

# Psychedelics as Non-Specific Amplifiers: Cultural Feedback Loops and Implications for Psychedelic Science. A commentary on *Return to the Real* by Ten Berge<sup>1</sup>

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**Abstract:** *Return to the Real* describes how culturally prevalent narratives shape psychedelic experience. Building on Ten Berge’s two-part analysis, our commentary argues that psychedelic effects are best understood within cultural feedback loops linking cultural set and setting, individual expectations, experience, and its articulation back into culture. On this view, psychedelics operate primarily as non-specific amplifiers and catalysts that magnify pre-existing beliefs, rather than revealing unmediated insights. We situate this thesis in relation to contemporary neuroscientific models of the psychedelic experience (CSTC, REBUS), humanistic and anthropological accounts, and evidence on socio-political belief change and clinical outcomes. We show how the apparent “disruptive” effects of psychedelics can often be reinterpreted as context-dependent intensifications. We then identify methodological and ideological obstacles to studying culture in psychedelic science and propose a mixed-methods program, including reflexivity, discourse analytics, neurophenomenology, and naturalistic cohort comparisons, to operationalize cultural variables. Recognizing culture’s constitutive role has ethical and epistemic consequences including caution with respect to metaphysical claims and attention to how psychedelics induce change in clinical settings. By bridging the humanities and cognitive neuroscience we can build a cumulative, culture-sensitive science of psychedelics.

**Keywords:** psychedelics; set and setting; discourse analysis; neurophenomenology

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## Highlights

- Psychedelics operate as non-specific amplifiers magnifying latent beliefs instead of unveiling unmediated truths.
- Cultural feedback loops (set, setting, experience, and testimony) co-produce outcomes and reinforce narratives.
- This perspective fits with neural theories such as CSTC/REBUS that argue for context-dependent intensification of psychedelic experiences.
- We propose mixed methods—reflexivity, discourse, neurophenomenology, naturalistic cohorts—to model culture in research.

In *Return to the Real*, Jos ten Berge provides a compelling historical perspective on how culturally prevalent ideas and narratives shape the psychedelic experience. A central premise of the Modernist Set & Setting in psychoactive drug experiences is that psychedelic experiences are in essence mind-revealing and present us with a deeper reality and unleash the veils of our clouded perception. Ten Berge argues that this perspective originates from a perennialist view on mystical experiences, according to which the diversity of mystical experiences reported across different religions, times, and cultures can be traced back to a common core, an unmediated experience that is ineffable and noetic. Ten Berge moves on to illustrate that psychedelic-induced mystical experiences in turn have ripple-effects on culture and society, as they provide an embodied experience of culturally transmitted beliefs and thereby function as reinforcers of these beliefs. This in turn, instantiates *cultural feedback loops* whereby the individual and cultural set and setting and the psychedelic experience are mutually related and reinforcing.

Next to calling attention to the importance of research on the cultural and historical context in which psychedelic experiences take place, ten Berge's account also critically questions the potential of psychedelic substances to veridically induce new insights, beliefs, or ideas. The view that ten Berge advocates is that psychedelics seem to act as non-specific amplifiers and catalysts that tend to amplify and magnify both conscious and unconscious latent processes. This is consistent with ideas previously articulated about psychedelics' effects in the domain of socio-political worldviews (Pace & Devenot, 2023; Sanchez Petrement, 2023), in psychedelic-assisted psychotherapy (Langlitz et al., 202; Noorani, Bedi & Muthukumaraswamy, 2023), and in historical analyses of set and setting that emphasize the role of context in shaping the nature of psychedelic effects (Hartogsohn, 2017).

Ten Berge's viewpoint critically challenges the currently widely prevalent belief that psychedelic experiences function as "disruptive technologies" that can induce change at personal, societal, and cultural levels. This idea has been at the basis of the current psychedelic revival, where we witness an increased interest in investigating the potential of psychedelic substances for the treatment of depression, end-of-life anxiety, and addiction (e.g., van Elk & Yaden, 2022). Central to the so-called psychedelic-peak therapy approach, which can also be traced back to early research in the 1950s and 60s (Oram, 2018), is the idea that psychedelic-induced mystical experiences are key in triggering a process of psychological change and insight. Indeed, several clinical studies provide preliminary evidence for the clinical efficacy of psychedelic therapy (see however van Elk & Fried, 2023) and meta-analyses show that the intensity of psychedelic-induced mystical experiences is predictive of treatment outcomes (Kangaslampi, 2023). This seems to suggest that psychedelic-induced mystical experiences *can* induce change e.g., in mental illness. Also, outside of a therapeutic context, contemporary studies seem to suggest that psychedelics induce radical changes in one's beliefs, values, and personality. For instance, some studies have suggested that a single psychedelic experience can result in decreases in neuroticism in depressed patients (Erritzoe et al., 2018), increased pro-environmental behavior (Forstmann et al., 2017) and altered metaphysical beliefs away from materialist and reductionist perspectives (Timmermann et al., 2021).

How can these apparently contradictory findings be reconciled with the perspective that psychedelics merely act as non-specific catalysts in cultural feedback loops? And what are the implications of the historical perspective outlined by ten Berge for contemporary research on psychedelics? In this commentary we would like to address these questions by discussing: (1) the alignment between ten Berge's viewpoint and contemporary psychedelic research, (2) the relation between ten Berge's perspective and other conceptual frameworks in psychedelic research, (3) challenges in conducting research on the notion of socio-cultural feedback loops, and (4) solutions in terms of tools and methods that can be applied to take the role of cultural and individual set and setting into account. We focus primarily on the implications of ten Berge's work for psychology, psychopharmacology, and neuroscience, since academic and mainstream discourse on the acute and long-term effects of psychedelics are largely shaped by evidence from these fields.

### **Consonance Between *Return to the Real* and Contemporary Research**

First, we would like to draw a parallel between Ten Berge's account and contemporary psychedelic neuroscience. Interestingly, the notion that psychedelic experienc-

es primarily act by releasing the filter of our perception or by “inhibiting the inhibition” – as ten Berge puts it – is central to theories of the neural mechanisms underlying psychedelics. According to the so-called cortico-striatal-thalamic-cortical (CSTC) model (Vollenweider & Preller, 2020), psychedelics primarily act by inhibiting the filtering function of the thalamus – a deep structure in the brain – thereby resulting in an increased flow of bottom-up signaling of interoceptive (i.e., related to the body) and exteroceptive (i.e., related to the environment) information. This mechanism has been proposed to account for the enhanced sensory experiences that people report after having taken a classical psychedelic, such as enhanced tactile sensitivity or more saturated color perception. According to another prevalent neurobiological model (ReBus; Carhart-Harris & Friston, 2019) psychedelics increase bottom-signaling by inhibiting high-level priors in prefrontal regions that normally constrain our perception and cognition. The net result is an increased sensitivity to bottom-up prediction error signaling, which in turn can amplify the effects of the current set and setting. Both the CSTC and the REBUS model thus converge with the idea that psychedelics function as non-specific amplifiers. We note that at the same time according to these models, it can be argued that if psychedelics relax beliefs or “filters” then we can see things “as they are,” that is without cultural constraints. Therefore, instead of a non-specific amplifier view, the REBUS and CSTC models can also be considered in line with the idea that psychedelics facilitate a more veridical perception of the world. Key to this discussion is how a prediction is defined and whether and how predictions are culturally embedded (see also Safron et al., 2024).

Interestingly, ten Berge’s view also resonated with an idea put forward by Noorani, Bedi, and Muthukumaraswamy (2023), who introduced a similar concept of *dark loops* and *psychedelic chemiosocialities*. Dark loops are the feedback cycles in which research participants’ experiences shape the expectations of future participants. These loops are embedded in chemiosocialities – communities that form around shared chemically-induced experiences. Such dynamics are particularly salient in randomized controlled trials (RCTs), where participants often come into studies with preconceived narratives shaped by media, peer groups, and personal research. The authors argue that these expectations can significantly affect study outcomes. Dark loops resemble the dynamics proposed by ten Berge (Part II, Figure A), as both highlight the interdependence between participants’ accounts of psychedelic experiences (e.g., personal testimonies, published results) and cultural factors (e.g., chemicosocial communities of psychedelic users or patients).

Evidence from other research fields is also consonant with the ideas proposed in *Return to the Real*. In his book *Psychedelic Experience* (2023), the philosopher Aidan Lyon makes a compelling case, based on a review of the available empirical ev-

idence, that experiences induced through the ingestion of psychedelic substances are *mind-revealing*, by making unconscious mental content available. Interestingly, he argues that other methods, including meditation or yoga, can yield similar effects and hence that the term psychedelic experience, applies more broadly to any mind revealing experience. As another example, the anthropologist David Dupuis conducted research in the Takiwasi Retreat about the use of ayahuasca for the treatment of drug addiction (Dupuis, 2022). Using ethnographic data collected over 18 months of fieldwork, he describes the process of what he dubs the *socialization of hallucinations*. This process involves the shaping of expectations, through carefully crafted rituals, symbolic elements, and sensory stimuli. Discussion groups after the ayahuasca experience help train attention and the categorization of perception (e.g., in terms of evil vs. benevolent spirits), which in turn have downstream effects on subsequent experiences. However, some participants were in doubt about the nature of “demons,” showing that they could deliberately decide to accept or reject these beliefs. As Dupuis notes (2022, p. 11): “Unlike factual (or intuitive) beliefs, which are more intuitive because they are attached to perceptual anchors that tend to make them unquestionable, the content of representational beliefs is not entirely grasped by those who hold them. Insofar as they are transmitted by authorities, they are nevertheless assumed to be true and preserved by means of “quotation marks.” Over time, Dupuis argues that psychedelic experiences act as “powerful vectors for cultural transmission”: the psychedelic visions frequently align with established cultural and religious narratives and reinforce Catholic and shamanic beliefs. This research provides a good illustration of how feedback loops between set and setting and the psychedelic experience operate in practice.

We also note the filter-metaphor that features centrally in *Return to the Real*, dating back to the perennialist philosophy of Aldous Huxley, has also been at the basis of other contemporary models of mystical experiences, such as Kelly’s ROSTA (Resonant Opening to Subliminal and Transpersonal Assets) model (see for instance: Sawyer, 2022; who places this model in the context of psychedelic research). Shortly, this view entails that psychedelic-induced mystical experiences release the filter function of our perceptual and cognitive faculties, thereby not only facilitating a more veridical perception of the material world, but also providing us access to “ultimate reality” during a mystical experience. Irrespective of whether one agrees with the ontological claims associated with this perspective, both views align in their claim that psychedelics open the “reducing valve.”

As a final example of alignment, we follow up on ten Berge’s (2025, p. 197) remark that “Within the proposed feedback loop, relating the individual set back to culture

may be the hardest gap to bridge for researchers. It involves distinguishing the personal from the cultural, which is no easy task.” In fact, such a distinction features centrally in a model that also incorporates the idea of cultural feedback loops in shaping religious experiences. The interactive religious experience model (IREM; van Leeuwen & van Elk, 2019) argues that culturally prevalent religious beliefs have downstream effects on the agency-detection experiences that believers seek out and report. These religious experiences are key in transforming *culturally prevalent religious beliefs* (e.g., “Jesus died for our sins”) into *personal religious beliefs* (e.g., “Jesus died for my sins”). Personal beliefs in turn feed back into cultural beliefs, as personal stories about supernatural encounters are readily incorporated in the religious canon. Although this model distinguishes between personal and cultural levels – a distinction that as we will see later is problematized in contemporary humanist approaches to psychedelics – it acknowledges the complex and dynamic interplay between both levels, whereby personal experiences feedback into cultural narratives and vice versa. IREM cites a lot of relevant empirical studies, from the field of the cognitive science of religion, anthropology, and evolutionary psychology, which provide evidence for the role of feedback loops between personal and cultural beliefs and experiences. Although IREM does not include psychedelic experiences, it could be expanded by showing how the concepts introduced in *Return to the Real* can be operationalized to become more tractable (more on this in Section 3).

## Dissonance Between *Return to the Real* and Contemporary Perspectives

At the same time, some findings appear to conflict with the idea that psychedelics work as amplifiers of existing ideas and rather suggest that they are disruptive technologies inducing societal and personal change. How can this be reconciled with the findings outlined above? We argue that a closer look at the available evidence questions the idea that psychedelics induce change in personality or beliefs, but that the evidence *is* compatible with the idea that existing traits and beliefs are amplified instead.

Take for instance the example of psychedelic-induced changes in metaphysical beliefs (Timmermann et al., 2021). In this study, participants indicated their agreement with a couple of metaphysical statements pertaining to the nature of reality, including belief in materialism, dualism, idealism, and panpsychism at different time-points: at baseline and 4-weeks and 6-weeks following a psychedelic experience. The abstract of the paper reads “Results revealed significant shifts away from ‘physicalist’ or ‘materialist’ views, and towards panpsychism and fatalism, post use.” This suggests

a radical change in people's metaphysical beliefs. A closer look puts the data in a different perspective: the psychedelic experience seems to shift existing beliefs in a more extreme direction (albeit in a limited matter, i.e., the effect sizes of the observed shifts in beliefs are small) but does not change the valence or directionality of existing beliefs. In other words: it does not seem to be the case that across-the-board extreme materialists, after a psychedelic experience suddenly, become panpsychists. The data suggest that people who already endorse panpsychist views in the first place, become somewhat more extreme in their panpsychist beliefs – also depending on the cultural context in which participants find themselves. Of course there may be exceptions to this rule: some individuals may show radical psychedelic-induced worldview changes. In these cases, revisions of one's worldview could be explained by a latent or unconscious predisposition to specific worldviews. For instance, a person may have left a supernatural worldview during adolescence for an atheistic framework, but supernatural beliefs may resurface depending on the set and setting in a psychedelic experience.

Other observations align with the idea that psychedelics result in the strengthening of existing beliefs, rather than in a revision of one's belief system. For instance, as an alternative to the REBUS model, Saffron and colleagues have proposed the SEBUS model, according to which psychedelic substances, especially at lower dosages, can result in a strengthening rather than a loosening of prior beliefs (Saffron et al., 2024). Also, contrary to the idea that psychedelics increase openness and thereby will foster a more open, tolerant and inclusive society, a scrutiny of the evidence indicates that psychedelics merely act as “politically pluripotent” non-specific amplifiers, that can result in more extreme conservatism and authoritarian worldviews in some settings and users (Pace & Devenot, 2021). Regarding the effects of psychedelics on personality change, a lot of the research is cross-sectional and does not allow causal inferences and hence caution is warranted when interpreting these results. Especially because the few experimental studies that have been conducted are inconclusive regarding the effects of psychedelics on personality change – at best, the effects appear context-dependent (Weiss et al., 2023). Whereas some findings can be reconciled with a non-specific amplifier view, we would like to point out that research on psychedelics in other disciplines starts from fundamentally different assumptions about the effects of psychedelics and the relation with the broader cultural setting (Kiverstein et al., personal communication). According to what we dub the *analytical view* – a framework that is dominant in research on neuropharmacology and experimental studies – psychedelics exert unique effects that occur irrespective of the socio-historical context in which they are used.

For instance, elementary and complex forms of visual imagery in response to psilocybin or ayahuasca tend to be characterized by substance-unique patterns that



in turn can be explained based on the structural and functional organization of the visual cortex (e.g., Aqil & Roseman, 2023). Similarly, there are predictable and dose-dependent effects of classical psychedelics on space- and time-perception that generalize across different settings. Research within this analytical tradition seems to clash with the Modern approach characterized by Ten Berge, by conducting experimental research to establish the unique effects that psychedelic substances exert, and the causal-mechanistic pathways involved. Further, Graziosi et al. (2023) suggest that at least some subjective effects of psychedelics, such as encounters with entities/gods or feelings of sacredness, occur across diverse settings and populations. At least some of the effects of psychedelics may thus be independent of the context in which they are administered – and hence these effects could act as independent causal vectors of cultural change.

### **Challenges for Contemporary Research to Assess Culture, set, and Setting**

The relevance of *set and setting* for the individual and societal consequences of psychedelic experiences is widely acknowledged by scholars in the humanities and social sciences (Devenot, 2023; Hartogsohn, 2017; Langlitz et al., 2021; Noorani et al., 2023). However, cultural context is still rarely considered in the design or interpretation of psychological, neuropsychological, or psychopharmacological research on psychedelics. Ten Berge identifies several key reasons for this. First, there is a prevailing desire to define the effects of psychedelics as stable across contexts, especially in research on neuropharmacology and psychiatry, where researchers try to isolate the effects of a single substance from the set and the setting in which it is administered. Second, some psychedelic researchers, influenced by the legacy of 1960s scholarship, continue to uphold the idea of psychedelics as unlocking a universal, perennial mystical experience. Third, practical obstacles – such as the complexity of integrating cultural variables into empirical studies – further hinder efforts to account for cultural factors.

Beyond these factors, additional ideological and practical barriers contribute to the marginalization of cultural factors in psychedelic research. Ideologically, both researchers and participants bring their own cultural backgrounds into the research process, often unconsciously incorporating implicit biases. Because culture is so deeply internalized within individuals that it tends to be invisible to those immersed in it (Bourdieu, 1977; Hall, 1973), these biases can be difficult to identify or articulate. Furthermore, most prominent psychedelic researchers come from Western, Educated, Industrialized, Rich, and Democratic (WEIRD) societies (Henrich & Heine, 2010), which



increases the likelihood that culturally specific assumptions go unexamined. For example, the dominant framing of psychedelics as psychiatric treatments reflects a particular worldview – one that defines psychological distress as an individual health issue with neurochemical or psychological roots, requiring medical intervention. Gearin and Devenot (2021) argue that this individualistic framing stands in tension with alternative approaches that address the socio-economic and relational dimensions of mental health.

Cultural biases are also evident in the selection of research questions, theoretical frameworks, and measurement tools. Commonly studied psychedelic effects, such as ego dissolution (i.e., the subjective experience of reduced or lost awareness of the bodily and the narrative self; Nour et al., 2016), mystical experience, and enhanced emotionality or insight, are frequently proposed as mechanisms underlying the therapeutic benefits of psychedelics (Kangaslampi, 2023; Kałużna et al., 2022). However, other significant aspects of the psychedelic experience, such as travel across time and space, taking on the perspective of non-human entities (e.g., animals, spirits, or other people), or the sensation of being (re)born, are largely neglected in quantitative research (Gearin & Devenot, 2021; Graziosi et al., 2023). Why are some experiences studied more often than others? The research instruments we develop and the questions we ask are not culturally neutral; they rest on culturally embedded assumptions about what psychedelics do, which aspects of experience are most relevant, and what qualifies as valid evidence. In this sense, the dominant methodology in psychedelic science reflects only one of several possible ways of producing knowledge, namely a mostly Western compartmentalized view.

This relates to another issue in the field: empirical psychedelic science often fails to engage with humanistic perspectives that could help contextualize and expand its cultural scope. Thus, while humanities scholars engage with and contextualize findings of empirical (e.g., psychological, clinical, or neuroscientific) psychedelic studies within a cultural framework (e.g., Gearin & Devenot, 2021; Langlitz et al., 2021), psychological or neuroscience researchers rarely do this themselves. As a consequence, socio-cultural context is overlooked while planning and conducting research, interpreting data and the communication of results to broader audiences. The integration of cultural context into psychedelic research remains thus a significant challenge, partly because the necessary interdisciplinary methodologies are still underdeveloped and unfamiliar within the field.

Ideological barriers reinforce the practical way in which research is being conducted. Most contemporary research in psychedelics is rooted in the metaphysics

of individualism, what Karen Barad critiques as an atomistic metaphysics that treats the world as composed of independent entities with inherent, preexisting properties; instead, she argues that *relata* do not preexist their intra-actions—properties and boundaries are enacted within specific phenomena (Barad, 2007). Within this framework, there is a tendency to define the effects of psychedelics as stable and replicable across all (or at least medical) contexts. This perspective reflects the assumptions of the dominant scientific paradigm and has led to significant advances in (psycho)pharmacology. Moreover, it aligns with regulatory requirements that demand standardized evidence to justify any change in the legal status of psychedelics (for critique of individualized approach in psychedelic science and its entanglement with regulatory practices; see Hauskeller, 2022). At the same time, an individualistic ontology stands in tension with culture-sensitive and relational perspectives, which understand people not as isolated units but as interdependent with their cultural environments. These two perspectives – one emphasizing individuality, generalizability, and standardization, the other emphasizing relationality and context – are difficult to reconcile as they rest on fundamentally different assumptions.

Individualistic and quantitative frameworks are more readily applicable than relational, community-based, or qualitative approaches, as the tools for standardization and universalization are more readily available. Given these ideological and practical challenges, the question arises: how might psychedelic research evolve to better incorporate the complexity of the cultural context?

### **Solutions: Incorporating Cultural Feedback Loops in Psychedelic Research**

To advance a culture-sensitive approach, we can begin by identifying the feedback loops through which culture shapes – and is shaped by – psychedelic experiences and their interpretations. But how can researchers begin to map these loops in practice? Quantitative methods, such as the use of scales or standardized test batteries, while allowing for standardization, often rely on predefined categories that may inadvertently constrain our understanding of emerging phenomena. Qualitative methodologies – such as ethnographic studies, in-depth interviews, and (neuro)phenomenological approaches – may offer richer insights into how cultural frameworks influence both acute experiences and long-term outcomes. For example, Timmerman et al. (2023) described how a neurophenomenological approach can be used to study non-ordinary states of consciousness and deepen understanding of neuroscientific data by using subjective experiences (for further discussion on how this can apply to the study of anomalous experiences more broadly, see e.g., Cardeña & Pekala, 2014).

Further, analysis by Graziosi et al. (2023) show how qualitative methods can complement quantitative findings, offering a broader understanding of acute psychedelic effects within and beyond WEIRD contexts. Accordingly, in the following sections we propose mixed-methods strategies, including both quantitative and qualitative methods, to better account for the role of culture in psychedelic's acute and long-term effects.

## Reflexivity in Psychedelic Research

Reflexivity can be a starting point for culture-sensitive psychedelic research: the practice of reflecting on how our own assumptions, positions, and cultural backgrounds shape the way we design studies, interpret data, and communicate findings. By engaging in reflexivity, researchers can begin to bring to light the implicit biases that guide their scientific inquiry. Jamieson, Govaart, and Pownall (2023) have proposed concrete ways to implement reflexivity in quantitative studies and offer examples of how reflexivity can be practiced in research. In the context of psychedelic research, this might involve asking questions such as: Where do I gain my knowledge about psychedelics? What beliefs do I hold about their appropriate use or regulation? How do I evaluate the legitimacy of various belief systems within the field? Why did I choose to study this component of the psychedelic experience? These questions might be addressed formally in a separate section in the paper, for example, in positionality statements (see: Oswald, 2024 and Savolainen et al., 2023 for controversies around positionality statements; Karhulahti, 2024 and Zembylas, 2025 for guidance on implementation of positionality statements). If one does not wish to disclose one's positionality formally, informal engagement in reflexivity, such as thinking reflexively during the research process or keeping a journal, can help reduce or acknowledge biases.

Reflexivity becomes especially relevant when collecting and interpreting empirical findings. As noted earlier, certain facets of the psychedelic experience, such as mystical experiences, have been associated with positive treatment outcomes in psychedelic-assisted psychotherapy. A similar pattern has emerged with ego dissolution: its intensity is likewise correlated with reductions in depression and other symptoms (Kałużna et al., 2022). This result might be framed in terms of evidence of a therapeutic mechanism, rendering ego dissolution a desirable effect of psychedelics (see Gearin & Devenot, 2021 for the analysis of public discourse around ego dissolution). Yet such interpretations are not culturally neutral. Historically, ego dissolving practices, such as meditation, have been appropriated for problematic purposes – such as by Nazi ideologues interested in suppressing individual morality for military ends (Gier, 2014; Victoria, 2022). Likewise, Carl Jung cautioned against reckless engagement with uncon-

scious material through psychedelics or spiritual practices. He believed ego continuity was necessary, as it serves as a mediator between the unconscious and conscious, essential for successful integration of unconscious experiences (Sopanen, 2022). In this context, a weakened ego alone might not lead to healing or insight, but rather to fragmentation, confusion, or psychological distress. These cases underscore the importance of viewing seemingly “objective” findings through a culturally aware and critical lens. Reflexivity thus invites researchers to question taken-for-granted assumptions about what constitutes a “beneficial” psychedelic effect. It encourages inquiry such as: Why do I believe ego dissolution is positive? How do my cultural values align with that belief? Acknowledging that concepts like “ego dissolution” hold different meanings across philosophical, spiritual, and clinical traditions helps prevent the uncritical endorsement of effects that may be valorized in some contexts but pathologized in others.

Reflexivity can help us gain an initial understanding of how the culture operates within us and define which modalities of it could be studied in psychedelic research. Therefore, besides acknowledging our own biases, tracking how our knowledge and beliefs influence the way we select research questions and collect, analyze and interpret the data, can also serve as a generative tool for identifying which dimensions of culture might be worth studying in psychedelic research.

## Systematic Discourse Analysis

Moving from the individual researcher’s perspective to broader cultural narratives, discourse analysis offers another valuable tool. Dominant discourses are shaped by individuals and institutions in positions of power such as media, religion, and scientific sites. They influence both public and academic understandings of psychedelics by providing narratives through which one can make sense of psychedelic experiences. One of the dominant discourses in scientific psychedelic space is medicalization and individualization (Gearin & Devenot, 2021). This narrative “sinks” into the language of researchers, patients and users, rendering them more likely to understand the experience in individualistic terms: that one’s suffering arises from individual reasons (i.e. brain functioning) and should be treated through individual means (substances that will “fix” the brain). Discourse analysis might examine how psychedelics are framed by researchers, therapists, media outlets, politicians, influencers, and research participants themselves.

For example, ten Berge’s analysis of key terms used in the psychedelic literature (see Part I, Figure 1), offers a model for identifying core cultural themes. He demonstrates how key concepts function as cultural anchors. Further, Gearin and Devenot (2021) and Devenot (2023) provide valuable examples of critical analysis of psychedelic-related discourses. They analyze how the background of the socio-economic

system might influence meaning-making of individual psychedelic experiences. Further, Holm et al. (2023) examine dominant discourses on how psychedelic users share their knowledge and construct the meaning of psychedelic experience via online forum.

Tools like BERTopic can support the automated and systematic extraction of themes and language patterns from large datasets, including interviews, scientific articles, and social media content (examples of BERT implementation for analysis of online content: Xu et al., 2022; and discourse analysis: Gupta, 2023). Importantly, while social media offers a valuable source of information for psychedelic research, it also raises significant ethical concerns, particularly regarding informed consent when using individuals' publicly available content for research purposes (Fiesler & Proferes, 2018). To address this issue ethical guidelines for research on social media have been developed and outlined for example in Townsend and Wallace (2016).

Identified dominant discourses can then be traced to the subjective reports of psychedelic users, revealing how broader narratives inform personal expectations and post-experience interpretations (see Noorani, Bedi & Muthukumaraswamy, 2023 for a discussion on tracking expectations in participants of clinical studies on psychedelics). A significant limitation of this strategy is that it can only account for information that participants are consciously aware of and able to articulate. As ten Berge notes, psychedelic experiences may be shaped by unconscious cultural content – elements that cannot easily be verbalized or reported by participants. This limitation can be addressed by employing novel methods of research and analysis. For example, analysis of speech patterns (for the use of speech analysis in psychedelic research, see Kuc et al., 2025) or the use of arts-based methods (for an overview, see an special issue on the topic, Chamberlain et al., 2018; also Margolin, Pearson, & Jones, 2024) can provide additional information, including unconscious or unarticulated content. In the next chapter, we will focus in detail on another possible solution to this issue: research involving a broader range of psychedelic users, which could help trace unarticulated expectations and their effects.

### Research on Naturalistic Users

Although controlled trials are invaluable for establishing nomothetic causality and efficacy, they only capture a narrow slice of the vast and diverse landscape of psychedelic use and psychedelic effects. Studying naturalistic users – those who use psychedelics in non-laboratory settings – offers an essential complement. These individuals often use psychedelics in contexts such as ceremonies, festivals, or at home

for personal exploration. One's choice to use psychedelics in a clinical study, at the ceremony or at festivals is to some extent defined by the cultural background one comes from. This choice of set and setting further affects how one experiences and interprets psychedelics effects. Since individuals engage with psychedelics for varied reasons across diverse contexts, clustering users into subpopulations based on the context can provide deeper insight into the role of set and setting.

Statistical methods like factor analysis, latent profile analysis, or k-means clustering (Gao et al., 2023) can be used to group users into subpopulations. Still, there are important methodological questions to consider: Which criteria should define these subgroups? How do we account for individuals who use psychedelics in multiple settings for different purposes? Moreover, even within the same environment or group, people may have vastly different experiences. Focusing on smaller and more homogeneous groups (e.g., different retreats or clinical study sites) would allow researchers to explore differences in subpopulations in a more nuanced way.

## Closing Remarks and Implications for the Field

Ten Berge's paper fits in a broader trend to call attention to the importance of incorporating cultural context and interdisciplinary collaboration within psychedelic science. Here, we placed this idea in the current landscape of psychological, psychopharmacological, and neuroscientific research on psychedelics, and proposed several strategies and methods for implementing culturally sensitive approaches. Yet we also raised the question of whether a more fundamental epistemological reorientation might be needed in how psychedelic research is approached – one that is based on relational ontologies instead (an elaboration of this idea in the context of psychedelic science is outlined in Sadowska, 2023). We argued that currently the field remains largely shaped by individualistic frameworks and that this selective focus can hinder the development and application of culturally and context-sensitive methodologies. If researchers, through their studies and public communication, promote a narrative of psychedelics as individual-level treatments for individual-level pathologies, they may unintentionally reinforce individualistic ideologies – both in study participants and in the broader culture. In this way, psychedelic research becomes part of a feedback loop: the culture shapes the research, the research shapes the expectations, and the expectations shape future experiences and interpretations. Thus, the imperative to incorporate culture into psychedelic research is not merely a matter of improving the quality of evidence. It is also an ethical and epistemological concern. The way researchers engage with psychedelics has real-world consequences, not only for in-

dividual participants, but also for the communities and societies in which those individuals are embedded.

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## **Les psychédéliques comme amplificateurs non spécifiques : boucles de rétroaction culturelle et implications pour la science psychédélique.**

### **Commentaire sur Retour au réel de Ten Berge**

**Anastasia Ruban   Michiel van Elk**

**Résumé:** Retour au réel décrit comment les récits culturels dominants façonnent l'expérience psychédélique. En s'appuyant sur l'analyse en deux parties de Ten Berge, ce commentaire soutient que les effets psychédéliques doivent être compris comme inscrits dans des boucles de rétroaction culturelle liant le set and setting culturel, les attentes individuelles, l'expérience et son articulation dans la culture. Dans cette perspective, les psychédéliques fonctionnent principalement comme des amplificateurs non spécifiques et des catalyseurs qui intensifient des croyances préexistantes, plutôt que de révéler des vérités immédiates. Nous situons cette thèse par rapport aux modèles neuroscientifiques contemporains (CSTC, REBUS), aux approches humanistes et anthropologiques, ainsi qu'aux données sur les changements de croyances socio-politiques et les résultats cliniques. Nous montrons que les effets « disruptifs » apparents des psychédéliques peuvent souvent être réinterprétés comme des intensifications dépendantes du contexte. Nous identifions aussi des obstacles méthodologiques et idéologiques à l'étude de la culture en science psychédélique et proposons un programme mixte incluant réflexivité, analyse du discours, neurophénoménologie et comparaisons de cohortes naturalistes. La reconnaissance du rôle constitutif de la culture a des conséquences éthiques et épistémiques, notamment la prudence à l'égard des affirmations métaphysiques et l'attention à la manière dont les psychédéliques induisent des changements dans les contextes cliniques. En jetant un pont entre les sciences humaines et les neurosciences cognitives, nous pouvons construire une science cumulative et sensible à la culture des psychédéliques.

French translation by Antoine Bioy, Ph. D.

## Psychedelika als nicht-spezifische Verstärker: Kulturelle Feedbackschleifen und Implikationen für die psychedelische Wissenschaft. Ein Kommentar zu *Rückkehr zum Realen* von Ten Berge

Anastasia Ruban Michiel van Elk

**Zusammenfassung:** „Rückkehr zum Realen“ beschreibt, wie kulturell vorherrschende Narrative psychedelische Erfahrungen prägen. Aufbauend auf Ten Berges zweiteiliger Analyse argumentiert unser Kommentar, dass psychedelische Effekte am besten innerhalb kultureller Rückkopplungsschleifen verstanden werden können, die kulturelle Rahmenbedingungen, individuelle Erwartungen, Erfahrungen und deren Rückkopplung in die Kultur miteinander verbinden. Aus dieser Sicht wirken Psychedelika in erster Linie als unspezifische Verstärker und Katalysatoren, die bereits bestehende Überzeugungen verstärken, anstatt unvermittelte Einsichten zu offenbaren. Wir stellen diese These in Beziehung zu zeitgenössischen neurowissenschaftlichen Modellen der psychedelischen Erfahrung (CSTC, REBUS), humanistischen und anthropologischen Darstellungen sowie Belegen für soziopolitische Glaubensveränderungen und klinische Ergebnisse. Wir zeigen, wie die scheinbar „störenden“ Effekte von Psychedelika oft als kontextabhängige Intensivierungen neu interpretiert werden können. Anschließend identifizieren wir methodologische und ideologische Hindernisse für die Untersuchung von Kultur in der psychedelischen Wissenschaft und schlagen ein Programm mit gemischten Methoden vor, das Reflexivität, Diskursanalyse, Neurophänomenologie und naturalistische Kohortenvergleiche umfasst, um kulturelle Variablen zu operationalisieren. Die Anerkennung der konstitutiven Rolle der Kultur hat ethische und epistemische Konsequenzen, darunter Vorsicht gegenüber metaphysischen Behauptungen und Aufmerksamkeit dafür, wie Psychedelika Veränderungen in klinischen Settings bewirken. Durch den Brückenschlag zwischen Geisteswissenschaften und kognitiver Neurowissenschaft können wir eine kumulative, kultursensible Wissenschaft der Psychedelika aufbauen.

German translation by Eberhard Bauer, Ph. D.

## Psicodélicos como Amplificadores Não-Específicos: Feedback-Loop Cultural e Implicações para a Ciência Psicodélica. Um Comentário sobre *Return to the Real* de Ten Berge

Anastasia Ruban Michiel van Elk

**Resumo:** Return to the Real descreve como as narrativas culturalmente prevalentes moldam a experiência psicodélica. Com base na análise de duas partes de Ten Berge, nosso comentário argumenta que os efeitos psicodélicos são melhor compreendidos dentro dos ciclos de feedback-loop culturais que ligam o set e setting cultural, as expectativas individuais, a experiência, e sua articulação de volta à cultura. Nessa visão, os psicodélicos operam essencialmente como amplificadores e catalisadores não específicos que acenam crenças pré-existentes, em vez de revelar insights não mediados. Situamos esta tese em relação

aos modelos neurocientíficos contemporâneos da experiência psicodélica (CSTC, REBUS), perspectivas humanísticas e antropológicas e evidências sobre mudança de crença sociopolítica e resultados clínicos. Mostramos como os aparentes efeitos “perturbadores” dos psicodélicos podem ser reinterpretados como intensificações dependentes do contexto. Em seguida, identificamos obstáculos metodológicos e ideológicos para estudar a cultura na ciência psicodélica e propomos um programa de métodos mistos, incluindo reflexividade, análise do discurso, neurofenomenologia e comparações de coortes naturalistas, para operacionalizar variáveis culturais. Reconhecer o papel constitutivo da cultura tem consequências éticas e epistêmicas, incluindo cautela com relação a alegações metafísicas e atenção a como os psicodélicos induzem mudanças em ambientes clínicos. Ao unir as humanidades e a neurociência cognitiva, podemos construir uma ciência cumulativa e culturalmente sensível sobre psicodélicos.

Portuguese translation by Antônio Lima, Ph. D.

## **Los Psicodélicos Como Amplificadores no Específicos: Circuitos Culturales Retroactivos e Implicaciones para la Ciencia Psicodélica. Un comentario sobre *Retorno a lo Real* de Ten Berge**

**Anastasia Ruban   Michiel van Elk**

**Resumen:** *Retorno a lo Real* describe cómo las narrativas culturales prevalecientes dan forma a la experiencia psicodélica. Partiendo del análisis en dos partes de Ten Berge, nuestro comentario arguye que los efectos psicodélicos se explican mejor en base a circuitos culturales retroactivos que vinculan a la actitud y el entorno cultural, las expectativas individuales, la experiencia, y su rearticulación en la cultura. Desde esta perspectiva, los psicodélicos funcionan principalmente como amplificadores y catalizadores no específicos que fortalecen las creencias preexistentes, en lugar de revelar percepciones no mediadas. Situamos esta tesis en relación a los modelos neurocientíficos contemporâneos de la experiencia psicodélica (CSTC, REBUS), los reportes humanistas y antropológicos, y la evidencia sobre el cambio de creencias sociopolíticas y los resultados clínicos. Mostramos cómo los aparentes efectos “perturbadores” de los psicodélicos pueden reinterpretarse a menudo como intensificaciones dependientes del contexto. A continuación, identificamos obstáculos metodológicos e ideológicos en el estudio de la cultura en la ciencia psicodélica y proponemos un programa de métodos mixtos, incluyendo reflexividad, análisis del discurso, neurofenomenología, y comparaciones entre grupos naturalistas, para operacionalizar las variables culturales. Reconocer el papel constitutivo de la cultura tiene consecuencias éticas y epistémicas, como el tener cautela con respecto a aseveraciones metafísicas y ser conscientes de cómo los psicodélicos pueden inducir cambios en contextos clínicos. La integración de las humanidades y las neurociencias cognitivas puede construir una ciencia cumulativa de los psicodélicos sensible a la cultura.

Spanish translation by Etzel Cardeña, Ph. D.