

MIND, MATTER, AND MUSHROOM: SHIFTING ONTOLOGICAL UNDERSTANDINGS OF PSYCHEDELIC HEALING AND LEGITIMATE KNOWLEDGE

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ABSTRACT

This paper examines the interplay between ontology, epistemology and interest in psilocybin therapy, highlighting how ontological beliefs influence what is considered legitimate knowledge. The paper posits three approaches to psilocybin healing: the religious-idealist approach popular in early usage, the secular-materialist approach common with scientists and the secular-materialist-idealist hybrid approach, as seen in Michael Pollan's work. I argue that the secular-materialist approach aligns with the financial interests of psilocybin therapy companies by privileging institutional knowledge. I conclude the paper by considering how different ontological understandings of psilocybin healing lend different levels of epistemological legitimacy to non-institutional actors like psychonauts and healers.

KEY WORDS

Psilocybin, therapy, psychedelics, patents, Michael Pollan.

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Epistemology is not divorced from ontology, and this applies both at an individual and social level. When religious ontologies are dominant politically and socially, knowledge acquired through revelation and sacred texts is given more weight. When an individual believes that the world consists only of material substance, they are more likely to give weight to a change in someone's behaviour that they can understand through physical processes. Interests also play a role, affecting ontology and epistemology. If one rules through the divine right of kings, they are interested in pushing a religious ontology and epistemology. Of course, these beliefs aren't static; some religious people lose their faith after traumatic experiences, and some non-believers find God after near-death experiences. Societies also change these associated beliefs and interests — sometimes rapidly, such as in the Quiet Revolution in Quebec in the 1960s, when the role of the Catholic Church in government and everyday life quickly diminished. When we think of what kind of knowledge production is considered legitimate, we should not think of it independently from questions of interests and ontology.

With this in mind, I will argue that investigations and experiments with psychedelics have been characterized by at least three distinct influential ontological approaches, with at least one being motivated in part by financial interests. These ontological assumptions are related to the study of psychedelic's epistemology, informing what people consider to be legitimate knowledge regarding psychedelics. These ontological assumptions are the religious-idealist view of psychedelics prevalent in the early psychedelic fervour of the 60s, the secular-materialist view of psychedelics that exists among scientists today, and a secular merging of idealist and materialist views of psychedelics, as popularised by Michael Pollan's *How to Change Your Mind* (2018).

Some of the earliest popular writings on psychedelics combine religious and idealist narratives when discussing the healing mechanism of psychedelics. The 1957 Life magazine photo essay "Seeking the Magic Mushroom" by Robert Gordon Wasson (1957), which introduced many Americans to psychedelics and coined the term 'magic mushroom', treated psilocybin mushrooms as sacred, calling them "divine". It also described the mushrooms, not as a therapeutic

that heals a patient, but as something that provides the user with answers. Wasson described Maria Sabina — the healer who provided Wasson with the mushrooms — as a woman with exceptional moral and spiritual power, while at the same time denigrating other healers as degenerates (Lutkajtis, 2019). Aldous Huxley (1994) argued that mescaline could induce mystical experiences in people. In *The Doors of Perception*, he argued that psychedelic drugs turn off a filtering system in your brain and allow you to perceive what he calls Mind at Large, a vast, interconnected, and undifferentiated reservoir of consciousness that exists beyond individual minds. The most prominent psychedelic enthusiast of the 1960s, Timothy Leary, held that psychedelics “unveil a new way of interpreting and understanding human consciousness” and argued that psychedelics had the potential to unleash latent religious sensibilities (Penner, 2014). This was part of the motivation for the Good Friday experiment, which Leary supervised, which sought to investigate whether taking psilocybin before hearing a sermon would engender religious or mystical experiences in the subjects (Pahnke, 1966).

The religious-idealist view is best understood through Leary’s writing, where he argues that these drugs expand your consciousness and allow you to approach religious matters in a different light. (Leary and Weil, 1968) He provides four different questions of religious significance: The Ultimate Power Question, The Life Question, the Human-Destiny Question, and the Ego Question, and compares the approach the scientific community takes to answering them to the way people who have had psychedelic-induced religious experiences view the questions and their answers. Science’s goal is to “answer the basic questions in terms of objective, observed, public data” whereas “psychedelic experience which subjects report to be ineffable and ecstatically religious involve a direct awareness of the processes which physicists and biochemists and neurologists measure.” (Leary and Weil, 1968, p. 8) Using the Human-Destiny Question, which asks “what is man, whence did he come, and where is he going?” as an example is illustrative. Leary argues that the ‘scientific

answer’ is to look at the physical development of the universe, then the evolution of people from Neanderthals to homosapiens and then the social development of people through various ages. He argues that the psychedelic correlate is that LSD subjects “say they experience early forms of racial or sub-human species evolution during their sessions” through their genetic text (Leary and Weil, 1968, p. 13). Leary argues that the direct understanding of the answers to these key questions is important because they provide us with an awe that allows the answers to these questions to move the users, as compared with the scientific answers which may be informative but are ultimately uninteresting to people. Access to these truths humbles people or provides enlightenment that allows them to overcome ailments like addiction, depression or anxiety, and the healing process takes place in the patient’s mind.

More recently, we have seen the rise of what I would call the secular-materialist view. This view holds that what causes psychedelic treatments to work has nothing to do with the ‘trip’ they induce, which is ultimately epiphenomenal with regards to the healing. What actually makes psychedelics work is some other quality they have, such as an anti-inflammatory quality. The clearest example of this view was articulated by the researcher Dr. Marvin Hausman, the chair of the scientific advisory board of Nova Mentis, a biotech firm that aims to use psilocybin-based treatments for neuroinflammatory disorders, such as autism spectrum disorder. Dr. Hausman is trying to create a data bank where feces and blood would be collected from patients to analyse biomarkers related to autism. Then, during the course of therapies, one could analyse any changes in these biomarkers that the treatments were producing. He was particularly interested in serotonin, the production of which is heavily influenced by what goes on in someone’s gut. He has laid out his views on the subject at length in interviews, such as the following:

“Many people are currently using psilocybin to treat depression. The mechanism of action of psilocybin remains unclear.

A popular approach is that people sit on a mountain top and take psychedelics. I think the industry needs to come into the 21st medical century. The hottest stocks on the market are setting up psychedelic treatment centers that monitor behaviour changes with patients listening to background music, under psychiatric observation. Is that the answer to get a drug approved through the FDA? I don't think so.

...

I want to be granular and focus on the bullseye. I want to have a hard data bank that gives me concrete measurements with physiologic biomarkers.

If there's something that suggests a six-month old child has autistic tendencies, I want to study the child, and see what the serotonin levels are. I want to have a very specific data bank that we can use to look at subsets of autism and then pick one of these compounds, whether it's psilocybin, baeocystin or aeruginascin, that show a therapeutic response. But I don't want to prove things only through behavioural changes. Behavioural changes are biased and are assessed by parents and psychiatrists. I want hard end points.

[Interviewer]: So you think a data bank will help all sorts of future FDA approval efforts?

Absolutely. They want biomarkers and statistically significant end points," (Eaton, 2021).

Hausman is not unique in this view, as many other researchers share the basic view that psychedelics work not through revelatory hallucinations, but rather by altering one's neurochemistry or by affecting their body's serotonin levels. This view is reflected in recent attempts to synthesize non-hallucinogenic analogs to currently available psychedelic drugs (Dong et al., 2021). The logic behind pursuing

this kind of treatment implies that the hallucinogenic, mind-altering features of psychedelics are not a necessary part of the healing process, presenting a direct contrast to the religious-idealist view, which considers mind alteration as the primary mechanism for healing.

My argument is that this view is a result of a reflexive materialism on the part of the scientists conducting this research, which itself is influenced by the profit motive. Psychedelic therapy companies like MindMed, Cybin, and COMPASS Pathways all have market caps of \$100 million or more,¹ meaning they have immense financial stakes invested in receiving regulatory approval and patenting their approaches. If, as the idealists argue, the power of psychedelics is that they allow the user to expand their consciousness, then the current set of psychedelics are good enough, and what is needed are effective psychedelic guides who can help patients navigate the psychedelic experience. However, you cannot patent a natural compound like psilocybin or a therapy method. If psychedelics treat addiction or depression through serotonin in the gut, then you can fine-tune the compound to do this more effectively, giving you a patentable drug. Second, as Dr. Hausman indicated, regulatory bodies are more likely to approve drugs that produce measurable, biological outcomes. Self-reports about depression and other behaviours are noisy and seen as less legitimate than directly measurable indicators like microbiome composition.

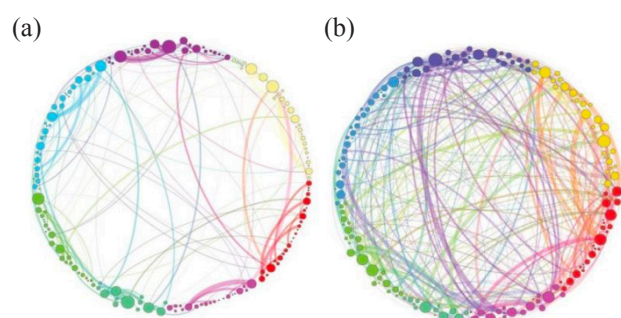
The secular-materialist view is not the only psychedelic narrative that can be utilised for profit. For example, the intersection of the wellness industry and psychedelics has often provided opportunities for the religious-idealist rhetoric to be utilised for enrichment. Moms on Mushrooms' founder Tracey Tee charges \$1,100 for an introductory online course on microdosing where she "[calls] the mushrooms' voice the Source, and connects it to what she calls a new form of feminine divinity" (Maddalena, 2024, p. 15). Unlike the religious-idealist position, the secular-materialist view is particularly well suited to the monopolistic kind of capitalism supported by venture capitalists (VCs), where money is spread around on projects that aim to

benefit from first mover effects to corner an industry for a small number of successful companies to more than pay for past failures. This requires patentable drugs and high regulatory thresholds to shield companies from competitors. Peter Thiel, co-founder of the VC Founders Fund and early Facebook investor, is the most notable backer of COMPASS Pathways. The religious-idealist and the secular-materialist approach to psilocybin both provide potential avenues for financial gain, however they do so for different people.

There is a third approach to psychedelics that does not follow the two aforementioned categories, best seen through the work of Michael Pollan. His book and Netflix series *How to Change Your Mind* have been among the most successful popular works on psychedelics this century. Pollan (2018) acknowledges that his

“default perspective is that of the philosophical materialist, who believes that matter is the fundamental substance of the world and the physical laws it obeys should be able to explain everything that happens. I start from the assumption that nature is all that there is and gravitate toward scientific explanations of phenomena. That said, I’m also sensitive to the limitations of the scientific-materialist perspective and believe that nature (including the human mind) still holds deep mysteries toward which science can sometimes seem arrogant and unjustifiably dismissive.” (p. 12)

Fig. 1: “Simplified visualization of the persistence homological scaffolds.” from Petri et al. 2014



Because of his default materialism, Pollan is usually searching for some way to explain what is going on in material terms, for example using this diagram to show that psilocybin causes the brain to form new neural pathways (Petri et al., 2014).

At the same time, he does not only rely on a materialist explanation for his argument. Pollan (2018) writes that “the narratives and insights don’t come from nowhere, and they certainly don’t come from a chemical.” (p. 406) He repeats the idealist notion that an integral part of psychedelic healing power comes from their ability to grant the patient new perspectives. Pollan’s book reflects this divided view on the effects of psychedelics. His book is part science history, delving into neuroscience and the chemical composition of psychedelics, part travelogue, explaining his experience taking psychedelics himself. Pollan (2018) says he has “no problem using the word ‘spiritual’ to describe elements of what [he] saw and felt [while on DMT], as long as it is not taken in a supernatural sense,” so he aims to be spiritual without being religious (p. 290). He also claims that the dissolution of the ego — the fourth of Leary’s questions — is the key to changing one’s mind. Pollan (2018) argues that the typical framing, between ‘spiritual’ and ‘material’ is misguided, and that after his experience on psychedelics, he believes that the “more useful antonym for ‘spiritual’ might be ‘egotistical’.” (p. 390) Pollan often speaks of the need for rigorous trials, believes it is important to continue trying to understand the physical process through which psychedelics act on the mind, and highlights the need for objectivity among scientists when investigating these substances, contrasting this with Timothy Leary’s cheerleading of the substance as a researcher. But he also casts doubt that the material explanation is all that is needed to understand psychedelics.

In his book, Pollan’s goal seems to be to create space for as much understanding as possible — to create an account that can incorporate the views of both scientists and enthusiasts of these powerful compounds. His view is counter to one that would downplay the importance of mental experiences, but one that always tries to frame mental experiences as either the result of a phys-

ical function or as parallel to a physical process. The marriage of these ideas allows Pollan to incorporate the knowledge from two disparate groups. Take his claims that the healing power of psychedelics comes from their ability to grant new perspectives and create new connections within the brain that one can see through an fMRI machine. The claim is that psychedelics create a sort of neuroplasticity that allows the mind to find new connections. So the physical change provides the opportunity for the mental work to take place. Therefore, people can be said to be healing themselves in a way that is assisted by psychedelics. This view seems to empower patients to see the process as one where they heal themselves, rather than being healed by the drug.

However, this does come into conflict with the profit motive of VC funded psychedelic companies, because if the purpose of the drug is to facilitate neuroplasticity, then the difference between various companies' compounds feels less important, making their patents less valuable. So while Pollan's approach is likely to be given more respect than Leary's by scientists, it is not necessarily going to be whole-heartedly adopted by those with monopolistic, VC interests. But Pollan himself still finds room to make sure there is a way to profit off psychedelics, one which fits within his understanding of the healing process. Pollan has taken a sceptical approach to the dissemination of psychedelics, claiming that the public should not get ahead of researchers by passing ballot measures decriminalising psilocybin (Pollan, 2019). He tempers idealist common understanding with materialist expertise. "[Pollan] names three specific avenues for the 'normalization' of psychedelics in society: medicalization through FDA approval; religious access through institutional churches ... and — lastly — spa-like retreat centers as a 'secular' option for 'healthy normals'." (Devenot et al., 2022, p. 493) Undoubtedly, these spa-like retreat centers would be prohibitively expensive for most people, mirroring the costs of existing spa-like rehabilitation centers.

It is worth contrasting this with the experience of indigenous users of psilocybin. Maria Sabina, the healer in Wasson's *Life* magazine story, was originally promised anonymity by Wasson,

only for him to out her identity, leading to harassment by police and financial destitution (Williams et al., 2022). Laws and norms surrounding intellectual property have allowed many non-indigenous people to reap significant rewards from psilocybin mushrooms, with little benefit going to indigenous people (Gerber et al., 2021). An equitable psilocybin economic landscape would confer benefits appropriately to the broad sources of understanding of psilocybin we have, rather than just those in line with Western scientific knowledge.

With this in mind, it is worth noting that all of Pollan's suggested avenues of normalisation are through institutional use. Because of its history of exclusion from mainstream medicine and science, in part due to Richard Nixon's war on drugs, but also religious suppression which goes back hundreds of years, there is a great amount of use that took place away from institutions. This raises questions about whether something approaching legitimate scientific knowledge can be produced away from institutions, and if so, why has this knowledge been ignored? This has led to two groups of people, both of whom have sets of assumptions and knowledge, being seen as less legitimate under the secular-materialist view, but can be given legitimacy under the secular mixture of idealism and materialism.

First are the psychonauts. These are people who explore altered states of consciousness, many of whom use psychedelic drugs to do so. Psychonauts are a community, have a very active Reddit forum, and share tips alongside their experiences. The term psychonaut is a portmanteau comprised of psyche and 'nautes', the Greek words for mind and navigator, respectively. They perform experiments on their own minds, testing various combinations of substances, techniques, and experiences, while collecting data about the results. Their goal is to discover new areas/experiences of the mind, which they relay to others to compare, learn new tips, and advance a collective set of knowledge. If psychedelics heal by reframing one's understanding of what ails them — for example, coming to accept death for those with existential anxiety — then the psychonauts are performing an important epistemic endeavour, essentially

performing experiments on themselves, at their own risk, to further our collective understanding of psychedelics healing potential.

So long as the consciousness altering aspect of psychedelics is seen as unimportant, however, the insights of psychonauts will always be seen as less legitimate. Psychonauts are obviously enthusiasts, and much of their insight is unverifiable. Aldous Huxley and Timothy Leary are two of the most famous psychonauts from the last century, and Leary is often accused of setting back the legitimacy of psychedelics through his enthusiastic support of them. Since much of the knowledge they seek must be experienced to be understood, they cannot report these findings in a way that is fully comprehensible to another. Compare this to attempts to create a data bank, which creates knowledge of effects that are not directly comprehensible to most subjects, but which researchers and regulators can understand. This raises the question of whether something can be considered legitimate, scientific knowledge if it must be experienced to be understood. It also raises important questions about the detachment of scientific researchers, and whether the enthusiasm of people like Leary poses too great a barrier to the legitimacy of this form of epistemic endeavour.

Second, are a group who use a variety of titles — healers, ceremonial leaders, wisdom keepers, psychedelic guides, etc. — who help others use psychedelics and heal. They guide people through the process, make sure they are taking a safe amount of drugs, provide them with a set and setting that is conducive to a productive psychedelic experience, and help the psychedelic recipient integrate the experience into their life. Many of the practices are inherited from over 1,000 years of experience, some practices dating back to before the Spanish colonization of Mexico. Other practices were learned through more recent experimentation, often by taking the drugs themselves. The skill set of these healers resembles those of therapists. They seek to understand the problem, guide people to the solution to their ailments, hope that people can change themselves, and help them try to integrate the insights into their lives. But because they are not accredited and because of their methods (and perhaps other ways that they fall short on the

‘respectability front’, such as how they dress), they are not treated as seriously as therapists.

The legitimacy and utility of both forms of knowledge are challenged by the notion that the healing power of psychedelic drugs is all chemical and material, and that the ‘trip’ the mind experiences on these drugs is merely epiphenomenal. If the experiences in the mind cause the healing, then the mental cartographers over at the subreddit r/Psychonaut are expanding our understanding of the healing power of these drugs immensely. However, if the trip is meaningless, then psychonauts are distracting us from the real physiological healing mechanism. If we take Michael Pollan’s middle way, then psychonauts tell us something interesting but should be balanced out by serious, sober analysis. A similar analysis can be given regarding those who guide people through the trip. If the trip is the source of the healing, then these psychedelic guides are performing a vital service. If the trip is not part of the healing, however, then they are there to treat a side effect.

Profit motive also affects the legitimacy of these forms of knowledge. Therapeutic methods are harder to patent — although that hasn’t stopped COMPASS Pathways from trying to patent lying on a couch listening to music while on psilocybin (Love, 2021) — and so there is less money to be made from them. Therefore, fewer resources are spent creating places where people can develop good psychedelic guide techniques. Money provides an opportunity for legitimacy — large, well-funded public conferences and well-endowed research centres give fields respectability. So, while the legitimacy of science is tied to notions like objectivity, it is worth considering the role money plays in creating a perception of objectivity.

All in all, I think it is worth considering what ontological assumptions we make about a treatment, how that affects how we conceive of legitimate evidence in favour of its effectiveness, and how this confers benefits to some over others.

ENDNOTES

1. This observation is dated to December 17, 2023. Market caps change over time as investor sentiment and valuations of a company change.

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