

1 What Can Critical Humanities Contribute to Psychedelic 2 Research? A Naturalist Approach to Interdisciplinary 3 Integration 4

5 *This paper explores the potential for interdisciplinary collaboration between*
6 *science and the humanities, with a focus on recent advancements in psychedelic-*
7 *assisted therapy. It provides an overview of key concepts in this emerging field*
8 *and identifies research gaps that offer opportunities for interdisciplinary*
9 *integration. Adopting a non-reductionist naturalist framework, the paper views*
10 *psychological phenomena as emergent properties of underlying neuronal*
11 *biochemical processes. The term “critical humanities” refers to integrating*
12 *diverse perspectives—such as aesthetic, psychological, philosophical, spiritual,*
13 *and recreational—with scientific inquiry. This approach contrasts with traditional*
14 *views that separate science from the humanities. Within this framework, the paper*
15 *argues that critical humanities can address metaphysical biases in language that*
16 *hinder psychedelic research and public understanding. For instance, it can clarify*
17 *antiquated dualisms, correct misconceptions about the nature of psychedelic*
18 *experiences, and prevent premature psychological predictions lacking solid*
19 *evidence. More precisely, the paper cautions against the notion that psychedelic*
20 *experiences “cause” insights. Additionally, critical humanities can enhance*
21 *therapeutic settings, such as the role of music in therapy sessions, and assist in*
22 *designing comparative studies. Ultimately, it aims to foster a more coherent*
23 *understanding regarding psychedelic experiences.*

24
25 **Keywords:** *psychedelic-assisted therapy, altered states of consciousness, mystic*
26 *experiences, humanities of psychedelics, philosophy, neuroplasticity, non-*
27 *reductionist naturalism*

28 29 30 Introduction 31

32 This paper investigates the potential for interdisciplinary collaboration between
33 science and the humanities, focusing on recent advancements in psychedelic-
34 assisted therapy. Here, “psychedelics” will refer to classical psychedelic compounds
35 including psilocybin, ayahuasca, peyote, LSD, mescaline, and DMT (N,N-
36 dimethyltryptamine). The paper provides an overview of the key concepts underpinning
37 this emerging field and identifies existing research gaps as opportunities for
38 meaningful cross-pollination.

39 Historically, mystic experiences have been reported by both religious and
40 secular thinkers as involving profound shifts in perception, mood, cognition, and
41 personality. Traditionally, these experiences have been viewed through an
42 entheogenic or metaphysical lens, which posits a transcendent layer of reality
43 beyond normal consciousness. This perspective suggests that such experiences
44 access a “deeper” or “more authentic” realm of being. The philosophical position
45 that empirical science does not exhaust what exists, that there is a level of reality
46 that cannot be translated into normal language—for example, what-it-feels-like

1 experiences (*qualia*) or union with the divine– has deep roots in the history of
2 Western thought and culture (See Appendix A).

3 In contrast, contemporary science approaches mystical experiences through
4 naturalistic frameworks, including biochemistry, pharmacology, and neurophysiology.
5 Research indicates that high dosages of psychedelics, such as psilocybin, can induce
6 mystic experiences leading to sustained positive changes in mood and behavior
7 within therapeutic settings. However, the effectiveness of these experiences is also
8 influenced by psychological and environmental factors, such as “set and setting.”
9 Current research questions include: How do psychedelics function biochemically
10 and neurophysiologically? What role does subjective experience play in therapeutic
11 contexts? Why isn’t psychedelic assisted therapy simply pharmacotherapy? And
12 how do psychological and environmental factors, like music, enhance ego-dissolution?

13 A recent call for a “critical, psychedelic humanities” suggests that exploring
14 metaphysical, ethical, and cultural dimensions of psychedelic experiences is crucial
15 (Letcher, 2023, p.824). This perspective argues that science alone cannot fully
16 capture the richness of psychedelic experiences, which are seen as “more than a set
17 of defined molecules” (Hauskeller, 2022, p.5). It advocates for integrating
18 humanities perspectives to prevent science from “overextending” and potentially
19 undermining the subjective mystic experience in its cultural, religious, or
20 recreational significance (Devenot, 2013). Such views reflect a long-standing
21 tradition that contrasts the humanities with natural science, seeking to protect the
22 unique and meaningful aspects of human experience from the impersonal laws of
23 nature (Hacker, 2002; von Wright, 1993). This distinction hinges on the alleged
24 dichotomy between normative and factual realms and their respective methods of
25 hermeneutical comprehension and causal explanation.

26 I challenge the idea that scientific and humanities perspectives are inherently at
27 odds. Instead, I align with neuroscientists Carhart-Harris and Friston, and
28 philosopher Chris Letheby, who propose that mystical states can be understood as
29 emergent properties of biochemical processes. This naturalist approach enables a
30 more integrated view that incorporates humanities perspectives without diminishing
31 the importance of subjective experiences or their biochemical foundations (Carhart-
32 Harris & Friston, 2019; Letheby, 2021). By viewing subjective experience as an
33 emergent property, we can reconcile pharmacotherapeutic and psychotherapeutic
34 approaches, rather than setting them at “loggerheads” (Lebedev et al., 2016, p.
35 3210). I use the term “critical humanities” to describe this inclusive domain, which
36 integrates scientific exploration with diverse perspectives—encompassing aesthetic,
37 psychological, sociological, anthropological, cultural, political, spiritual, and
38 recreational viewpoints. A non-reductionist naturalist worldview, where multiple
39 levels of explanation are valid as long as they are consistent with scientific principles
40 (Carroll, 2016), provides a legitimate space for the critical humanities.

41 If we view humanities and science as complementary, we can explore questions
42 that are not commonly asked, or, at the very least, shift the tone and focus of the
43 debate. For example, “What can critical humanities contribute to psychedelic
44 research?” I will demonstrate that the interdisciplinary nature of psychedelic-
45 assisted therapy creates an opportunity for cross-pollination, precisely because
46 many of the numerous research gaps in this emerging field lie at the intersection of

1 biochemical mechanisms and subjective experience. For example, while there is
 2 accumulating evidence that “set and setting” influence the acute psychedelic
 3 experience and its long-term effects, exactly *how* and precisely *which* aspects do so
 4 for *whom* has not been tied to specific biomarkers (Golden et al., 2022). There is a
 5 good reason for this lack of testing “set and setting.” As one scientist puts it:
 6 “Integrating variables of set and setting into clinical drug research would entail great
 7 complications for a pharmaceutical industry bent on randomized controlled trials
 8 (RCTs) and with limited patience for injecting fuzzy social and cultural elements
 9 into its considerations” (as cited in Golden et al., 2022, p.63). However, it lies in the
 10 very nature of the psychedelic experience that “fuzzy” intrapersonal and
 11 sociocultural contexts matter. By bridging the divide between science and the
 12 humanities, critical humanities of psychedelics can play a crucial role in advancing
 13 a coherent understanding of psychedelic-assisted therapy and is thus highly relevant
 14 to policy debates about psychedelic therapy. More specifically, this paper focuses
 15 on three key areas where critical humanities can contribute to psychedelic research:
 16 clarifying linguistic frameworks, maintaining scientific boundaries, and enhancing
 17 therapeutic settings. These areas correspond to the paper’s main sections.

18

- 19 1. Clarifying Linguistic Frameworks: Removing metaphysical biases from our
 20 language to better understand and interpret psychedelic experiences. By
 21 highlighting antiquated dualisms critical humanities can bolster psychedelic
 22 research, which uses outdated language in its qualitative studies.
- 23 2. Maintaining Scientific Boundaries: Ensuring science does not make
 24 premature psychological predictions such as causally linking psychedelic
 25 use to material beliefs without solid evidence tied to biomarkers.
- 26 3. Enhancing Therapeutic Settings: Improving the design and impact of
 27 therapeutic settings, such as music, in psychedelic therapy.

28

29

30 **The Contingency of Language in Mystical and Psychedelic Contexts**

31

32 Reports on mystic-type experiences permeate human history. Despite
 33 significant phenomenal overlap, these experiences vary widely subjectively and are
 34 described using vastly differing vocabulary across contexts such as religion,
 35 philosophy, art, personal development, and clinical research. When we ask “What
 36 is a mystic experience?” “What is a psychedelic state?” or “What is an entheogenic
 37 or hallucinogenic state?” –for, all these terms have some overlap as they share
 38 common phenomenal features– the answer is: That depends on who you ask, as the
 39 psychedelic experience involves subjective, cultural, and psychological dimensions
 40 that are not fully captured by current biomarkers (Siegel et al., 2024). For lack of a
 41 better word, the Austrian 20th century intellectual, Musil, calls the mystic state
 42 simply “the other state” [*der andere Zustand*] indicating that what all first-person
 43 historical reports have in common —besides their “passionate imprecision” (Musil,
 44 1990, p.199)— is that they understand the mystic state in opposition to everyday
 45 normal consciousness.

1 Given that subjective interpretations of psychedelic experiences vary widely,
 2 as reports come from individuals with different backgrounds, interests, and settings,
 3 it is not surprising that there are many metaphysical and entheogenic interpretations
 4 of the mystic state. For example, about “the other state” it has been claimed that it
 5 provides direct access to ultimate truth bypassing any linguistic mediation between
 6 subject and world (Schopenhauer, 2010); encounters with God (Buber, 1995);
 7 insights into universal human values (Dostoevsky, 1993); or discovery of one’s
 8 authentic self (Musil, 1978). However, Letheby (2021) has shown that such
 9 metaphysical interpretations are by no means necessary.

10 Common aspects in first-person reports of mystical experiences have been
 11 found to include

- 12
- 13 • ego-dissolution, or the experience of profound unity or “oneness” with all
 14 that exists,
- 15 • a felt sense of sacredness,
- 16 • a sense of the experience of truth and reality at a fundamental level,
- 17 • deeply felt positive mood,
- 18 • transcendence of time and space,
- 19 • and difficulty explaining the experience in words (Barrett, Johnson, &
 20 Griffiths, 2015).
- 21

22 If we zero in on the first of these points and ask “What is meant by ‘ego-
 23 dissolution?’” we are confronted with another coarse-grained term, as it is an
 24 unsettled philosophical and scientific question what “self” or “ego” refer to (if they
 25 are referring terms at all) (Hacker, 2007; Lebedev et al., 2015; Millière, 2017). Some
 26 examples might thus be useful to elucidate the phenomenon of ego-dissolution:
 27

28 It became very important to distinguish between ‘I’ and ‘Me,’ the latter being an
 29 object defined by patterns and structures and responsibilities –*all of which had*
 30 *vanished*—and the former being the subject experiencing and feeling. My normal
 31 life seemed to be all Me, all demands and responsibility, a rushing burden which
 32 destroyed the pleasure and freedom of being ‘I.’ (as cited in Letheby, 2021, p.53).
 33

34 Although I *lost all sense of ‘me-ness,’* the sense of ‘I-ness’ was intensified
 35 unbelievably. ... It was simply a sense of ‘is-ness’ or ‘am-ness’. *I wasn’t anything*
 36 *–I simply was.* And at these moments of ecstatic clarity there was such a peace and
 37 rest and at the same time such exuberance and wildest joy (as cited in Letheby,
 38 2021, p.53).
 39

40 I was looking at my furniture, not as the utilitarian who has to sit on chairs ... but
 41 as the pure aesthete. ...

42 I spent several minutes –or was it several centuries?—not merely gazing at those
 43 bamboo legs, but actually *being* them –or rather being myself in them; or, to be still
 44 more accurate (for “I” was not involved in the case, nor in a certain sense were
 45 “they”) being my Not-self in the Not-self which was the chair (Huxley, 1954, pp.
 46 21-22).
 47

1 In the image of this world there is neither measure nor precision, neither purpose
 2 nor cause: good and evil simply fall away, ... and in place of all these relations
 3 enters a secret rising and ebbing of our being with that of things and other people.
 4 It is in this condition that the image of each object becomes not a practical goal, but
 5 a wordless experience (Musil, 1990, p.199).
 6

7 The phenomenon of ego-dissolution, where one loses one’s autobiographical
 8 narrative self while retaining a minimal sense of self, has been linked to the
 9 therapeutic success of psychedelic-assisted therapy (Lebedev et al., 2016; Carhart-
 10 Harris & Friston, 2019; Letheby, 2021; Siegel et al., 2024).

11 It is noteworthy that most data on mystical experiences, including ego-
 12 dissolution, rely on subjective reports, questionnaires, and other qualitative methods.
 13 For instance, a study found that only 6.6% of relevant research on the effects of
 14 setting on psychedelic experiences linked them to biomarkers (Golden et al., 2022).
 15 Even Siegel et al. (2024), who connects subjective psychedelic experiences to brain
 16 changes, relies on the Mystical Experience Questionnaire (MEQ), which involves
 17 metaphysical language. MEQ is a validated scientific tool used to assess mystical
 18 experiences, particularly those induced by psychedelics. It is used in psychological
 19 and clinical research to quantify and analyze the nature and extent of mystical
 20 experiences (Barrett, Johnson, & Griffiths, 2015). The MEQ employs metaphysical
 21 and entheogenic language in statements such as: “Experience of unity with *ultimate*
 22 *reality.*” “Feeling that you experienced something profoundly *sacred and holy.*”
 23 “Feeling that the consciousness experienced during part of the session was *more*
 24 *real* than your normal awareness of everyday reality” (Griffiths, Richards, & Jesse,
 25 2006; emphases added). The Metaphysical Beliefs Questionnaire used by
 26 Timmermann et al. (2021) also uses classical metaphysical positions to describe the
 27 mystical experience. Statements include: “There exists another separate realm or
 28 dimension beyond this physical world that can be experienced or visited.
 29 (Ontological transcendentalism).” “Visiting such immersive “realms” or “worlds”
 30 can sometimes depend on a supernatural / magical transition process or event.
 31 (Supernatural transcendentalism)” And “There are two separate realms of existence,
 32 the physical (body, brain and external world) and the mind, the latter being non-
 33 physical/non-material. (Dualism)” (Timmermann et al., 2021, p.2).

34 Philosophically, these metaphysical interpretations —whether historical or
 35 contemporary—presuppose an appearance-reality split. This dualist worldview
 36 assumes a transcendent level of self and world, a deeper layer of reality, that cannot
 37 be accessed by normal consciousness but is reachable through an “other state.” The
 38 metaphysical phrasing of mystic experiences is not surprising, given the deep roots
 39 of dualism in Western thought and culture. To understand the extent and lasting
 40 impact of these roots, see Appendix A. From the *Oracle at Delphi*, where the
 41 priestess would enter a trance-like state to deliver prophecies, to Plato, where
 42 knowledge regarding the concept of the One (the ultimate principle of unity) cannot
 43 be conveyed in normal language but must be experienced: “For this knowledge is
 44 not something that can be put into words like other sciences” (Plato, Letter VII,
 45 341c), to Kant who argues that we can access the noumenal realm through moral
 46 feeling (Thorndike, 2018), and Schopenhauer, where the transcendent World as
 47 Will is directly experienced in music (Schopenhauer, 2010, §52), to Wittgenstein

1 who says that “there are, indeed, things that cannot be put into words. They make
2 themselves manifest. They are what is mystical” (Wittgenstein, 1997, Proposition
3 6.522), and finally Star Wars, where “The Force” underlies everything like
4 Heraclitus’ conception of the *The Logos*. “This *Logos* holds always, but humans
5 always prove unable to understand it” (as cited in McKirahan, 2010, p.112). In all
6 these examples, some epistemological/ontological dualism is presupposed.

7 The grip of the metaphysical perspective on psychedelic states is powerful,
8 because the dichotomies on which it relies—even though they are scientifically
9 untenable—are still deeply rooted in our language. Even leading scientists on
10 psychedelic-induced mystical states get caught up in this antiquated language. For
11 example, in their landmark paper, Carhart-Harris and Friston suggest that
12 “integrated properly, psychedelics have every chance of becoming a legitimate, if
13 not lauded, tool of science and medicine—capable of awakening us to the *true*
14 *depths* of our being” (Carhart-Harris and Friston, 2019, 339, emphasis added) Or, in
15 his Ted Talk, Fred Barrett, current director of the department of psychedelic
16 research at Johns Hopkins University, speaks of psychedelics helping to overcome
17 “disconnection from our *most authentic* selves” (Barrett, 2020, emphasis added).
18 And Griffith, founder of the department, treats psychedelic therapy as something
19 akin to the Oracle of Delphi:

20
21 So I did a session with a psychedelic and went into that explicitly asking a couple of
22 questions. ... I asked a question directly of the cancer. I’m hesitant to talk about it
23 because it’s reifying the cancer as “other,” and I don’t hold that the cancer is some
24 “other” with which I can have a dialogue. ...: “This process, is it going to kill me?”
25 The answer was, “Yes, you will die, but everything is absolutely perfect; there’s
26 meaning and purpose to this that goes beyond your understanding, but how you’re
27 managing that is exactly how you should manage it (Marchese, 2023).
28

29 Terms like “true depth,” “authenticity,” and “purpose beyond our understanding”
30 have no place in science, —and they should not in public discourse or in the context
31 of psychedelic-assisted therapy either. The appearance-reality split that these
32 expressions presuppose invites metaphysical speculation that empirical science does
33 not exhaust what exists, that there is a level of reality that cannot, in principle, be
34 translated into language—such as what-it-feels-like experiences (*qualia*), union
35 with the divine, or the allegedly ineffable universal language of music. It also evokes
36 false expectations in the public. Critical humanities of psychedelics can play a useful
37 role debunking these views by removing metaphysical biases embedded in our
38 language and help to re-think the narrative phrasing of an ineffable experience.

39 There is no “true” self to be discovered, only contingent versions of oneself
40 (Rorty, 1989). For instance, one might connect with an earlier version of oneself
41 that feels superior, such as during a mid-life crisis or experiences of alienation.
42 While some versions of oneself might be healthier and preferable, they are not more
43 “true” or “authentic.” Historically, from antiquity to modernity, people spoke of a
44 deeper self, but with contemporary understanding of natural causal mechanisms
45 behind altered states, this perspective is less relevant. The dualisms that get the
46 metaphysical perspective on mystical states off the ground and invite the idea that
47 other than linguistic means could be employed to access an alleged deeper layer of

1 self and reality are part of a world view that is inconsistent with contemporary
2 science. To be clear, it might feel during the acute drug experience —“acute”
3 meaning while the psychedelic drug is pharmacologically active, which depending
4 on drug and dosage can last for several hours— *as if* there exists another separate
5 realm beyond this physical world that can be experienced. It might be useful to add
6 “as if” to questionnaires to capture this subjective experience more accurately.

7 Language, including scientific language, is historically contingent. So, how
8 does contemporary science explain psychedelics-induced mystical states? Recent
9 neuroscientific research into psychedelic-assisted therapy focuses on the
10 biochemical mechanisms that disrupt neuronal networks and initiate neuroplasticity.
11 This therapy aims to leverage these mechanisms to foster lasting changes in
12 behavior, thought patterns, and emotional well-being (Ly et al., 2018; Shao et al.,
13 2021; Vargas et al., 2023). Carhart-Harris and Friston’s landmark 2019 paper,
14 “REBUS and the Anarchic Brain: Toward a Unified Model of the Brain Action of
15 Psychedelics,” links the subjective phenomenology of psychedelic experiences with
16 their neurobiological underpinnings (Carhart-Harris & Friston, 2019). The REBUS
17 model—Relaxed Beliefs Under Psychedelics—aims to integrate three levels of
18 human behavior: neuroscience, psychology, and everyday experience. This
19 approach is significant as it connects various aspects of human behavior into a
20 cohesive framework. A few key points are as follows:

21 Starting with the neuroscientific level, the biochemical mechanisms of
22 psychedelics are not yet fully understood. It is known that psychoplastogens like
23 psilocybin, the active compound in magic mushrooms, act as agonists at serotonin
24 5-HT_{2A} receptors, which are crucial for promoting generalized plasticity and
25 cortical neuron growth (Vargas et al., 2023). Psilocybin induces rapid increases in
26 dendritic spine density and enhances structural and functional connectivity,
27 particularly in high-level cortical regions. Siegel, *et al.*, 2024 find that “psilocybin-
28 driven functional connectivity changes were strongest in the default mode network,
29 which is connected to the anterior hippocampus and is thought to create our sense
30 of space, time and self.” (Siegel, *et al.*, 2024, p.2) Accordingly, functional
31 disintegration of these high-level networks has been linked to phenomenological
32 features of ego dissolution, transcendence of space and time, and other cognitive
33 and emotional changes under psychedelics (Lebedev et al., 2015; Vargas et al.,
34 2023; Siegel, et al., 2024). The key takeaway is that psychedelic-induced altered
35 states are *natural* phenomena, as the acute psychedelic experience can be linked to
36 specific functional connectivity changes induced by agonism of 5-HT_{2A} receptors.
37 Siegel et al. (2024) show that over 80% of variability in mystical experiences as
38 measured by MEQ can be neurobiologically explained.

39 Connecting these biochemical observations to lasting psychological effects
40 remains challenging. It is hypothesized that general neuronal plasticity underlies the
41 rapid and sustained therapeutic effects of psilocybin. However, the integration of
42 these neuroplastic changes into long-term behavioral patterns is influenced by
43 environmental and psychological contexts and is not solely attributable to
44 pharmacotherapy. Psychedelic experiences do not lead to therapeutic effects by
45 themselves, but also involve extra-pharmacological factors such as supportive
46 preparational psychotherapy, session facilitation, post-session integration meetings

1 —in short “set and setting” (Haijen et al., 2018, Carhart-Harris and Friston, 2019).
 2 “Any theory of psychedelic meaning must therefore take into account that these
 3 [pharmacological] agents work on *encultured psyches*” (Letcher, 2013, p.255), as
 4 the precise relationship between brain network changes and lasting effects of
 5 psychedelics remains unclear (Siegel et al., 2024).

6 At the psychological level, Carhart-Harris and Friston (2019) use the predictive
 7 processing model of cognition. This model suggests that normal consciousness is
 8 shaped by prior expectations based on past experiences, which guide perception and
 9 cognition. Prior expectations constrain attention and enable experience by filtering
 10 sensory input (Feldman Barrett, 2018; Letheby, 2021). For example, the hollow
 11 mask illusion demonstrates how deeply entrenched expectations can override
 12 conflicting sensory evidence. While perceptual priors interpret immediate sensory
 13 input, high-level priors formulate more abstract conceptual expectations in broader
 14 cognitive contexts, e.g., beliefs regarding one’s personal identity. The predictive
 15 brain model can usefully be applied to various well-known psychological biases: for
 16 example, cognitive biases, where new data is squeezed to fit preconceptions; or
 17 confirmation biases, where the mind filters information that confirms beliefs it
 18 already has (Carroll, 2016; Feldman Barrett, 2018). Historically, the idea of prior
 19 expectations structuring our experience goes back at least to Kant, who famously
 20 said that intuitions without concepts are blind (Kant, 1992, *Critique of Pure Reason*,
 21 A51/B75; A95-110) —meaning that without concepts the mind would not be able
 22 to structure sense data into useful units. This means, experience is not given; rather,
 23 it is made by the mind. On this basis, integrating the neuroscientific and
 24 psychological perspectives, Carhart-Harris and Friston (2019) propose that certain
 25 psychopathologies such as depression or obsessive-compulsive disorder may be
 26 rooted in particularly rigid high-level priors or excessively dominant beliefs, thereby
 27 constraining an agent’s self-awareness and learning. Psychedelic-assisted therapy
 28 targets these rigid priors through two steps:

- 29
- 30 (a) During the acute psychedelic state: relaxation of high-level priors via
- 31 disruption of their neuronal substrates;
- 32 (b) Post-acute relaxation of priors: fostering new forms of self-modeling
- 33 (Letheby, 2021).
- 34

35 Although Carhart-Harris and Friston (2019) do not identify precise biomarkers
 36 for transformative changes following an acute mystical experience, they propose a
 37 neuro-pharmacological model to explain “the full gamut” (p. 339) of phenomena
 38 associated with psychedelics:

39

40 Our proposal is that psychedelics disrupt functioning at a level of the system ... that
 41 encodes ... priors, beliefs, or assumptions. At low doses, subjective effects may be felt
 42 most tangibly at the perceptual level..., but at higher doses, effects will become more
 43 profound as the functioning of higher levels of the global hierarchy become
 44 significantly disrupted, potentially accounting for phenomena such as the dissolution
 45 of ego boundaries and potential (long-term) revision of high-level priors (Carhart-
 46 Harris & Friston, 2019, pp. 320-321).

1 The REBUS model aims to explain the full range of psychedelic experiences
2 and suggests that the acute brain conditions induced by psychedelics are ideal for
3 revising high-level priors.

4 What does this mean for the epistemological status of insights gained during
5 acute mystical experiences (Letheby, 2016)? The subjective experience of magic
6 mushrooms remains “magical” despite a naturalistic explanation—and rightly so.
7 This is similar to how the experiences of beauty, the sublime, or free will remain
8 valid at the subjective level, even when fully understood in terms of their physical,
9 chemical, and biological determinants. From the first-person perspective, the mystic
10 state is often described as ineffable or difficult to articulate. However, it’s not
11 entirely ineffable because people do talk about it. The challenge lies in that the
12 experience falls outside normal narrative contexts, making it hard to express in
13 conventional language. From a neuroscientific perspective, this “ineffability” arises
14 because psychedelics profoundly affect the high-level narrative structure of
15 experience (Carhart-Harris & Friston, 2019). Psychedelics relax the constraints of
16 prior knowledge by disrupting the neural correlates of predictive coding. Hence, the
17 mystical state itself is neither strictly true nor false. For a statement to be true you
18 need to give it a sense within a narrative framework, —but for the mystic experience
19 such a standard narrative framework is precisely missing from the first-person
20 perspective. Thus, the individual impression that the experience is hard to put into
21 words. Given the breakdown of the standard predictive model of self and world,
22 there is thus the problem of how to “correctly” interpret a mystic experience that is
23 essentially “ineffable” in terms of everyday language. This presents a challenge for
24 those undergoing psychedelic-assisted therapy. Even though the general
25 neurobiological mechanisms can be identified, the narrative framing of mystical
26 experiences varies based on subjective factors. Accordingly, psychedelic states can
27 be experienced as spiritually enlightening and meaningful or disorienting and
28 overwhelming. The difference between describing the mystical state biologically
29 versus psychologically is notable:

30
31 For example, under the effects of a high dose of a psychedelic, an individual may report
32 feeling as if they cannot move, vocalize, or even breathe properly, but, in practice, they
33 can typically perform these functions almost as normal (Carhart-Harris and Friston,
34 2019, p.323).

35
36 The sense of losing one’s self or ego with higher doses of psychedelics may explain
37 why one can feel as if one is dying while under the effects of these drugs ... despite the
38 fact that peripheral physiology remains largely unaffected (Carhart-Harris and Friston,
39 2019, p.325).

40
41 While delusional beliefs induced by psychedelics are not objectively real, the
42 first-person perspective might still be experienced as meaningful. Emotional release
43 during therapy, somatic changes, and the recapturing of autobiographical memories
44 can be integrated into an individual’s life, potentially altering entrenched negative
45 thought patterns and behaviors. However, these epistemic benefits occur within the
46 bounds of normal consciousness. The mystical state itself is neither true nor illusory

1 but an experience shaped by radically altered perceptual and narrative frameworks,
2 which can be integrated into ordinary experience in various ways.

3 Carhart-Harris and Friston, 2019 note that “it is popularly commented that
4 Freudian-minded therapists saw Freudian contents in their patients’ psychedelic
5 experiences, whereas Jungians saw Jungian material” (p.330). Granted that
6 relaxation of priors allows for an enhanced sensitivity to “data,” for a fresh look at
7 things, the mystical state itself cannot “signal” what that fresh look should be, or
8 whether released unconscious material will genuinely contribute to a better life. The
9 mystic state is not an oracle. Griffith appears to engage in an introspective dialogue
10 with himself in the quote above (Marchese, 2023), exploring his inner thoughts and
11 feelings, as it were, but there is no non-contingent standpoint from which to interpret
12 and unpack his mystic experience. The terms “correct” or “incorrect” interpretation
13 are not applicable. Psychedelic states are a thing of nature that are experienced as
14 extraordinary. They do not require deciphering and translation into propositional
15 terms. Rather, they require, in one direction, a scientific explanation of how
16 psychedelics impair normal consciousness, and, in the other direction, integration
17 into one’s personality and outlook on life. Whatever the intuitive insights are that
18 one takes from “the other state,” one has to reflect on them in normal language —
19 be this in the language of everyday experience, science, or art. However, outdated
20 metaphysical language that seeks hidden truths in the mystical experience is non-
21 sensical. The terms “true” or “not true” do not apply to the mystic state because it
22 lacks the narrative framework within which we can meaningfully use these words.
23 Describing psychedelics reaching “a deeper level” of the self, “most authentic sense
24 of self,” or “uncovering” truth is misleading metaphysical language. The home of
25 understanding “truth” this way is the Ancient Greek “aletheia” (ἀλήθεια), which
26 means “unconcealment,” “un-hidden.” In Platonic thought, *aletheia* is associated
27 with the ultimate reality beyond the physical world. Such language can mislead
28 interpretations of psychedelic experiences. Critical humanities can support
29 psychedelic research by analyzing historical and cultural contexts to understand
30 metaphysical positions and correct misconceptions based on current scientific
31 knowledge.

32 Removing metaphysical biases embedded in our language may help individuals
33 in the context of psychedelic assisted therapy dealing with the psychological
34 uncertainty and unpredictability of the experience as well as promote understanding
35 of psychedelics within the broader community. Carhart-Harris and Friston (2019)
36 caution that an escalation in psychedelic use could lead individuals to cling to
37 delusional beliefs if experiences are poorly integrated:

38
39 A strong psychedelic experience can cause such an ontological shock that the
40 experiencer feels compelled to reach for some kind of explanation, however tenuous
41 or fantastical, to close an epistemic gap that the experience has opened up for them.
42 ...In experiencing such information overload, the psychedelic initiate may reach for
43 bizarre beliefs or poorly understood platitudes, in an effort to explain away his/her felt
44 uncertainty... Spiritual bypassing may be understood as an escapist defense, dressed up
45 as a spiritual awakening (Carhart-Harris and Friston, 2019, pp.336-337).
46

1 The challenge of interpreting the ineffable mystical experience is a common
 2 issue in psychedelic therapy. Musil (1978) captures this dilemma by comparing
 3 mystical experiences to hearing a “whisper or merely a rustling, without being able
 4 to distinguish between the two” (p.562). A whisper has meaning, but you need to
 5 listen very carefully. A rustling is a mere noise that lacks information. So, which
 6 one of the two is it? The answer is: neither. Psychedelic experiences are not signals
 7 pointing to a deeper layer of world and self. However, they are not mere noise either,
 8 because the relaxing of high-level priors can promote significant psychological
 9 insights after the acute experience and thus have therapeutic benefits if properly
 10 integrated into normal consciousness.

11 In conclusion, the exploration of mystical and psychedelic experiences reveals
 12 the profound influence of linguistic and cultural contingencies on our interpretations
 13 of these states. The language we use to describe mystical experiences—ranging
 14 from “ego-dissolution” to “divine encounters”—is deeply embedded in historical
 15 metaphysical dualisms, which often obscure rather than clarify the nature of these
 16 experiences. This contingency challenges our ability to interpret psychedelic states
 17 as they are described through varied and often imprecise metaphors. The REBUS
 18 model, by contrast, offers a way beyond this contingency by providing a
 19 neurobiological framework that connects the subjective phenomenology of
 20 psychedelic experiences to their underlying biochemical mechanisms. By relaxing
 21 rigid prior beliefs and facilitating new forms of self-modeling, REBUS allows for a
 22 more integrated and scientifically grounded understanding of these experiences.
 23 Thus, while the language of metaphysics may continue to shape our perceptions, the
 24 REBUS model helps bridge the gap between the historically contingent experience
 25 of psychedelic states and the naturalistic explanations that can contextualize these
 26 experiences within contemporary science. This shift not only clarifies the nature of
 27 psychedelic experiences but also supports a more accurate and less biased interpretation,
 28 enhancing both scientific inquiry and public understanding. Furthermore, by
 29 examining how metaphysical positions influence research and therapeutic
 30 practices—particularly in the use of qualitative questionnaires—critical humanities
 31 can enhance the accuracy of our understanding of psychedelic experiences. Hence,
 32 a key role of critical humanities is to bolster psychedelic research by examining
 33 historical and cultural contexts to clarify metaphysical assumptions and correct
 34 misconceptions rooted in outdated language.

35
 36

37 **Guarding Scientific Integrity: Challenging Causal Claims in Psychedelic** 38 **Research**

39

40 In clinical trials, psilocybin is administered in pill form. When has a pill ever
 41 caused a long-term material belief change—except, of course, the red pill in the
 42 movie *The Matrix*? Speaking of psychedelics “accounting” for lasting changes in
 43 beliefs (Carhart-Harris & Friston, 2019, p.321), or “causally” influencing long-term
 44 metaphysical beliefs (Timmermann et al., 2021, p.1) is misleading. Why? Because
 45 it is generally acknowledged that it is not understood how “acute brain changes and
 46 associated mind states trigger the relevant long-term changes in beliefs” (Carhart-

1 Harris and Friston, 2019, p.337). “It remains unclear how human brain network
 2 changes relate to subjective and lasting effects of psychedelics” (Siegel et al., 2024,
 3 p.1). While science has made great advances in understanding the biochemical
 4 mechanisms of the acute drug effect, such as neuroplastic effects of psilocybin on
 5 brain network function, these effects are not identical to psychological long-term
 6 belief and behavioral changes. For this reason, it would be better to speak of
 7 psychedelics as “facilitating” or “mediating” belief revisions, as the latter depend on
 8 additional individual and environmental factors.

9 Distinguishing between the biological effects of psychedelics and the content
 10 of mystical experiences clarifies this point: Psychedelics promote a generalized
 11 plasticity via their agonist actions at the 5-HT_{2A} receptor. An explanation of the
 12 weakening of high-level priors —whatever they are— in terms of the pharmacology
 13 and electrophysiology at the neuronal level accounts for plasticity *in general* but
 14 does not yet say anything about the *content* of the experience. Insights, on the other
 15 hand, denote some specific material content. Thus, psychedelics themselves cannot
 16 be said to “cause” insights. An insight is achieved or happens at the cognitive level,
 17 —despite the naturalist assumption that cognitive insights are coarse-grained
 18 descriptions of underlying biochemical processes. It is important not to mix the
 19 neurophysiological level of describing human experience with the cognitive level
 20 of agency. This is so because although the psychedelic experience of altered
 21 consciousness in general can be accounted for at the neuro-pharmacological level,
 22 the subsequent post-acute transformative believe changes cannot. If it could then
 23 psychedelic assisted therapy would be pure pharmacotherapy. But it isn’t.
 24 “Psychedelic therapy depends on an interaction between a biological action of the
 25 drug and non-pharmacological contextual factors” (Timmermann et al., 2021). For
 26 this reason, the “insights” experienced by individuals differ vastly based on their
 27 personal context (Pace & Devenot, 2021). As one author has eloquently put it: “to
 28 say that someone has taken LSD tells little more about the content and import of the
 29 experience than to say that he has had a dream” (as cited in Rowlandson, 2013,
 30 p.246).

31 Undoubtedly, transformative psychological changes are realized in
 32 neurophysiological changes. Precisely for this reason, mystic states do not tap into
 33 a “truer” or “deeper” reality; rather they tap into the mind of the specific person
 34 having the mystic experience. While psychedelic’s entropic effect on brain activity
 35 opens up the mind to psychological change, it does not “cause” that change by itself
 36 independently of “set and setting.” Therefore, psychedelics do not come with build-
 37 in material beliefs, —be this on personality, politics, the environment, metaphysics,
 38 or any other topic that science is currently investigating. Beliefs are historically
 39 contingent products, constructed by an individual’s past experiences. For this
 40 reason, there cannot be a context-independent core to mystical experiences. Proving
 41 that psychedelics cause material beliefs would contradict the predictive processing
 42 model of cognition, which posits that all experience is conceptually constructed.
 43 Scientists would undermine their own scientific paradigm if they could prove that
 44 psychedelics can cause universal material beliefs. Claiming that “psychedelic use
 45 may causally influence metaphysical beliefs” (Timmermann et al., 2021, p.1) is
 46 particularly troublesome. If we were to prove scientifically that the brain causes

1 beliefs that cannot be captured by science, this would mean to scientifically validate
2 the existence of a material belief that, by definition, eludes scientific validation.

3 Research on whether psychedelics can cause material beliefs is ongoing.
4 Studies linking psychedelic use to specific beliefs—whether related to personality,
5 politics, or metaphysics—likely involve participants already predisposed to such
6 beliefs. Scientists acknowledge this limitation. Lebedev et al. (2023) conclude their
7 “Alternative beliefs in psychedelic drug users” by saying that results might “reflect
8 an existing spectrum of non-conformist mentality, which to a degree is dependent
9 on contextual factors,” such as shared personality traits and social environments
10 (p.11). Barrett et al. (2020) grant that “whether these effects are idiosyncratic to the
11 given sample, generalize to other healthy participant samples, or have relevance to
12 therapeutic outcomes in patient populations has yet to be determined” (p.8). And
13 Timmermann, et al. (2021) write: “It is important to note some limitations to our
14 findings. We did not collect respondents’ and patients’ religious affiliations at
15 baseline, differential environmental susceptibilities, or interests concerning
16 metaphysical beliefs. It is plausible therefore that we recruited an atypical sample
17 skewed towards individuals who were sensitive to the belief shifts observed here.”
18 (p.8)

19 Even increasing the diversity of contexts and sample sizes in studies may not
20 resolve whether post-psychedelic belief shifts are truly context-dependent or
21 context-independent. For, as the term “context-independent” is used in the debate,
22 it refers to phenomena that can be described biochemically and neurophysiologically,
23 while “context-dependent” relates to psychological processes that cannot be so
24 described. Therefore, acute belief relaxation, which can be described at the
25 biochemical level, could be considered context-independent, whereas long-term
26 belief revision, best described at the psychological level, is context-dependent. This
27 linguistic point deserves more emphasis as it helps preventing systematic confusion
28 of neurophysiological and cognitive levels of describing human experience.
29 Research on psychedelic assisted therapy is interested in the sequential process of
30 how disruption of higher brain functions at the biochemical level may act as a
31 catalyst for neuroplasticity at the cognitive level. For example, in a recent study,
32 54% of participants with treatment-resistant depression met the criteria for
33 remission four weeks after psilocybin administration with psychological support
34 (Davis et al., 2021). However, because neuronal plasticity cannot be directly
35 mapped onto psychological plasticity, science should avoid equating biochemically
36 observable neuronal plasticity with cognitive and behavioral changes, which lack
37 clear biomarkers. Research should focus on the interplay between biochemical
38 disruption and neuroplasticity, without overstepping into unproven causal claims
39 about long-term cognitive plasticity.

40 The psychedelic experience is highly individual, despite its general
41 biochemical underpinnings. Therefore, the long-term effects of the drug vary among
42 individuals and are best described at the cognitive level. Material beliefs are held for
43 contingent reasons, which are significantly more complex to describe at the
44 biochemical level than measuring agonist actions at their cortical 5-HT_{2A} receptors.
45 Whether “new methods to measure neurotrophic markers in the human brain will
46 provide a critical link between mechanistic observations at the cellular, brain

1 networks and psychological levels” (Siegel et al., 2024, p.7) remains to be seen. The
2 importance of individual differences in the integration of psychedelic experiences
3 recognizes the variability in human responses and the complexity of “translating”
4 the specific neurobiological changes induced by 5-HT_{2A} antagonism into
5 psychological outcomes. Fine-grained plasticity does not *entail* coarse-grained
6 plasticity. This warning against an equivocation on “plasticity,” suggesting that
7 using the term across different levels of analysis (neuroanatomical vs. cognitive)
8 without careful distinction can be misleading, emphasizes the need for clarity in
9 scientific discourse, and provides an opportunity for critical humanities to assist
10 research on psychedelics.

11 In summary, psychedelics do not inherently cause beliefs—they open the mind
12 to change within the context of “set and setting.” The variability in individual
13 responses and the complexity of translating neurobiological changes into
14 psychological outcomes highlight the need for precise language and interdisciplinary
15 collaboration in psychedelic research.

16 17 18 **Enhancing the Therapeutic Setting: The Role of Critical Humanities in** 19 **Shaping Psychedelic Music Environments and Designing Alternative Control** 20 **Groups**

21
22 Despite accumulating evidence that setting influences outcome, a robust
23 understanding of the biochemical mechanisms underlying the effects of setting on
24 psychedelic-assisted therapy is lacking (Golden et al., 2022). One area where this
25 gap is evident is the role of music, which is central to the therapeutic process.

26 Music has been shown to enhance emotional and experiential aspects of
27 psychedelic sessions, potentially promoting ego dissolution and increasing personality
28 trait openness (Lebedev et al., 2016). However, the relationship between music and
29 therapeutic outcomes is complex and highly individualized. Music, like psychedelics,
30 does not cause emotional changes by itself but interacts with the “set and setting” of
31 the participant. Studies have shown a diverse range of responses to music during
32 therapy, with some participants finding it resonant and others experiencing it as
33 dissonant or counterproductive (Kaelen et al., 2018; Davis, 2021). This variability
34 is not surprising, as music requires a cognitive framework to evoke emotions, which
35 means that its effects are contingent on individual backgrounds (Kivy, 1990). As
36 music alone does not in itself contain emotionally evocative stimuli, there are many
37 ways of listening to music. Some participants perceive music along a narrative
38 structure, providing the sense of being on a journey to different psychological
39 ‘places,’ while others do not (Kaelen et al., 2018), highlighting the importance of
40 *extra*-pharmaceutical factors of the psychedelic music experience. “It is not merely
41 the drug effect in isolation, but an interaction between the drug and the music on
42 *subjective* experience that promotes positive therapeutic outcomes” (Kaelen et al.,
43 2018, Section “Music experience predicts experience and therapy outcomes,”
44 emphasis added).

45 That both music and psychedelics can evoke intense, personally meaningful
46 emotionality, thoughts, and memories is an often-made observation: “Both unfold

1 in duration; both are profoundly affectual and difficult to convey in words; and both
2 only make sense in the light of cultural expectation” (Letcher, 2013, p.258). To
3 better understand how music promotes emotionality in the context of psychedelic
4 experience, we would need to know more about the exact relationship between the
5 distinct neuronal effects of music and the relevant psychedelic pharmacodynamics.
6 It is not clear how precisely music supports or modulates the emotional component
7 of psychedelic experiences (or *vice versa*), because there is a gap between the
8 qualitative body of data and its relevant neuronal underpinnings. Do the music lists
9 used in trials affect any of the processes thought to be central to the biochemical
10 workings of psychedelics? Or is the music experience independent of these
11 neurobiological processes? While it is a neuroscientific claim that psychedelics
12 temporarily dysregulate brain mechanisms that normally regulate emotion, it is not
13 clear how this process is related to music enhancing “emotionality, thoughts, and
14 memories that are most personally salient” (Kaelen et al., 2018, Section “Possible
15 therapeutic mechanisms of music in psychedelic therapy”). This latter claim is based
16 on qualitative data obtained from trials that lack control conditions. As Kaelen et al.
17 (2018) acknowledge, “the data was acquired without a placebo condition, making
18 causal inferences about the nature of the effects problematic” (Section “Limitations
19 and future directions”). Hence, questions remain about how music supports or
20 modulates the emotional component of psychedelic experiences. Given the
21 importance of individualized experiences, the project of creating general playlists
22 for all participants may be misguided. As music’s impact is highly context-
23 dependent, it is unlikely that research will find general “reliable indicators of
24 positive (welcome/supportive) and negative (unwelcome/unsupportive) influences
25 of music on the therapeutic processes during psychedelic therapy sessions” (Kaelen
26 et al., 2018, Section “Implications for the use of music in psychedelic therapy”). A
27 recent study found “no drawback to deviating from a standardized western art-music
28 playlist and using a playlist primarily constructed over overtone music ... [which]
29 does challenge the notion that western art music, or any particular playlist, holds a
30 privileged place in terms of being able to support psychedelic experiences” (Golden
31 et al., 2022, 60; Strickland et al., 2020). Critical humanities of psychedelics can
32 provide the forum for this discussion, and play a key role in designing personalized
33 music lists that resonate with specific individuals, thus enhancing therapeutic
34 outcomes (Kaelen et al., 2018; Messell et al., 2022).

35 Music is just one component of the psychedelic setting. Similar considerations
36 apply to social, ritual, ceremonial, and natural settings (Golden et al., 2022). Such
37 differing environments could be explored to design more effective therapeutic
38 environments and alternative control groups. As has been shown, aesthetic
39 experiences, meditative states, religious ceremonies including singing and dancing,
40 or major life events with high personal significance, share neurobiological
41 similarities and significant overlap in the phenomenology with psychedelic states
42 (Carhart-Harris & Friston, 2019). Designing alternative control groups would help
43 isolating the effectiveness of psychedelics. Critical humanities of psychedelics can
44 support this endeavor as it has explored ego-dissolution and transformational
45 changes in a broad variety of contexts and can thus suggest a variety of active
46 comparators. Designing comparative studies, isolating components of the

1 psychedelic experience, and tying these to biomarkers, would shed further light on
2 why the intense subjective experience induced specifically by psychedelics has the
3 transformative effect that is desired in therapeutic contexts.

4 In summary, a more nuanced understanding of the role of music and other
5 environmental factors in psychedelic therapy, supported by quantitative measures,
6 could improve the efficacy of therapeutic interventions and provide deeper insights
7 into the complex interplay between biochemistry and consciousness.

10 **Conclusion and Outlook**

11
12 As psychedelics pharmacologically impair normal consciousness, acute
13 psychedelic experiences cannot be phrased in ordinary language. Due to this
14 experienced ineffability, only a robust understanding of the biochemical
15 mechanisms underlying the effects of psychedelic-assisted therapy can provide
16 necessary granularity. However, as integrating set and setting variables into clinical
17 drug research is necessary given the pharmacotherapeutic and psychotherapeutic
18 aspects of psychedelic assisted therapy, this integration presents numerous
19 opportunities for researchers across disciplines to engage in meaningful dialogue. I
20 use the term “critical humanities” to suggest that diverse perspectives—such as
21 aesthetic, psychological, sociological, anthropological, cultural, political, spiritual,
22 and recreational—are not separate from science but complementary to it. In this
23 sense, critical humanities can contribute in several key ways to the current discourse
24 on psychedelic-assisted therapy:

- 25
26 1. Clarifying Linguistic Frameworks: Removing metaphysical biases
27 from our language to better understand and interpret psychedelic
28 experiences. By highlighting antiquated dualisms critical
29 humanities can bolster psychedelic research, which uses outdated
30 language in its qualitative studies. Critical humanities can also aid
31 in developing a more coherent public understanding and self-image
32 by challenging the entheogenic perspective and cautioning against
33 assuming that “insights” from psychedelic experiences are
34 inherently trustworthy.
- 35 2. Maintaining Scientific Boundaries: Ensuring science does not make
36 premature psychological predictions such as causally linking
37 psychedelic use to material beliefs without solid evidence tied to
38 biomarkers.
- 39 3. Enhancing Therapeutic Settings: Improving the design and impact
40 of therapeutic settings, such as music, in psychedelic therapy.
41 Designing Comparator Studies: By suggesting alternative control
42 groups that could help isolate the effects of psychedelic compounds
43 more effectively.
- 44

45 These contributions, alongside other dimensions not covered here (e.g., ethical,
46 political, economic), are already part of both academic and public discourse. I have

1 emphasized that while diverse viewpoints are important, there is no need to view
 2 the scientific perspective on psychedelic experiences as a threat. Understanding
 3 what is individual, unique, and meaningful about these experiences should not
 4 involve exempting them from the general, impersonal laws of nature. A scientific
 5 explanation of mystical states does not delegitimize traditional communal practices
 6 or individual first-person experiences. While it is valid for individuals to find
 7 comfort in alternative beliefs or the ineffability of mystical experiences, we should
 8 remain epistemologically honest and avoid metaphysical misinterpretations. The
 9 psychedelic state is a state of nature, and we should interpret it in continuity with
 10 scientific language, rather than as an autonomous alternative. This is an
 11 epistemological point. Whether entertaining entheogenic and alternative-facts-
 12 interpretations of mystic states is a threat to societal or individual functioning is
 13 another matter. Helping the public understanding to build a more coherent
 14 worldview and self-image might thus be a significant byproduct of the critical
 15 humanities' contribution to psychedelic research.

18 References

- 19
 20 Barrett, F. S. (October 1, 2020). The neuroscience of psychedelic drugs, music and
 21 nostalgia. [Video]. Johns Hopkins Psychedelic Research. <https://hopkinspsychedelic.org/index/#media>
 22
 23 Barrett, F. S., Doss, M. K., Sepeda, N. D., Pekar, J. J., & Griffiths, R. R. (2020). Emotions
 24 and brain function are altered up to one month after a single high dose of psilocybin.
 25 *Scientific Reports*, *10*(1). <https://doi.org/10.1038/s41598-020-59282-y>
 26 Barrett, F. S., Johnson, M. W., & Griffiths, R. R. (2015). Validation of the revised Mystical
 27 Experience Questionnaire in experimental sessions with psilocybin. *Journal of*
 28 *Psychopharmacology*, *29*(11), 1182-1190. <https://doi.org/10.1177/0269881115609019>
 29 Bidney, M. (2004). Epiphany in Autobiography: The quantum changes in Dostoevsky and
 30 Tolstoy. *Journal of Clinical Psychology: In Session*, *60*(5), 471-480.
 31 Buber, M. (1995). *Ich und Du*. Stuttgart: Reclam.
 32 Carhart-Harris, R. L., & Friston, K. J. (2019). REBUS and the anarchic brain: Toward a
 33 unified model of the brain action of psychedelics. *Pharmacological Reviews*, *71*(3),
 34 316-344. doi.org/10.1124/pr.118.017160
 35 Carroll, S. (2016). *The Big Picture: On the Origins of Life, Meaning, and the Universe itself*.
 36 New York: Dutton.
 37 Davis, A. K., Barrett, F. S., May, D. G., Cosimano, M. P., Sepeda, N. D., Johnson, M. W.,
 38 Finan, P. H., & Griffiths, R. R. (2021). Effects of Psilocybin-Assisted Therapy on
 39 Major Depressive Disorder: A Randomized Clinical Trial. *JAMA Psychiatry*, *78*(5),
 40 481-489. <https://doi.org/10.1001/jamapsychiatry.2020.3285>
 41 Devenot, N. (2013). *A Declaration of Psychedelic Studies*. In C. Adams, D. Luke, & A.
 42 Waldstein (Eds.), *Breaking convention: Essays on psychedelic consciousness* (pp. 187-
 43 199). Strange Attractor Press.
 44 Dostoevsky, F. (1993). *The Grand Inquisitor: With related chapters from The Brothers*
 45 *Karamazov* (C. B. Guignon, Ed. & C. Garnett, Trans.). Indianapolis: Hackett Publishing.
 46 Eleusinian Mysteries. (n.d.). [Exhibit]. Archaeological Site of Elefsina, Elefsina, Greece.
 47 Euripides. (2004). *Four Plays: Medea, Hippolytus, Heracles, Bacchae* (S. Esposito, Ed.).
 48 Newburyport: Focus Classic Library.

- 1 Feldman Barrett, L. (2018). *How emotions are made: The secret life of the brain*. Mariner
2 Books.
- 3 Goethe, J. W. (2001). *Faust* (W. Arndt, Trans.; C. Hamlin, Ed.; 2nd ed.). New York: Norton.
- 4 Golden, T. L., Magsamen, S., Sandu, C. C., Lin, S., Roebuck, G. M., Shi, K. M., Barrett, F.
5 S., & Preller, K. H. (2022). Effects of Setting on Psychedelic Experiences, Therapies,
6 and Outcomes: A Rapid Scoping Review of the Literature. In *Disruptive*
7 *Psychopharmacology* (pp. 35-70). Springer International Publishing. [https://doi.org/](https://doi.org/10.1007/7854_2021_298)
8 [10.1007/7854_2021_298](https://doi.org/10.1007/7854_2021_298)
- 9 Goltschnigg, D. (1974). *Mystische Tradition im Roman Robert Musils: Martin Bubers*
10 *'Ekstatische Konfessionen' im 'Mann ohne Eigenschaften'*. Heidelberg: Lothar Stiehm
11 Verlag.
- 12 Griffiths, R. R., Richards, W. A., McCann, U., & Jesse, R. (2006). Psilocybin can occasion
13 mystical-type experiences having substantial and sustained personal meaning and
14 spiritual significance. *Psychopharmacology (Berl)*, 187, 268–283. [https://doi.org/](https://doi.org/10.1007/s00213-006-0457-5)
15 [10.1007/s00213-006-0457-5](https://doi.org/10.1007/s00213-006-0457-5)
- 16 Hacker, P. (2002). Wittgenstein and the autonomy of humanistic understanding. In
17 *Wittgenstein: Connections and Controversies* (pp. 245-263). Oxford: Oxford University
18 Press.
- 19 Hacker, P. (2007). *Human Nature: The Categorical Framework*. Malden: Blackwell
20 Publishing.
- 21 Haijen, E. C., Kaelen, M., Roseman, L., Timmermann, C., Kettner, H., Russ, S., Nutt, D.,
22 Daws, R. E., Hampshire, A. D., Lorenz, R., & Carhart-Harris, R. L. (2018). Predicting
23 responses to psychedelics: A prospective study. *Frontiers in Pharmacology*, 9, 897.
24 <https://doi.org/10.3389/fphar.2018.00897>
- 25 Hauskeller, C., & Sjöstedt-Hughes, P. (Eds.). (2022). *Philosophy and Psychedelics:*
26 *Frameworks for Exceptional Experience*. London: Bloomsbury.
- 27 Hopkins Psychedelic Research Unit. (n.d.). Retrieved August 5, 2024, from <https://hopkin>
28 [spsychedelic.org](https://hopkin.spsychedelic.org)
- 29 Huxley, A. (1954). *The doors of perception*. New York: Harper Perennial.
- 30 Kant, I. (1992--). *Edition of the Works of Immanuel Kant*. Cambridge: Cambridge
31 University Press.
- 32 Kaelen, M., Giribaldi, B., Raine, J., Evans, L., Timmerman, C., Rodriguez, N., Roseman,
33 L., Feilding, A., Nutt, D., & Carhart-Harris, R. (2018). The hidden therapist: evidence
34 for a central role of music in psychedelic therapy. *Psychopharmacology*, 235(2), 505-
35 519. <https://doi.org/10.1007/s00213-017-4820-5>
- 36 Kivy, P. (1990). *Music Alone: Philosophical reflections on the purely musical experience*.
37 Ithaca: Cornell University Press.
- 38 Lebedev, A. V., Lövdén, M., Rosenthal, G., Feilding, A., Nutt, D. J., & Carhart-Harris, R.
39 L. (2015). Finding the Self by Losing the Self: Neural Correlates of Ego-Dissolution
40 Under Psilocybin. *Human Brain Mapping*, 36(8), 3137–3153. [https://doi.org/10.1002/](https://doi.org/10.1002/hbm.22833)
41 [hbm.22833](https://doi.org/10.1002/hbm.22833)
- 42 Lebedev, A. V., Kaelen, M., Lövdén, M., Nilsson, J., Feilding, A., Nutt, D. J., & Carhart-
43 Harris, R. L. (2016). LSD-Induced Entropic Brain Activity Predicts Subsequent
44 Personality Change. *Human Brain Mapping*, 37(9), 3203–3213. [https://doi.org/10.](https://doi.org/10.1002/hbm.23234)
45 [1002/hbm.23234](https://doi.org/10.1002/hbm.23234)
- 46 Lebedev, A. V., Acar, K., Horntvedt, O., Cabrera, A. E., Simonsson, O., Osika, W., Ingvar,
47 M., & Petrovic, P. (2023). Alternative beliefs in psychedelic drug users. *Scientific*
48 *Reports*, 13, 16432. <https://doi.org/10.1038/s41598-023-42444-z>
- 49 Letheby, C. (2021). *Philosophy of Psychedelics*. Oxford: Oxford University Press.
- 50 Letheby, C. (2016). The epistemic innocence of psychedelic states. *Consciousness and*
51 *Cognition*, 39, 28–37. <http://dx.doi.org/10.1016/j.concog.2015.11.012>

- 1 Letcher, A. (2023). What to do about the woo? Review of *Philosophy and Psychedelics. Frameworks for Exceptional Experience* (C. Hauskeller & P. Sjöstedt-Hughes, Eds.).
2 London: Bloomsbury, 2022, pp. 823-828.
- 3 Letcher, A. (2013). *Deceptive Cadences: A Hermeneutic Approach To The Problem Of*
4 *Meaning and Psychedelic Experience*. In C. Adams, D. Luke, & A. Waldstein (Eds.),
5 *Breaking convention: Essays on psychedelic consciousness* (pp. 249-260). Strange
6 Attractor Press.
- 7 Ly, C., Greb, A. C., Cameron, L. P., Wong, J. M., Barragan, E. V., Wilson, P. C., Burbach,
8 K. F., Zarandi, S. S., Sood, A., Paddy, M. R., Duim, W. C., & Olson, D. E. (2018).
9 Psychedelics promote structural and functional neural plasticity. *Cell Reports*, 23(11),
10 3170-3182. <https://doi.org/10.1016/j.celrep.2018.05.022>
- 11 McKirahan, R. D. (2010). *Philosophy before Socrates: An introduction with texts and*
12 *commentary* (2nd ed.). Indianapolis: Hackett Publishing Company.
- 13 Marchese, D. (2023, April 7). A psychedelic pioneer takes the ultimate trip. *The New York*
14 *Times*. Retrieved August 12, 2024, from [https://www.nytimes.com/interactive/2023/](https://www.nytimes.com/interactive/2023/04/03/magazine/roland-griffiths-interview.html)
15 [04/03/magazine/roland-griffiths-interview.html](https://www.nytimes.com/interactive/2023/04/03/magazine/roland-griffiths-interview.html)
- 16 Messell, C., Summer, L., Bonde, L. O., Beck, B. D., & Stenbæk, D. S. (2022). Music
17 programming for psilocybin-assisted therapy: Guided Imagery and Music-informed
18 perspectives. *Frontiers in Psychology*, 13, 873455. [https://doi.org/10.3389/fpsyg.20](https://doi.org/10.3389/fpsyg.2022.873455)
19 [22.873455](https://doi.org/10.3389/fpsyg.2022.873455)
- 20 Millière, R. (2017). Looking for the self: phenomenology, neurophysiology and
21 philosophical significance of drug-induced ego dissolution. *Frontiers in Human*
22 *Neuroscience*, 11, 245. <https://doi.org/10.3389/fnhum.2017.00245>
- 23 Musil, R. (1992). *Der Mann ohne Eigenschaften* (A. Frisé, Ed.). Band 1 and Band 2.
24 Sonderausgabe. Reinbek bei Hamburg: Rowohlt Verlag GmbH.
- 25 Musil, R. (1990). Toward a New Aesthetic (1925). In B. Pike & D. S. Luft (Eds. & Trans.),
26 *Precision and Soul* (pp. 193–207). Chicago: University of Chicago Press.
- 27 Musil, R. (1978). Die Amsel. In *Prosa und Stücke. Kleine Prosa. Aphorismen.*
28 *Autobiographisches. Essays und Reden. Kritik*. Reinbek bei Hamburg: Rowohlt Verlag
29 GmbH.
- 30 Nietzsche, F. (1999). *The Birth of Tragedy. And Other Writings* (R. Geuss & R. Speirs,
31 Eds.). Cambridge: Cambridge University Press.
- 32 Pace, B. A., & Devenot, N. (2021). Right-Wing Psychodelia: Case Studies in Cultural
33 Plasticity and Political Pluripotency. *Frontiers in Psychology*, 12, Article 733185.
34 <https://doi.org/10.3389/fpsyg.2021.733185>
- 35 Plato. (1997). *Complete Works* (J. M. Cooper, Ed.). Indianapolis: Hackett Publishing.
- 36 Rowlandson, W. (2013). *The Anaesthetic Revelation: Psychedelia and Mysticism*. In C.
37 Adams, D. Luke, & A. Waldstein (Eds.), *Breaking convention: Essays on psychedelic*
38 *consciousness* (pp. 235-247). Strange Attractor Press.
- 39 Rorty, R. (1989). The contingency of selfhood. In *Contingency, Irony, and Solidarity* (pp.
40 23-43). Cambridge: Cambridge University Press.
- 41 Schopenhauer, A. (2010). *The World as Will and Representation. Volume I* (J. Norman, A.
42 Welchman, & C. Janaway, Eds.). Cambridge: Cambridge University Press.
- 43 Scott, M. (2014). *Delphi: A History of the Center of the Ancient World*. Princeton: Princeton
44 University Press.
- 45 Shao, L. X., Liao, C., Gregg, I., Davoudian, P. A., Savalia, N. K., Delagarza, K., & Kwan,
46 A. C. (2021). Psilocybin induces rapid and persistent growth of dendritic spines in
47 frontal cortex in vivo. *Neuron*, 109(17), 2535–2544. [https://doi.org/10.1016/j.neuron.](https://doi.org/10.1016/j.neuron.2021.06.008)
48 [2021.06.008](https://doi.org/10.1016/j.neuron.2021.06.008)
- 49 Siegel, J. S., Subramanian, S., Perry, D., et al. (2024). Psilocybin desynchronizes the human
50 brain. *Nature*. <https://doi.org/10.1038/s41586-024-07624-5>
51

- 1 Spinoza, B. de. (1994). *A Spinoza Reader. The Ethics and other Works* (E. Curley, Ed.).
2 Princeton: Princeton University Press.
- 3 Strickland, J. C., Garcia-Romeu, A., & Johnson, M. W. (2020). Set and setting: a
4 randomized study of different musical genres in supporting psychedelic therapy. *ACS*
5 *Pharmacology & Translational Science*, 4(2), 472–478. <https://doi.org/10.1021/acsp>
6 [tsci.0c00187](https://doi.org/10.1021/acsp.tsci.0c00187)
- 7 Thorndike, O. (2018). *Kant's Transition Project and Late Philosophy. Connecting the Opus*
8 *postumum and Metaphysics of Morals*. Bloomsbury.
- 9 Timmermann, C., Kettner, H., Letheby, C., et al. (2021). Psychedelics alter metaphysical
10 beliefs. *Scientific Reports*, 11, 22166. <https://doi.org/10.1038/s41598-021-01209-2>
- 11 Vargas, M. v., Dunlap, L. E., Dong, C., Carter, S. J., Tombari, R. J., et al. (2023).
12 Psychedelics promote neuroplasticity through the activation of intracellular 5-HT2A
13 receptors. *Science*, 379(6535), 700–706. <https://doi.org/10.1126/science.adf0435>
- 14 Von Wright, G. H. (1993). Humanism and the Humanities. In *The Tree of Knowledge and*
15 *Other Essays* (pp. 155-171). Leiden: E.J. Brill.
- 16 Wagner, R. (1964). *Wagner on Music and Drama. A compendium of Richard Wagner's*
17 *prose works* (A. Goldman & E. Sprinchorn, Eds. & H. Ashton Ellis, Trans.). New
18 York: Dutton.
- 19 Wagner, R. (1912). *Richard Wagners Gesammelte Schriften und Briefe* (J. Kapp, Ed.).
20 Volume 4. Leipzig: Hesse & Becker Verlag.
- 21 Wittgenstein, L. (1997). *Tractatus Logico-Philosophicus. Werkausgabe. Band 1* (11th ed.).
22 Frankfurt am Main: Suhrkamp.
- 23
24
25
26

1 **Appendix A: Intellectual and Cultural Highlights of Metaphysical Dualisms**
 2 **in Western History**

3 **Ancient Greek Religious Practices:**

- 4 • **Oracle at Delphi (8th-4th century BCE):** The priestess entered trance-like
 5 states to deliver prophecies. (Scott, 2014)
 6 • **Eleusinian Mysteries (5th-4th century BCE):** Initiates consumed a potion
 7 called “*kykeon*,” the exact nature of which is unclear due to the secrecy
 8 maintained by the initiates. Along with other communal ritual practices, e.g.,
 9 dance and fasting, the mysteries are believed to have induced altered states
 10 of consciousness, leading to profound spiritual experiences. Eleusinian
 11 Mysteries. (n.d.). [Exhibit]. Archaeological Site of Elefsina, Elefsina,
 12 Greece)

13 **Philosophy and Dualism:**

- 14 • **Heraclitus (ca. 535-475 BCE):** Distinguished between normal experience
 15 and the Logos: “This Logos holds always, but humans always prove unable
 16 to understand it” (McKirahan, 2010, p. 112).
 17 • **Plato (ca. 427-347 BCE):** Distinguished between discursive knowledge of
 18 the sciences and intuitive cognition of underlying reality. In *The Republic*,
 19 he contrasts “human affairs” within the cave with “the things themselves”
 20 outside the cave (514a-518d). In *Symposium*, he contrasts human affairs
 21 with the “highest mystery,” where the philosopher intuitively grasps the One
 22 reality (210a-e), comprehending it as a “great sea of beauty.” This view is
 23 central to Plato’s so-called unwritten doctrine, where knowledge regarding
 24 the concept of the One (the ultimate principle of unity) cannot be conveyed
 25 in normal language but must be experienced: “For this knowledge is not
 26 something that can be put into words like other sciences.” (Plato, Letter VII,
 27 341c)
 28 • **Spinoza (1632-1677):** Opposed sense perception and discursive reasoning
 29 to *scientia intuitiva*, a direct understanding of the essence of things (Spinoza,
 30 1994).
 31 • **Kant (1724-1804):** Opposed phenomena and noumena, corresponding to
 32 discursive and intuitive understanding (Kant, 1992, *Critique of Pure*
 33 *Reason*, A235-260; *Critique of the Power of Judgment*, §77; and *Critique*
 34 *of Practical Reason*, 5:72-89). Kant argues that we can access the noumenal
 35 realm through moral feeling (Thorndike, 2018).

36 **Art and Dualism:**

- 37 • **Euripides (ca. 480-406 BCE), *The Bacchae*:** King Pentheus represents
 38 reason, while Dionysus, “god of ecstasy” (Euripides, 2004, line 1167),
 39 represents “the other state.” This dichotomy is paralleled in psychedelic-
 40 assisted therapy. The process through which Dionysus captures the mind of
 41 Pentheus commences from perceptual changes and culminates in Pentheus
 42 assuming a transformed identity. In what might be the first psycho-analytic
 43 document in Western History, Cadmus (Pentheus’ grandfather) functions as
 44 the psychotherapist to his daughter Agave (Pentheus’ mother) (Euripides,
 45 2004, lines 1264-1297).

- 1 • **Goethe (1749-1832)**: The “Eternal-Feminine” in *Faust II* is his version of
 2 Platonic heavenly *Eros*, inspiring Mahler’s 8th Symphony. Chorus
 3 Mystic: “The Eternal-Feminine draws us on high.” (2001, line 12110f.)
 4 • **Schopenhauer (1788-1860)**: Distinguished the world as representation vs.
 5 the World as Will, directly experienced in music (*The World as Will and*
 6 *Representation*, 2010, §52).
 7 • **Nietzsche (1844-1900)**: Apollonian vs. Dionysian in *The Birth of Tragedy*;
 8 *Tristan and Isolde* as an example of ego-dissolution and ineffability.
 9 • **Wagner (1813-1883)**: Conventions of everyday existence vs. ultimate truth
 10 and love (*Tristan and Isolde*; *Wagner on Music and Drama*). Nietzsche
 11 referred to *Tristan and Isolde* as Schopenhauer’s “philosophy in sound.”

12 **Modern Thinkers:**

- 13 • **Dostoevsky (1821-1881)**: Transformational personality change of Father
 14 Zossima in *The Brothers Karamazov* involving various marks of the mystic
 15 experience (e.g., vividness, immediacy, noetic conviction of a single
 16 transformative moment) (Bidney, 2004).
 17 • **Wittgenstein (1889-1951)**: Distinguished between what can be said vs.
 18 what must be shown. “There are, indeed, things that cannot be put into
 19 words ... They are what is mystical” (*Tractatus Logico-Philosophicus*,
 20 Proposition 6.522). In the *Tractatus*, Wittgenstein holds that only state of
 21 affairs in the world can be represented through propositional language;
 22 aesthetic experience, for example, cannot be so communicated.
 23 • **Buber (1878-1965)**: I-It vs. I-Thou dualism in *Ich und Du*; fragmentation
 24 of experience in space and time, means-end relationships vs. ecstatic unity
 25 of I and world, which originally is an entering into God, *enthusiasm*,
 26 “being filled with the god.” The duality of primal words that Buber calls *I-*
 27 *Thou* and *I-It* refers to an ontological dualism that cannot be stated
 28 propositionally, but must be experienced, because mystic experiences are
 29 ineffable.
 30 • **Musil (1880-1942)**: Normal experience vs. “the other state” in *The Man*
 31 *without Qualities*; influence of Buber’s mysticism on Musil (Goltschnigg,
 32 1974).
 33 • **Huxley (1894-1963)**: The mind as a reducing valve vs. Mind-at-Large
 34 (*Doors of Perception*, 33-38).
 35 • **Star Wars (1977)**: “The Force” underlies everything, similar to Heraclitus’
 36 Logos.
 37