

# The Ontological Shock: What Psychedelics can Teach us about the Nature of the Mind

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## ABSTRACT

The following article provides a brief overview of the significance and potential challenges of profound psychedelic experiences that prompt individuals to question the nature of reality, often referred to as "ontological shocks." These experiences are believed to induce changes in the structure of consciousness, leading to subsequent shifts in worldviews, behaviors, relationships, and mental health. While they can result in long-lasting positive changes, they are not always pleasant. Due to the complex alterations these experiences produce, they offer a unique opportunity to explore gaps in our understanding of the human mind and the nature of the reality it perceives, enacts, or constructs. The article aims to raise awareness of these issues by shedding light on various aspects of the discourse surrounding this topic.

## KEYWORDS

psychedelics, ontological shock, mind, consciousness

## 1 INTRODUCTION

Psychedelics are psychoactive substances that can lead to altered states of consciousness, experienced as a change in perception and cognitive processes. Classic psychedelics, such as psilocybin, mescaline, LSD and DMT, primarily act through the stimulation of the serotonin 5HT-2A receptor. Due to somewhat similar psychological effects, substances such as MDMA and ketamine are also sometimes considered as psychedelics even though they target different neurological structures [1].

In recent years, there has been a growing interest in research on the potential use of psychedelic substances for mental health treatment. There are many studies that support this claim [e. g. 2, 3, 4], but there is also evidence that psychedelics can lead to longer lasting adverse effects [e. g. 1, 5].

Some of the challenges that may emerge after a psychedelic experience stem from profound shifts in one's worldview [6], metaphysical beliefs [7], and an overall ontological shock [8], in which the individual begins to re-evaluate the nature of their reality. Commonly, people also experience a shift in their spiritual orientation [9], due to experiences that have been

labeled as "spiritual emergencies" [10]. These include transpersonal experiences, out-of-body experiences, hallucinations of religious nature etc. [10].

In this paper, we will tackle the problem of the "ontological shock" that can arise due to psychedelic experiences, how individuals cope with them and what implications they have on our understanding of the mind.

## 2 ONTOLOGICAL SHOCK FOLLOWING THE USE OF PSYCHEDELICS

As interest in researching psychedelics for their potential therapeutic effects increases, there is a growing need to understand the mechanisms that enable these changes to occur. Changes in metaphysical beliefs are thought to be one of the driving mechanisms of change that enable the transformational process to occur [8]. However, changes in metaphysical beliefs don't come easily, as they normally induce the so-called ontological shock about the nature and reality of existence [8]. This means that people start to question the nature of (their) reality and subsequently come to adopt an altered belief system, commonly constituting beliefs such as animism, life after death, the existence of alternative realities etc. [7].

On one hand, psychedelic experiences are often reported to be among the most meaningful and significant experiences, leading to positive long-term changes [11]. On the other hand, many individuals report prolonged difficulties after a profound psychedelic experience, struggling with ontological challenges as they question their own reality and existence [8]. This presents ethical challenges in both formal and informal practices for integrating psychedelic experiences, while also raising broader questions about the nature of reality itself.

### 2.1 Coping with the ontological shock

Psychedelic experiences that possess mystical qualities—characterized by feelings of ineffability, significance, and the perceived "trueness" of the experience—are more likely to result in an ontological shock and lead to a transformed belief system [12]. These experiences can offer profound insights into the "oneness" of reality and foster a sense of "ontological comfort," bringing a greater sense of purpose and meaning to life. However, they can also present challenges, as individuals may struggle to integrate these insights into their everyday lives. This raises the question of how best to support people in making sense of these new ontological truth claims [12].

Challenging psychedelic experiences can lead to various ontological difficulties, such as questioning one's identity,

grieving the loss of a past self, experiencing persistent encounters with (spiritual) entities, psychotic episodes, spiritual grandiosity, feelings of meaninglessness and emptiness, isolation and despair [8], derealization, delusional beliefs, and experiences of possession [9]. These prolonged challenges can impact individuals in different ways, resulting in difficulties with everyday interactions, attentional problems, disruptions at work [8], challenges in managing emotions, and perceptual difficulties [9].

Research on the adverse effects of psychedelics [e.g. 13, 14, 15, 16] and the challenges that arise following the so-called ontological shocks these experiences can induce [e.g. 1, 8, 9] highlights the importance of developing therapeutic practices and guidance rooted in empathic resonance and the concept of psychedelic apprenticeship [6]. While there are many existing therapeutic and shamanic frameworks aimed at making sense of psychedelic experiences [6], it is crucial to recognize that these experiences often lead to heightened suggestibility [17], which must be considered when helping individuals navigate their shifting worldviews. People have reported various strategies that helped them cope with extended difficulties, such as meditation, embodied contemplation, self-education through reading and journaling, and physical exercise. In terms of support from others, individuals expressed a need to feel seen, heard, understood, believed, and to have their experiences accepted and validated [1, 8]. This suggests a responsibility for practitioners working with and guiding people through psychedelic experiences to help them find meaning in their experiences without imposing any specific ontological truth claims [12].

Extensive research on challenging psychedelic experiences, including work by Stanislav Grof's clinical team, has identified common existential challenges that individuals often face following these experiences, primarily centered around fears of dying, going insane, or losing control [18]. According to Grof's team, psychedelic experiences can activate deep existential concerns that only subside once the individual has successfully processed them. It is suggested that people may encounter a sense of the groundlessness of being [18], which can be understood as an underlying "principle" of cognition. This brings us to the next point of this paper: the implications these experiences might have for the scientific understanding of the mind.

### 3 POSSIBLE IMPLICATIONS ON UNDERSTANDING THE MIND

#### 3.1 Understanding psychedelic experiences

The underlying mechanisms that facilitate changes after the use of psychedelics have yet to be fully understood. However, several hypotheses have been proposed to explain how these cognitive shifts might occur. One prominent hypothesis is based on the framework of predictive processing [19]. This framework conceptualizes the mind as a "prediction machine" that continuously balances information by integrating prior knowledge about the world with incoming sensory data from the environment [19].

Within this framework, the "Relaxed Beliefs Under Psychedelics" (REBUS) model suggests that psychedelics increase the brain's level of entropy—or uncertainty—while reducing reliance on prior beliefs, thereby allowing more room

for new sensory information [20]. This process can lead to the dissolution of previously rigid mental models and established worldviews. The resulting experience of an ontological shock may represent a direct encounter with the fundamental uncertainty of reality [8]. This concept, referred to as "groundlessness," attempts to explain how individuals continuously construct a world of meaning that is inherently without a fixed foundation and perpetually in flux [21].

It is important to note that psychedelics can also reinforce existing beliefs, potentially enhancing established worldviews, mental models, and expectations [22]. To address this complexity, the "Altered Beliefs Under Psychedelics" (ALBUS) model proposes that the effects of psychedelics on prior beliefs depend on factors such as the dose consumed and the individual's pre-existing state of mind [22]. This model aims to explain how psychedelics can both diminish and strengthen prior beliefs, bridging gaps between different proposed mechanisms of how psychedelics influence reality and well-being [22].

Additionally, other models offer explanations for the mechanisms of action of psychedelics. The "Cortical-Subcortical Communication Theory" (CSCT) suggests that psychedelics reduce thalamo-cortical filtering of internal and external stimuli, allowing new, unfiltered sensory information to emerge [23]. The "Cortical-Clastrum Communication" (CCC) model posits that psychedelics decouple cortical areas from the claustrum, leading to reduced cognitive control [24]. Furthermore, psychedelics are thought to open a critical period for social learning, potentially fostering new social behaviors and reducing tendencies toward isolation [25].

These various theories attempt to explain how psychedelics can facilitate the creation of new cognitive models of the world and reality. However, the field of psychedelic research continues to grapple with understanding the precise mechanisms of these substances, with ongoing testing of competing theories and hypotheses. For a comprehensive evaluation of these theories, see [26].

There is also an ongoing debate about the role of subjective experiences in the transformative effects of psychedelics. Some researchers take on a reductionist approach, focusing solely on the brain mechanisms involved [27, 28]. This is problematic, as it opens the question of how to understand the profound ontological shocks and the integration of the psychedelic experience in everyday lives of individuals. It is also problematic, as evidence suggests that psychedelic experiences with rich subjective effects, such as mystical-type experiences, can lead to the most significant transformations [29, 30]. If transformative effects were purely mechanistic, without considering subjective experiences, it becomes challenging to explain the struggles and positive changes individuals report in their daily lives after using psychedelics.

Subjective experiences cannot be easily dismissed [31, 32, 33, 34], and they are crucial for understanding how people's ontological reality gets altered. Investigating these subjective aspects could help address some of the unresolved questions about the mind. Studying the invariants and stable states of the "changing mind" following psychedelic use may bring us closer to unlocking the nature of the mind. This research could have implications for not only understanding and treating mental health issues but also for exploring concepts like consciousness [22, 36, 37] and the self [22, 33, 35, 38]. Additionally, it could

impact the reductionist debate [32], consciousness theories, and discussions about the "easy" and "hard" problems of consciousness [22, 36, 37].

### 3.2 Possible contribution to understanding the mind

In previous sections, we provided a short overview of what psychedelics are and sketched some possible implications they can have in the everyday lives of people, as well as our broader impact they may have on our understanding of the mind. In the last section we want to finish with diving a bit deeper into some possible implications that ontological shocks can have on understanding the mind.

Let us stop for a moment on how we understand the concept of the "mind". This is an important question as the theories of psychedelic mechanisms all have their own postulates, the prevalent implicit view being that the mind is a product of neuronal activity (which applies for previously presented theories – the REBUS [20], CSCT [23] and CCT model [24]). This is a reductionist view of the mind that equals the mind with the brain [39]. Another possible view is that the mind is an information-processing system that manipulates and transforms information, which is a computational view [40]. In the previous years, another understanding on the mind has slowly been evolving in cognitive science – that the mind is embodied, embedded, extended and enacted, which we call the 4E cognition. This view understands the mind as a complex interplay between the brain, body and the surrounding environment [41].

The challenge of understanding the mind mirrors the debate in psychedelic research about the significance of subjective experiences. The core issue is whether the relevance of a psychedelic experience depends solely on inducing specific brain states or requires a deeper subjective experience to impact a person's everyday life. Evidence increasingly supports the idea that both "set" (the interplay of personality, preparation, expectation, and intention) and "setting" (the physical, social, and cultural environment) play crucial roles during a psychedelic experience [42]. This observation could indicate the relevance of the 4E cognition framework, which views the mind as a dynamic interplay between brain, body, and environment. Moreover, the 4E cognition theory might explain why set and setting are important, and why some psychedelic states and doses lead to profound changes while others do not. By exploring this intricate interplay, the 4E framework may shed light on why certain individuals experience ontological shocks under specific conditions. If, however, these experiences are inexplicable through existing frameworks, they could highlight gaps in our current understanding of the mind and reveal how alternative states of consciousness can disrupt the established interaction between mind, body, and environment.

Psychedelic experiences are often described as "altered states of consciousness," suggesting that by examining what changes during these experiences, we can gain insights into what constitutes the "normal," "usual," or "everyday" state of consciousness. The concept of ontological shock, which we have frequently referenced, highlights a paradox within this framework. If a person's everyday consciousness is altered during a psychedelic experience, and they subsequently notice

changes in their subjective experience in their daily life, does this mean that the new state is an unusual or extended form of consciousness? In other words, does this imply that the individual is now living in a perpetually altered state of consciousness?

There is a prevalent view that the subjective experiences induced by psychedelics reveal aspects of the mind that need to be integrated into everyday life [43]. This perspective suggests that psychedelics should be considered mind-revealing rather than merely mind-altering substances [44]. This leads us back to fundamental questions about the nature of consciousness itself. Is consciousness merely a byproduct of neuronal activity, something external waiting to be experienced, is it embodied, enacted, or something else entirely? What we do know at this point is that psychedelics can induce alterations in our consciousness, affecting our awareness of ourselves and the world around us.

While it may be ambitious to claim that psychedelic experiences will fully bridge the epistemic gap between first-person experiences and their third-person correlates, or help us understand the nature of consciousness itself – the problem we commonly refer to as the hard problem of consciousness [45, 36]–, they can still provide valuable insights into both these issues [35, 36]. The most profound psychedelic experiences, which often lead to significant changes in consciousness, self-perception, and belief systems, may offer particularly important insights.

## 4 CONCLUSION

The aim of this article was to present the concept of ontological shock following the use of psychedelics and possible implications on the scientific understanding of the mind. We provided an overview of what is already known about this topic, to point out where we should be cautious and what is still unknown or vaguely known, as well as to illustrate how diving deeper into this topic could help us scientifically advance our current understanding of the mind.

It is important to conclude this paper with a call for caution. As we tried to point out, psychedelic experiences and its subsequent changes in everyday experience can inform us about the nature of our mind and help us gain broader understanding about topics related to consciousness, self, mental health etc. But the experiences that could most inform us about these topics and can lead to most profound long-term changes, have its challenges and downsides, which should not be disregarded. That is why the integration process, as well as the importance of set and setting, should always be considered when dealing with these substances. But before we have a consensus on what the mind is and how it constructs our reality, a lot of damage can be done, especially if we want to use psychedelic substances to help people get through their mental health problems, as is the case in psychedelic research in the past years.

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