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Body Image Phenomenology in Psychedelic and Meditative Peak Experience Narratives

A Qualitative-Quantitative Approach

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Psychedelics and meditation can induce peak experiences involving an altered state of consciousness in which the flexibility of self-referential processing increases. Predictive processing theories posit that these states temporarily relax rigid beliefs and may allow for their revision through enhanced sensory processing. However, there is a lack of research about these experiences' body image-related aspects. Body image is a multidimensional representation defined by its experiential nature and its quality is important for well-being. Altered states of consciousness may induce profound changes to how one perceives and relates to their body. Evidence suggests that the quality of the acute experience, such as its mystical-type aspects, is associated with therapeutic outcomes with psychedelics. Clinical psychedelic-assisted and mindfulness-based interventions are being applied for body image disorders, but the role of body-related experience contents is not known. Studying these experiences in naturalistic settings can offer insights about the relations between their phenomenological aspects and body image.

This study collected narrative reports of 138 participants' most meaningful psychedelic (n = 90) or meditative (n = 48) experiences with online surveys and explored their body image phenomenology using a coder reliability approach to thematic analysis. The study investigated similarities and differences between psychedelic and meditation reports, associations between narrative themes, perceived body attitude changes, and current body appreciation, and whether individuals with body image concerns manifesting as eating disorder traits reported different themes or perceived body attitude changes differently from those without such traits.

The results indicated that embodiment-related themes were common in both psychedelic (63.3%) and meditation (56.3%) reports, describing either increased body awareness or an unraveling of the bodily self-model, with psychedelic reports involving more drastic disembodiment. Affective-attitudinal body image themes were predominantly positive in valence, involving acceptance and appreciation. Individuals with eating disorder traits were more likely to describe body appreciation in their narratives and perceive their body dissatisfaction as having reduced more after the experience. Disembodiment experiences predicted greater perceived improvements in body connection and body dissatisfaction. Increased body awareness predicted a greater perceived reduction in body dissatisfaction. Positive affective-attitudinal body image content predicted a greater perceived improvement in body connection.

Keywords: psychedelics, meditation, altered states of consciousness, mystical-type experience, peak experience, predictive processing, body image, bodily self, embodiment, body image disturbance, eating disorders.

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Psykedeelit ja meditaatio voivat aiheuttaa huippukokemuksiksi koettuja muuntuneita tajunnantiloja, joissa itseen liittyvän prosessoinnin joustavuus lisääntyy. Ennakoivan prosessoinnin teoriat esittävät, että näissä tiloissa jäykät uskomukset voivat tilapäisesti höllentyä, jolloin tehostunut aistiprosessointi mahdollistaa niiden uudelleenarvioinnin. Huippukokemusten kehonkuvaan liittyviä aspekteja on tutkittu niukasti. Kehonkuva on moniulotteinen representaatio, jota subjektiivinen kokemus määrittää, ja sillä on suuri merkitys hyvinvoinnille. Muuntuneet tajunnantilat voivat muokata yksilön hahmotusta ja suhtautumista kehoonsa. Psykedeelien kohdalla akuutin kokemuksen laadun, esim. mystistyyppisten piirteiden, on havaittu olevan yhteydessä terapeuttisiin tuloksiin. Psykedeeli- ja mindfulness-avusteisia interventioita sovelletaan kehonkuvahäiriöihin, mutta kehollisten kokemussisältöjen roolia ei vielä tunneta. Transformatiivisten psykedeeli- ja meditaatiokokemusten tutkiminen myös naturalistisessa kontekstissa voi tarjota näkökulmia kokemussisältöjen ja kehonkuvan välisiin yhteyksiin.

Tutkimus tarkasteli internet-kyselyillä kerättyjä narratiivisia raportteja 138 osallistujan merkityksellisimmistä psykedeeli- (n = 90) ja meditaatiokokemuksista (n = 48) ja analysoi niiden kehonkuvasisältöjä koodaajien välistä reliabiliteettia hyödyntävällä temaattisella analyysilla. Psykedeeli- ja meditaatioraportteja vertailtiin ja teemojen yhteyksiä tutkittiin suhteessa nykyiseen kehoarvostukseen ja itsearvioituihin muutoksiin kehoasenteissa kokemuksen jälkeen. Tutkimus selvitti myös, raportoivatko syömishäiriöpiirteiset erilaisia teemoja kuin osallistujat, joilla ei ollut viitteitä syömishäiriöpiirteistä, ja arvioivatko he erilaisia muutoksia kehoasenteissaan.

Muuntuneen kehollisuuden (engl. embodiment) teemat olivat yleisiä psykedeeli- (63.3%) ja meditaatioraporteissa (56.3%). Niissä kuvattiin joko lisääntynyttä kehotietoisuutta tai kehollisen minämallin eriasteista hajoamista, joka oli psykedeeliraporteissa voimakkaampaa. Tunteellis-asenteellisissa teemoissa korostuivat kehon hyväksyntä ja arvostus. Syömishäiriöpiirteiset raportoivat kehoarvostussisältöjä todennäköisemmin ja arvioivat kehotyytymättömyyden laskeneen enemmän kokemuksen jälkeen. Kokemus kehon liukenemisesta (engl. disembodiment) ennusti suurempaa itsearvioitua kehoyhteyden kohentumista ja kehotyytymättömyyden laskua. Lisääntynyt kehotietoisuus ennusti suurempaa itsearvioitua kehotyytymättömyyden laskua. Myönteiset tunteellis-asenteelliset kehonkuvasisällöt ennustivat suurempaa itsearvioitua kehoyhteyden kohentumista.

Avainsanat: psykedeelit, meditaatio, muuntuneet tajunnantilat, mystistyyppinen kokemus, huippukokemus, ennakoiva prosessointi, kehonkuva, kehominä, kehollisuus, kehonkuvahäiriöt, syömishäiriöt.

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1 Introduction

Psychedelics and intense meditation are known to induce altered states of consciousness (ASC) that profoundly impact sensory perception, affective and cognitive processing, and one's experience of self. Although psychedelic states are induced through neuropharmacological, and meditative states through attentional modulation, they have phenomenological commonalities (Letheby, 2022; Milliére et al., 2018; Timmermann et al., 2023) and similarly facilitate mystical-type peak experiences, perceived by individuals as deeply transformative (Barrett et al., 2018; Zanesco et al., 2023). With the rise of psychedelic-assisted treatments (PAT), the relevance of subjective experience on well-being has become a topic of interest. Evidence suggests that the quality of the acute experience, such as its mystical-type aspects, is associated with therapeutic outcomes with psychedelics (Ko et al., 2022; Roseman et al., 2018; Yaden et al., 2024). Moreover, ASCs are a common occurrence among regular meditators (Wright et al., 2024). Peak experiences are known to include alterations to the bodily experience, e.g., disembodiment (Galante et al., 2024; Milliére et al., 2018; Vizeli et al., 2024), but research on the range of body image phenomena remains scarce, and the bodily aspects of psychedelic and meditative peak experiences have not been compared systematically. Further, while clinical PATs and mindfulness-based interventions show promise in treating body image disorders (Breeksema et al., 2020; Brewerton et al., 2022; Butryn et al., 2013; Gopan et al., 2024; Peck et al., 2024), little is known about the role of body-related experience contents.

Body image is a multidimensional construct defined by its subjective nature (Raoul & Grosbras, 2023), and its quality is important for well-being (Wilson et al., 2013). Particularly in the case of body image disturbance, rigid body-related beliefs and attitudes hinder one's ability to perceive and relate to one's body flexibly and adaptively (Irvine et al., 2018; Riva & Dakanalis, 2018). According to predictive processing (PP) theories, psychedelic and meditative ASCs temporarily loosen rigid beliefs and allow for their revision through enhanced sensory processing (Carhart-Harris & Friston, 2019; Laukkonen & Slagter, 2021), plausibly opening a window of opportunity to recalibrate body image (Ho et al., 2020; Ledwos et al., 2023). In this thesis, I aim to form a coherent overview of body image phenomenology in psychedelic and meditative peak experiences through the PP framework and examine the associations between bodily experience contents and individuals' perceived body attitude changes.

This study explores retrospective narrative reports of psychedelic and meditative peak experiences. The reports' body image aspects, including perceptual, affective-attitudinal, and embodiment-related, are identified and compared by means of a coder reliability approach to thematic analysis (TA) (Boyatzis, 1998; Braun & Clarke, 2021). Similarities and differences between psychedelic and meditation narratives are investigated, and associations between themes, perceived body attitude changes, and current body appreciation are examined. This study also investigates whether individuals with body

image concerns manifesting as eating disorder traits report different themes or perceive subsequent body attitude changes differently compared to those without such traits. While these individuals do not represent a clinical population, their experiences may offer insights about the plasticity of rigid body-related beliefs in psychedelic and meditative ASCs similarly to those with clinical body image disorders.

1.1 Predictive processing

The PP framework is based on Karl Friston's *free energy principle* (2010), developed as a unifying theory of brain function that explains how organisms strive to resist disorder to maintain their homeostasis and adapt to their environment (Friston, 2010). PP-based theories have gained popularity over the past decade as a lens to understand a wide variety of psychological phenomena, including psychiatric conditions (Lernia et al., 2023; Qela et al., 2025) and ASCs (Carhart-Harris & Friston, 2019; Laukkonen & Slagter, 2021). In psychedelic research, the PP-based REBUS model by Carhart-Harris & Friston (2019) is currently highly influential. Although PP has been criticized for insufficiencies in empirical validity and falsifiability (Litwin & Miłkowski, 2020; Piekarski, 2021), I rely on it here, since it is the predominant framework to study psychedelic experiences. The PP is critically evaluated in Discussion (see 4.3 Limitations).

PP theories posit that organisms do not experience the world directly, but rather, a synthesis of multisensory bottom-up inputs and associative top-down processes conditioned by beliefs, past experiences, and phylogenetic factors (Badcock et al., 2019). Friston (2010) suggests that the brain processes information in a bidirectional flow within a hierarchical organization, in which each level aims to predict inputs from the lower one: At the higher levels, where slower dynamics and general information are processed, the brain produces generative models with which it predicts the causes of sensory events. Temporally and spatially immediate information is processed at the lower levels. Probabilistic predictions, *priors*, range from simple to complex and are imbued with more or less confidence depending on their estimated accuracy. Priors are passed down to be compared with sensory inputs, and prediction errors are passed up toward the cortex.

Prediction errors, discrepancies between priors and sensory events, produce surprise. Organisms engage in a constant effort to minimize prediction error in a process of *precision weighting* (Friston, 2010): When an error occurs, its reliability is estimated. If the prediction error is weighted as precise, i.e., considered reliable, the predictive model is updated (*perceptual inference*). If it is weighted as less precise, the current model may be maintained, and action taken to modify the input to suit the model (*active inference*). The more imbued with confidence a prior belief is, the more immune it is to revision.

Adaptive behavior requires criticality. If models are too malleable or too rigid, organisms will not survive (Gadsby & Hohwy, 2023).

1.2 Body image

1.2.1 Definition

The body is deeply ingrained within the PP framework. Friston (2010) suggests that maintaining boundaries is vital for an organism, as it allows to distinguish between internal and external causes of events. Hence, a body representation emerges to predict events with more precision (Gadsby & Hohwy, 2023). Gadsby & Hohwy (2023) emphasize that the body representation is a domain-general schema, meaning that it is influenced by multiple systems, e.g., sensory modalities and contextual factors such as the environment. Body-related priors exist on all levels of the cortical hierarchy and include basic percepts, like having boundaries, as well as abstract narrative beliefs (Riva, 2018). As these priors are proposed to be weighted as less precise in psychedelic and meditative ASCs, subjective shifts in various body-related percepts and beliefs may occur (Ho et al., 2020). In this chapter, I aim to define the dimensions of body image that could be impacted in psychedelic and meditative peak experiences.

Body image literature and terminology are heterogenous, posing challenges to mapping the relationships between its different levels and aspects. The phenomenological approach may have advantages in bridging them together, because subjective experience is always at the core of body image (Raoul & Grosbras, 2023). In the phenomenological framework, body image has been defined as the consciously accessible representation of one's body (Gallagher, 2005), i.e., the body as an object of consciousness.

Thomas Cash's influential conceptualization of body image defines four inter-related dimensions: 1) *perceptual*, perceptions and beliefs about one's visual appearance, size, and shape; 2) *affective-attitudinal*, emotions and attitudes toward one's body; 3) *cognitive*, semantic information about one's body and bodies in general; and 4) *behavioral*, the habits and actions in relation to one's appearance (Cash & Smolak, 2011). In recent neuroimaging studies, the perceptual component has been linked with attentional processes and saliency detection, and the affective-attitudinal component with social processing (Hamamoto et al., 2023), highlighting multicontextuality. As ASCs pose various changes to self-related processing, acute changes could occur in any of these dimensions.

Further, peak experiences may radically alter the basic percept of having, or *being*, a body that is often taken for granted in normal in waking consciousness states. Body image arises from a more fundamental bodily self-model, in which multisensory bottom-up information is integrated into a unified experience of being a bodily subject (Riva, 2018). Shaun Gallagher's (2000) concept of "minimal self" proposes

two key components of this bodily subjecthood: 1) *body ownership*, the experience of having a body that is one's own, and 2) *agency*, being in control of its movements. Building on this foundation, Olaf Blanke's (2012) model of the bodily self defines three core aspects: 1) *self-identification*, identifying with one's body, 2) *self-location*, relating to one's surroundings with it, and 3) *first-person perspective*, experiencing the world from its viewpoint.

The bodily self is understood to be pre-reflective, meaning that it is not an object within consciousness, thus it is often separated from body image (Gallagher, 2005). However, it is not unconscious, but within phenomenal consciousness (Raoul & Grosbras, 2023), as defined by Nagel (1974), "there is something that it is like to be that organism—something it is like for the organism". In the context of ASCs, sudden changes and disruptions in the normally implicit aspects of bodily selfhood might bring them into conscious reflection and intertwine them with body image. It has been suggested that the bodily self-experience should be considered multidimensional and multilayered with explicit and implicit aspects instead of dichotomizing between them (Raoul & Grosbras, 2023). In this study's context, this stance is preferred, and body image is examined as a function of the bodily self and not separate from it.

Acute changes in sensory and self-related processes may be reflected on the experience of *embodiment*, defined by Piran et al. (2020) as the quality of one's awareness of and connectedness to one's body. In general, individuals who are high in positive embodiment feel comfortable, harmonious, as if being "at home" in their body (Piran et al., 2020), while those with low embodiment may feel uneasy and disconnected from it, which is often the case in body image disorders. Embodiment is facilitated by the ability to integrate multisensory body-related bottom-up information adaptively, such as interoceptive, proprioceptive and vestibular sensations. This is often researched in terms of interoceptive awareness, i.e., the ability to notice, trust, and attune to bodily signals and needs (Cebolla et al., 2016; Mehling et al., 2018). Adaptive interoception also facilitates one's ability to adjust and update one's body image as the body changes through life (Naraindas & Cooney, 2023). A healthy body image is relatively stable yet plastic, allowing for flexible recalibration when needed (Raoul & Grosbras, 2023).

1.2.2 Body image disturbance

Body image disturbance (BID) is usually conceptualized as either perceptual or affective-attitudinal (Cash & Smolak, 2011): Perceptual BID is defined as a discrepancy between the perceived and the actual body, manifesting as false beliefs about one's body, and affective-attitudinal BID as a discrepancy between the perceived and the ideal body, manifesting as body dissatisfaction and maladaptive attitudes. These can be thought of as examples of rigid and outdated beliefs. Evidence suggests that disturbances in these domains are separate but interacting processes. For example, attentional biases driven by

negative body attitudes and self-evaluations may underlie perceptual distortions, leading the individual to focus excessively on their disliked body parts (Hamamoto et al., 2022).

Multisensory integration deficits have consistently been linked to eating disorders, especially anorexia nervosa (AN) (Brizzi et al., 2023; Riva & Dakanalis, 2018), and somewhat less consistently, to BID (Naraindas & Cooney, 2023; Portingale et al., 2024). When body-related top-down information is highly emotionally salient, e.g., rigid ideals of what one should look like, or painful memories of being shamed, the integration of conflicting bottom-up inputs may be trumped, causing one to perceive their body in a distorted way, e.g., overestimating its size (Irvine et al., 2018). BID-related beliefs may be egosyntonic, making them difficult to resist and revise (Roncero et al., 2013). Individuals may acknowledge that their beliefs are harmful and objectively untrue, but still perceive letting go of them as a threat.

From the PP perspective, body image priors are proposed to be processed at different levels of the cortical hierarchy according to their sensory and temporal immediacy. Riva (2018) suggests that immediate multisensory data is mapped at the lower levels, producing an embodied first-person perspective to one's body. In contrast, abstract (i.e., non-immediate) body image data, such as ideals and memories, exemplify high-level beliefs through which, according to Riva (2018), individuals process their body as an object, occupying a third-person or "outsider" perspective. In the case of BID, these high-level beliefs are rigid and disproportionately weighted over multisensory data. Those with body image concerns may rely excessively on top-down processes and external visual cues, leading them to adopt rigid, self-objectifying attitudes to their body (Ainley et al., 2013; Riva & Dakanalis, 2018), with insufficient access to its immediate, embodied experiencing.

Both psychedelics and meditation are suggested to enhance the integration of immediate multisensory data and reduce the precision of high-level priors (Carhart-Harris & Friston, 2019; Laukkonen & Slagter, 2021). Psychedelics have been proposed to create conditions to target BID (Ho et al., 2020; Ledwos et al., 2023) in alignment with Riva's (2018) "embodied medicine", a proposition that body image could be improved by enhancing multisensory integration and inducing controlled prediction errors, i.e., surprising mismatches to confound the dysfunctional priors, thus, opening a window of opportunity for recalibration. Body illusions have been studied as a method to facilitate this (Lernia et al., 2023). In a recent systematic review, 20 out of 24 (83.3%) studies found body illusions to improve BID with small to large effect sizes, offering support for the hypothesis, although the variability in measures poses limitations for robust comparisons (Portingale et al., 2024).

1.2.3 Positive body image

While a lot of body image research has centered around pathology, there has been growing interest in positive body image as a well-being resource. According to Tylka & Wood-Barcalow (2015), positive body image is not the opposite of BID, but its own dimension, encompassing traits like positive embodiment, body and functionality appreciation, and body image flexibility (Alleva et al., 2017; Burychka et al., 2021; Piran et al., 2020; Sandoz et al., 2013; Tylka & Wood-Barcalow, 2015). Interventions targeting positive body image can improve well-being, regardless of initial body dissatisfaction (Alleva et al., 2015; Linardon et al., 2021; Webb, 2015).

A core construct of positive body image is *body appreciation*, defined as a holistic positive and accepting view of one's body regardless of physical appearance, treating it with respect and resisting unrealistic expectations displayed in the media (Avalos et al., 2005). It is highly associated with body image flexibility, a mindfulness-related capacity to openly experience thoughts and feelings about the body without acting on them or trying to change them (Swami et al., 2023). The link has been proposed to be bidirectional and mutually reinforcing (Behrend et al., 2023; Webb, 2015). Both body appreciation and body image flexibility are linked to various positive outcomes, including higher overall well-being and self-compassion, and may buffer against disordered eating and BID (Linardon et al., 2021; Swami et al, 2023).

1.3 Psychedelic and meditative peak experiences

Psychedelic and meditative peak experiences have been compared in terms of their phenomenology (Letheby, 2022; Milliére et al., 2018; Timmermann et al., 2023), involving aspects such as ego dissolution, unity, ineffability, and transcendence of time and space (Barrett et al., 2018; Milliére et al., 2018; Zanesco et al., 2023). Although systematic comparisons about their bodily aspects have not been made, previous studies have linked both psychedelics and meditation with, e.g., disembodiment (Galante et al., 2024; Vizeli et al., 2024), increased positive embodiment (Bornemann et al., 2021; Xu et al., 2018), and improved affective-attitudinal body image (Gopan et al., 2024; Barba et al., 2024). It is worth noting that the existing research is limited and methodologically varied. Challenges regarding psychedelic and meditation studies are further addressed in Discussion (see 4.3 Limitations). In this chapter, I will introduce two currently popular PP-based models of psychedelic and meditative ASCs and provide an overview of existing body image findings from psychedelic and meditation studies.

Both psychedelics and meditation are proposed to reduce the precision of high-level priors, inducing states of consciousness that are less governed by beliefs and more open to immediate multisensory events (Carhart-Harris & Friston, 2019; Laukkonen & Slagter, 2021). They are linked to reduced activity

in the default mode network (DMN) and its key hubs, such as the posterior cingulate cortex (PCC) and medial prefrontal cortex (mPFC) (Carhart-Harris & Friston, 2019; Garrison et al., 2013). The DMN has consistently been associated with self-referential processing and mind-wandering, and its inactivity is linked with present-moment awareness and relaxed self-consciousness, including ego dissolution in peak experiences (Carhart-Harris & Friston, 2019; Holas & Kamińska, 2023; Milliére et al., 2018).

1.3.1 Psychedelics through predictive processing

Serotonergic or "classical" psychedelics, such as LSD, psilocybin, DMT and mescaline, are a group of substances that primarily act as 5-HT_{2A} serotonin agonists and consistently induce ASCs. The REBUS (Relaxed Beliefs Under Psychedelics and the Anarchic Brain) is a hypothetical model by Robin Carhart-Harris and Karl Friston (2019) that aims to explain their mechanism of action by integrating the free energy principle with Carhart-Harris' entropic brain hypothesis (EBH). EBH presents that by activating 5-HT_{2AR} serotonin receptors, classical psychedelics increase entropy in spontaneous cortical activity, i.e., dynamic uncertainty in neuronal fluctuation across time. This dynamic entropy affects the global cortical hierarchy by desynchronizing functional networks, particularly the DMN. REBUS presents that this causes a highly plastic state in which neuronally coded high-level priors are 1) less imbued with confidence, and 2) more open for revision (Carhart-Harris & Friston, 2019). Phenomenologically, this may be experienced as unusual openness to sensory inputs, relaxed thought patterns, emotional lability, novel insights, and, potentially, transformations of deeply held beliefs and self-concepts.

Although the functioning of global cortical hierarchy is affected at all doses, progressive effects are suggested: At lower doses, the subjective experience may be more subtle and include visual alterations, as the visual cortex is rich with 5-HT_{2AR} receptors. In higher doses and increasing DMN disruption, more powerful and abstract experiences like ego dissolution and transcendence of time and space may occur (Carhart-Harris & Friston, 2019).

Non-classical psychedelics, such as MDMA and ketamine, have different primary mechanisms of action but may facilitate ASCs with similar phenomenological effects, such as increased empathy, sensory acuity, or altered embodiment (Preller & Vollenweider, 2019, Sarasso et al., 2024). In this study's context, narratives involving non-classical psychedelics are included because they may induce similar alterations in body image and embodiment as classical psychedelics despite different pharmacological profiles (Ho et al., 2020).

1.3.2 Meditation through predictive processing

Meditation refers to a family of practices that train present-moment awareness and emotional regulation through attentional processes. In research, an often-used, though perhaps inconclusive, umbrella framework for attentional techniques lists *focused attention* (FA), concentrating on a single object (e.g., breath) while intentionally inhibiting other inputs or impulses; *open monitoring* (OM), observing all sensory phenomena without attachment or judgement; and *non-dual meditation* (ND), resting in "pure awareness", in which the subject-object dichotomy is collapsed (Laukkonen & Slagter, 2021). These are practiced in most Buddhist traditions like Theravada, Zen, and Tibetan Buddhism (Laukkonen & Slagter, 2021), with FA and OM also utilized in the context of Western secular mindfulness. While these practices often aim to deconstruct habitual psychological patterns, some techniques, such as loving-kindness meditation, include intentional strengthening of adaptive patterns like empathy or compassion (Dahl et al., 2015).

Meditation-induced ASCs may be more prevalent than commonly thought. A recent population survey of regular meditators ($N = 3135$) determined that 45% had experienced phenomena like unity, ecstasy, sensory vividness, changes in perceived size, electric sensations, and out-of-body experiences (Wright et al., 2024). Although sparsely discussed in the context of Western mindfulness-based programmes, a RCT indicated a significant causal relationship between mindfulness practices and ASCs (Galante et al., 2024). Peak experiences are well acknowledged in several Buddhist traditions, although how they are viewed varies. While some traditions encourage them and view them as markers of progress, others see them as something to be wary of, associating them with hindrances like excessive striving (Lindahl et al, 2017).

Ruben Laukkonen and Heleen Slagter (2021) have introduced a PP model of meditative consciousness states. It describes the process by which meditation, through attention modulation, gradually reduces the precision of high-level priors and minimizes active inference. Its key aspect is disengaging counterfactual processes, i.e., thoughts of possible but currently non-existent states, thus facilitating a state of "bare" present-moment awareness, sensory openness, and reduced experience of self.

The model suggests that sustained single-pointed attention (FA) increases the synaptic gain of the chosen sensory input, modulating its precision higher and, thus, reducing the precision of "temporally thick", i.e., counterfactual, priors. This activates top-down attention networks, particularly the dorsal attention network (DAN), which inhibits DMN function, leading to a tranquil state where narrative and abstract cognitive functions, e.g., the experience of self, quiet down, and present-moment awareness is heightened (Laukkonen & Slagter, 2021).

As attention becomes more effortless and open (OM), brain activity shifts from the DAN toward the ventral attention network (VAN), associated with bottom-up attention and receptivity to unexpected stimuli. When sensory inputs are observed without attachment, each input is assigned equally low precision. This reduces the frequency and temporal span of priors, creating a state in which all sensory events, including aversive ones, can be experienced "purely" as sensations without top-down interference (Laukkonen & Slagter, 2021). The authors propose that thus, non-judgemental awareness is a natural state of the lower levels of predictive hierarchy.

In ND meditation, experienced practitioners may disengage all abstractions deviating from the present moment, including the very deep and stubborn models that create the experience of subject-object duality (Laukkonen & Slagter, 2021). This would result in all active inference stopping, phenomenologically manifesting as awareness with no conceptual processes, time, or space.

1.3.3 Body image findings from psychedelic and meditation studies

Perhaps the most recognized body-related phenomenon in psychedelic and meditative ASCs is disembodiment, i.e., the experience of the body dissolving (Berkovich-Ohana et al., 2013; Galante et al., 2024; Milliére et al., 2018; Vizeli et al., 2024). It has been associated with unity and ego dissolution (Galante et al., 2024; Lynn et al., 2023) but identified as a distinct dimension in factor analysis (Studerus et al., 2010). In a neurophenomenological study examining advanced meditators, different levels of body dissolution were identified according to the depth of meditative state (Berkovich-Ohana et al., 2013). Participants reported perceiving their body boundaries become permeable and gradually vanish, which correlated with reduced activity in brain regions associated with bodily self-awareness, particularly the PCC and temporoparietal junction (TPJ). Deeper meditative states were associated with more pronounced reductions and, phenomenologically, a complete loss of the sense of having a body.

Disembodiment is consistently documented in psychedelic experiences (Vizeli et al., 2024). Although the felt effect is often strong and abrupt, it does not persist beyond the acute experience in healthy adults (Harduf et al., 2023). Ketamine-induced disembodiment has, however, been linked to therapeutic outcomes in depersonalized depression, proposedly improving interoceptive awareness by suspending rigid high-level priors in those with compromised embodiment (Sarasso et al., 2024).

The drastic disengagement of body-related top-down models by psychedelics may have therapeutic potential for individuals with aberrant body perceptions (Ho et al., 2020). A case study documented an amputee phantom limb pain (PLP) patient treated successfully with psilocybin-assisted mirror visual

feedback therapy (Ramachandran et al., 2018), subsequently prompting an ongoing clinical trial of psilocybin-assisted treatment for 30 PLP patients (University of California, San Diego, 2025).

Visuoperceptual body image alterations may be common when looking in the mirror under psilocybin (Elias et al., 2023). In another case study of an aberrant body perception ameliorated with psychedelics, a young man with body dysmorphic disorder (BDD) was reported to experience an acute reduction in symptoms after ingesting psilocybin (Hanes, 1996). Reportedly, during the experience he had noted that his appearance in the mirror "had changed" so that he no longer looked "deformed", causing him to suspect his perceived deformity was not real. A clinical trial examining psilocybin-assisted treatment for SSRI-resistant BDD involving 12 patients found reductions in BDD symptoms, including conviction of belief, negative affect, and disability (Schneier et al., 2023).

Although meditation may involve disembodiment, it is more often linked with increased subjective body awareness. Meditators have been found less susceptible to body illusions than non-meditators, suggesting stability in embodiment functions (Cebolla et al., 2016; Xu et al., 2018). This may also be associated with positive affective-attitudinal body image. In a recent systematic review and meta-analysis, mindfulness-based interventions were found to be moderately effective for reducing body dissatisfaction in clinical populations (Gopan et al., 2024). Body appreciation has been found to improve with mindfulness practices in RCTs (Albertson et al., 2015; de Wet et al., 2020), with a positive association between meditation frequency and the amount of improvement (Albertson et al., 2015). Atkinson et al. (2019) suggest that mindfulness training can encourage individuals to become non-judgmentally aware of and attuned to their bodies, while decentering around areas that are normally considered problematic, thus fostering embodiment and positive attitudes.

There is a lack of systematic research into the relationship between psychedelics and embodiment, but in a qualitative study examining semi-structured interviews with 11 individuals with chronic pain, nine participants recounted acute and enduring increases in adaptive interoception and positive embodiment under psilocybin, departing from their usual experiences of dissociation and avoidance (Bornemann et al., 2021). The authors identified somatic presence and positive reframing of the body as two key processes. Also, in an RCT targeting end-of-life anxiety with psilocybin, some participants recounted finding a more accepting body connection, as articulated by a participant, "choosing" their body despite its suffering and limitations (Swift et al., 2017).

Research on psychedelics' association with affective-attitudinal body image is limited but preliminarily positive. In a longitudinal survey study of naturalistic psychedelic use, the participants' appearance satisfaction, sense of body connection, and sexual functioning were improved at the 4-week follow-up, with the changes maintained at the 6-month follow-up (Barba et al., 2024**)**. Appearance satisfaction

improvements were also found in a clinical trial comparing psilocybin and escitalopram in patients with major depressive disorder, with those receiving psilocybin more likely to retain the improvements at the 6-week endpoint (Barba et al., 2024).

So far, one clinical pilot trial of psilocybin-assisted treatment for anorexia nervosa (AN) has been completed (Peck et al., 2024), with two currently in progress (Johns Hopkins Medicine, 2024; University of California, San Francisco, 2024). In the completed trial, six out of ten participants reported experiencing reduced importance of physical appearance. One patient described disembodiment prompting them to grieve how much time they had spent hyperfixating on a part of themself "that just holds my being" (Peck et al., 2024). Sudden and sustained significant reductions in shape and weight concerns were recorded. In a qualitative study of ayahuasca experiences among individuals in eating disorder recovery, experiences involving reframing one's body as a cherishable gift were recounted (Lafrance et al., 2017). One participant described a vision of herself transitioning from a "rotting, decaying skeleton" to a "beautiful full-bodied woman", encouraging her to start gaining weight.

However, in the above studies involving AN patients, behavioral symptoms were not as fast to decline. Peck et al. (2024) report that the patients struggled in their ability to change restrictive behavioral patterns despite changed outlooks and increased motivation, relating this to the amount of constant effort that behavioral change entailed in everyday life. In the study of Lafrance et al. (2017), some participants described temporary worsening of behavioral symptoms, with one participant relating this to the "stirring up of trauma" and being home alone with deficient skills to process it. This highlights how, despite positive changes in attitudes and feelings may occur, behavior may not be easy to change, as it requires sustained self-regulatory effort over a long time span after the initial experience.

1.4 Research questions

This study aims to investigate the scope and frequency of body image-related phenomena in retrospective reports of psychedelic and meditative peak experiences, their similarities and differences, and whether these phenomena are associated with the participants' perceived body attitude changes or current body appreciation. It also explores whether individuals with rigid body image-related beliefs manifesting as eating disorder traits report different body image-related phenomena or perceived body attitude changes compared to those without such traits.

Previous research indicates that psychedelic and meditative ASCs include a variety of phenomena related to altered self-processes, including personally meaningful body-related narratives, feelings, attitudes, and perceptions. Both psychedelics and meditation have been linked to decreases in negative

body image (Gopan et al., 2024; Peck et al., 2024) and increases in positive body image (Barba et al., 2024; de Wet et al., 2020). There is evidence that phenomenal aspects may predict therapeutic outcomes of psychedelic experiences (Yaden et al., 2024). Furthermore, body image disturbance is linked with multisensory integration difficulties and rigid top-down beliefs (Riva & Dakanalis, 2018; Portingale et al., 2024), whereas psychedelics and meditation are proposed to increase bottom-up flow while relaxing beliefs and allowing for their revision (Carhart-Harris & Friston, 2019; Laukkonen & Slagter, 2021).

Thus, I hypothesize that eating disorder traits are associated with the reports' thematic content. I also hypothesize that the thematic content of psychedelic or meditation reports is associated with the individuals' perceived body attitude changes and current body satisfaction. The research questions are as follows:

1. What are key body image-related themes in narrative reports of psychedelic and meditative peak experiences? Do their occurrences differ between psychedelic and meditative narratives?
2. Do eating disorder traits predict different body image-related themes in the reports?
3. Do body image-related themes predict current body appreciation or perceived body attitude changes following the experience?

2 Method

This study was preregistered as an additional study within the Insights project led by Dr. Jussi Jylkkä of Åbo Akademi University, Finland (https://osf.io/5pa8f), and approved by the Research Ethics Committee at Åbo Akademi University (#15092022). The study followed the GDPR regulations regarding privacy and data management, as well as the declaration of Helsinki ethical principles of research. It should be noted that the research questions have slightly changed from the original preregistration. Comparisons between different substances or meditation techniques were discarded to keep the study reasonably compact. Eating disorder traits were examined as a continuous variable instead of group comparisons to improve statistical analysis.

2.1 Participants

The data were collected internationally with two separate online surveys for psychedelic and meditation reports between October 2022 and March 2023. The participants were recruited through social media, psychedelic and meditation focused online forums and communities, and by contacting relevant associations directly, e.g., meditation centers and groups, psychedelic societies, and research consortiums. Participants had to be over 18-years-of-age and possess sufficient English skills. Participation was anonymous. All participants gave their informed consent. The inclusion of both psychedelic and meditation groups was disclosed to the participants after completing the survey. Participants were not given monetary or otherwise compensation.

In total, 213 individuals responded, 147 with psychedelic and 66 with meditation reports. Participants who indicated that their experience did not include body-related aspects (see 2.2.2 Thematic question) were removed from further analysis in this study, 32 (21.8%) from the psychedelic and 14 (21.2%) from the meditation group. 14 cases with missing data due to a malfunction in the survey platform were removed. 8 cases with missing reports, and 7 reports not adhering to the task, i.e., describing several experiences, were removed. Thus, the final sample consisted of 138 participants, 90 reporting psychedelic and 48 meditation experiences.

2.2 Materials

2.2.1 Open report prompt

Participants were asked to recall their “most personally meaningful or important” psychedelic or meditation experience, referred to as *the Experience*. This task has been used in studies to probe peak

experiences retrospectively (Kangaslampi et al., 2020; Strickland et al., 2024). Narrative reports were prompted with the open-ended question “Please write down everything you experienced during the Experience (what happened, where, who was present, thoughts, feelings, images, scenarios) as accurately and in as much detail as possible. Remember that every detail is important”. The prompt was applied from dream research methodology (Sikka, 2019), and it aimed to collect narratives with minimal bias before the thematic question.

2.2.2 Thematic question

Participants were asked, “Did you perceive your body in a different way or have any personally meaningful thoughts, feelings or insight about it?” with three categorical reply options: “Yes”, “No”, and “Don’t know”. This was followed with the prompt: “If yes, please describe these aspects in English below”. If the participant replied “No”, they were excluded from further analysis. Collecting thematic reports about body-related aspects was considered important because it was assumed that some participants might overlook them, as psychedelic and meditation experiences are often discussed in terms not directly linked to the body, e.g., their psychological, emotional, or mystical-type aspects.

2.2.3 Eating disorder traits

Eating disorder traits were measured with the Eating Disorder Screen for Primary Care (ESP; Cotton et al., 2003). ESP is a short self-report measure designed for effective patient screening with four dichotomous questions: 1. “Are you satisfied with your eating patterns?”, 2. “Do you ever eat in secret?”, 3. “Does your weight affect the way you feel about yourself?”, and 4. “Do you suffer, or have you ever suffered in the past with an eating disorder?” 0–1 abnormal answers is likely to rule out a true diagnosis (likelihood ratio [LR] = 0.0), and 3–4 abnormal answers make a true diagnosis almost certain (LR = 11). A cut-off of 2 or more abnormal answers maximizes its sensitivity at 100% with specificity at 71%, and this score is considered basis for further investigation (Cotton et al., 2003). In this sample, ESP demonstrated questionable internal consistency with Cronbach’s Alpha, α = .61, possibly due to the small number of items and their dichotomous response format. In this study, ESP was used as a continuous variable with a theoretical range of 0–4 in regression analyses to signify the presence and severity of eating disorder traits. The aim was not to identify a clinical sample, but to examine the variable as a marker of body image concerns and rigid body-related beliefs that accompany eating disorder traits.

2.2.4 Current body appreciation

Current body appreciation was measured with Body Appreciation Scale-2 (BAS-2; Tylka & Wood-Barcalow, 2015). BAS-2 is a unidimensional 10-item self-report scale measuring positive affective-attitudinal body image features, such as acceptance and respect for one's body. Ten statements are answered with a 5-point Likert scale ranging from 1 (*Never*) to 5 (*Always*). The final score is the mean of the ten items. BAS-2 has demonstrated excellent internal consistency with Cronbach's α = .94 in women and α = .93 in men, strong test-retest reliability with intraclass correlation coefficients = .90 for both genders, and strong construct validity (Tylka & Wood-Barcalow, 2015). In this sample, BAS-2 demonstrated excellent internal consistency with α = .93.

2.2.5 Perceived body attitude changes

Perceived body attitude changes were assessed with the question, "As a result of the Experience, have you noticed any persisting increases or decreases in the following?" Answers were given on a 5-point Likert scale, responses signifying 1 *Decreased a lot*, 2 *Decreased a bit*, 3 *Not changed (stayed the same)*, 4 *Increased a bit*, 5 *Increased a lot*. Three body attitudes were assessed: 1. "Your critical thoughts and feelings about your body?", probing body dissatisfaction, i.e., core construct of negative affective-attitudinal body image (Cash & Smolak, 2011); 2. "Your acceptance and appreciation for your body?", probing body appreciation, i.e., core construct of positive affective-attitudinal body image (Tylka & Wood-Barcalow, 2015), and; 3. "Your sense of being 'at home' in your body?", probing body connection, i.e., core construct of positive embodiment (Piran et al., 2020).

2.3 Procedure

The survey consisted of 1) demographics and the ESP, 2) background of the Experience, 3) an open narrative report, 4) a thematic narrative report of bodily aspects, 5) perceived body attitude changes following the Experience, and 6) the BAS-2. Completing the survey took approximately 30–60 minutes. The psychedelic and meditation survey versions were identical except for questions about the background of the Experience.

The first part of the survey collected demographic data: gender (female/male/other), age, education and income levels, religion, country of origin, psychiatric diagnoses, psychedelic use history, and meditation habits. Information about the participant's eating disorder traits was collected with the ESP. In the psychedelic survey, the participant then gave details about the substance(s) used to facilitate the Experience. In the meditation survey, the participant gave details about their meditation technique.

Selecting several listed drugs or meditation techniques was permitted and additional details could be written in a text box. Drugs were listed as follows: “LSD or analogues”, “Psilocybin or ‘magic mushrooms’”, “Ayahuasca”, “N,N-DMT”, “5-MeO-DMT or Bufo Alvarius”, “Mescaline or psychoactive cacti”, “Ibogaine”, “Salvia divinorum”, “MDMA, ‘ecstasy’ or ‘molly’”, “Ketamine”, and “Cannabis”. Meditation styles were listed as: “mindfulness”, “silent sitting or lying down”, “voicework, e.g. chanting”, “bodywork, e.g. yoga”, and/or “breathwork (intentional manipulation of breath)”. The participant then determined how much time had passed since the Experience.

Next, the participant was instructed to write an open narrative report with the open report prompt (see Materials). After completion, the participant was presented with the categorical thematic question about the Experience including body-related aspects (see Materials) and prompted to write a thematic report about them. The participant then estimated their perceived body attitude changes following the Experience with three Likert-scale questions. In the final part of the survey, the participant filled the BAS-2.

2.4 Analysis

2.4.1 Qualitative analyses

Qualitative analysis was performed using a coder reliability approach to thematic analysis (TA) (Boyatzis, 1998; Braun & Clarke, 2021). This approach was chosen because it is suited for explorations of both theory-driven and data-driven themes, which was ideal given the scarcity of research about the body image phenomenology of psychedelic and meditative ASCs. Three theory-driven themes were preregistered based on common use in body image research (Burychka et al., 2021): 1) perceptual body image, 2) experience of embodiment, and 3) affective-attitudinal body image.

The Codebook for Body-Related Experiences (see Appendix 1) was created in an iterative process. All narrative reports were randomized and examined by the author. Data-driven subthemes were created under the predefined themes to describe the reports’ phenomena more specifically. The predefined themes were preserved as thematic categories. Literature and standardized questionnaires were used for definition. “Affective-attitudinal body image” was divided into “Body Appreciation” and “Functionality appreciation” (Alleva et al., 2017; Tylka & Wood-Barcalow, 2015). “Embodiment” was divided into “Increased Body Awareness” (Mehling et al., 2018; Piran & Counsell, 2020; Price et al. 2017), “Disembodiment” (Millière et al., 2018; Studerus et al., 2010), and “Bodily Self-Transcendence” (Berkovich-Ohana et al., 2013; Millière et al., 2018). Inductive themes were created: A thematic category “Other” for phenomena not fitting any other category, encompassing the data-driven themes “Experiencing the Body as Energy”, “Impermanence of the Body”, and miscellaneous “Other: other”.

"Negative Body-Related Experience" was initially categorized under "Other," but separated due to its substantial difference in content with the category's other themes during analysis. "No Identifiable Body-Related Experience" was created for cases from which no themes could be directly identified despite the participant's initial reply that body-related aspects may have been present. The codebook was completed with instructions, exclusion criteria (missing reports and reporting multiple experiences), theme definitions, and hypothetical examples.

The reports were coded by two independent raters, a psychology student and a neuroscience doctoral student. In accordance with the coding reliability approach to TA (Boyatzis, 1998), the raters were asked to take the reports at face value and refrain from interpreting. The raters were provided with the codebook, all reports randomized ($N = 213$), and a data matrix. The raters read each report and marked in the data matrix whether a theme was present in the report (0/1), or whether the case met exclusion criteria. When a theme was present, the sequence exhibiting said theme was quoted. Multiple themes could co-occur within a single report. Excluded cases were not coded. To determine inter-rater reliability, I utilized statistical measures of agreement on the presence of coded themes. Discrepant codings were settled in a consensus coding meeting between the raters and the author.

2.4.2 Statistical analyses

Statistical analyses were conducted using IBM SPSS Statistics 27. Parametric tests were used based on the central limit theorem as sample size was sufficient ($n > 30$). I studied the internal consistency of standardized questionnaires in this data with Cronbach's Alpha. To examine demographic data, I used Student's t, Pearson's χ^2 and Mann-Whitney U tests. I used Cohen's Kappa to determine inter-rater agreement in thematic coding. I studied the occurrence of themes in the reports with Pearson's χ^2 tests. Binary logistic regression was used to probe the associations between eating disorder traits (ESP) and themes. Linear regression was used to probe the associations between themes, perceived body attitude changes, and current body appreciation. A false discovery rate (FDR) of 0.05 was calculated for each p-value (Benjamini & Hochberg, 1995) in the following clusters: 1. Occurrences of all themes and pooled thematic categories (x13), 2. Binary logistic regression models predicting the themes with eating disorder traits (x10), and 3. Linear regression models predicting body attitude changes and current body appreciation with the themes (x4).

3 Results

3.1 Demographic data

Of all respondents (N = 213), 145 (68.1%) determined that their experience included body-related aspects and 22 (10.3%) were uncertain. The 46 (21.6%) responding "No" were removed from further analysis in this study. In Table 1, the answers of all respondents in psychedelic and meditation surveys are presented. Their rates of body-related aspects were almost identical (χ^2 = 0.14, p = .99).

Table 1. *Presence of body-related aspects in the Experience, all respondents.*

Body-related aspects (χ^2 = 0.14, p = .99)	**Psychedelics (*n* = 147*)***		**Meditation (*n* = 66)**	
	n	%	*n*	%
Yes	100	68.0	45	68.2
No	32	21.8	14	21.2
Don't know	15	10.2	7	10.6

Notes: The presence of body-related aspects was assessed with the thematic question "Did you perceive your body in a different way or have personally meaningful thoughts, feelings or insights about your body?", answered categorically.

Demographic data of the included participants (N = 138) is presented in Table 2. In general, those reporting psychedelic experiences were younger than those reporting meditation experiences. Participants were from all continents and educational backgrounds, but the majority were European and had university degrees. Psychedelic and meditation respondents did not differ in terms of their history of psychiatric diagnoses. Buddhism was practiced more among meditation respondents, and more psychedelic respondents identified as atheist or agnostic, but "spiritual but not religious" was the most common denomination in both groups.

The participants' psychedelic use history and meditation habits are presented in Table 3. The participants responding to the psychedelic survey had more psychedelic use history and practiced less meditation than those responding to the meditation survey. Most meditation respondents were long-term practitioners (over 5 years) and practiced daily. 22 (45.8%) of them were psychedelic-naive, and 7 (14.58%) had used classical psychedelics within the last year.

Table 2. *Demographics of the participants.*

Demographic	**Psychedelics (*n* = 90)**		**Meditation (*n* = 48)**	
	n	*%*	*n*	*%*
Age (*t* = 4.24, ***p* < .001**)	*M*	*SD*	*M*	*SD*
	39.5	13.6	50.1	14.6
Gender (χ^2 = 3.44, *p* = .18)	*n*	*%*	*n*	*%*
Female	33	32.7	23	47.9
Male	56	62.2	23	47.9
Other	1	1.1	2	4.2
Education level (*U* = 1957.0, *p* = .35)	*n*	*%*	*n*	*%*
Primary education	1	1.1	0	0.0
Lower secondary education	4	4.4	1	2.1
Higher secondary education	9	10.0	1	2.1
Vocational education	5	5.6	3	6.3
University: Bachelor's degree	23	25.6	16	33.3
University: Master's degree	32	35.6	17	35.4
University: Doctoral degree	11	12.2	6	12.5
Other	5	5.6	4	8.3
Income level (*U* = 1786.0, *p* = .08)	*n*	*%*	*n*	*%*
Much below average	17	17.8	9	18.8
Below average	18	20.0	11	22.9
Average	20	22.2	10	20.8
Above average	39	43.3	15	31.3
Much above average	6	6.7	4	8.3
Religion (χ^2 = 36.54, ***p* < .001**)	*n*	*%*	*n*	*%*
Agnostic	15	6.7	2	4.2
Atheist	18	20.0	2	4.2
Buddhist	1	1.1	15	31.3
Christian	5	5.6	4	8.3
Hindu	0	0.0	1	2.1
Non-denominational	5	5.6	2	4.2
Spiritual but not religious	34	37.8	17	35.4
Other	12	13.3	5	10.4
Origin of birth[a] (χ^2 = 19.50, *p* = .24)	*n*	*%*	*n*	*%*
Africa	4	4.4	0	0.0
Asia	2	2.2	6	12.5
Europe	69	76.7	28	58.1
North America	11	12.2	13	27.1
South America	1	1.1	1	2.1
Oceania	2	2.2	1	2.1
Psychiatric diagnoses	*n*	*%*	*n*	*%*
Not disclosed (χ^2=.50, *p*=.49)	4	4.4	1	2.1
Severe depression (χ^2=2.25, *p*=.13)	16	17.8	4	8.3
Bipolar (χ^2=.64, *p*=.42)	3	3.3	3	6.3
Psychosis (χ^2=1.89, *p*=.17)	0	0.0	1	2.1
Anxiety disorder (χ^2=.45, *p*=.50)	13	14.4	5	10.4

Notes: a: Answered with a written response to the question, "In which country were you brought up? That is, in which country did you spend most of your childhood?" The responses were grouped by continent to allow for statistical analysis; *t* = Student t-test value; χ^2 = chi square test value; *U* = Mann-Whitney U test value.

Table 3. *Psychedelic use and meditation habits in participants.*

	Psychedelic (*n* = 90)		**Meditation (*n* = 48)**	
	n	***%***	***n***	***%***
Classical psychedelic use history[a] (*U* = 836.0, ***p* < .001**)				
Never	0	0.0	22	45.8
Once	6	6.7	3	6.3
2–5 times	17	18.9	10	20.8
6–10 times	17	18.9	4	8.3
10–50 times	37	41.1	8	16.7
Over 50 times	13	14.4	1	2.1
Time since last classical psychedelic (*U* = 677.0, ***p* < .001**)				
Over a year ago or never	17	18.9	41	85.4
6–12 months ago	10	11.1	3	6.3
3–6 months ago	7	7.8	0	0.0
1–3 months ago	18	20.0	0	0.0
Less than one month ago	38	42.22	4	8.3
Meditation practice (*U* = 379.0, ***p* < .001**)				
Never	17	18.9	0	0.0
Few times per year or less	25	27.8	0	0.0
Monthly	19	21.1	0	0.0
Weekly	18	20.0	8	16.7
Daily	8	8.9	29	60.4
Several times a day	3	3.3	11	22.9
Meditation history (*U* = 978.0, ***p* < .001**)				
None	27	30	0	0.0
Less than a year	9	10.0	1	2.1
1–2 years	10	11.1	1	2.1
2–5 years	9	10.0	3	6.3
Over 5 years	35	38.9	43	89.6

Notes: a = Classical psychedelic use history was assessed with the question “Have you ever tried classical psychedelics (e.g., LSD, psilocybin / "magic mushrooms", ayahuasca, DMT, 5-MeO-DMT)?”, answered with multiple choice on an ordinal scale; *U* = Mann-Whitney U test value.

The participants’ eating disorder traits are presented in Table 4. Psychedelic respondents scored higher in the Eating Disorder Screen for Primary Care (ESP) than meditation respondents. More psychedelic respondents also reached the clinical cut-off compared to meditation respondents, indicating higher likelihood of an eating disorder.

Table 4. *Eating disorder traits in participants.*

	Psychedelics (*n* = 90)				**Meditation (*n* = 48)**			
	M	*SD*	*n*	*%*	*M*	*SD*	*n*	*%*
ESP (*t* = 3.26, ***p* = .001**)	1.38	1.24			0.73	0.82		
ESP >= 2[a] (χ^2 = 7.04, ***p* = .008**)			37	41.1			9	18.8

Notes: a: Participants above clinical cut-off, representing heightened risk of an ED; ESP = sum of abnormal responses in Eating Disorder Screen for Primary Care; *t* = Student t-test value; χ^2 = chi square test value.

Details of the drugs and meditation techniques used to facilitate the Experience are presented in Table 5. Most psychedelic respondents (66.7%) reported experiences involving classical psychedelics, e.g., LSD or psilocybin, and a minority (10.0%) reported experiences facilitated with non-classical psychedelics such as MDMA or cannabis. Polydrug use involving both classical and non-classical psychedelics was reported by 21 (23.3%) psychedelic respondents, most often combining cannabis with a classical psychedelic.

Upon examining the meditation data, "mindfulness" and "silent sitting or lying down" were combined into a single variable, "silent meditation, e.g., mindfulness", because there was no meaningful difference between them, and they were used interchangeably by participants, e.g., in labeling Vipassana meditation. Meditation respondents named a variety of traditions or styles, including Vipassana (*n* = 18), Zen (*n* = 3), Tibetan (*n* = 3), Anapanasati (*n* = 2), Trekchö (*n* = 2), Dzogchen (*n* = 1), Transcendental Meditation (*n* = 1), Nembutsu (*n* = 1), and Metta (*n* = 1).

Time since the Experience is presented in Table 6. Meditation respondents reported significantly older experiences than psychedelic respondents, with 75.0% reporting an experience that took place more than a year ago. Respectively, 56.7% of psychedelic respondents reported an experience that took place more than a year ago.

Table 5. *Details of the drugs and meditation styles used to facilitate the Experience. The participant could select several.*

Psychedelics		
Individual drugs used	***n***	**%**
LSD or analogues	32	35.6
Psilocybin or 'magic mushrooms'	43	47.8
Ayahuasca	7	7.8
N,N-DMT	4	4.4
5-MeO-DMT or Bufo Alvarius	7	7.8
Mescaline or psychoactive cacti	2	2.2
Ibogaine	0	0.0
Salvia divinorum	1	1.1
MDMA, 'ecstasy' or 'molly'	17	18.9
Ketamine	4	4.4
Cannabis	19	21.1
Aggregated drug groups	***n***	**%**
Classical psychedelics only[a]	60	66.7
Non-classical psychedelics only[b]	9	10.0
Both classical and non-classical	21	23.3
Meditation		
Silent meditation, mindfulness	40	83.3
Voice meditaton (e.g., chanting)	2	4.2
Breathwork (intentional manipulation of breath)	6	12.5
Bodywork (e.g. yoga)	1	2.1

Notes: a: LSD or analogues, psilocybin, ayahuasca, N,N-DMT, 5-MeO-DMT, mescaline, and ibogaine; b: Salvia divinorum, MDMA, ketamine, and cannabis.

Table 6. *Time since the Experience.*

Time since the Experience[a]	**Psychedelics (*n* = 90)**		**Meditation (*n* = 48)**	
(*U* = 1647.00, ***p* = .019**)	*n*	*%*	*n*	*%*
< 2 weeks	5	5.6	2	4.2
2–4 weeks	5	5.6	4	8.3
1–3 months	14	15.6	2	4.2
3–6 months	6	6.7	2	4.2
6–12 months	9	10.0	2	4.2
1–2 years	11	12.2	7	14.6
2–5 years	22	24.4	9	18.8
> 5 years	18	20.0	20	41.7

Notes: a: Asked with the question “When did the Experience happen?”, answered with multiple choice;
U = Mann-Whitney U test value.

3.2 Qualitative analysis

3.2.1 Measure of agreement

Measure of agreement between raters was calculated for missing reports, kappa = 1.000, $p < .001$, and cases reporting several experiences, kappa = .962, $p < .001$. After discussing what constituted as several experiences, meditation reports describing multiple events over a single retreat were considered parts of the same experience. Reports describing multiple events over a longer and less defined time span, e.g., weeks to years of daily practice, were considered several experiences. Cases with missing reports (n = 8), and several experiences (n = 7) were removed. The measures of agreement for the themes and pooled thematic categories are presented in Table 7.

Table 7. *Inter-rater agreement on the presence of themes.*

	kappa	***p***
Perceptual Body Image		
Altered perceptual body image	.75	< .001
Affective-Attitudinal Body Image		
Body appreciation	.83	< .001
Functionality appreciation	.79	< .001
Pooled affective-attitudinal[a]	.81	< .001
Embodiment		
Increased body awareness	.72	< .001
Disembodiment	.64	< .001
Bodily self-transcendence	.50	< .001
Pooled embodiment[a]	.62	< .001
Other		
Experiencing the body as energy	.58	< .001
Impermanence of the body	.53	< .001
Other: other	-.03	.699
Pooled other[b]	.66	< .001
Negative Body-Related Experience	.35	< .001
No Identifiable Body-Related Experience	.49	< .001

Notes: a: The pooled rating indicates if any of the subthemes within the thematic category was rated as occurring; b: "Pooled other" did not include "Other: other", since it was not reliable.

According to Cohen's interpretation of Kappa (McHugh, 2012), there was substantial agreement (.64–.83) on the presence of Altered Perceptual Body Image, Body Appreciation, Functionality Appreciation, Increased Body Awareness, and Disembodiment. The agreement was moderate (.49–.58) for Bodily Self-Transcendence, Experiencing the Body as Energy, Impermanence of the Body, and No Identifiable Body-Related Experience. For the presence of Negative Body-Related Experience, the agreement was

fair (.35), and finally, for the miscellaneous category Other: other, there was no agreement at all (-.03). It was omitted from further analysis due to non-significant reliability. Consensus coding was performed for the discrepantly rated cases (n = 62) in a meeting between raters and codebook creator.

3.2.2 Occurrence of body image themes in the reports

In Table 8, the thematic map is presented with participant endorsement and compared between psychedelic and meditation reports. Embodiment themes were found in most of both psychedelic (63.3%) and meditation (56.3%) reports. Both included descriptions of increased body awareness and/or an unraveling of the bodily self on varying levels, with psychedelic narratives describing more drastic disintegration. Affective-attitudinal body image aspects were found in both psychedelic (16.7%) and meditation (8.3%) reports. They were notably positive in valence. Perceptual body image alterations, i.e., changes in the way one perceived their appearance, size, or shape, were unique to psychedelic narratives (11.1%) and absent from meditation reports. Below, each theme is explored.

Table 8. *Thematic map and participant endorsement.*

Theme	**Psychedelics (*n* = 90)**		**Meditation (*n* = 48)**			
	n	%	*n*	%	χ^2	p_{FDR}
Perceptual Body Image[a]						
Altered perceptual body image	10	11.1	0	0.0	5.75	**.049**
Affective-Attitudinal Body Image[a]						
Body appreciation	10	11.1	1	2.1	3.48	.115
Functionality appreciation	7	7.8	3	6.3	0.11	.742
Pooled affective-attitudinal	15	16.7	4	8.3	1.83	.229
Embodiment[a]						
Increased body awareness	29	32.2	9	18.8	2.85	.150
Disembodiment	32	35.6	8	16.7	5.43	**.049**
Bodily self-transcendence	6	6.7	16	33.3	16.61	**.013**
Pooled embodiment	57	63.3	27	56.3	0.66	.493
Other[b]						
Experiencing the body as energy	8	8.9	11	23.3	5.19	**.049**
Impermanence of the body	0	0	4	8.3	7.72	**.022**
Pooled other	8	8.9	14	29.2	9.61	**.013**
Negative Body-Related Experience[b]	4	4.44	0	0.0	2.20	.200
No Identifiable Body-Related Experience[b]	20	22.2	9	18.8	2.23	.686

Notes: a: Perceptual Body Image, Affective-Attitudinal Body Image, and Embodiment were preregistered, theory-driven key themes. Their subthemes were data-driven and theory informed.

b: The main themes Other, Negative Body-Related Experience, and No Identifiable Body-Related Experience were inductive.

3.2.3 Altered Perceptual Body Image

Perceiving one's visual appearance, size or shape in a new or unusual way was present in 10 (11.1%) of psychedelic narratives. The alterations ranged from featural and detail-oriented ("My hands looked bigger"), to holistic ("It was as if [my body] was ten feet long"). Some implied an affective valence, as described by one participant reporting psilocybin experience: "[I felt] light, beautiful, smaller, tinier, softer…"

Creative associations to fantastical creatures were described, like in this psilocybin narrative: "I was astonished by my own reflection in the mirror. I looked like a forest troll, though I was still clearly recognizable as myself." While most seemed to retain an idea of their appearance ("recognizable as myself"), one participant also described losing access to their usual appearance on LSD: "My face looked different from the mirror, and I didn't remember anymore how I really looked."

3.2.4 Body Appreciation (Affective-Attitudinal Body Image)

Holistically appreciative, respectful, and caring attitudes toward one's body were articulated in 10 (11.1%) psychedelic and 1 (2.1%) meditation reports. An emotional quality of relief was common to them, as described by a participant during the practice of loving-kindness meditation toward the end of a Vipassana retreat: "The deep appreciation and acceptance, the care I felt, was touching. (…) All the judging, evaluating, pushing, and shaming melt away."

Some referenced their appearance specifically, like this participant reporting a psilocybin experience: "I felt like everything got the right proportions. I felt that I'm supposed to be like this." One participant described their sentiments in terms of not wanting to be "at war" with their body anymore. For some, there was a renewed motivation to treat their body well, like in this psilocybin report:

> "I also came to accept my weight in the sense that I don't hate myself for it anymore. Although I still feel the need to lose weight, I came to the insight that it can happen over time, in a healthy way."

3.2.5 Functionality Appreciation (Affective-Attitudinal Body Image)

Functionality Appreciation, in which the participants articulated appreciation or gratitude distinctly for the body's ability to function and allow one to live, heal, connect, and experience life, was present in 7 (7.8%) psychedelic, and 3 (6.3%) meditation reports. Several of the cases expressed gratitude for the body's function as a "vessel", like this participant reporting an experience of psilocybin combined with

LSD: “[I] experienced a sense of appreciation towards my body for being my vessel and carrying me through this life.” Although functionality appreciation was sometimes phrased in a way expressing warm regard for the body, such as referring to it as a “gift”, this was not always the case, as some expressed affective indifference toward the body outside its functional value (“not otherwise significant”).

3.2.6 Increased Body Awareness (Embodiment)

Instances of a strengthened body connection, comfort and attunement to bodily signals were described in 29 (32.2%) psychedelic and 9 (18.8%) meditation reports. Several mentioned a holistic sense of embodiment, like one participant on their MDMA experience: “I remember feeling more at home in my body, feeling much more connecting [sic] to the world in an embodied and tactile way.” A sharpened interoceptive sensitivity was common, like in this psilocybin report: “[My] bodily sensations became somehow more sharp and vivid.”

Some reported learning new ways to self-regulate based on interoceptive awareness. One meditator described physically locating a subtle sensation they associated with “sacredness” that they could later access when needed. Increased Body Awareness was also described in terms of the body being open, co-operative, or very alive, as written in one meditation report, “I had a sense of the entire body being extraordinarily alive, and that the experience of walking was strongly present and energetic.”

3.2.7 Disembodiment (Embodiment)

A variety of intense experiences were reported in which one’s bodily self disintegrated, and body awareness, body ownership, or the sense of having an intact body were lost. This was a predominantly psychedelic theme, found in 32 (35.6%) psychedelic and 8 (16.7%) meditation reports. Disembodiment was described in terms of, e.g., melting, “not having a body at all”, or floating, such as in a psilocybin report: “My proprioception disappeared completely, and I was a consciousness floating in a void.” Some described their body merging with their surroundings or another person. A participant described “melting” and “resolidifying” on a Vipassana retreat:

> “As it ‘melted’ I scanned down into my feet, and I couldn’t distinguish a context, my feet were pure sensation and they felt as if they had dissolved. As I scanned upwards more of the confines of my body dissolved. I went from feeling like I was the one breathing to feeling like I was BEING Breathed. (…) I felt my face disappear and for several minutes I lost the ability to know myself in the context of my body. After a few minutes I felt myself resolidify from head to toe. Although I felt like I had a different body then [sic] before, with different solidity.”

Ego dissolution was a co-occurring feature in several cases, but not all disembodiment experiences described it or were framed in a mystical-type narrative. Rather, some psychedelic respondents perceived the dissolution of their body as novel or strange. A few cases also featured the body being perceived as physically intact but alien, or not one's own.

3.2.8 Bodily Self-Transcendence (Embodiment)

Some participants described their body contours becoming transparent and their "self" expanding beyond their body boundaries, all the while retaining their sense of body connection and presence, like in this meditation report: "I felt very firmly rooted in my body but also like I was expanding outward into the universe." Phenomenologically they were not disembodied, but rather, "transcended" their body and recontextualized their experience of self into a larger whole. This phenomenon was seen predominantly in meditation reports, with 16 (33.3%) describing it. A significantly smaller occurrence was seen in 6 (6.7%) psychedelic reports.

Many instances referred to body boundaries and expansion, like in these two meditation reports: "The boundary of my skin ceased to be the edge of 'me'," and "My body seemed to expand so vast that it could contain all the universe (…) My body seemed just to be a vessel I am in at the moment, not the true me or in any way limiting my existence." Some perceived the body as a functional part of a greater context, as in one meditation report from a Zen retreat:

> "My body was doing things just like it had been always, but I didn't identify with it, it was more like a part of the whole world or environment, just like the road and the air and the trees outside when I was walking."

3.2.9 Experiencing the Body as Energy (Other)

Some reports expressed experiencing their body as an electrical field or a flux of vibrating particles, or they experienced unusual "waves of energy" passing through them. These instances were coded as their own subtheme because of their particularity and recurrence. Described in 11 (23.3%) meditation and 8 (8.9%) psychedelic reports, this was a mostly meditation-related theme. In some cases, the experience was associated with a cognitive reframing of what the body is, as in one mescaline report: "I was made aware of the bodies' vibrational structure." Experiencing this was considered to be healing by the participant, who had suffered physical illness.

This theme co-occurred with disembodiment, like in this psilocybin report: “I lost the ability to perceive my body at all, I was just a cloud of energy.” It also seemed to highlight a sharpened awareness of bodily sensations, like in this meditation example: “My body was pure sensation—it’s hard to explain, but [it] felt like pulsing energy.” In some energy-like experiences, high body awareness and the loss of body boundaries coincided, like in this meditation report: “The physical body was here and present, fully awake and aware. During the experience the contours of the body become erased and there is only energy discernible.”

3.2.10 Impermanence of the Body (Other)

In four meditation reports (8.3%), insights into the body’s temporary or constantly changing nature were explicitly stated, e.g., “[I] woke up to experiencing my entire mind body phenomenon changing on every moment.” All reporting these insights were Vipassana practitioners. This theme was not present in psychedelic reports.

3.2.11 Negative Body-Related Experience

Negative body-related experiences were described by four participants exclusively in psychedelic reports (4.4%). Challenging aspects and difficult emotions would not be considered negative if they were resolved and lead to relief or insight. If the difficulty was too intense to manage, or could not be resolved within the experience, the case would be coded as negative.

Fear and discomfort of losing control over one’s bodily processes was common to all cases reporting this theme. In one report, the participant recounted eating a large dose of cannabis, which resulted in intense confusion, fear of dying, and worsening physical pain as the participant tried to stay active for hours with the help of physical exercises. Others reported extreme and unpleasant heaviness, inability to move, and a fear of strange physical sensations. In half of the cases, excessive polydrug use was present. In hindsight, all considered the experience important, and one reported it helped them find the motivation to seek therapy, citing it “a bad moment but necessary”.

3.2.12 No Identifiable Body-Related Experience

In some reports, no body-related themes could be identified despite the participant responding positively to the presence of bodily aspects in the thematic question. Some reports seemed to imply body-related phenomena, but as required in the coding reliability approach to TA (Boyatzis, 1998), interpretations were not made beyond explicit statements. For example, it was concluded that “oceanic boundlessness”

or “ego dissolution” may or may not imply a bodily experience. They were not coded in the Embodiment subthemes unless the report explicitly related them to the body. Phrases like “I completely forgot about my body for a while”, or “I was spontaneously not attentive to my body” were not taken to mean an altered bodily self, but rather, inattentiveness to the body. Accounts reporting “feeling relaxed” were not interpreted to mean Increased Body Awareness, even if being relaxed and comfortable could imply it. The reports had to express that the relaxation or comfort was exceptional. Encountering past trauma and emotional breakthroughs were not coded as Increased Body Awareness, even though they may signify embodied emotional processing, which would be conceptually related. While the emotional realm is inherently somatic, the meaning-making and narrative aspects of experiencing emotion were often emphasized more in these narratives. It was decided that unless the participant discussed the bodily aspects explicitly, it was not assumed that they were in focus.

3.3 Eating disorder traits in relation to the themes

Logistic regression was performed to examine whether eating disorder traits predicted the presence of body themes in the reports. Ten separate binary logistic regression models were formed with each individual theme as the dependent variable and the Eating Disorder Screen for Primary Care (ESP) score as the predictor. The model was adjusted for age and gender. Gender was converted into a binary variable, because the group identifying as “other” only included 3 cases and would not have provided for a meaningful analysis. Thus, these participants were removed from the regression models.

Body Appreciation. Eating disorder traits predicted a higher likelihood of Body Appreciation in the narrative reports. The model was statistically significant, $\chi^2(3, 135) = 16.661$, $p < .001$ ($p_{FDR} = .01$). The model fit the data, $\chi^2 = 6.835$, $p = .446$, and explained 26.9% (Nagelkerke R^2) of the variance in Body Appreciation content. Each abnormal ESP response was found to more than double the odds of Body Appreciation in the report, $B = .856$, $p = .003$, $OR = 2.354$.

The following models were not statistically significant: Altered Perceptual Body Image, $\chi^2(3, 135) = 6.041$, $p = .110$ ($p_{FDR} = .302$). Functionality Appreciation, $\chi^2(3, 135) = 3.297$, $p = .348$ ($p_{FDR} = .435$). Increased Body Awareness, $\chi^2(3, 135) = 5.524$, $p = .137$ ($p_{FDR} = .302$). Disembodiment, $\chi^2(3, 135) = 4.168$, $p = .244$ ($p_{FDR} = .407$). Bodily Self-Transcendence, $\chi^2(3, 135) = 2.059$, $p = .560$ ($p_{FDR} = .560$). Experiencing the Body as Energy, $\chi^2(3, 135) = 2.363$, $p = .501$ ($p_{FDR} = .557$). Impermanence of the Body, $\chi^2(3, 135) = 5.861$, $p = .119$ ($p_{FDR} = .302$). Negative Body-Related Experience, $\chi^2(3, 135) = 5.295$, $p = .151$ ($p_{FDR} = .302$). No Identifiable Body-Related Experience, $\chi^2(3, 135) = 3.516$, $p = .319$ ($p_{FDR} = .435$).

3.4 Perceived body attitude changes and current body appreciation

Descriptive data of perceived body attitude changes are presented in Table 9. Meditation respondents perceived their body appreciation and body connection as having increased slightly more than those reporting a psychedelic experience. Changes in perceived body dissatisfaction did not differ between psychedelic and meditation respondents. Current body appreciation measured with the BAS-2 was higher in meditation respondents than psychedelic respondents.

Table 9. *Perceived body attitude changes, and current body appreciation.*

	Psychedelics		**Meditation**			
Perceived body attitude change	*M*	*SD*	*M*	*SD*	*t*	*p*
Body dissatisfaction[a]	2.54	0.85	2.29	0.99	1.57	.119
Body appreciation[b]	3.62	0.80	4.00	0.97	-2.45	.016
Body connection[c]	3.79	0.92	4.15	0.97	-2.14	.035
Current body appreciation	*M*	*SD*	*M*	*SD*	*t*	*p*
BAS-2	3.74	0.71	4.07	0.57	2.78	.006

Notes: Measured with the question "As a result of the Experience, did you notice any persisting increases or decreases in the following?", 1 signifying *great decrease*, through 3 *no change*, and 5 *great increase*.
a: "Your critical thoughts and feelings about your body";
b: "Your acceptance and appreciation for your body";
c: "Your sense of being 'at home' in your body";
BAS-2 = Body Appreciation Scale-2.

3.4.1 Themes in relation to perceived body attitude changes

Linear regression was used to examine whether the themes predicted perceived body attitude changes, i.e., the participants' estimation of their body appreciation, body dissatisfaction, and body connection following the Experience. It was also examined whether these changes differed based on the type of experience (psychedelic vs. meditation) or the presence of eating disorder traits.

Three separate linear regression models were created, each using one of the body attitude change variables as the dependent variable. Predictors included all ten themes, experience type (psychedelic vs. meditation), and ESP scores. The models were adjusted for age and gender (binary). The model probing perceived changes in body appreciation was not statistically significant, $F(14, 135) = 1.510$, $p = .117$ ($p_{FDR} = .117$).

Perceived changes in body connection. The model was statistically significant, $F(14, 135) = 2.131$, $p = .014$ ($p_{FDR} = .028$), and it explained 19.9% of the variance (Nagelkerke R^2). Disembodiment predicted a greater perceived increase in body connection, $B = .520$, 95% CI [.102,.939], $\beta = .250$, $t = 2.462$, p =

.015. This was also the case with Body Appreciation, $B = .730$, 95% CI [.106,1.353], $\beta = .212$, $t = 2.317$, $p = .022$, and Functionality Appreciation, $B = .774$, 95% CI [.136,1.412], $\beta = .215$, $t = 2.403$, $p = .018$. Interestingly, No Identifiable Body-Related Experience predicted a greater increase in body connection, $B = .570$, 95% CI [.001,1.139], $\beta = .248$, $t = 1.985$, $p = .049$.

Perceived changes in body dissatisfaction. The model was statistically significant, $F(14, 135) = 1.902$, $p = .032$ ($p_{FDR} = .043$), and it explained 18.2% of the variance (Nagelkerke R^2). Disembodiment predicted a greater decrease in body dissatisfaction, $B = -.738$, 95% CI [-1.138,-.337], $\beta = -.374$, $t = -3.648$, $p < .001$, as did Increased Body Awareness, $B = -.438$, 95% CI [-.870,-.006], $\beta = -.217$, $t = -2.007$, $p = .047$. Again, No Identifiable Body-Related Experience also predicted a greater decrease in body dissatisfaction, $B = -.602$, 95% CI [-1.146,-.058], $\beta = -.277$, $t = -2.190$, $p = .030$. Meditation respondents perceived their body dissatisfaction as having decreased more than psychedelic respondents, $B = -.484$, 95% CI [-.890,-.078], $\beta = -.257$, $t = -2.360$, $p = .020$. Those exhibiting eating disorder traits also perceived a greater reduction in body dissatisfaction, $B = -.171$, 95% CI [-.318,-.024], $\beta = -.219$, $t = -2.297$, $p = .023$.

3.4.2 Themes in relation to current body appreciation

A linear regression model was used to examine whether the themes or experience type (psychedelic vs. meditation) predicted current body appreciation. BAS-2 scores were used as the dependent variable, with the ten themes, experience type (psychedelics vs. meditation), and eating disorder traits (ESP) as predictors. The model was adjusted for age and gender (binary).

The model was statistically significant, $F(14, 135) = 4.786$, $p < .001$ ($p_{FDR} = .004$) and it predicted 35.8% (Nagelkerke R^2) of the variance in BAS-2 scores. The only significant predictors were eating disorder traits and male gender, both associated with lower body appreciation ($B = -.328$, 95% CI [-.427,-.229], $\beta = -.554$, $t = 6.554$, $p < .001$; and $B = -.324$, 95% CI [-.550,-.097], $\beta = -.235$, t = 2.829, $p = .005$, respectively). Neither the themes, $p > .211$, nor experience type (psychedelic vs. meditation), $p = .462$, predicted current body appreciation.

4 Discussion

4.1 Main findings

This study examined body image-related themes in narrative reports of psychedelic and meditation peak experiences. The aim was to investigate similarities and differences between psychedelic and meditation reports and the themes' associations to perceived body attitude changes and current body appreciation. The study also explored whether individuals with rigid body-related beliefs manifesting as eating disorder traits were likely to report different themes or perceive subsequent body attitude changes differently compared to those without such traits. The majority (68%) of both psychedelic and meditation survey respondents indicated that their experience included body-related aspects, suggesting these phenomena may be equally prevalent in both contexts.

4.1.1 Body image themes in psychedelic and meditation reports

Embodiment-related phenomena were the most prevalent in both psychedelic and meditation narratives, with more than half of the reports describing either increased body awareness or an unraveling of the bodily self-model in varying degrees. In psychedelic reports, disembodiment was more drastic, such as "melting", "merging", or the body disappearing completely. In meditation reports, a more subtle and gradual process was described, often without the loss of body awareness. They articulated body boundaries becoming transparent, expanding, or no longer confining one's experience of self. Narratives of reduced bodily self often involved letting go of the body as a defining feature of oneself. A recurring phrase in them was "a vessel", used to separate the body from what participants perceived as their "true" self. Embodiment narratives involving increased body awareness expressed harmonious and dynamic bodily presence, describing the body as unusually alive, vivid, or tactile.

Affective-attitudinal and perceptual body image themes were not as common in the narratives as embodiment themes. The affective-attitudinal themes were positive in valence, expressing relief over finding acceptance for the body and wanting to treat it with respect. Some expressed gratitude distinctly for the body's functional properties, such as allowing one to live, feel, and connect. Altered perceptual body image, in which the body was felt being intact, but its appearance, size or shape was perceived differently, was exclusive to psychedelic reports.

A theme of experiencing the body as energy was present in both psychedelic and meditation narratives. While it seemed to describe high interoceptive awareness, it often co-occurred with some level of body dissolution. Four meditation reports also included insights about the body's impermanent nature.

Negative body-related experiences were identified in four psychedelic reports, describing fears of strange sensations, losing control over bodily function, or dying.

4.1.2 Reports of individuals with eating disorder traits

Individuals with eating disorder traits were significantly more likely to describe body appreciation in their narratives, with each abnormal response to the Eating Disorder Screen for Primary Care (ESP) more than doubling the likelihood of body appreciation in the report.

4.1.3 Themes in relation to perceived body attitude changes and current body appreciation

Body connection, feeling "at home" in one's body, was perceived to increase more when disembodiment, body appreciation, functionality appreciation, or "no identifiable body-related theme" was reported. Body dissatisfaction was perceived to decrease more when disembodiment, increased body awareness or "no identifiable body-related theme" was reported. Those with eating disorder traits were likely to experience greater reductions in body dissatisfaction, as were those reporting a meditation experience. The emergence of "no identifiable body-related theme" as a significant predictor alongside disembodiment could suggest that some entries in the "no theme" category were, in fact, instances of disembodiment, although they weren't coded as such due to insufficient information. They may also reflect other aspects not identified in this study.

Perceived changes in body appreciation or current body appreciation measured with BAS-2 were not associated with any of the narrative themes. Individuals with eating disorder traits scored lower in current body appreciation than those without them. Meditation respondents scored higher in body appreciation than psychedelic respondents based on pairwise comparison, but when eating disorder traits were controlled for in the regression model, the difference disappeared, suggesting that lower eating disorder traits explained the higher body appreciation in meditation respondents.

4.2 Discussion

The prevalence and quality of body-related phenomena in both psychedelic and meditation narratives seem to align with the predictive processing models put forth by Carhart-Harris & Friston (2019) and Laukkonen & Slagter (2021). When high-level priors are temporarily relaxed, whether through psychedelic-induced neural entropy or attentional modulation in meditation, body-related beliefs seem to be loosened, producing sensorily vivid experiences and novel insights about the body. Energy-like

experiences offer an interesting example of the phenomenal richness of these states. This theme was identified in reports with both increased body awareness and disembodiment, one report even describing all three. While it may seem counterintuitive that one can be highly aware of bodily sensations and lose the sense of having a body at the same time, from a PP perspective it makes sense: as the precision of priors that typically maintain the experience of body as a solid, bounded entity is reduced, raw interoceptive data becomes salient and unconstrained by conceptual thought.

The differences between psychedelic and meditation narratives align with previous literature (Milliére et al., 2018), linking more abrupt disembodiment with psychedelics, and more subtle and gradual boundary dissolution with meditation. This may reflect their different mechanisms of action. Psychedelics affect the global cortical hierarchy in an acute and unorderly way, whereas in meditation, the process is much slower, more controlled, and requires sustained effort, and often, physical stillness.

Visuo-perceptual body image alterations were not reported in this sample of meditation narratives, suggesting they may be less frequent in meditative states than psychedelic experiences. Classical psychedelics are known to produce pseudohallucinations fairly easily due to the density of 5-HT_{2AR} receptors in the visual cortex (Carhart-Harris & Friston, 2019). While meditation may make colours and lights appear brighter and produce spontaneous visual imagery (Lindahl et al., 2014), these alterations are likely to be less disruptive than those induced by psychedelics. Thus, seeing oneself "as a forest troll" in the mirror, as one psychedelic respondent in this study reported, may not be as likely in meditation. Most meditation practices also guide one's focus more toward first-person sensory experiencing than third-person visual perception of one's body. While interoceptive integration through meditation may bring changes to distorted perceptual body image (de Lima-Araujo et al., 2022; Naraindas & Cooney, 2023), this process is likely more gradual compared to the abrupt perceptual changes induced by psychedelics.

The relationship between disembodiment narratives and perceived improvements in body connection and body dissatisfaction is an interesting finding, aligning with Riva's (2018) "embodied medicine", the premise that enhancing multisensory inputs and abruptly reducing the precision of body-related predictive models may allow for their revision and facilitate positive embodiment. Here, an important clarification is that ASC-related disembodiment is phenomenally very different from the low embodiment that individuals with body image concerns experience in normal waking consciousness states. According to PP theories, rigid high-level priors define the bodily experience in the latter (Riva & Dakanalis, 2018), whereas in the former, these are heavily relaxed, and bottom-up inputs predominate (Carhart-Harris & Friston, 2019; Laukkonen & Slagter, 2021). When a person gains back their body awareness after ASC-related disembodiment, it may be likely to return through a present-moment first-person perspective rather than a counterfactual third-person one. If an individual's high-level body

image priors have been overly dominant, it would be hypothetically plausible that an abrupt reduction of their precision, felt as disembodiment, could create access to a revised bodily perspective in a potentially sustained way, as suggested by previous studies (Barba et al., 2024; Sarasso et al., 2024).

The extreme experience of not being bound by one's body might also facilitate its conceptual reframing in less self-objectifying terms, as expressed by the participants who referred to their body as "a vessel", much like the patient in Peck's et al. (2024) study. For some individuals, this might involve spiritual undertones, as disembodiment is likely to be part of deeper ASCs involving mystical-type aspects such as unity, sacredness, and noetic quality (Milliére et al., 2018; Barret et al., 2015). Since the depth of mystical-type experiences has been linked with therapeutic outcomes (Ko et al., 2022), it is plausible that some of these qualities may influence one's body concept in ways that reduce preoccupation with perceived flaws.

Regression analyses implied links between attitudinal and embodiment functions. In addition to disembodiment, those who reported increased body awareness were likely to perceive their body dissatisfaction as having reduced more after the experience. Respectively, participants who reported body and functionality appreciation in their narratives were likely to perceive greater increases in subsequent body connection. This aligns with Riva's (2018) propositions that 1) multisensory enhancement and fostering a present-moment first-person frame of reference in relation to one's body may be beneficial for affective-attitudinal body image, and 2) an abrupt confoundment of body representation may create a window of opportunity for its adaptive reconfiguration, allowing kinder, more flexible and accepting views.

Participants with eating disorder traits were more likely to report body appreciation content in their narratives than those without such traits. Individuals with body image concerns are likely to assign high emotional salience to their bodies, which may explain why body-related affect becomes the subject of reflection for them more than it does for those without body image concerns. Encountering personally challenging themes is common in both psychedelic and meditation experiences and may facilitate their reframing in a therapeutic way (Lindahl et al., 2017; Wood et al., 2024). Interestingly, all cases of body appreciation in the psychedelic narratives came from either psilocybin or MDMA reports, both of which have been linked to increases in affective empathy (Preller & Vollenweider, 2019). In the one meditation narrative reporting body appreciation, the participant was practicing *metta* (loving-kindness meditation) toward the end of a Vipassana retreat. This could imply that empathy enhancement may be beneficial in addressing body image concerns in addition to deconstructing prior models.

Participants with eating disorder traits were likely to perceive greater reductions in body dissatisfaction following their experience. However, current body appreciation was significantly lower in those with

eating disorder traits regardless of their narrative themes. While this study was not longitudinal and the participants' former body appreciation rates are not known, this association may highlight the complicated and long-standing nature of body image concerns and suggest that positive acute experiences may not translate into long-term body appreciation without additional support.

In this sample, meditation respondents presented higher current body appreciation than psychedelic respondents. This difference was not observed in the regression model controlling for eating disorder traits, indicating that the higher body appreciation in meditators was explained by their significantly lower eating disorder traits. Most meditation respondents were long-term practitioners who meditated daily. A link between practice frequency and positive body image outcomes has been identified in previous research, attributed to better body awareness and non-judgement facilitated by meditation (Albertson et al., 2015; Tihanyi et al., 2024). While the low eating disorder trait prevalence of meditation respondents in this sample may be due to other factors, the notion that regular meditation serves as a buffer against body image concerns is a plausible explanation for this difference.

Although the majority of narratives and perceived body attitude changes were positive—possibly due to the task of reporting the most "personally meaningful or important experience"—psychedelic narratives also included some frightening and negative body-related experiences, illustrating how sudden increases in multisensory acuity, paired with a drastic reduction in processes that create a sense of predictability, could become overwhelming and result in perceiving one's body as unfamiliar and unreliable. It needs to be acknowledged that both psychedelics and intensive meditation may sometimes induce dissociative symptoms that persist beyond the acute experience and maladaptively affect embodiment, such as in depersonalisation and derealisation (Evans et al., 2023; Lindahl et al., 2017). Developing support and integration practices that could help foster positive embodiment after peak experiences is particularly relevant because while individuals with body image disorders might benefit from novel perspectives, they could also be vulnerable to destabilizing effects.

4.3 Limitations

A primary limitation of this study is that it relies on retrospective narrative reports. Reports do not equal experiences, as they are temporally dissociated and heavily filtered by what the respondent remembers, considers important, and is able to articulate. In this sample, most participants reported an experience that had occurred more than a year ago. Thus, it should be acknowledged that this study may inform about what is remembered and emphasized. This is, however, a worthwhile subject, because it informs about what remains of a transitory state. Another challenge of narrative reports is that ineffable phenomena are by definition hard to articulate and specify. This may introduce uncertainty when coding

these types of narratives, e.g., in the case of reports implying disembodiment but not stating it explicitly enough for reliable identification. Moreover, the participants' religious or spiritual beliefs may influence the way peak experiences are framed. In this study, Buddhism was practiced significantly more among meditation respondents, and more psychedelic respondents identified as atheist. Insights into one's bodily impermanence, for example, was only described by Vipassana practitioners. With impermanence being a core tenet of Buddhist philosophy, the participants were likely predisposed to observe and report it. Similarly, the greater prevalence of energy-like experiences in meditation reports could at least partially be due to various energy-related concepts in some yogic traditions.

Methodologically, this study's cross-sectional design rules out causal conclusions. While participants reported perceiving body attitude changes following their experiences, no baselines can be determined, nor other factors controlled for. Self-report measures always pose risks of bias, especially when answered retrospectively. In this study, the fact that most experiences took place over a year ago may confound the self-assessment of perceived body attitude changes following the experience. However, these measures may still provide useful comparative data across sufficient samples. In this study, the regression analyses included 135 participants, claiming limited but meaningful value as pilot data for future hypotheses.

It is also important to consider that psychedelic users and regular meditators may exhibit some population-level differences, e.g., in personality traits, beliefs, or values. While overlaps in psychedelic use and meditation practices exist in population studies (Simonsson & Goldberg, 2023) and in this data, the comparison groups showed some differences that may hypothetically skew the results. In this sample, meditation respondents were older and exhibited significantly less eating disorder traits. This may either be linked to the possible protective impact of meditation on body image, or other underlying factors, such as individuals with body image difficulties finding it hard or uncomfortable to practice meditation. The meditation group was also considerably smaller than the psychedelic group. Moreover, the focus on most meaningful experiences may likely cause selection bias toward positive experiences, underrepresenting negative body-related content. The variability of substances and meditation practices is another potential confounder.

Studying ASCs is methodologically challenging. Ideally, they should be studied as they are occurring, and even then, researchers must rely on participants' introspection and self-report. Double-blinded RCT's may not be possible in psychedelic trials, as the drug effects are evident to both participants and researchers, making expectancy bias and placebo effects difficult to eliminate (Soliman et al., 2024). In previous studies, small sample sizes have reduced their statistical power, and participant selection has involved risks of bias (van Elk & Fried, 2023). Attempts to overcome these challenges have involved the development of standardized questionnaires such as the Mystical Experience Questionnaire

(MEQ30; Barrett et al., 2015), and the use of active placebos and low doses in RCTs (Soliman et al., 2024). It has further been pointed out that in interventions that are supposed to affect self-awareness, such as PATs, expectancy, self-narratives and beliefs should not be considered biases, but treatment factors (Schenberg, 2024).

Lastly, while the PP framework offers a compelling explanation for these phenomena and has gained much popularity over the past decade, its unificatory power has received criticism (Litwin & Miłkowski, 2020; Piekarski, 2021). It has been suggested to re-describe rather than explain phenomena, making PP-based theories difficult to test and falsify (Litwin & Miłkowski, 2020). It has been criticized for oversimplifying complex phenomena, overrelying on Bayesian models and lacking biological basis (Litwin & Miłkowski, 2020; Piekarski, 2021). While this study's findings align with PP-based models of ASCs and body image (Carhart-Harris & Friston, 2019; Laukkonen & Slagter, 2021; Riva, 2018), they cannot be considered evidence of PP's empirical validity. Interdisciplinary collaboration and the refinement of mechanistic explanations would be needed to improve PP's robustness (Piekarski, 2021). The heterogeneity of body image research poses further challenges. Reconciliation between different frameworks and terminologies is difficult, increasing risks of misinterpretation and requiring that some potentially relevant viewpoints be left out.

4.4 Conclusions and further research

To my knowledge, this thesis is the first study to focus exclusively on body image phenomenology of psychedelic and meditative peak experiences. No systematic comparisons between psychedelic and meditative body image-related experience contents have been made previously, nor their associations with subsequent body attitudes studied. The findings imply that an altered bodily experience is common in these ASCs and may potentially revise the individual's beliefs and perspectives in relation to their body.

The most reported phenomena in both psychedelic and meditation narratives involved an altered experience of embodiment, with subjective increases in body awareness and/or the dissolution of body boundaries. Disembodiment appeared more drastic and abrupt in psychedelic narratives. While affective-attitudinal body image themes were not as common in the narratives as embodiment themes, they were present in both psychedelic and meditation reports and were predominantly positive in valence. In this sample, perceptual body image alterations were only seen in psychedelic narratives.

Disembodiment was found to predict a greater perceived increase in body connection and reduced body dissatisfaction after the experience. Increased body awareness also predicted a greater perceived

reduction in body dissatisfaction. Respectively, narratives with positive affective-attitudinal body image content were linked with perceived increases in body connection, reflecting a link between embodiment functions and improved body attitudes. From the perspective of predictive processing, the abrupt relaxation of high-level body image priors while enhancing the precision of multisensory inputs has been proposed to help foster an embodied first-person perspective instead of a self-objectifying one, allowing for more flexible body attitudes.

Individuals with eating disorder traits were more likely to report body appreciation in their narratives and perceive greater reductions in body dissatisfaction following the experience. Although further research is warranted, these findings could suggest that some individuals with particularly rigid body image-related beliefs could benefit from the novel perspectives facilitated by these experiences. However, longitudinal studies tracking body image measures before and after psychedelic or meditative experiences would be needed to inform about their causal effects. The role of empathy enhancement in addition to deconstructing dysfunctional models is also a question whose further investigation could have important implications for developing targeted interventions for body image disorders in the future.

References

Ainley, V., & Tsakiris, M. (2013). Body Conscious? Interoceptive Awareness, Measured by Heartbeat Perception, Is Negatively Correlated with Self-Objectification. *PLOS ONE*, *8*(2), Article e55568. https://doi.org/10.1371/journal.pone.0055568

Albertson, E. R., Neff, K. D., & Dill-Shackleford, K. E. (2015). Self-Compassion and Body Dissatisfaction in Women: A Randomized Controlled Trial of a Brief Meditation Intervention. *Mindfulness*, *6*(3), 444–454. https://doi.org/10.1007/s12671-014-0277-3

Alleva, J. M., Tylka, T. L., & Kroon Van Diest, A. M. (2017). The Functionality Appreciation Scale (FAS): Development and psychometric evaluation in U.S. community women and men. *Body Image, 23*, 28-44. https://doi.org/10.1016/j.bodyim.2017.07.008

Alleva, J. M., Sheeran, P., Webb, T. L., Martijn, C., & Miles, E. (2015). A Meta-Analytic Review of Stand-Alone Interventions to Improve Body Image. *PLOS ONE*, *10*(9), Article e0139177. https://doi.org/10.1371/journal.pone.0139177

Atkinson, M., Wade, T. D., Tylka, T., & Piran, N. (2019). Mindfulness Training to Facilitate Positive Body Image and Embodiment. In *Handbook of Positive Body Image and Embodiment* (pp. 312–325). Oxford University Press. https://doi.org/10.1093/med-psych/9780190841874.001.0001

Avalos, L., Tylka, T. L., & Wood-Barcalow, N. (2005). The Body Appreciation Scale: development and psychometric evaluation. *Body Image*, *2*(3), 285–297. https://doi.org/10.1016/j.bodyim.2005.06.002

Badcock, P. B., Friston, K. J., & Ramstead, M. J. D. (2019). The hierarchically mechanistic mind: A free-energy formulation of the human psyche. *Physics of Life Reviews*, *31*, 104–121. https://doi.org/10.1016/j.plrev.2018.10.002

Barba, T., Kettner, H., Radu, C., Peill, J. M., Roseman, L., Nutt, D. J., Erritzoe, D., Carhart-Harris, R., & Giribaldi, B. (2024). Psychedelics and sexual functioning: a mixed-methods study. *Scientific Reports*, *14*(1), 2181–2181. https://doi.org/10.1038/s41598-023-49817-4

Barrett, F. S., Griffiths, R. R., Vollenweider, F. X., Halberstadt, A. L., & Nichols, D. E. (2018). Classic Hallucinogens and Mystical Experiences: Phenomenology and Neural Correlates. *Behavioral Neurobiology of Psychedelic Drugs*, *36*, 393–430. https://doi.org/10.1007/7854_2017_474

Barrett, F. S., Johnson, M. W., & Griffiths, R. R. (2015). Validation of the revised Mystical Experience Questionnaire in experimental sessions with psilocybin. *Journal of Psychopharmacology (Oxford)*, *29*(11), 1182–1190. https://doi.org/10.1177/0269881115609019

Behrend, N., Webb, J. B., & Warschburger, P. (2023). Exploring the reciprocal associations between body appreciation, body image flexibility, and body acceptance by others in the context of the COVID-19 pandemic in Germany: Results from cross-lagged panel analyses among women and men. *Body Image*, *46*, 139–151. https://doi.org/10.1016/j.bodyim.2023.05.008

Benjamini, Y., & Hochberg, Y. (1995). Controlling the False Discovery Rate: A Practical and Powerful Approach to Multiple Testing. *Journal of the Royal Statistical Society. Series B, Methodological*, *57*(1), 289–300. https://doi.org/10.1111/j.2517-6161.1995.tb02031.x

Berkovich-Ohana, A., Dor-Ziderman, Y., Glicksohn, J., & Goldstein, A. (2013). Alterations in the sense of time, space, and body in the mindfulness-trained brain: A neurophenomenologically-guided MEG study. *Frontiers in Psychology*, *4*, 912–912. https://doi.org/10.3389/fpsyg.2013.00912

Blanke, O. (2012). Multisensory brain mechanisms of bodily self-consciousness. *Nature Reviews. Neuroscience*, *13*(8), 556–571. https://doi.org/10.1038/nrn3292

Bornemann, J., Close, J. B., Spriggs, M. J., Carhart-Harris, R., & Roseman, L. (2021). Self-Medication for Chronic Pain Using Classic Psychedelics: A Qualitative Investigation to Inform Future Research. *Frontiers in Psychiatry*, *12*, Article 735427. https://doi.org/10.3389/fpsyt.2021.735427

Boyatzis, R. E. (1998). *Transforming qualitative information: thematic analysis and code development*. Sage.

Braun, V., & Clarke, V. (2021). Can I use TA? Should I use TA? Should I not use TA? Comparing reflexive thematic analysis and other pattern-based qualitative analytic approaches. *Counselling and Psychotherapy Research*, *21*(1), 37–47. https://doi.org/10.1002/capr.12360

Breeksema, J. J., Niemeijer, A. R., Krediet, E., Vermetten, E., & Schoevers, R. A. (2020). Psychedelic Treatments for Psychiatric Disorders: A Systematic Review and Thematic Synthesis of Patient Experiences in Qualitative Studies. *CNS Drugs*, *34*(9), 925–946. https://doi.org/10.1007/s40263-020-00748-y

Brewerton, T. D., Wang, J. B., Lafrance, A., Pamplin, C., Mithoefer, M., Yazar-Klosinki, B., Emerson, A., & Doblin, R. (2022). MDMA-assisted therapy significantly reduces eating disorder symptoms in a randomized placebo-controlled trial of adults with severe PTSD. *Journal of Psychiatric Research*, *149*, 128–135. https://doi.org/10.1016/j.jpsychires.2022.03.008

Brizzi, G., Sansoni, M., Di Lernia, D., Frisone, F., Tuena, C., & Riva, G. (2023). The multisensory mind: a systematic review of multisensory integration processing in Anorexia and Bulimia Nervosa. *Journal of Eating Disorders*, *11*(1), 1–204. https://doi.org/10.1186/s40337-023-00930-9

Burychka, D., Miragall, M., & Baños, R. M. (2021). Towards a Comprehensive Understanding of Body Image: Integrating Positive Body Image, Embodiment and Self-Compassion. *Psychologica Belgica*, *61*(1), 248–261. https://doi.org/10.5334/pb.1057

Butryn, M. L., Juarascio, A., Shaw, J., Kerrigan, S. G., Clark, V., O'Planick, A., & Forman, E. M. (2013). Mindfulness and its relationship with eating disorders symptomatology in women receiving residential treatment. *Eating Behaviors: An International Journal*, *14*(1), 13–16. https://doi.org/10.1016/j.eatbeh.2012.10.005

Carhart-Harris, R. L., & Friston, K. J. (2019). REBUS and the Anarchic Brain: Toward a Unified Model of the Brain Action of Psychedelics. *Pharmacological Reviews*, *71*(3), 316–344. https://doi.org/10.1124/pr.118.017160

Cash, T. F., & Smolak, L. (2011). *Body image: a handbook of science, practice, and prevention* (2nd ed.). Guilford Press.

Cebolla, A., Miragall, M., Palomo, P., Llorens, R., Soler, J., Demarzo, M., García-Campayo, J., & Baños, R. M. (2016). Embodiment and Body Awareness in Meditators. *Mindfulness*, *7*(6), 1297–1305. https://doi.org/10.1007/s12671-016-0569-x

Cotton, M., Ball, C., & Robinson, P. (2003). Four Simple Questions Can Help Screen for Eating Disorders. *Journal of General Internal Medicine: JGIM*, *18*(1), 53–56. https://doi.org/10.1046/j.1525-1497.2003.20374.x

Dahl, C. J., Lutz, A., & Davidson, R. J. (2015). Reconstructing and deconstructing the self: cognitive mechanisms in meditation practice. *Trends in Cognitive Sciences*, *19*(9), 515–523. https://doi.org/10.1016/j.tics.2015.07.001

de Lima-Araujo, G. L., de Sousa Júnior, G. M., Mendes, T., Demarzo, M., Farb, N., de Araujo, D. B., & de Sousa, M. B. C. (2022). The impact of a brief mindfulness training on interoception: A randomized controlled trial. *PLOS ONE*, *17*(9), Article e0273864. https://doi.org/10.1371/journal.pone.0273864

de Wet, A. J., Lane, B. R., & Mulgrew, K. E. (2020). A Randomised Controlled Trial Examining the Effects of Self-Compassion Meditations on Women's Body Image. *Body Image*, *35*, 22–29. https://doi.org/10.1016/j.bodyim.2020.07.009

Elias, S., Spivak, S., Alverez, A., Gili Olivares, A., Ferrol, M., & Keenan, J. P. (2023). Self-perception and self-recognition while looking in the mirror on psilocybin. *Journal of Psychedelic Studies*, *7*(2), 129–134. https://doi.org/10.1556/2054.2023.00251

Evans, J., Robinson, O. C., Argyri, E. K., Suseelan, S., Murphy-Beiner, A., McAlpine, R., Luke, D., Michelle, K., & Prideaux, E. (2023). Extended difficulties following the use of psychedelic drugs: A mixed methods study. *PLOS ONE*, *18*(10), Article e0293349. https://doi.org/10.1371/journal.pone.0293349

Friston, K. (2010). The free-energy principle: a unified brain theory? *Nature Reviews. Neuroscience*, *11*(2), 127–138. https://doi.org/10.1038/nrn2787

Gadsby, S. & Hohwy, J. (2023). Predictive processing and body representation. In Alsmith, A. J. T., & Longo, M. R. (Eds.), *The Routledge Handbook of Bodily Awareness* (1st ed., Vol. 1, pp. 161–170). Routledge. https://doi.org/10.4324/9780429321542-16

Galante, J., Montero-Marín, J., Vainre, M., Dufour, G., García-Campayo, J., & Jones, P. B. (2024). Altered states of consciousness caused by a mindfulness-based programme up to a year later: Results from a randomised controlled trial. *PLOS ONE*, *19*(7), Article e0305928. https://doi.org/10.1371/journal.pone.0305928

Gallagher, S. (2000). Philosophical conceptions of the self: implications for cognitive science. *Trends in Cognitive Sciences*, *4*(1), 14–21. https://doi.org/10.1016/S1364-6613(99)01417-5

Gallagher, S. (2005). *How the Body Shapes the Mind* (1st ed.). Oxford University Press. https://doi.org/10.1093/0199271941.001.0001

Garrison, K. A., Santoyo, J. F., Davis, J. H., Thornhill, th, Kerr, C. E., & Brewer, J. A. (2013). Effortless awareness: using real time neurofeedback to investigate correlates of posterior cingulate cortex activity in meditators' self-report. *Frontiers in Human Neuroscience*, *7*, 440–440. https://doi.org/10.3389/fnhum.2013.00440

Gopan, H., Rajkumar, E., Gopi, A., & Romate, J. (2024). Mindfulness-based interventions for body image dissatisfaction among clinical population: A systematic review and meta-analysis. *British Journal of Health Psychology*, *29*(2), 488–509. https://doi.org/10.1111/bjhp.12710

Hamamoto, Y., Suzuki, S., & Sugiura, M. (2022). Two components of body-image disturbance are differentially associated with distinct eating disorder characteristics in healthy young women. *PLOS ONE*, *17*(1), Article e0262513. https://doi.org/10.1371/journal.pone.0262513

Hamamoto, Y., Suzuki, S., Motoki, K., Oba, K., Kawashima, R., & Sugiura, M. (2023). Neural mechanisms of perceptual and affective body-image disturbance during own-body and ideal-body estimation. *Behavioural Brain Research*, *444*, Article 114349. https://doi.org/10.1016/j.bbr.2023.114349

Hanes K. R. (1996). Serotonin, psilocybin, and body dysmorphic disorder: a case report. *Journal of clinical psychopharmacology*, *16*(2), 188–189. https://doi.org/10.1097/00004714-199604000-00011

Harduf, A., Panishev, G., Harel, E. V., Stern, Y., & Salomon, R. (2023). The bodily self from psychosis to psychedelics. *Scientific Reports*, *13*(1), Article 21209. https://doi.org/10.1038/s41598-023-47600-z

Ho, J. T., Preller, K. H., & Lenggenhager, B. (2020). Neuropharmacological modulation of the aberrant bodily self through psychedelics. *Neuroscience and Biobehavioral Reviews, 108,* 526–541. https://doi.org/10.1016/j.neubiorev.2019.12.006

Holas, P., & Kamińska, J. (2023). Mindfulness meditation and psychedelics: potential synergies and commonalities. *Pharmacological Reports*, *75*(6), 1398–1409. https://doi.org/10.1007/s43440-023-00551-8

Irvine, K. R., McCarty, K., McKenzie, K. J., Pollet, T. V., Cornelissen, K. K., Tovée, M. J., & Cornelissen, P. L. (2019). Distorted body image influences body schema in individuals with negative bodily attitudes. *Neuropsychologia*, *122*, 38–50. https://doi.org/10.1016/j.neuropsychologia.2018.11.015

Johns Hopkins Medicine. (2024). Effects of Psilocybin in Anorexia Nervosa. Retrieved January 20, 2025, from https://clinicaltrials.gov/study/NCT04052568

Kangaslampi, S., Hausen, A., & Rauteenmaa, T. (2020). Mystical Experiences in Retrospective Reports of First Times Using a Psychedelic in Finland. *Journal of psychoactive drugs*, *52*(4), 309–318. https://doi.org/10.1080/02791072.2020.1767321

Ko, K., Knight, G., Rucker, J. J., & Cleare, A. J. (2022). Psychedelics, Mystical Experience, and Therapeutic Efficacy: A Systematic Review. *Frontiers in Psychiatry*, *13*, Article 917199. https://doi.org/10.3389/fpsyt.2022.917199

Laukkonen, R. E., & Slagter, H. A. (2021). From many to (n)one: Meditation and the plasticity of the predictive mind. *Neuroscience and Biobehavioral Reviews*, *128*, 199–217. https://doi.org/10.1016/j.neubiorev.2021.06.021

Ledwos, N., Rodas, J. D., Husain, M. I., Feusner, J. D., & Castle, D. J. (2023). Therapeutic uses of psychedelics for eating disorders and body dysmorphic disorder. *Journal of Psychopharmacology*, *37*(1), 3–13. https://doi.org/10.1177/02698811221140009

Lernia, D. D., Serino, S., Tuena, C., Cacciatore, C., Polli, N., & Riva, G. (2023). Mental health meets computational neuroscience: A predictive Bayesian account of the relationship between interoception and multisensory bodily illusions in anorexia nervosa. *International journal of clinical and health psychology: IJCHP*, *23*(4), Article 100383. https://doi.org/10.1016/j.ijchp.2023.100383

Letheby, C. (2022). Psychedelics and meditation: A neurophilosophical perspective. In *Routledge Handbook on the Philosophy of Meditation* (1st ed., pp. 209–224). Routledge. https://doi.org/10.4324/9781003127253

Linardon, J., Anderson, C., Messer, M., Rodgers, R. F., & Fuller-Tyszkiewicz, M. (2021). Body image flexibility and its correlates: A meta-analysis. *Body Image*, *37*, 188–203. https://doi.org/10.1016/j.bodyim.2021.02.005

Lindahl, J. R., Fisher, N. E., Cooper, D. J., Rosen, R. K., & Britton, W. B. (2017). The varieties of contemplative experience: A mixed-methods study of meditation-related challenges in Western Buddhists. *PLOS ONE, 12*(5), Article e0176239. https://doi.org/10.1371/journal.pone.0176239

Lindahl, J. R., Kaplan, C. T., Winget, E. M., & Britton, W. B. (2014). A phenomenology of meditation-induced light experiences: Traditional Buddhist and neurobiological perspectives. *Frontiers in Psychology*, *4*, 973–973. https://doi.org/10.3389/fpsyg.2013.00973

Litwin, P., & Miłkowski, M. (2020). Unification by Fiat: Arrested Development of Predictive Processing. *Cognitive Science*, *44*(7), Article e12867. https://doi.org/10.1111/cogs.12867

Lynn, S. J., McDonald, C. W., Sleight, F. G., & Mattson, R. E. (2023). Cross-validation of the ego dissolution scale: implications for studying psychedelics. *Frontiers in Neuroscience*, *17*, Article 1267611. https://doi.org/10.3389/fnins.2023.1267611

McHugh, M. L. (2012). Interrater reliability: The kappa statistic. *Biochemia Medica*, *22*(3), 276–282. https://doi.org/10.11613/bm.2012.031

Mehling, W. E., Acree, M., Stewart, A., Silas, J., & Jones, A. (2018). The multidimensional assessment of interoceptive awareness, version 2 (MAIA-2). *PLOS ONE*, *13*(12), Article e0208034. https://doi.org/10.1371/journal.pone.0208034

Millière, R., Carhart-Harris, R. L., Roseman, L., Trautwein, F.-M., & Berkovich-Ohana, A. (2018). Psychedelics, meditation, and self-consciousness. *Frontiers in Psychology, 9*, Article 1475. https://doi.org/10.3389/fpsyg.2018.01475

Nagel, T. (1974). What Is It Like to Be a Bat? *The Philosophical Review*, *83*(4), 435–450. https://doi.org/10.2307/2183914

Naraindas, A. M., & Cooney, S. M. (2023). Body image disturbance, interoceptive sensibility and the body schema across female adulthood: A pre-registered study. *Frontiers in Psychology, 14*, Article 1285216. https://doi.org/10.3389/fpsyg.2023.1285216

Peck, S.K., Fisher, H., Kim, J., Shao, S., Trim, J., & Kaye, W. H. (2024). Psychedelic treatment for anorexia nervosa: A first-hand view of how psilocybin treatment did and did not help. *Psychedelics*, 1–4. https://doi.org/10.61373/pp024e.0034

Piekarski, M. (2021). Understanding Predictive Processing. A Review. *Avant (Toruń), 1*, 1–48. https://doi.org/10.26913/avant.2021.01.04

Piran, N., Teall, T. L., & Counsell, A. (2020). The experience of embodiment scale: Development and psychometric evaluation. *Body image, 34*, 117–134. https://doi.org/10.1016/j.bodyim.2020.05.007

Portingale, J., Krug, I., Liu, H., Kiropoulos, L., Butler, D., & Nezu, A. M. (2024). Your Body, My Experience: A Systematic Review of Embodiment Illusions as a Function of and Method to Improve Body Image Disturbance. *Clinical Psychology (New York, N.Y.)*, *31*(4), 445–458. https://doi.org/10.1037/cps0000223

Preller, K. H., & Vollenweider, F. X. (2019). Modulation of social cognition via hallucinogens and "entactogens." *Frontiers in Psychiatry, 10*, 881–881. https://doi.org/10.3389/fpsyt.2019.00881

Price, C. J., Thompson, E. A., & Cheng, S. C. (2017). Scale of Body Connection: A multi-sample construct validation study. *PLOS ONE*, *12*(10), Article e0184757. https://doi.org/10.1371/journal.pone.0184757

Qela, B., Damiani, S., De Santis, S., Groppi, F., Pichiecchio, A., Asteggiano, C., Brondino, N., Monteleone, A. M., Grassi, L., Politi, P., Fusar-Poli, P., & Fusar-Poli, L. (2025). Predictive coding in neuropsychiatric disorders: A systematic transdiagnostic review. *Neuroscience and Biobehavioral Reviews*, *169*, Article 106020. https://doi.org/10.1016/j.neubiorev.2025.106020

Ramachandran, V., Chunharas, C., Marcus, Z., Furnish, T., & Lin, A. (2018). Relief from intractable phantom pain by combining psilocybin and mirror visual-feedback (MVF). *Neurocase*, 24(2), 105–110. https://doi.org/10.1080/13554794.2018.1468469

Raoul, L., & Grosbras, M.-H. (2023). Relating different dimensions of bodily experiences: Review and proposition of an integrative model relying on phenomenology, predictive brain and neuroscience of the self. *Neuroscience and Biobehavioral Reviews*, *148*, Article 105141. https://doi.org/10.1016/j.neubiorev.2023.105141

Riva, G. (2018). The neuroscience of body memory: From the self through the space to the others. *Cortex*, *104*, 241–260. https://doi.org/10.1016/j.cortex.2017.07.013

Riva, G., & Dakanalis, A. (2018). Altered processing and integration of multisensory bodily representations and signals in eating disorders: A possible path toward the understanding of their underlying causes. *Frontiers in Human Neuroscience*, *12*, 49–49. https://doi.org/10.3389/fnhum.2018.00049

Roncero, M., Belloch, A., Perpiñá, C., & Treasure, J. (2013). Ego-syntonicity and ego-dystonicity of eating-related intrusive thoughts in patients with eating disorders. *Psychiatry Research*, *208*(1), 67–73. https://doi.org/10.1016/j.psychres.2013.01.006

Roseman, L., Nutt, D. J., & Carhart-Harris, R. L. (2018). Quality of acute psychedelic experience predicts therapeutic efficacy of psilocybin for treatment-resistant depression. *Frontiers in Pharmacology*, *8*, 974–974. https://doi.org/10.3389/fphar.2017.00974

Sandoz, E. K., Wilson, K. G., Merwin, R. M., & Kate Kellum, K. (2013). Assessment of body image flexibility: The Body Image-Acceptance and Action Questionnaire. *Journal of Contextual Behavioral Science*, *2*(1–2), 39–48. https://doi.org/10.1016/j.jcbs.2013.03.002

Sarasso, P., Billeci, M., Ronga, I., Raffone, F., Martiadis, V., & Di Petta, G. (2024). Disembodiment and Affective Resonances in Esketamine Treatment of Depersonalized Depression Subtype: Two Case Studies. *Psychopathology*, *57*(6), 480–12. https://doi.org/10.1159/000539714

Schenberg, E. E. (2024). Comment on: History repeating: guidelines to address common problems in psychedelic science. *Therapeutic Advances in Psychopharmacology*, *14*. https://doi.org/10.1177/20451253241243242

Schneier, F. R., Feusner, J., Wheaton, M. G., Gomez, G. J., Cornejo, G., Naraindas, A. M., & Hellerstein, D. J. (2023). Pilot study of single-dose psilocybin for serotonin reuptake inhibitor-resistant body dysmorphic disorder. *Journal of Psychiatric Research*, *161*, 364–370. https://doi.org/10.1016/j.jpsychires.2023.03.031

Simonsson, O., & Goldberg, S. (2023). Linkages between Psychedelics and Meditation in a Population-Based Sample in the United States. *Journal of Psychoactive Drugs*, *55*(1), 11-. https://doi.org/10.1080/02791072.2021.2022816

Sikka, P. (2019). How to Study Dream Experiences. In *Dreams* (pp. 153-).

Soliman, P. S., Curley, D. E., Capone, C., Eaton, E., & Haass-Koffler, C. L. (2024). In the new era of psychedelic assisted therapy: A systematic review of study methodology in randomized controlled trials. *Psychopharmacology*, *241*(6), 1101–1110. https://doi.org/10.1007/s00213-024-06598-6

Strickland, J. C., Garcia-Romeau, A., & Johnson, M. W. (2024). The Mystical Experience Questionnaire 4-Item and Challenging Experience Questionnaire 7-Item. *Psychedelic Medicine, 2*(1), 33–43. https://doi.org/10.1089/psymed.2023.0046

Studerus, E., Gamma, A., & Vollenweider, F. X. (2010). Psychometric evaluation of the altered states of consciousness rating scale (OAV). *PLOS ONE, 5*(8), Article e12412. https://doi.org/10.1371/journal.pone.0012412

Swami, V., Adebayo, S. O., Ahmed, O., Aimé, A., Halbusi, H. A., Alexias, G., Alp-Dal, N., Alsalhani, A. B., Andrianto, S., Aspden, T., Aruta, J. J. B. R., Ayandele, O., Bahbouh, R., Bellard, A., Bozogáňová, M., Browning, M. H. E. M., Brytek-Matera, A., Camacho, P., Camilleri, V. E., … Yeung, V. W. L. (2023). Body appreciation around the world: Measurement invariance of the Body Appreciation Scale-2 (BAS-2) across 65 nations, 40 languages, gender identities, and age. *Body Image*, *46*, 449–466. https://doi.org/10.1016/j.bodyim.2023.07.010

Swift, T. C., Belser, A. B., Agin-Liebes, G., Devenot, N., Terrana, S., Friedman, H. L., Guss, J., Bossis, A. P., & Ross, S. (2017). Cancer at the Dinner Table: Experiences of Psilocybin-Assisted Psychotherapy for the Treatment of Cancer-Related Distress. *The Journal of Humanistic Psychology*, *57*(5), 488–519. https://doi.org/10.1177/0022167817715966

Tihanyi, B. T., Böőr, P., Emanuelsen, L., & Köteles, F. (2016). Mediators between Yoga Practice and Psychological Well-Being: Mindfulness, Body Awareness, and Satisfaction with Body Image. *European Journal of Mental Health*, *11*(1–02), 112–127. https://doi.org/10.5708/EJMH.11.2016.1-2.7

Timmermann, C., Bauer, P. R., Gosseries, O., Vanhaudenhuyse, A., Vollenweider, F., Laureys, S., Singer, T., Antonova, E., & Lutz, A. (2023). A neurophenomenological approach to non-ordinary states of consciousness: hypnosis, meditation, and psychedelics. *Trends in Cognitive Sciences*, *27*(2), 139–159. https://doi.org/10.1016/j.tics.2022.11.006

Tylka, T. L., & Wood-Barcalow, N. L. (2015). The Body Appreciation Scale-2: Item refinement and psychometric evaluation. *Body Image*, *12*(1), 53–67. https://doi.org/10.1016/j.bodyim.2014.09.006

University of California, San Diego. (2025). Psilocybin-Assisted Therapy for Phantom Limb Pain. Retreived January 20, 2025, from https://clinicaltrials.gov/study/NCT05224336

University of California, San Francisco. (2024). Study of Psilocybin for Anorexia in Young Adults (SPANYA). Retrieved January 20, 2025, from https://clinicaltrials.gov/study/NCT06399263

van Elk, M., & Fried, E. I. (2023). History repeating: guidelines to address common problems in psychedelic science. *Therapeutic Advances in Psychopharmacology*, *13*, 1–20. https://doi.org/10.1177/20451253231198466

Vizeli, P., Studerus, E., Holze, F., Schmid, Y., Dolder, P. C., Ley, L., Straumann, I., Becker, A. M., Müller, F., Arikci, D., & Liechti, M. E. (2024). Pharmacological and non-pharmacological predictors of the LSD experience in healthy participants. *Translational Psychiatry*, *14*(1), 357–358. https://doi.org/10.1038/s41398-024-03074-9

Webb, J. B. (2015). Body image flexibility contributes to explaining the link between body dissatisfaction and body appreciation in White college-bound females. *Journal of Contextual Behavioral Science*, *4*(3), 176–183. https://doi.org/10.1016/j.jcbs.2015.06.001

Wilson, R. E., Latner, J. D., & Hayashi, K. (2013). More than just body weight: The role of body image in psychological and physical functioning. *Body Image*, *10*(4), 644–647. https://doi.org/10.1016/j.bodyim.2013.04.007

Wood, M. J., McAlpine, R. G., & Kamboj, S. K. (2024). Strategies for resolving challenging psychedelic experiences: insights from a mixed-methods study. *Scientific Reports*, *14*(1), 28817–14. https://doi.org/10.1038/s41598-024-79931-w

Wright, M. J., Galante, J., Corneille, J. S., Grabovac, A., Ingram, D. M., & Sacchet, M. D. (2024). Altered States of Consciousness are Prevalent and Insufficiently Supported Clinically: A Population Survey. *Mindfulness*, *15*(5), 1162–1175. https://doi.org/10.1007/s12671-024-02356-z

Xu, A., Cullen, B. H., Penner, C., Zimmerman, C., Kerr, C. E., & Schmalzl, L. (2018). Comparing embodiment experiences in expert meditators and non-meditators using the rubber hand illusion. *Consciousness and Cognition*, *65*, 325–333. https://doi.org/10.1016/j.concog.2018.09.003

Yaden, D. B., Goldy, S. P., Weiss, B., Potash, J. B., Griffiths, R. R., & Johnson, M. W. (2024). Clinically relevant acute subjective effects of psychedelics beyond mystical experience. *Nature Reviews Psychology, 3*, 606–621. https://doi.org/10.1038/s44159-024-00345-6

Zanesco, A. P., King, B. G., Conklin, Q. A., & Saron, C. D. (2023). The Occurrence of Psychologically Profound, Meaningful, and Mystical Experiences During a Month-Long Meditation Retreat. *Mindfulness*, *14*(3), 606–621. https://doi.org/10.1007/s12671-023-02076-w

Appendices

Appendix 1 Codebook for body-related experiences

General instructions

- The contents are rated into themes and subthemes (see below, dichotomic rating of 1 or 0): does a given theme occur or not. Several themes, both main themes and subthemes, may occur within one report.
- Within a report, copy-paste the sequence ("sq") of text that represents a specific theme to the respective column (e.g., "PBI_sq"; see below).
- If in column "body_1yes_2no_3dontknow" the value is 1 (yes) or 3 (don't know), the rater reads the thematic body report in the column "Thematic_body". If the value is 2 (no), the coding left blank.
- If the theme can be identified directly from "Thematic_body", then there's no need to read the longer, open report (column "Open_report").
- If the theme is unclear based on the "Thematic_body", or if the participant refers to their open report, then the rater also reads the open report and rates based on that (in addition to the thematic body report).
- If the participant reports several experiences, the data is excluded and categorized as missing ("NA:several").
- If the fields are left empty, code as missing ("NA:missing").
- If there is no body-related experience that can be identified, code as "No identifiable body-related experience".
- If the insight came after the acute experience and there is no insight in the acute experience itself, code as "No identifiable body-related experience".

The themes

1. Altered perceptual body image (PBI)

Perceptual body image refers to the mental image or representation of the body based on sensory inputs and visual perception. It involves how we perceive and interpret the size, shape, proportions, and appearance of our body. "Altered perceptual body image" refers to changes and updates in this representation, such as:

- *Perceptual change*, e.g., "My body morphed in shape or size", "I looked different in the mirror", "I felt like I was more beautiful/ugly than usually", "I felt leaner/softer/wrinklier/etc."
- *Updated representation*, e.g., "I realized how big/skinny I had become."

2. Affective-attitudinal body image (ABI)

Affective-attitudinal body image encompasses the feelings and attitudes one holds toward the appearance, functional capacities, or inherent worth of one's body. The subthemes may coincide or occur separately.

2a. Body appreciation (ABI:B)

Body appreciation represents a respectful and accepting attitude that values the body holistically, acknowledging its intrinsic worth while also appreciating its unique features.

- e.g., "I felt loving, caring feelings for my body", "I was able to accept my body", "I found new kinds of beauty in my body."
- "I respect my body and want to live harmoniously with it."
- "The body is a precious gift, and I should treat it well."

2b. Functionality appreciation (ABI:F)

Functionality appreciation describes the recognition of the body's significance as the medium through which life is navigated. The body is valued as a function rather than as an object.

- e.g., "I felt gratitude for the way my body carries me through life and allows me to experience it", "My body is a miracle for all it can do", "It lets me connect with my loved ones and communicate."
- "I stopped worrying about my looks. My body works and that's what matters", "I felt gratitude for my health and my body's ability to heal".
- "I appreciated my body for being a vehicle for my soul."

3. Increased body awareness (BA)

Body awareness refers to the conscious experiencing of bodily sensations, movements and position via an embodied first-person perspective. It includes one's sense of body connection, attunement to bodily signals, and the ability to self-regulate based on these sensations. "Increased body awareness" can be identified by one or more of the following:

- *Sensitivity to internal sensations (interoception)*, e.g. "I became very aware of my bodily processes", "My body felt so alive", "I felt emotions strongly in my body."
- *Sensitivity to sensations of position, pressure, and movement (proprioception)*, e.g., "My body felt heavy and relaxed / energetic and light", "Moving felt effortless and fulfilling. I felt agile, like a dancer."
- *Sense of body connection*, e.g., "I felt at home in my body", "I felt grounded and present in my body", "My body felt comfortable", "I am my body."
- *Self-regulation*, e.g. "I could calm myself with my breath", "I was able to heal old hurt in my body", etc.
- *Overall sense of embodiment*, e.g., "The experience felt embodied."

4. Altered sense of bodily self (BS)

Altered sense of bodily self refers to anomalies in the experience of oneself as an embodied entity. It involves aberrations in body awareness, body ownership (the sensation of one's body as one's own), and self-location (the perceived spatial placement of oneself both within the physical body and relative to the surrounding environment). It also encompasses experiences of expanding boundaries and the self being recontextualized into a larger whole. The subthemes may coincide or occur separately.

4a. Disembodiment (BS:D)

Disembodiment refers to a disconnected body experience where one's sense of 1) body awareness, 2) body ownership, and/or 3) self-location is disrupted. This can manifest as:

- *Feelings of not having a body anymore*, e.g., "My body was no longer there. I wasn't aware of having a body at all", "I lost all bodily sensation."
- *Feeling like one's body isn't their own*, e.g., "My body felt alien to me", "I felt like my body was that of someone else."
- *Out-of-body experiences*, e.g., "It seemed as if I was outside my body."
- *Feelings of floating*

- *Feelings of the body dissolving*, e.g., “My body melted”, “My body merged with my surroundings / another person.”

4b. Bodily self-transcendence (BS:T)

“Bodily self-transcendence” refers to 1) shifts in body boundaries, and 2) the self integrating into a broader context in which it is no longer experienced as being confined within the boundaries of the body. This includes aspects of:

- *Expansiveness*, e.g., “My boundaries expanded and became translucent”.
- *Recontextualization*, e.g., “I realized my body is part of a bigger whole”, “My body is just a vehicle”, “I stopped identifying with my body, and my ‘self’ blended with the universal consciousness.”

5. Other body-related experience (O)

5a. Experiencing the body as energy (O:E)

- e.g., “I felt like my body was a flux of vibrating movement”, “I experienced my body as waves of electricity”, “A current / force passed through me.”

5b. Impermanence of the body (O:I)

- e.g., “I realized the body is just transitory”, “I understood my body is in constant change.”

5c. Negative body-related experience (O:N)

- e.g., “I was disgusted by my body”, “I feared losing control of my body”, “I felt like a prisoner in my body”.

5d. O:O Other body-related experience

6. No identifiable body-related experience (N)