
A NARRATIVE REVIEW OF MEDITATION AND PSYCHEDELICS

Pairing Practices, Synergistic Effects, and a Mutual Research Framework

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Abstract: *Meditation and psychedelics have been increasingly implemented in combination within clinical and nonclinical research settings. This trend reflects rich and independent histories of their usage for personal, communal, and ceremonial use. As research proliferates in this area, an updated synthesis of empirical findings, an evidence-based framework for implementation, and culturally sensitive approaches to this syncretic phenomenon are needed. A threefold framework is introduced to assess their compatibility and feasibility when delivered together, drawing on principles intrinsic to the traditions they are derived from. Presenting a timely update to the literature, a structured literature search resulted in sixteen observational and experimental articles that are explicated in narrative review format. We offer examples of viable yet unexplored research designs that further highlight their synergistic compatibility and the potency of a cross-cultural exchange between representative systems of contemplative knowledge production. Conclusory reflections respond to ethical responsibilities and emergent delivery frameworks at this intersection of scientific and humanistic research.*

INTRODUCTION

Traditional styles of meditation and therapeutic applications of psychedelics have received exponential coverage in recent decades, yet only in recent years have researchers and clinicians considered the subjective effects of combining meditation and psychedelics into a synchronous intervention.¹ Broadly conceived, the practice of meditation covers a suite of practices for intentionally training qualities of the mind and body,² while psychedelics are psychoactive substances that produce non-ordinary changes in perception by catalyzing 5-HT_{2A} receptor activity.³ These agents are known to cultivate subjective wellbeing via overlapping mechanisms, such as emotion regulation and cognitive flexibility.⁴ There have been several commentaries dedicated to elucidating the similarities between meditation and psychedelics that infer their

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harmonious effects when combined in practice.⁵ There is, however, a lack of clarity regarding how these techniques could be optimally sequenced and how the combination of meditation and psychedelics can be leveraged to optimize personal and interpersonal benefit.

To address this gap in the literature, this article provides a thematic commentary of synergistic effects shared between meditation and psychedelics, situated within the threefold sequencing framework of preparation, in-session, and integration. This is followed by a narrative review of relevant clinical trials and observational studies combining meditation and psychedelic administration along with the elevation of a latent repertoire of meditative practices and psychedelics in combined practice. Through a comprehensive search process that includes previously unpublished studies, this article offers a comprehensive analysis of the subjective and psychotherapeutic benefits of meditation and psychedelics. Importantly, although much of the literature introduces meditative practices as an adjunct to the more dramatic effects of psychedelics, recent literature has positioned psychedelics as ancillary to meditation in certain traditional contexts, thereby nuancing a dominant orientation in the scientific literature toward dramatic effects and destabilizing a hierarchy of importance between the two.⁶ This paper tacitly aims to level the relationship between meditation and psychedelics by giving equal consideration to their methodologies, characteristics, and mutual beneficence within the first two sections. In the final sections, we extend our argument about their naturalistic complementarity embedded in the first section to suggest that meditation and psychedelics not only resonate but also can inform best practices.

SYNERGIES OF MEDITATION STYLES AND CLASSIC PSYCHEDELICS

While research into the mechanisms underlying meditative practices and psychedelic substances' therapeutic effects is limited, it is plausible that coupling these interventions may yield synergistic or enhanced remedial effects beyond what either can achieve in isolation. Available literature has considered how characteristic subjective features of meditation or classic psychedelics may supplement one another where deficits are present or when shared mechanisms are activated by the presence of the other agent.⁷ For instance, psychedelic use might offer an experiential reference for novice meditation practitioners who struggle to cultivate phenomenological qualities (e.g., equanimity) commonly reported by more experienced meditators. Similarly, where alterations in one's disposition while under the effects of psychedelics are highly transient, a regular meditation routine can stabilize these dispositions until they become durable traits. The symbiotic relationship of their neurobiological substrates supports their integration from a mechanistic standpoint as both are known to distinctively alter connectivity within and across the default mode network (DMN).⁸ Such recent work, however, suggests that they do so in a differential yet complementary manner where meditation decreases connectivity between the posterior DMN and secondary visual processing regions, and psychedelics decrease activity within the anterior DMN and primary auditory processing. We propose that global network activity could be enhanced were the two interventions to be engaged synchronously, possibly resulting in prolonged or augmented therapeutic effects.⁹

While previous research has thoughtfully speculated on observable synergies, a presentation of evidence-based synergies organized under a single operational framework for co-deployment can inspire and inform continued research. Drawing from historical and contemporary precedents, we offer a framework for understanding the complementarity of meditation and psychedelics through their parallel protocols of engagement, including (1) preparation, (2) in-session, and (3) integration stages. These three stages have precedents in historical contemplative traditions and provide a normative framework for meditation practice. For instance, in Tibetan Buddhist contemplative traditions, it is a convention to structure a meditation session according to preparation (Tib. *sngon*), main in-session (*dngos*), and postmeditation (*rjes*) stages, schematized temporally by before (*thog ma*), during (*bar du*), and after (*tha ma*) the session. The preparation stage involves cultivating a valorized mindset, setting intentions, and curating the environmental and social conditions; the in-session stage involves immersion in the practice; and the integration stage involves translating experiences and insights to bring about a holistic transformation in one's psychosocial functioning.

Likewise, this method has been central to contemporary psychedelic protocols, including psychedelic-assisted therapy (PAT). The standard protocol for PAT sessions begins with the preparation stage, which involves a dialogical process of revealing the expectations, contexts, concerns, and intentions going into the session.¹⁰ For those choosing to undergo PAT, an open and nondefensive posture is facilitated ("set") and a comfortable and innocuous environment ("setting") is secured to begin engaging the intended psychological transformation in the psychedelic context. Next, the in-session, or administrative session, refers to the period between the ingestion of the psychedelic substance and the subsiding of acute effects wherein the client is supported in navigating what can be emotionally intense experiences and potentially meaningful reappraisals of memories as a result of the substance's capacity to deconstruct ways of relating to autobiographical narratives. Finally, the post-session procedures entail follow-up visits and continued therapy for eliciting actionable insights from nonordinary and salient experiences, requiring continual reflection to inspire intra- and interpersonal growth.¹¹ This threefold framework can be used to support the psychotherapeutic training for therapists that is necessary to establish conditions for the client to experience a pleasurable or otherwise meaningful alteration in conscious experience during the acute psychedelic state.¹² Equally important, such considerations across these two types of interventions can help ensure that a meditation practice or psychedelic dosing session is impactful far beyond the session, or, if challenging experiences arise over the course of the session and endure beyond, can equip participants with skillful and integrated means to respond.¹³ Evidence-based regimens are already central to mindfulness-based intervention (MBI) programs and PAT. As such, articulating synergistic motives for combining these treatments can serve as a rigorous extension of this existing work.

Preparation Stage

In the preparation stage, procedures taken to optimize outcomes and mitigate risks are integral to ensuring the attractiveness and scalability of meditation and psychedelics research. Given the excitement associated with potential benefits claimed by practitioners of meditation and psychedelics,¹⁴ there is a need to temper expectation effects to allow researchers to more accurately delineate the unique mechanisms underpinning intervention outcomes.¹⁵ For instance, meditation

training could prospectively attenuate the influence of high expectations that characterize engagement with psychedelics given that a central aspect of modern definitions of mindfulness is the element of nonreactivity.¹⁶ In the context of preparing for a psychedelic session, meditation practice in the preceding days or weeks could emphasize the cultivation of nonattachment and de-reification of emergent experiences anticipated by the psychedelic agent. As such, meditation poses the benefit of strengthening one's ability to be present and engaged during a potential peak or challenging experience in a more discerning, less automated manner.

It is important for individuals who are considering engaging with such practices to be aware of potential remarkable experiences, broadly construed, and adverse events (AEs).¹⁷ Incidents characterized by dissociation, traumatic reengagement, and similar reports in meditation are prevalent.¹⁸ While psychedelic-induced AEs tend to be managed well within clinical research settings,¹⁹ and occur at low rates in the general population,²⁰ worsening of psychiatric or otherwise aversive symptoms during the acute dosing stage and beyond is a present concern. In historical meditation literature, such events are recognized more broadly as a category of Remarkable Meditative Experiences (RME; Tib. *nyams*), which are highly salient experiences that emerge along a spectrum from positively to negatively valenced, from adverse to blissful to neurotic to nonconceptual.²¹ Palitsky et al. (2024) have suggested that the AEs identified across meditation and psychedelics studies are comparable in their phenomenology and that the minimization of AEs entails greater attention to idiographic and contextual features, namely set and setting.²² Supporting the cultivation of a relaxed mindset, meditation can be deployed in the hours prior to, or during, the acute phase of psychedelic intake because of its calming effects.²³ Efforts to improve the preparatory stage for PAT have recently included the creation of a versatile digital intervention for psychedelic preparation (DIPP).²⁴ Having interviewed several dozen attendees of psilocybin retreats and invited their input through a series of workshops, the researchers used practitioner insights to inform the development of a three-week course to be followed in anticipation of a psychedelic dosing session. Along with the need for informational programming, meditation was the most highly endorsed resource. Open Monitoring (OM) meditation, Transcendental Meditation (TM), body scans, and mindful walking were practices reported to support emotional regulation, mindfulness, and pre-psilocybin retreat anxiety. Further qualitative investigation theorizes that prior contemplative training can support postpsychedelic developmental trajectories as individuals' ability to meaningfully integrate insights from challenging psychedelic episodes are strengthened by recurrent acts of reappraising unpleasant contents within meditation practice.²⁵

In-Session

The ability to anticipate AEs and facilitate mental, social, and environmental conditions for a wider scope of REs, including positive and insightful experiences, must be maintained and supported during in-session treatment. Reinforcing the reported strategies most frequently employed for pre-session anxiety, an online survey of psychedelic users found that the most frequently cited individual coping strategy for distress was meditation.²⁶ As a tool enriching psychedelic experiences, meditation practices in the preparatory or acute phases are considered a reliable means for inducing peak psychedelic experiences.²⁷ While no standardized guidelines for combining meditation and psychedelics currently exist, we theorize that guided meditation instructions during a dosing session would provide a more consistent and endogenous means of

generating positive experiences than the classical paradigm of wearing eyeshades, listening to music, and being generally told to introspect.²⁸ Were unexpected or undesirable phenomena to become present, meditation practices could complement the therapeutic advice to not combat the experience and provide a self-reliant scaffolding to moderate unnecessary interpretations that could otherwise be internalized and become self-defeating.

A novel benefit of combined deployment is that psychedelics could spark an interest in less studied but critically important styles of contemplative practice (e.g., imaginal, somatic, nondual, etc.) and corollary emergent experiences that have been overshadowed by what is characterized as the Standard Version of meditation.²⁹ Psychedelic states can engender the conscious modality of ego-dissolution³⁰ that is associated with nondual awareness (NDA), which is articulated within historical contemplative traditions of Buddhism.³¹ Experiences of NDA and related states are being increasingly found to improve wellbeing due to their capacity to reorient habitual conceptions of oneself and their appraisals of self-implicative events.³² Likewise, in addition to the Standard Version of meditation, there are myriad styles of practice to cultivate prosocial affect, such as empathy, loving-kindness, and compassion.³³ Where extending acceptance toward oneself and others may be challenging for some individuals, psychedelics are found to engender strong feelings of unified compassion that attenuate self-other representational distinctions.³⁴ Within clinical treatments, the addition of psychedelics to one's regular meditation routine could prospectively allow for needed breakthroughs in emotion regulation and affective processing. Thus, we can infer that the synergistic effects on the phenomenology that underpins these families of meditation styles—attentional, nondual, and prosocial—may likely result in more pronounced transformative experiences than would be experienced by a single intervention alone.³⁵

Integration

The third stage, integration, is critical to the therapeutic process because it locates, magnifies, and extends cognitive restructuring that occurs within the fixed intervention period into post-session life.³⁶ Dramatic changes in one's disposition as a result of long-term meditation could influence perceptions of self-concept, somatic awareness, and relationality to others.³⁷ Evidence of meditation and psychedelics' ability to influence self-other perception at the cognitive and behavioral levels is represented by increases in social connectedness,³⁸ which includes more-than-human others.³⁹ Reductions in psychiatric symptoms such as addictive behavior⁴⁰ and mood disorders⁴¹ in the weeks and months following committed meditation routines or psychedelics use could indicate a divergence from formerly static conceptions of self and others. Again, we can surmise that their impact would be greater within a combined study design because of the convergence upon notions like selflessness or unity, and the co-activation of psychological mechanisms like decentering, de-reification, and compassion.

Building off the definition of integration as the repeated attempt to inspire long-term change in a manner that is personalized to one's experience,⁴² PAT begins with the narrative disclosure of events that unfold throughout the session. As the participant attempts to apply meaning to these events, they formulate lessons relating to their own self-concept, habits, life events, and relationships. The final phase is identifying amendments in patterned ways of thinking and behaving across short-term and long-term applications as well as how to respond to setbacks. A similar three-stage model is popular in more traditional accounts of meditation where the third

stage, called “Insight Training,” corresponds to the task of reflecting on pronounced impressions from meditation that could translate into enduring changes.⁴³ At this third level, depending on the contemplative tradition, the meditator proceeds to investigate their mental life and extrapolates principles to contextualize self-relevant phenomena. The refinement of attentional faculties in textual accounts⁴⁴ and popular meditation programs today⁴⁵ function similarly to psychedelic insights in that they have the potential to become diffused into everyday perceptions. Exemplifying the mechanism of psychological flexibility said to underlie changes following meditation and psychedelic programs,⁴⁶ these formalized interventions comparatively allow for novel patterns of psychological and behavioral functioning.

NARRATIVE REVIEW

Following theoretical and evidence-backed precedence for arranging meditation and psychedelics in a coterminous study design, this section reports on the extent of intervention conditions developed to date. This review provides a necessary update to previous reviews of the literature on subjective and therapeutic effects by exposing critical limitations and future directions from a scientific and humanistic purview. A narrative style of review was chosen to allow for the selective reporting of how meditation and psychedelics were respectively deployed, measured, and discussed. This was critical as several reports under analysis attended more to describing attributes of delivering the psychedelic intervention than the conditions of meditation practice, which the present researchers find to be a generally underdeveloped area of methodological rigor within the literature. In doing so, a targeted collection of well-documented, contemporary use cases is made available for further interdisciplinary analysis, in addition to providing further support for the synergistic framework previously described.

Methods

Studies were selected for inclusion in this narrative review if they met the following criteria:

1. Published in the English language.
2. Published in the year 2000 or after.
3. Was either a clinical trial or an observational study providing original data.
4. Described either a direct comparison of meditation and psychedelic treatment, a sequenced delivery of meditation and psychedelic treatment, or concurrent delivery of meditation and psychedelic treatment.

A broad search strategy for potential articles was used to include all relevant studies. Electronic searches of key databases (PubMed, APA PsycNet, and Google Scholar) were performed by one author in December 2023 and in September 2024, then jointly by two authors in January 2025 as the manuscript was being prepared. Further updates to the reviewed body of literature were made at incremental stages of the article revision process, with the last review conducted in September

2026. Subject headings included: “meditation,” “mindfulness,” “contemplative,” “yoga,” “psychedelics,” and “hallucinogens.” References in the resulting papers were reviewed to identify additional publications. Gray literature, including preprint articles and abstracts, was considered given the small amount of empirical research on the subject. Articles were filtered first at the level of title and abstract screening and then through annotation of full manuscripts. Details involving sampling methodology, intervention protocol, or other study design features were charted and summarized within original drafts to help facilitate the narrative review. Studies involving classic psychedelics (lysergic acid diethylamide [LSD], psilocybin, mescaline, and N,N-dimethyltryptamine [DMT])⁴⁷ were included in the narrative review. We excluded studies evaluating combinations of meditation and ketamine administration⁴⁸ as well as those using 3,4-methylenedioxymethamphetamine (MDMA), as they comprise separable classes of hallucinogens (i.e., dissociatives, entactogens) on account of their subjective and neurochemical profiles.⁴⁹

Results

Nine observational studies and seven experimental or randomized controlled trials were located and analyzed for methodological inspection and relevant findings. No studies surfaced for the integration of contemplative practices other than those defined as “meditation.”

Discussion

Observational Studies

Several observational studies (i.e., online surveys) have attempted to capture personalized dynamics of meditation and psychedelic experiences, including how individuals were introduced to the respective practices. Azmoodeh et al. (2023) conducted a thematic analysis of open-response prompts to examine historical associations, such as preferences for combined versus separate use of meditation and psychedelics.⁵⁰ Over 40 percent of responses indicated that the combined use enhances subjective experiences compared to either practice alone. Simonsson and Goldberg (2022) found that the intensity of ego-dissolution during a psychedelic experience—rather than psychedelic use frequency—was associated with greater general meditation practice frequency.⁵¹ A subsequent survey of 613 lifetime psychedelic users suggests that these effects may be more pronounced in specific meditation practice domains compared to others. Specifically, psychedelic use was associated with a higher frequency in mindfulness meditation practice but not loving-kindness or compassion meditation practices.⁵² Jiwani et al. (2024) found that greater lifetime frequency of psychedelic use was associated with greater meditation quality in a convenience sample of regular meditators.⁵³

In another study, a pool of nearly 200 international respondents to an online survey were asked to describe their most meaningful meditative or psychedelic experience in the past; semantic content and sentiment analyses indicate that conditions were very similar in reported levels of meaning, shared concepts, reduced temporal depth (i.e., greater present-centered awareness), and relational social themes, though psychedelic reports contained higher emotional variance.⁵⁴ A separate qualitative content analysis reported discrete thematic findings from this dataset, including a higher presence of mystical-type insights (e.g., unity) in meditative experiences and psychological insight (e.g., personal values) and philosophical-existential insights (e.g., objective

values) in psychedelic experiences as opposed to value-based insights in meditation experiences.⁵⁵ More recent work may reinforce the integrity of these patterns at the level of comparing a cohort of ayahuasca users with experienced meditators along a single assessment, where meditators were found to score higher on domains of acceptance, decentering, and nonacceptance, indicating less egoic fixation, which may be consistent with valuing self-nature insight and in conflict with self-alteration phenomenology.⁵⁶ Finally, a secondary pooled analysis provided evidence that accumulating meditation and psychedelic use has a small to moderate enhancing effect on mental wellbeing and psychological flexibility; however, improvements were more attributable to meditation practice. Further, meditation appeared to show greater improvements than psychedelic use in outcomes like positive affect, a sense of peace and harmony, and attenuated negative affect, though meditation and psychedelics produced broadly similar insight profiles over the course of lifetime practice.⁵⁷ Interestingly, psychedelic reports have emphasized greater loss of connection with physical embodiment, whereas meditation reports have suggested increased attenuation of psychological self-other boundaries while retaining the felt sense of having a capacious first-person perspective, or embodied presence.⁵⁸

Experimental Research

Prior evidence demonstrates a strong association between improvements in mechanisms often targeted by meditation interventions, such as trait mindfulness, emotion regulation, compassion, and decentering, and the usage of N,N-dimethyltryptamine (DMT), a psychoactive component found in the South American brew ayahuasca and other organic sources.⁵⁹ To directly investigate the effects of mindfulness training in comparison with ayahuasca use, Soler et al. (2018) conducted a two-arm study that contrasted an eight-week mindfulness-based stress reduction (MBSR) program to four dosing sessions of ayahuasca on trait mindfulness, the capacity for present-moment awareness in everyday life.⁶⁰ The MBSR and ayahuasca groups showed similar statistically significant improvements in the nonjudgment facet of the Five-Facet Mindfulness Questionnaire (FFMQ),⁶¹ indicating that exposure to the psychedelic can increase trait mindfulness without dedicated mindfulness training, which suggests a shared overlapping mechanism of effect. Recently, a group of thirty-six therapists trained to deliver ayahuasca therapy took part in a four-day retreat where ayahuasca was taken at night and followed by group morning discussion sessions and preparatory exercises in the afternoon.⁶² In addition to pre- and postintervention psychometric batteries of acute psychedelic experiences (e.g., the Ego Dissolution Inventory),⁶³ they responded to ecological momentary assessments (EMA) corresponding to mindfulness and affect in the week preceding and a five-day period following the ceremonies. Psychedelic experiences correlated with statistically significant improvements in mindfulness during the acute, but not subacute (i.e., five days after), phase of the retreat study. Interestingly, and as traditional psychedelic pedagogy might argue,⁶⁴ improvements in positive affect were facilitated by the presence of challenging experiences, indicating the potential of psychedelics to help people work out deficits in emotional reactivity when conducted under supportive and corrective conditions. The impact of meditation exercises and other ceremonial components during and surrounding the ceremonies was not directly assessed; however, the discussion and participant feedback underscored the importance of communal, naturalistic, and sacred elements of the study setting.

The effects of DMT/harmine, a β -carboline alkaloid that stalls the rapid digestion of DMT,⁶⁵ have been evaluated in conjunction with sitting and walking meditation during a three-day retreat among long-term practitioners (average lifetime practice ~2,500 hours) who practiced mindfulness and compassion meditation.⁶⁶ On day one, participants engaged in meditation and preparation for drug administration; on day two, participants were randomized to receive either a cumulative dose of 120 mg of DMT/harmine over a two-hour period, or an inactive placebo; on day three, participants engaged in meditation and integration of the insights gained during the dosing session. Contrary to the author's hypotheses, neither state mindfulness, self-compassion, nor other-oriented compassion increased in the experimental group relative to an inactive placebo, suggesting that DMT/harmine appear ineffective in enhancing these effects of meditation practice on these measures. Instead, trait mindfulness was significantly increased in the DMT/harmine group compared to placebo at the one-week follow-up. However, insight, emotional breakthrough, mystical experiences, and state-level nondual awareness were significantly greater at the end of the retreat in the DMT/harmine group relative to the control condition. Additionally, ratings at the one-month follow-up showed increased personal meaning and spiritual significance among the experimental group relative to the control. A subsequent Natural Language Processing analysis of microphenomenological interviews from participants revealed semantic resemblance regarding the estimated effects of the two psychological agents, particularly in the presence of spiritual frameworks—most notably Buddhist philosophy—and terms like equanimity and embodied wisdom.⁶⁷

Psilocybin has been popularly used in psychedelic research studies because of its moderately intense subjective effects and relatively short activation time.⁶⁸ In another randomized controlled trial (RCT), 85 community volunteers were randomly assigned to one of three groups: (1) low-dose psilocybin (10 mg/70 kg body weight in sessions one and two) with a lower level of support in contemplative practices including meditation and reflection (i.e., seven contact hours with session facilitators involving introduction to establishing a contemplative practice in daily life); (2) high-dose psilocybin (20 mg/70 kg body weight in session one and 30 mg/70 kg body weight in session two) with a lower level of contemplative practice support; or (3) high-dose psilocybin (20 mg/70 kg body weight in session one and 30 mg/70 kg body weight in session two) with a higher level of contemplative practice support (i.e., up to thirty-five contact hours with session facilitators).⁶⁹ The primary finding was that a higher psilocybin dose, while not accompanied by a high contemplative practice support level, was associated with greater likelihood of having a mystical experience along with greater improvements in mental, social, and spiritual health at the six-month follow-up. However, there was evidence for synergy between the higher psilocybin dose and higher contemplative practice support level, resulting in a significantly greater proportion of people from that condition, relative to the other conditions, engaging in daily meditation practice at the six-month follow-up.

Subjective and neural responses to psilocybin administered during a five-day Zen Buddhist retreat was evaluated in experienced meditators with approximately 5,000 hours of meditation practice.⁷⁰ Participants were randomized to receive either psilocybin (~22 mg) or a placebo (lactose), administered on the fourth day of the retreat. During that day, participants engaged in sitting meditation, walking meditation, various forms of physical activity, and relaxation. Ratings of meditation depth at post-treatment (day five) were significantly higher in the psilocybin versus

control condition, though state mindfulness levels did not differ between groups.⁷¹ A functional MRI task was conducted at pre- and post-treatment, in which participants engaged in periods of rest and periods of focused attention (FA) and open awareness (OA) meditation.⁷² Results revealed that participants in the psilocybin group (but not placebo) had significant decoupling of antero-posterior DMN connectivity during OA meditation. Acute changes in self-transcendence following psilocybin administration were significantly correlated with DMN decoupling measures. A secondary analysis considered the OA practice as providing a counterbalancing effect to the expanded repertoire of phenomenological content permitted by the psilocybin's hallucinogenic effects. Specifically, enhanced meta-awareness during OA practice allowed for improved regulation of content and crystallization of insights deemed important.⁷³ Finally, a variety of persistent psychological effects were assessed with the Life Changes Inventory⁷⁴ at pre-treatment and the four-month follow-up. Notably, greater self-acceptance and concern for others—measures of compassion—were higher over time in the psilocybin group compared to the placebo group.

In another study, a preparatory body scan procedure was compared to a specially curated nature-themed video intervention program used to support the ascent and descent stages of a psilocybin dosing session in individuals with alcohol use disorder.⁷⁵ The intent of the study was to measure the effects of nature videos on blood pressure by piloting a series of calming videos that would be played right after each dose was taken and during the descending arc of drug effects. The videos featured panoramic and time-lapsed nature scenes displayed for those in the Visual Healing group. Meditation was implemented as an active control condition wherein participants allocated to the Standard group were allowed to recline, wear eyeshades, and listen to music, along with being instructed in a brief body scan practice at the start of sessions and during any periods of distress. Participants were randomly assigned to the Visual Healing or Standard arms at the beginning of the study, and two psilocybin dosing sessions (25 mg each) were conducted during the third and seventh week. For the second session, participants were able to choose which preparatory device they wished to use, with a statistically insignificant majority (eleven of nineteen participants) choosing the video procedures over the meditation protocol. The researchers found no significant difference in the intensity of mystical experiences between the Visual Healing and Standard group, though this was treated as clinically meaningful as it suggested that the intervention is not disruptive to the psilocybin experience and, in fact, supported set and setting conditions. For all items and scales of the measures of subjective effects, however, the Standard group showed higher scores than the Visual Healing group (e.g., the number of participants achieving a complete mystical experience was 60 percent and 40 percent, respectively). While a portion of participants endorsed the Visual Healing intervention (e.g., 26 percent of responses strongly agreed that Visual Healing improved the psychedelic experience), this study offers evidence that virtual intervention programs may be as effective as a meditation exercise, possibly underperforming relative to a short body scan.

Further clinical research has explored the effects of a joint eight-week mindfulness-based stress reduction plus psychedelic-assisted psychotherapy (MBSR+PAP) intervention compared to a standard eight-week MBSR training for health-care workers.⁷⁶ Responding to the need for effective psychotherapeutic adjuncts to psilocybin treatments in cases of comorbid depression and burnout, the study design involved participants in the MBSR+PAP group beginning preparatory therapy in week five, participating in a group dosing session during week six, and completing

integrative therapy sessions in weeks seven and eight (dosage was standardized at 25 mg per participant). To match the presence of an intensive experience for the MBSR-only group, participants engaged in a silent meditation retreat on the dosing day. The researchers found significantly lower scores in the MBSR+PAP group for depression, perceived helplessness, and two of the three subscales of burnout at the two-weeks follow-up. Experientially, scores on the Mystical Experiences Questionnaire (MEQ-30)⁷⁷ and Nondual Awareness Dimensionality Assessment (NADA)⁷⁸ demonstrated a much higher occurrence of nonordinary states for participants in the MBSR+PAP group than the MBSR-only group; however, the correlation between the magnitude of the experiential scores and degree of improvement in clinical scores did not differ across groups. This implies that the presence of a self-transcendent state, whether induced by mindfulness training or psilocybin in conjunction with therapy, was a greater determinant of improvements in depression and burnout than the specific intervention employed.

A single-subject case study compared the effects of 5-MeO-DMT and nondual meditation practice in an expert Tibetan Buddhist meditator.⁷⁹ The research design featured three meditation sessions preceded, in one instance, by an intranasal dose of the placebo (a saline solution) and, in the others, two doses of DMT (5 mg and 12 mg). Treatments were followed by visual analogue scales corresponding to psychological effects (e.g., degree of complex imagery) and microphenomenological interviews. The researchers compared entropy rate and frequency band power between meditation and psychedelic conditions against within-subject contrasts including baseline recordings and cognitive tasks (e.g., counting backward, cued daydreaming). Neural and phenomenological profiles between the low dose of DMT and nondual meditation reflect shared substrates and state-like effects. More pronounced differences appeared between the nondual and high-dose DMT, the latter being marked by intense phenomenal features and dissociations in narrative self-other processing as evidenced by self-report and interview findings. Increases in alpha power were seen in nondual meditation and both DMT conditions, indicating a divergence from past literature, which suggests a compromise of attentional control during intensive phenomenal states.⁸⁰ Contrastingly, region-specific reductions in entropy rate, beta and gamma power in the low dose and nondual meditation conditions diverged from increases in gamma power and improved entropy rate, reflecting a hypothesized distinction between two candidate neural circuitries, one leading to reduced content and conceptualization, and the other to overloaded sensory processing and disconnect from the environment.

LIMITATIONS AND FUTURE DIRECTIONS

Research studies in previous reviews gestured to here have filled critical gaps in study design and methodology.⁸¹ Even so, several limitations to the RCTs conducted to date should be considered. Except for Griffiths et al. (2018; N = 75), nearly all RCTs evaluated in the present review had relatively small sample sizes (N = 20–40). All but Heinzerling et al. (2023) exclusively enrolled healthy participants, limiting generalizability of results. Many of these studies overrepresent certain demographic groups relative to the North American population, a problem that is especially pronounced in psychedelic and contemplative research.⁸² Additionally, the reviewed RCTs lacked a qualitative assessment component, limiting the breadth of interpretation of participant experiences in these combined interventions. Recent work has begun to take up this mantle. For instance, meditation research has increasingly implemented microphenomenological interviewing

to capture the dimensions of different contemplative practices.⁸³ Psychedelic research, too, has begun to examine psychedelic states through natural language processing approaches.⁸⁴ Such explanatory data helps to refine the implementation of interventions by optimizing health-care protocols according to meaningful experiential dynamics.

Psychedelic effects were observed to often be the primary interest of studies, likely because of the intensity of psychedelic-induced experiences and their dramatic and immediate effects.⁸⁵ The present authors wish to advance the investigation of the role of meditation in these studies through careful detailing of meditation protocols and attention to meditation-related outcomes. Systematic reviews on the effects of psychedelics argue that improvements in mood, personality, and attitudes are driven largely by changes in mindfulness, a mechanism most associated with training in meditation practice, though the dynamics of these practices may be unclear due to underreporting of intervention instructions.⁸⁶ Finally, studies to date have not widely compared across meditation styles, psychedelic substances, and practitioner backgrounds. While the participants in those studies involving individuals with significant meditation training experience expressed familiarity with a range of Buddhist traditions (e.g., Tibetan, Vipassana, Zen) and contemplative training styles (affective, attentional, etc.), studies with experienced meditators predominantly took place in the context of a formal Zen retreat setting.⁸⁷ These findings may not be generalizable to other settings and contemplative traditions that widely differ in their implementation and evaluation of practices. The impact of longitudinal factors, including meditation practice history, regular practice length, and meditation frequency are important features determining the effectiveness of practice that are notably understudied.⁸⁸ In-session dynamics during the acute dosing stage are also important to identify co-active mechanisms. Only Smigielski et al. (2019) measured the effects of different meditation styles during the acute psychedelic state.

Considering trends in the critical appraisal of this intersectional research, humanistic scholars further contend that the preoccupation with inducing mystical experiences imposes a hierarchy on subjective phenomena, often at the expense of communal or orthopraxic dimensions of the tradition.⁸⁹ While the present review takes special interest in subjective and therapeutic outcomes, the prioritization of acute, dramatic effects over and above other domains of phenomenal analysis (e.g., intersubjective effects) limits the significance of this work for traditions of psychotherapy that are less interested with altering states than mood, behavior, or cognition. The cultural import of this research is further reflected by the global communities that this work represents, including the living contemplative and Indigenous communities that hold these practices, and the more recent mindfulness movement and psychedelic science communities seeking to adapt and experiment with them. In keeping with these lineages and mapping to the strengths of recently progressive, scalable, and successful research programs,⁹⁰ future research designs should continue to implement group-based, mindfulness- and compassion-informed, and eco-aware treatment programs.

ALTERNATIVE PAIRINGS BASED ON SYNERGISTIC FINDINGS

As evidenced by the narrative review presented here, clinical interest in the parallels between meditative practices and psychedelic substances gained momentum following observational data from ayahuasca-assisted therapy, which revealed sustained elevations in mindfulness scores immediately postintervention and at the six-month follow-up.⁹¹ This “afterglow effect” has been

found to last for days to months following psychedelic use, and it is especially pronounced in ayahuasca.⁹² The afterglow effect has frequently been found to strengthen prosocial qualities of empathy, compassion, and forgiveness of self and others.⁹³ Inherent in Buddhist virtue ethics is the development of altruistic attitudes, namely through the inculcation of the *brahmavihārā*, or Four Immeasurables: loving-kindness, compassion, empathetic joy, and equanimity,⁹⁴ of which the former two have been systematized into programmatic routines.⁹⁵ Serendipitously, the afterglow effect of ayahuasca extends qualities akin to the Buddhist definitions of empathetic joy and equanimity, therefore an intervention combining compassion meditation (CM) or loving-kindness meditation (LKM) within an ayahuasca ceremony could prolong socially desirable attributes since such prosocial affective qualities are central to both interventions.⁹⁶ This combination could be significant for clinical treatment where unhealthy perceptions of self or tenuous relationships with others are the target of treatment plans.

Lysergic acid diethylamide (LSD) has been highly popular in recreational settings though comparatively understudied relative to other psychedelics in recent research.⁹⁷ LSD is associated with accentuated hallucinatory effects, which include intense visual and auditory stimuli due to its potent binding effects to 5-HT_{2A} and 5-HT₁ receptor sites.⁹⁸ One study measuring cognitive bizarreness showed that LSD-induced experiences resembled interpretable narratives above and beyond random fluctuations in cognitive or emotional content.⁹⁹ The authors likened this to bizarreness in dream states where mental imagery may seem spontaneous yet somehow coherent. Similar contemplative dynamics are leveraged within Tibetan Buddhist practices that exercise imaginal simulation in practices of dream yoga and illusory forms in which practitioners learn how to work with endogenously generated imagery, including alternate bodies, objects, and environments that are less physically constrained than in waking life.¹⁰⁰ The ability to skillfully navigate and modulate one's experience could not only prepare participants taking LSD to sustain emotional equipoise when confronted with intense LSD-induced imagery but also could be used to enhance imagination and related divergent thinking skills. Such perceptual plasticity is critical for therapeutic approaches relying on the ability to transform one's self-perception. This could include chronic psychiatric conditions like body dysmorphia and chronic pain, in which the intervention could help break through static conceptions of the embodied self.¹⁰¹

Relatedly, previous research suggests that psilocybin and Open Monitoring (OM)-style meditation facilitate more receptive attitudes toward emergent experiences. Psilocybin has been shown to improve the personality domain of "openness," which operates across cognitive (e.g., "I have a very active imagination"), emotional (e.g., "I experience a wide range of emotions and feelings"), and behavioral (e.g., "I think it's interesting to learn and develop new hobbies") dimensions.¹⁰² Research on OM-style meditation corroborate its capacity to entertain a broader range of experiences through enhanced divergent thinking and creativity.¹⁰³ Corresponding to trait- and state-level operationalizations of openness, respectively, a study involving several weeks of OM training during the preparation and integration phases and an in-session intervention featuring psilocybin use might enhance participants' abilities to embrace previously suppressed emotional events, shift perspectives, and be open to new opportunities. Consequently, this intervention may be particularly useful for populations dealing with immobilizing distress, generalized anxiety, and other issues stemming from having fixed representational priors of situational contexts. As this combination design stands to be the most likely adopted provided the regularity of psilocybin use

in clinical and nonclinical settings and the emphases on openness and acceptance in contemporary mindfulness culture, its delivery, if guided by evidence-based implementation practices, could draw on each agent's established uses in healthy and clinical populations.¹⁰⁴

CONCLUSION AND FUTURE AVENUES

At a time when clinical and popular interest in meditation and psychedelic research has markedly escalated, this review takes stock of the empirical literature on the coupling of meditation practices with classic psychedelics. Relevant findings and characteristics of the two practices within a formalized framework of synergies were presented, spanning the preparation, in-session, and integration stages of therapeutic delivery. Similarities in the acute, subacute, and long-term outcomes of these interventions were noted while maintaining a focus on synergistic effects as a gestalt phenomenon in which meditation and psychedelics mutually enhance effects when combined. Such claims were supported by an extensive chronological review of qualitative and quantitative findings in narrative format. Finally, a refined model of meditation and psilocybin was considered, alongside several recommendations for alternative pairings of specific meditation styles with psychedelic substances based on phenomenological affinities. Future research could address existing limitations in experimental designs, transparency of methodological reporting, and demographic representation among participants and research consultants that were illuminated.¹⁰⁵

At this still nascent stage of research, exploratory studies involving meditation and psychedelics must be sensitive to the diverse range of cognitive or affective responses that these interventions can elicit, and the myriad social and cultural norms that influence one's interpretation and integration processes.¹⁰⁶ The implications of this converging field are, however, impactful to more than the lived experiences of research subjects. They also require us to critically evaluate how meditation and psychedelic communities are merging to create new cultural artifacts and approaches to treatment. Recent scholarship has mapped the institutional contestation and emerging cultural formations resulting from the intersection of contemplative communities and psychedelic medicines.¹⁰⁷ To address these lacunae in clinical and research settings, scholarship considering meditation-psychedelic frameworks must prioritize clinical models that are culturally sensitive and emerge through recursive dialogue between scientists, lineage holders, practitioners, and ethicists. Indeed, such meaningful work could be uniquely rewarding insofar as meditative and psychedelic cultures are commonly characterized by their emphases on presence, awareness, and intentionality.¹⁰⁸ Such cultural synergies could be the site of future humanistic scholarship, which, in turn, constrains and catalyzes new angles of scientific research.

A potentially fruitful area for the emerging field is to develop a standardized contemplative facilitator training for psychedelic-assisted therapies. Such a programmatic approach could be carefully informed by global traditions and represent an inclusive spectrum of meditation and psychedelic practices. Emphasis could be placed on the preparatory stage to systematize the cultivation of discrete contemplative life skills that would prospectively abate adverse events and enhance therapeutic effects during the acute psychedelic experience. Moreover, these skills would increase functional plasticity and be transferable for the participant to navigate and modulate their emotions, attention, and social lives beyond the context of treatment to make enduring behavioral transformations. Such training would leverage the findings reported in this review and elsewhere

to operationalize clinically valuable and latent synergistic pairings between meditation and psychedelic-based interventions.

NOTES

- ¹ Crane et al., “What Defines Mindfulness-Based Programs?”; Hadar et al., “Psychedelic Renaissance in Clinical Research.”
- ² Walsh and Shapiro, “Meeting of Meditative Disciplines.”
- ³ Johnson et al., “Human Hallucinogen Research.”
- ⁴ Letheby, “Psychedelics and Meditation.”
- ⁵ Payne et al., “Combining Psychedelic and Mindfulness Interventions”; Holas and Kamińska, “Mindfulness Meditation and Psychedelics.”
- ⁶ Cattoi, “Hesychasm and Psychedelics.”
- ⁷ Azmoodeh et al., “Meditation Trips”; Krabbe et al., “Interplay of Psychedelic Use.”
- ⁸ Gattuso et al., “Default Mode Network Modulation”; Brewer et al., “Meditation Experience Is Associated.”
- ⁹ Moujaes et al., “Comparing Neural Correlates of Consciousness.”
- ¹⁰ Beachy et al., “Relationality and Ethics.”
- ¹¹ Johnson et al., “Human Hallucinogen Research.”
- ¹² Carbonaro et al., “Survey Study of Challenging Experiences.”
- ¹³ Luoma et al., “Toward a Contextual Psychedelic-Assisted Therapy.”
- ¹⁴ Meling et al., “Meditating on Psychedelics”; Van Dam et al., “Mind the Hype”; Yaden et al., “Preparing for the Bursting.”
- ¹⁵ Colloca and Fava, “What Should Constitute a Control”; Prätzlich et al., “Impact of Short-Term Meditation”; Szigeti et al., “Assessing Expectancy and Suggestibility”; Zeidan et al., “Mindfulness Meditation Improves Cognition.”
- ¹⁶ Hicks et al., “Expectancy Effect in Three Mind-Body”; Szigeti and Heifets, “Expectancy Effects in Psychedelic Trials.”
- ¹⁷ Lindahl et al., “Challenging and Adverse Meditation Experiences.”
- ¹⁸ Aizik-Reebs et al., “First, Do No Harm.”; Pons et al., “Cross-Sectional Survey on Depersonalization/Derealization.”
- ¹⁹ Goodwin et al., “Single-Dose Psilocybin.”
- ²⁰ Simonsson et al., “Classic Psychedelic Use and Current.”
- ²¹ Gyatso, “Healing Burns with Fire.”
- ²² Palitsky et al., “Leveraging Meditation Research.”
- ²³ Huberty et al., “Efficacy of the Mindfulness Meditation.”
- ²⁴ McAlpine et al., “Development of a Digital Intervention.”
- ²⁵ Riedel et al., “Exploring the Interface of Meditation.”
- ²⁶ Robinson et al., “Coming Back Together.”
- ²⁷ Gandy, “Predictors and Potentiators of Psychedelic-Occasioned.”
- ²⁸ Johnson et al., “Human Hallucinogen Research.”
- ²⁹ McMahan, *Rethinking Meditation*, 17–18; JCS Editor, “Contemplation + Psychedelics.”
- ³⁰ Nour et al., “Ego-Dissolution and Psychedelics.”
- ³¹ Deroche and Sheehy, “Distinctive Mindfulness of Dzogchen.”
- ³² Hanley et al., “Self-Transcendent States”; Sacchet et al., “Modulating Self-Referential Processing.”
- ³³ Kang et al., “Nondiscriminating Heart”; Mascaro et al., “Learning Compassion and Meditation”; Singer and Klimecki, “Empathy and Compassion.”
- ³⁴ Kamboj et al., “Recreational 3,4-Methylenedioxy-N-Methylamphetamine (MDMA) or ‘Ecstasy’”; Watts et al., “Patients’ Accounts of Increased ‘Connectedness.’”
- ³⁵ Canby et al., “Clarifying and Measuring the Characteristics”; Letheby and Gerrans, “Self Unbound”; Millière, “Varieties of Selflessness”; Vago and Silbersweig, “Self-Awareness, Self-Regulation, and Self-Transcendence (S-ART).”
- ³⁶ Bathje et al., “Psychedelic Integration”; Cohen et al., “Immediate and Long-Term Effects.”
- ³⁷ Baer et al., “Weekly Change in Mindfulness”; Cooper et al., “Effectiveness and Active Ingredients”; Goldberg et al., “Mindfulness-Based Cognitive Therapy”; Ehmann, “Mindfulness, Cognition, and Long-Term Meditators.”

- ³⁸ Agin-Liebes et al., “Participant Reports of Mindfulness”; Bhatt et al., “Effect of Psilocybin on Empathy”; Campos et al., “Exploring the Role of Meditation”; Olami and Peled-Avron, “Effects of Classical Psychedelics.”
- ³⁹ Forstmann and Sagioglou, “Psychedelics and Connectedness”; Gandy et al., “Potential Synergistic Effects”; Hanley et al., “Metacognitive Processes of Decentering Scale”; Loy et al., “Cultivating Connectedness.”
- ⁴⁰ Brewer et al., “Craving to Quit”; Chapron et al., “Impact of Psychedelics on Craving”; Schmid and Bershad, “Altered States and Social Bonds.”
- ⁴¹ Galvão-Coelho, “Classic Serotonergic Psychedelics”; Leung et al., “Potential Therapeutic Effects of Meditation.”
- ⁴² Earleywine et al., “Integration in Psychedelic-Assisted Treatments.”
- ⁴³ Brown and Engler, “Stages of Mindfulness Meditation.”
- ⁴⁴ Brown, “Model for the Levels.”
- ⁴⁵ Lutz et al., “Attention Regulation and Monitoring.”
- ⁴⁶ Campo and Yali, “Psychedelic Use and Psychological Flexibility”; Watts and Luoma, “Use of the Psychological Flexibility”; Hayes et al., “Open, Aware, and Active”; Marais et al., “Mindfulness-Based Programs Improve Psychological Flexibility”; Sloshower et al., “Psychological Flexibility as a Mechanism.”
- ⁴⁷ Johnson et al., “Human Hallucinogen Research.”
- ⁴⁸ Dakwar et al., “Single Ketamine Infusion”; Grabski et al., “Adjunctive Ketamine with Relapse”; Hicks et al., “Ketamine-Assisted Psychotherapy for Antisocial Personality.”
- ⁴⁹ Dunlap, “Dark Classics in Chemical Neuroscience.”
- ⁵⁰ Azmoodeh et al., “Meditation Trips.”
- ⁵¹ Simonsson and Goldberg, “Linkages Between Psychedelics and Meditation.”
- ⁵² Simonsson et al., “Longitudinal Associations Between Psychedelic Use.”
- ⁵³ Jiwani et al., “Can Psychedelic Use Benefit Meditation?”
- ⁵⁴ Kallio-Mannila et al., “Comparing Psychedelic and Meditation Experience.”
- ⁵⁵ Krabbe et al., “Interplay of Psychedelic Use.”
- ⁵⁶ Arqueros et al., “Investigating Hypo-Egoic Features.”
- ⁵⁷ Jylkkä, “Meditation and Psychedelics Facilitate Similar.”
- ⁵⁸ Väyrynen et al., “Body Image Phenomenology in Reports.”
- ⁵⁹ Domínguez-Clavé et al., “Ayahuasca Improves Emotion Dysregulation”; Franquesa et al., “Psychological Variables Implied”; Mian et al., “Ayahuasca’s Antidepressant Effects”; Murphy-Beiner and Soar, “Ayahuasca’s ‘Afterglow’”; Sampedro et al., “Assessing the Psychedelic ‘After-Glow’”; Soler et al., “Exploring the Therapeutic Potential”; Sznitman et al., “Prospective Ecological Momentary Assessment Study”; Thomas et al., “Ayahuasca-Assisted Therapy for Addiction”; Uthaug et al., “Sub-Acute and Long-Term Effects”; Uthaug et al., “Single Inhalation of Vapor”; Uthaug et al., “Placebo-Controlled Study”; Uthaug et al., “Prospective Examination of Synthetic 5-Methoxy-N,N-Dimethyltryptamine.”
- ⁶⁰ Soler et al., “Four Weekly Ayahuasca Sessions.”
- ⁶¹ Baer et al., “Construct Validity of the Five.”
- ⁶² Sznitman et al., “Prospective Ecological Momentary Assessment Study.”
- ⁶³ Nour et al., “Ego-Dissolution and Psychedelics.”
- ⁶⁴ Shanon, *Antipodes of the Mind*; Gashi et al., “Making ‘Bad Trips’ Good.”
- ⁶⁵ Egger et al., “Neurobiological Research on N,N-Dimethyltryptamine.”
- ⁶⁶ Meling et al., “Meditating on Psychedelics.”
- ⁶⁷ Schlomberg et al., “Mixed-Methods Analysis on Psychedelic-Augmented.”
- ⁶⁸ Tylš et al., “Psilocybin—Summary of Knowledge.”
- ⁶⁹ Griffiths et al., “Psilocybin-Occasioned Mystical-Type Experience.”
- ⁷⁰ Smigielski et al., “Characterization and Prediction of Acute”; Smigielski et al., “Psilocybin-Assisted Mindfulness Training.”
- ⁷¹ Smigielski et al., “Characterization and Prediction of Acute.”
- ⁷² Smigielski et al., “Psilocybin-Assisted Mindfulness Training.”
- ⁷³ Singer et al., “Psilocybin Enhances Insightfulness in Meditation.”
- ⁷⁴ Greyson and Ring, “Life Changes Inventory—Revised.”
- ⁷⁵ Heinzerling et al., “Nature-Themed Video Intervention.”
- ⁷⁶ Lewis et al., “Psilocybin-Assisted Group Psychotherapy.”

- ⁷⁷ Barrett et al., “Validation of the Revised Mystical.”
- ⁷⁸ Hanley et al., “Nondual Awareness Dimensional Assessment.”
- ⁷⁹ Timmermann et al., “Neural Effects and Phenomenology.”
- ⁸⁰ Brain waves reflect synchronized neural activity that corresponds to cognitive and physiological states, with lower frequencies (delta, theta, alpha) frequently linked to sleep and other conservative processes, higher frequencies (beta and gamma) associated with focus, arousal, and expedient information processing, and power referring to the strength of these frequencies during any given task or period.
- ⁸¹ Sznitman et al., “Prospective Ecological Momentary Assessment Study”; Heinzerling et al., “Nature-Themed Video Intervention”; Lewis et al., “Psilocybin-Assisted Group Psychotherapy”; Timmermann et al., “Neural Effects and Phenomenology”; Jylkkä et al., “Meditation and Psychedelics Facilitate Similar”; Kallio-Mannila et al., “Comparing Psychedelic and Meditation Experience”; Krabbe et al., “Interplay of Psychedelic Use.”
- ⁸² DeLuca et al., “Systematic Review of Ethnoracial Representation”; Thrul and Garcia-Romeu, “Whitewashing Psychedelics.”
- ⁸³ Petitmengin, “Describing One’s Subjective Experience”; Przyrembel and Singer, “Experiencing Meditation—Evidence for Differential Effects”; Timmermann et al., “Neurophenomenological Approach to Non-Ordinary States.”
- ⁸⁴ McCulloch et al., “Psilocybin-Induced Mystical-Type Experiences”; Dikovskaya et al., “Natural Language Analysis.”
- ⁸⁵ Barrett and Griffiths, “Classic Hallucinogens and Mystical Experiences.”
- ⁸⁶ Aday et al., “Long-Term Effects of Psychedelic Drugs”; Jones et al., “Relationship Between Changes in Mindfulness”; Jungaberle et al., “Positive Psychology in the Investigation.”
- ⁸⁷ Smigielski et al., “Characterization and Prediction of Acute”; Smigielski et al., “Psilocybin-Assisted Mindfulness Training.”
- ⁸⁸ Bowles et al., “Too Much or Not Enough.”
- ⁸⁹ Sharf, “Buddhist Modernism and the Rhetoric”; Marcus, “‘Everybody’s Creating It Along.’”
- ⁹⁰ Loucks et al., “Mindfulness-Based Programs: Why, When, and How to Adapt?”
- ⁹¹ Thomas et al., “Ayahuasca-Assisted Therapy for Addiction.”
- ⁹² Keppler, “Role of the Brain.”
- ⁹³ Kiraga et al., “Persisting Effects of Ayahuasca”; Pagni et al., “Long-Term Mental Health and Wellbeing.”
- ⁹⁴ Shulman, “Ethical Samādhi: Brahma-Vihāra Meditation.”
- ⁹⁵ Hofmann et al., “Loving-Kindness and Compassion Meditation.”
- ⁹⁶ Apud et al., “Ayahuasca Ritual, Personality and Sociality.”
- ⁹⁷ Yockey et al., “Trends in LSD Use”; Fuentes et al., “Therapeutic Use of LSD.”
- ⁹⁸ Liechti, “Modern Clinical Research on LSD.”
- ⁹⁹ Kraehenmann et al., “Dreamlike Effects of LSD.”
- ¹⁰⁰ Sheehy, “Cognitive Illusion, Lucid Dreaming.”
- ¹⁰¹ Ledwos et al., “Therapeutic Uses of Psychedelics”; Molinari et al., “Power of Visualization.”
- ¹⁰² MacLean et al., “Mystical Experiences Occasioned.”
- ¹⁰³ Bashmakova and Shcherbakova, “Just Open Your Mind?”; Colzato et al., “Meditate to Create.”
- ¹⁰⁴ Madden et al., “Psilocybin for Clinical Indications”; Creswell, “Mindfulness Interventions.”
- ¹⁰⁵ George et al., “Psychedelic Renaissance and the Limitations.”
- ¹⁰⁶ Palitsky et al., “Relationships Between Religious and Scientific Worldviews.”
- ¹⁰⁷ Simonds, “Psychedelic Buddhism”; Simonds, “View, Meditation, Action.”
- ¹⁰⁸ Proulx et al., “Evolution of an Indigenous Mindfulness.”

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