (2013). Propranolol's effects on the consolidation and reconsolidation of long-term emotional memory in healthy participants: A meta-analysis. *Journal of Psychiatry and Neuroscience*, 38, 221–231.
- Mackie, J. L. (1974). *The cement of the universe: A study of causation*. Oxford, UK: Clarendon Press
- Mars, R. B., et al. (2012). On the relationship between the “default mode network” and the social brain. *Human Neuroscience*, 6, 1–9.
- Miller, R. L. (2017). *Psychedelic medicine: The healing powers of LSD, MDMA, psilocybin, and ayahuasca*. Rochester, VT: Park Street Press
- Pahnke, W. (1971). The psychedelic mystical experience in the human encounter with death. *Harvard Theological Review*, 62, 1–21.
- Pollan, M. (2018). *How to change your mind: What the new science of psychedelics teaches us about consciousness, dying, addiction, depression, and transcendence*. New York: Penguin Press.
- Sessa, B. (2017). MDMA and PTSD treatment: PTSD: From novel pathosociology to innovative therapeutics. *Neuroscience Letters*, 649, 176–180.
- Shelby, C. L. (2016). *Addiction: A philosophical perspective*. New York: Palgrave Macmillan.
- Stace, W. T. (1961). *Mysticism and philosophy*. London: Macmillan.
- Turner, E., & Rosenthal, R. (2008). Efficacy of antidepressants. *British Medical Journal*, 336, 516–517.
- Whitaker, R. (2010). *Anatomy of an epidemic*. New York: Crown Publishing Group.
- Young, M. B., Andero, R., Ressler, K. J., & Howell, L. L. (2015). 3,4-Methylenedioxy-methamphetamine facilitates fear extinction learning. *Translational Psychiatry*, 5(9), e634.
- Young, M. B., et al. (2017). Inhibition of serotonin transporters disrupts the enhancement of fear memory extinction by 3,4-methylenedioxy-methamphetamine (MDMA). *Psychopharmacology*, 234(19), 2883–2895.