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Philosophy and the Mind Sciences

Minimal states of awareness across sleep and wakefulness

A multidimensional framework to guide scientific research

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Abstract
I introduce a novel multidimensional framework tailored to investigate a set of phenomena that might appear intractable and render them amenable to scientific inquiry. In particular, I focus on examining altered states of consciousness that appear to the experiencing subject as "contentless" or "objectless" states in some form, either by having disrupted or reduced content of awareness, or content that appears as missing altogether. By drawing on empirical research, I propose a cluster of phenomenological dimensions aimed at enhancing our understanding of this group of experiences of minimal awareness, including *Richness of the Content, Bodily-Awareness, Passage of Time, Attentional Focus, and Self-Revelation.* The result is a robust framework that provides precise scientific terminology, facilitating its operationalisation and adaptability for future empirical work. I show the explanatory power of this framework through a case study of the state of clear light sleep—a state widely reported by Indo-Tibetan Buddhist traditions as an instance of pure awareness during sleep, a state of consciousness-as-such. This rare phenomenon has gained increasing attention in contemporary analytic philosophy of mind for the study of the nature of consciousness. However, we still lack consensus on its characterisation and potential identity with other associated states. I end the paper by illustrating how the state of clear light sleep can be situated in relation to other associated states and more ordinary ones as regions of a multidimensional state space.

Keywords
Altered states of consciousness · Contentless awareness · Multidimensional framework

This article is part of a special issue on "Dreaming and mind wandering: Spontaneous thought across the sleep-wake cycle," edited by Thomas Andrillon, Manuela Kirberg, and Jennifer Windt.

1 Introduction

One of the challenges faced in the science of consciousness is that of accounting for the nature of experiences that might appear intractable—states involving a

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Alcaraz-Sánchez, A. (2024). Minimal states of awareness across sleep and wakefulness: A multidimensional framework to guide scientific research. *Philosophy and the Mind Sciences*, 5. https://doi.org/10.33735/phimisci.2024.10233
 https://philosophymindscience.org ISSN: 2699-0369

sort of conscious content that seems to depart from ordinary experience. Examples of these sorts of experiences are altered states of consciousness (ASCs) (Dittrich, 1998). While ASCs tend to be regarded as unique and distinctive conscious states, unrelated to other conscious experiences, a closer examination of their features reveals links across ASCs and non-altered states, providing a more nuanced understanding of their nature. For instance, a large body of researchers in cognitive science and philosophy of mind have attempted to shed light on the allegedly elusive nature of dreaming by comparing it to more ordinary states like mind wandering (Domhoff and Fox, 2015; Foulkes and Fleisher, 1975; Fox et al., 2013). This work has resulted in the development of theoretical frameworks spelling out the overlapping functional and phenomenological features between dreaming and mind wandering (Christoff et al., 2016; Girn et al., 2020; Windt, 2021), bringing some authors to claim that dreaming might just be a particularly immersive and intensified form of mind wandering (Domhoff, 2018; Fox et al., 2013; Windt, 2021). These theoretical frameworks have provided us with better tools to aid our understanding of the nature of previously unrelated states by situating them as part of the same spectrum of spontaneous experiences (cf. Christoff et al., 2016). Additionally, work in this area has helped to bridge the gap between theoretical and experimental work on dreaming and associated experiences in waking (Andrillon et al., 2019; Christoff et al., 2009; Domhoff, 2011; Domhoff and Fox, 2015).

In this paper, I investigate how we can advance our understanding of ASCs by considering the different ways in which these sorts of states might depart from ordinary states of consciousness other than their particular sort of content. Thus, my targets are ASCs with a sort of conscious content that appears as disrupted, diminished, or even lacking—experiences that could be said to be, to some extent, objectless or contentless. From now on, I will refer to them as *experiences of minimal awareness* to include those that might still involve some sort of distinguishable content.[1] My aim here is to show how this fuzzy group of states of minimal awareness can be situated as part of a common multidimensional space in relation to other ordinary states of consciousness, following current approaches in cognitive science. To that aim, I start (§2) by implementing a natural grouping approach, a method of clustering based on the observed shared characteristics in a group of phenomena, to survey a group of states of minimal awareness that at first instance seem more closely interconnected. That might be because they also seem to contain a sort of content which is minimal or ineffable, or because, in some cases, they are regarded as states of pure consciousness—states characterised by the presence of just awareness and nothing else. I then (§3) isolate the distinctive features characterising this group of experiences of minimal awareness and propose a frame-

[1] In the literature, objectless states have received other names, including "pure conscious events" or "pure consciousness" (cf. Forman, 1986, 1990; Shear, 1983), "pure awareness" (cf. Ramm, 2019), or "minimal phenomenal experiences" (cf. Metzinger, 2020; Windt, 2015b). For reasons of space, I will not be discussing how these different notions relate to each other, or whether they all indeed point to a state that is completely objectless. For a more in-depth discussion see Metzinger (2020).

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work constituted by different phenomenological dimensions to capture how such experiences depart from more ordinary conscious states. Finally (§4), I show the potential of this framework to contribute to the live debate on the nature of a very rare and understudied experience of minimal awareness: the state of clear light sleep. This state, widely described by Indo-Tibetan Buddhist traditions as a state of just consciousness during sleep, has been a target of recent attention in the literature. However, despite prevalent descriptions from contemplative traditions, there is still a lack of research and consensus on how to characterise clear light sleep, especially in analytic philosophy and cognitive science. I finish the paper by applying my proposed framework to aid future research on clear light sleep by comparing and contrasting this phenomenon with associated experiences and other ordinary states.

2 States of minimal awareness across sleep and wakefulness

Paradigmatic cases of experiences of minimal awareness are described in certain sorts of advanced meditative practices. For instance, in "open-monitoring" or "*objectless* meditation" practices (Lutz et al., 2008, 2012), like *Mahamudra* and *Samatha*, the practitioner is instructed to let go of the explicit focus of an object of awareness and instead become aware of the non-intentional aspects of conscious experience, or the quality of their conscious state. These sorts of practices are said to lead to a state of non-duality, a state that lacks the subject-object distinction of ordinary consciousness (see Dunne, 2015 for a review).[2] Similar descriptions are found in the so-called "mystical experiences" (Shear, 1994). Mystical experiences are regarded by some as states of pure awareness, states of contentless or objectless awareness (Wahbeh et al., 2018). Whilst a lot of attention has been paid to mystical experiences resulting from engagement in religious or spiritual practices (James, 1982), they can also arise during deep meditative states (Bronkhorst, 2017; Kihlstrom, 2012; Yaden et al., 2017). Similar experiences to that of deep meditation are also reported during hypnotic states (Barnier and Nash, 2012; Kihlstrom, 2012). Hypnotic states can be deeper or shallower and give rise to different experiences, including one involving just an awareness of "total nothing", "great darkness", and a sense of "void" (Cardeña, 2005).

States of minimal awareness can also be induced in experimental settings. Examples are the Restricted Environmental Sensory Therapy States or REST (Suedfeld and Borrie, 1978). These sorts of states are triggered after exposure to an environment with homogeneous and unstructured visual and auditory stimulation,

[2] Other types of advanced meditative practices that also lead to a similar state of objectless awareness are those of Transcendental Meditation and Stillness Meditation. For a detailed review of the similarities and differences across those practices, see (Woods et al., 2020, 2022).

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like that in the Ganzfeld experiment.[3] Long exposures to the Ganzfeld sometimes lead to an experience known as "blankout" (Cohen, 1957, 1958), a state where there is a complete lack of vision as well as the inability to tell whether one has their eyes closed or open (Wackermann et al., 2008). Natural conditions can also trigger similar experiences. For instance, the so-called experience of "long eye" (Suedfeld et al., 2018) has been described by individuals on long-term expeditions in South Polar regions exposed to natural Ganzfeld environments, such as snowstorms, fog, constant darkness, or light.[4] The phenomenon of long eye is described as a form of "mental blanking" (Rohrer, 1961) lacking awareness of the surroundings, as well as an absence of any other forms of mentation like imagery or thoughts (Suedfeld et al., 2018). Prolonged episodes of long eye might lead to what is known as a "fugue state", a state of minimal or near-absent awareness (Mullin, 1960). Subjective reports of this state from researchers in the Antarctic describe a lack of recollection of the period spanning between leaving the research station and returning (Barabasz et al., 1983).

Similar states to deep meditation, mystical experiences, and hypnotic states can be found during sleep-onset transition, for instance, during sleep paralysis, a state characterised by muscular atonia, but with awareness of one's actual surroundings (Solomonova, 2017). While most common forms of sleep paralysis involve audio-visual imagery at sleep onset, or the feeling of a "presence" in the room or on top of one's body (Cheyne, Newby-Clark, and Rueffer, 1999), some others only involve somatosensory content. These latter forms are characterised by vestibulo-motor mentation such as feelings of flying, spinning, lifting, and falling (Cheyne and Girard, 2009; Cheyne, Rueffer, and Newby-Clark, 1999). Some of these unusual sensations during sleep paralysis have been linked to another rare form of conscious experience, out-of-body experiences (OBEs).[5] OBEs are usually described as the experience of one's point of view in a different location to that of one's physical body (Rabeyron and Caussie, 2016) or the experience of seeing oneself "outside" one's body (Twemlow et al., 1982). As I will discuss later, OBEs involve a strong alteration in the perception of one's body to the extent of feeling that one's body has "evaporated" (McCreery and Claridge, 1996).

Finally, recent research has also brought attention to the existence of states of minimal awareness during sleep or "objectless sleep experiences" (Alcaraz-Sánchez, 2024; Alcaraz-Sánchez et al., 2022; Windt et al., 2016). One paradigmatic

[3] The set-up for this experiment consists in making participants wear a pair of coloured goggles (usually made of halved ping-pong balls) that create the perception of a homogeneous colour whilst listening to white noise (Schmidt and Prein, 2019). More recent experimental setups trigger more "immersive" Ganzfeld environments with "whole-body perceptual deprivation" chambers (Ben-Soussan et al., 2019; Glicksohn et al., 2017).

[4] The phenomenon of long eye as described by Suedfeld and colleagues (2018) should not be confused with that of "big eye", a sleep disturbance experienced by individuals on long-term expeditions in Antarctica (Mullin, 1960) causing long periods of insomnia.

[5] See Campillo-Ferrer et al. (2024) for a new conceptual model spelling out the links between sleep-related OBEs, sleep paralysis, and lucid dreaming.

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case is that of "bodiless dreams", dreams involving an experience of a self as a "disembodied entity" (Cicogna and Bosinelli, 2001; LaBerge and DeGracia, 2000; Occhionero et al., 2005), or a "dot of consciousness" (Johnson, 2014). Similar descriptions are found in what is known as the experience of "the void" (Gillespie, 1986, 2002; Johnson, 2014) or "minimal perceptual environments" (Gillespie, 2002; LaBerge and DeGracia, 2000). According to some, the void is a state that follows the dissolution of a dream (Magallón, 1987). Subjective reports of this experience allude to a state of "nothingness", a state of just "awareness" (Alcaraz-Sánchez et al., 2022). This sort of experience is reminiscent of those described in the practice of "dream yoga" or "yoga Nidra" (Holecek, 2016; Norbu, 1983; Saraswati, 1984; Wallace, 2012). Yoga Nidra is a meditative practice with roots in Tibetan Buddhist traditions aimed at reaching a state of pure awareness during sleep (Chang, 1963; Evans-Wentz, 2000; Gillespie, 1986; Varela, 1997).

Following a process of natural grouping, I have identified a series of experiences that can be described as instances of minimal awareness, experiences that at first examination display a sort of content that appears as disrupted, diminished, or even lacking. Note that, given the scope of the paper, this is not an exhaustive survey—other experiences from those surveyed here could be incorporated. While my initial examination included a wider range of experiences, here I have only included those states that are substantially interconnected, given the phenomenological features I show in the next section. For the rest of the paper, I will treat these phenomena as pertaining to the same subgroup of experiences of minimal awareness.[6]

3 A multidimensional phenomenological framework of conscious experiences

My aim in this section is to introduce a descriptive multidimensional framework that considers how a constellation of overlapping features can be integrated to situate this initially fuzzy group of experiences of minimal awareness outlined above and how they can be set apart from other more common altered and non-altered states. Thus, I will spell out the phenomenological categories that emerge from examining subjective descriptions of those experiences found in the empirical literature. I will then investigate how these phenomena can be linked to other associated states like dreaming and ordinary states such as mind wandering. Moreover, I explore potential correlations among these phenomenological dimensions. Note that these dimensions are extracted considering current empirical research and

[6] The attentive reader might wonder whether such experiences belong to the same kind of experiences. Here, I remain neutral about it, and I only take a phenomenological approach to their study: I start by examining what overlapping phenomenological features appear across this group of phenomena. I will return to the question of whether such phenomena should be regarded as belonging to the same kind in §4.

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thus, different ones could be added as new findings emerge. Similarly, the scope of each category, that is, the range of degrees considered, is determined by the distinctive qualitative features of the experiences examined in this paper. Thus, the range of dimensions could be extended in the future to capture a broader spectrum of phenomenological differences.

3.1 Richness of the Content: From pure awareness to rich

One feature characterising this subset of experiences of minimal awareness is that they can be plausibly described as minimal forms of consciousness, and, in some cases, even as instances of "pure awareness", states that lack perception of distinct conscious content. However, a closer examination of the descriptions found in the literature reveals a larger variability in the sort of conscious content those experiences involve, which in most cases is not really missing. For instance, while descriptions of "bodiless" dreams or "void" experiences allude to an experience lacking imagery and distinguishable forms of perception, some reports include mentions of perceptual features, such as kinaesthetic sensations, like "floating" or "moving" in space (Alcaraz-Sanchez, 2021; Alcaraz-Sánchez et al., 2022), or the perception of "darkness" or a "void" (LaBerge and DeGracia, 2000). We can also find descriptions alluding to the perception of "abstract imagery", "geometrical forms" (Bogzaran, 1991, 2003), or the experience of snow-like percepts like the ones appearing when the TV signal is out (Hurd, 2008).

The same sort of variability can be observed across the other phenomena. In the case of sleep paralysis and OBEs, some involve the perception of simple visual patterns, cloud formations, or bright-coloured lights (McCreery and Claridge, 1996), while others might just involve pure kinaesthetic sensations (Cheyne, Rueffer, and Newby-Clark, 1999). In the case of REST, most experiences in the literature allude to brief and isolated hallucinations like lights, dots, and geometric patterns (Lloyd et al., 2012; Merabet et al., 2004; Wackermann et al., 2001; Zubek, 1964; Zubek et al., 1961), as well as more complex ones like auditory hallucinations, such as voices and sounds (Wackermann et al., 2001) or dream-like hallucinations (Heron, 1965; Heron et al., 1956; Hochberg et al., 1951; Zubek, 1964).

Finally, mystical states and certain deep meditative states are paradigmatically characterised as lacking an object of awareness, including thoughts, emotions, sensations, or any other sort of intentional content (Forman, 1986). They are described as an awareness of the qualitative aspects of awareness itself (Shear, 1983, 2004). However, some might also trigger simple hallucinations. For example, the so-called "meditation-induced light experiences" are reported by expert meditators involving the perception of dots, lights, and simple imagery during deep meditative states (Lindahl et al., 2014, 2017). Hypnotic states show a similar pattern. Some deep states of hypnosis lead to what appears as a contentless state, or a state of "nothing" (Cardeña, 2005), while others involve clear kinaesthetic or somatosensory content, or even, some simple imagery (ibid).

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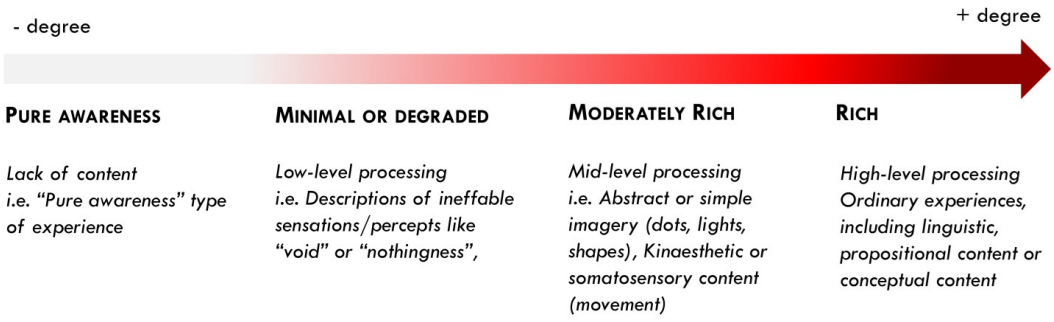

Figure 1: The dimension of *Richness of the Content*. At the lower end, we would situate states that appear to lack conscious content, states that are said to be about nothing or to be a state of pure awareness. Further up the spectrum, we would situate descriptions of different sorts of contents and levels of information processing, ranging from those that only include lower-level features to those with mid-level features. On the upper end, we would find ordinary conscious states involving higher-level features of the experience as well as those with more ordinary forms of content like linguistic, propositional, or conceptual. Note that this is a very simplistic illustration of how such states should be situated. As I discussed, the degree of richness of the content allows for further fine-grained distinctions, which can be affected by the type of representational content or the level of information processing taking place. Also, note again that the spectrum of experiences illustrated in the simplified diagrams only considers the subgroup of experiences examined here in relation to ordinary states. In the future, the diagrams and the scope of each dimension could be extended to include other experiences. I draw the right end of the diagram unbounded to leave open the possibility that there are experiences with even richer contents than ordinary ones, e.g., arguably psychedelic experiences or synaesthesia.

To better understand the varying complexities in the conscious content of those experiences, I propose the dimension of *Richness of the Content*, the degree to which the conscious content of an experience is more or less complex (see Figure 1). Importantly, the richness of the content of an experience is an objective matter: in particular, a conscious state could have rich contents even if the experiencer, when asked to assess how "rich" their experience was, reported experiential impoverishment. Nevertheless, it can prove helpful to further understand how the available conscious content might impact the subjective description of those experiences, as I will discuss in the following sections.

One way to classify these experiences along the richness of their conscious content is by considering the representational level of the available content. Some authors argue that what distinguishes different conscious states is the level of information processing (or range of accessible conscious content) and the level of

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complexity of the content (Bayne et al., 2016; Kouider et al., 2010). For instance, in certain states of awareness, we may only access lower-level features representing that state, such as its colour or shape. In contrast, other states may grant access to higher-level representations, such as meaning or concepts, and thus, be perceived as more vivid or detailed (Fazekas and Overgaard, 2016; Jonkisz et al., 2017). One tentative claim is that experiences of minimal awareness only involve access to low-level representations, and thus, appear to be experiences that are more degraded than ordinary ones. In the following subsections, I explore how the level of information processing might impact the perception of experiences as more minimal due to lacking higher-order features or ordinary experiences, such as a sense of bodily awareness (§3.2) and a sense of time (§3.3).

The dimension of *Richness of the Content* can also prove useful for situating those experiences in relation to other associated states as well as to other ordinary states. For instance, one of the features that set this subset of ASCs apart from more ubiquitous experiences is the type of representational format of the conscious content (i.e. propositional, imagistic, sensory…). These experiences tend to lack quasi-linguistic or propositional content. Instead, they involve a sort of content that might be more ineffable or difficult to describe, such as sensations or a perception of "void" or "nothingness". This type of representational format might explain why these experiences are deemed as degraded or involving a more minimal sort of awareness. On the contrary, more ordinary conscious states tend to involve more conceptually mediated forms of content and are often regarded as more complex than non-conceptual forms of content. I will return to this point later in §4 when considering how the type of format and the level of information processing might account for the differences across seemingly related states, like forms of mind wandering that seem to lack conscious content and ASCs described as minimal forms of awareness.

3.2 Bodily-Awareness: From selflessness to strong

Another common feature across this subset of ASCs is their disruption in bodily awareness, understood here as the experience of one's own body. This can occur in different ways. On the one hand, some of those experiences involve a distorted bodily self. For instance, some reports of deep meditative states allude to experiencing one's body as smaller or bigger, or some body parts as having a different size than usual (Maij and van Elk, 2018). We also find mentions of a transformation of one's body in OBEs where one feels like inhabiting a "sphere", "cloud" or "gaseous ball" (Rabeyron and Caussie, 2016), or feeling one's body melting (LaBerge, 1985). Similar descriptions alluding to a dreaming self as an "abstract entity" (Cicogna and Bosinelli, 2001), a "dot of consciousness" (Johnson, 2014), a "sphere", or a "speck of light" (Alcaraz-Sánchez et al., 2022) are found in bodiless dreams and void experiences. On the other hand, some descriptions are more explicit about how this sense of bodily awareness is totally lost. For instance, deep meditative states are

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characterised by a sense of "self-boundaries dissolution" (Nave et al., 2021)—the experience that one's sense of bodily-boundaries with the world has disappeared. Moreover, these experiences tend to be described as the dissolution of the "self", or what is also commonly referred to as "ego-dissolution" (Lebedev et al., 2015). These experiences involve such an apparent disappearance of the sense of self that they are sometimes regarded as "selfless" experiences.[7] Empirical studies have also found that sustained exposure to immersive Ganzfeld environments, such as "whole-body perceptual deprivation" chambers (REST) triggers a dissolution of bodily boundaries similar to deep meditative states. Reports of these phenomena describe the experience of oneself as "one" with the environment (Ben-Soussan et al., 2019). Similar mentions of this dissolution of the bodily self can also be found in deep hypnotic states alluding to a state of being "one with everything" (Cardeña, 2005) as well as mystical experiences described as involving a breakdown of the physical boundaries between self and other (Stace, 1886/1960).[8]

I propose the dimension of *Bodily-Awareness* to capture the variability across different experiences of minimal awareness, ranging from a disrupted sense of bodily-awareness involving the perception of a transformed or missing body to those experiences that might appear as "selfless" (see Figure 2). This dimension can be useful for situating a wider range of experiences, including more common states like dreaming. For instance, while dreams have been widely characterised as immersive experiences of a self in a dream world while asleep (Revonsuo, 1995; Windt, 2010), the sense of bodily-awareness experienced varies. Ordinary dreams are best characterised by what Windt calls a "weak phenomenal embodiment" (Windt, 2015b) if compared with ordinary experiences during wakefulness. Most dreams involve certain bodily sensations, including movement, but lack a detailed representation of the whole body (including body parts). In some cases, this weak sense of bodily-awareness might be instantiated in a very minimal sense, thus explaining the sort of more minimal sleep experiences I introduced, such as bodiless dreams and the void. Some anecdotal reports of these sorts of sleep experiences seem to point towards a minimal experience of bodily ownership despite an alleged lack of bodily-awareness (see Alcaraz-Sánchez et al., 2022 for a discussion), described as the feeling of being present in the dream.[9] Thus, some of those experiences would be situated further down the dimension of bodily-awareness, mak-

[7] However, note that even apparent "selfless" experience might not lack a sense of self altogether. For instance, some aspects of the sense of self may persist, which would explain why some features, such as a sense of minimal identification with the experience, are present (see Lindström et al., 2022; Millière, 2020 for a discussion). Consequently, there are important terminological differences as to what is meant by "selfless" experience, both in the literature, and in subjective reports.

[8] Experiences of ego-dissolution can also be drug-induced, for instance, through the use of certain psychedelics (see Millière, 2017 for a review of studies).

[9] Note that, according to some authors, a sense of bodily-ownership can occur without explicit mentions of the body or without being contained within certain bodily boundaries (De Vignemont, 2013; Gallagher, 2017). Similarly, others have distinguished between the experience

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Figure 2: The dimension of *Bodily-Awareness* and its instantiation in different conscious experiences. On the lower end, we find states of minimal awareness that lack a bodily sense to the extent they appear as "selfless" experiences. These experiences might be described as states in which the body has "dissolved" or "disappeared". A bit further along the spectrum, we find descriptions alluding to an abnormal bodily awareness involving a "distorted" body or body parts that are different in shape, form, or size to our ordinary body. Towards the upper end, we would situate different instances of ordinary dreaming involving weaker forms of bodily awareness, if compared to ordinary bodily awareness, which might involve awareness of body parts, or just be experienced as a feeling of location within the dream. On the upper end, we find some ordinary dreams involving a more robust feeling of one's dream body. Ordinary experiences might hoover somewhere in between a weak to strong sense of bodily awareness, depending on the circumstance.

ing them to be more paradigmatic cases of "selflessness" than ordinary forms of dreaming. For instance, in the case of void dreams, there seems to be a minimal experience of bodily ownership despite a lack of bodily-awareness.

3.3 Passage of Time: Matching, disrupted, and timelessness

Similar to the sense of bodily-awareness, the experiences surveyed here are characterised by a disruption in the subjective experience of the passage of time or time duration. For instance, there is an underestimation of the amount of time spent in Restricted Environmental Sensory Therapy States (REST) environments (Wackermann et al., 2001), meditating (Droit-Volet and Dambrun, 2019; Wittmann, 2015), or in a hypnotic session (Bowers, 1979; Naish, 2007).[10] Thus, there is a mismatch between the objective and subjective time duration of those experiences. In some

of the body as "experiencing" and the body as a "subject", spelling out the distinctions on how bodily awareness can be realised (Legrand, 2006).

[10] A recent case report found that, in some cases, there might be a slight overestimation of passage of time under hypnotic conditions, especially in highly hypnotisable individuals (see Noreika et al., 2012).

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cases, these disruptions in felt duration bring about a sense of "timelessness", a state that was said to lack any perception of time. Reports of timeless experiences are typical in long exposures to immersive Ganzfeld-like environments (Glicksohn et al., 2017) as well as deep meditative states (Ataria et al., 2015). Some other reports mention an experience that seemed to fall "outside time" (Droit-Volet and Dambrun, 2019). Mystical experiences are also characterised by a feeling that time has "stopped" (Marshall, 2005) or by lacking a sense of passing time (Stace, 1886/1960).

I suggest the dimension of *Passage of Time* to properly capture the diversity of the experience of the flow of time or lack thereof instantiated in these experiences (see Figure 3). This dimension allows us to better distinguish between two features of the subjective experience of the passage of time identified in the literature: the feeling of nowness, also known as the specious present (James, 1980; Varela, 1999) and the experience of duration, or flow of time (Wittmann, 2009; Wittmann and Schmidt, 2014). In most cases, these experiences might seem to lack "time" as in the case of "timeless" ones, yet they might still involve a sense of "nowness" or present. Phenomenological reports of REST states allude to the experience of "expanded time" and the perception of a more "refined time perception" (Glicksohn et al., 2017; Wittmann and Schmidt, 2014). One speculation is that in those cases, there is a lack of the perception of passage of time, yet there is a sense of "nowness" or specious present, which is then perceived as lasting longer or expanding.

Some authors have attributed subjective changes in the perception of the passage of time to disruptions in one's bodily awareness. For instance, some authors have appealed to the notion of "embodied time" to explain changes in time perception. According to those authors, there is a sense in which the perception of the passage of time is modulated by interoception and bodily signals (Droit-Volet, 2014; Droit-Volet and Gil, 2009; Wittmann, 2014). Such a notion of "embodied time" has been used to explain why some meditation practices aiding the attention to one's body lead to experiences of "expansion of time" (Wittmann and Schmidt, 2014). Similarly, this notion has been supported by preliminary research on induced OBEs showing a correlation between disruption of bodily-awareness and the subjective perception of the flow of time (Droit-Volet et al., 2020). These preliminary results favour the idea that bodily awareness is central to an accurate time perception. Other authors have also appealed to the lack of bodily awareness involved in some meditative practices to explain instances of timeless experiences (Winter et al., 2020). In those cases, a complete lack of bodily awareness is said to bring about the apparent lack of perception of the passage of time.

As for void experiences and bodiless dreams, current studies do not include first-person descriptions explicitly mentioning the experience of the passing of time or lack thereof during those. Yet, given that the sense of bodily-awareness in those states is highly disrupted, we would expect *Passage of Time* to be disrupted too (or even missing). Preliminary findings in dream research indicate that temporal passage varies across dreams in different sleep stages. Noreika and colleagues

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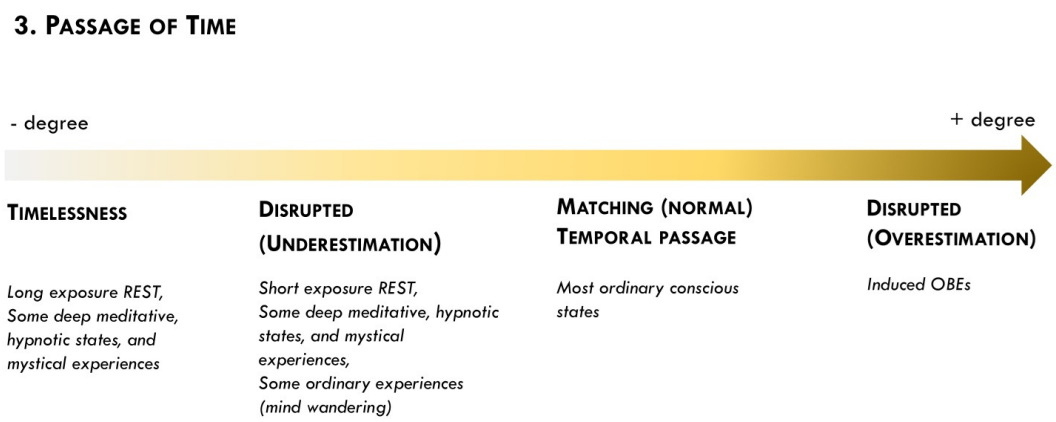

Figure 3: The dimension of *Passage of Time* and its instantiation in different conscious experiences. On the lower extreme (lower degree) we can situate phenomena such as REST, deep meditative states, and mystical experiences, which are commonly described as "timeless" or lacking any experience of time. I noted that some of those might indeed be accounted as cases lacking any perception of time altogether, while others might involve a mere feeling of "nowness" or present time, which in some cases, might even be perceived as extended. Other phenomena like short exposure REST, meditative, and hypnotic states have been described as involving an underestimation of the flow of time; the passage of time feels shorter than it is. On the other extreme of the spectrum (higher degree), we find examples of some induced OBEs that have been reported to involve an overestimation of the passage of time; the passage of time feels longer than actually is.

(2010) found that REM dreams (which tend to be more complex and elaborated) are subjectively regarded as lasting longer than NREM dreams (which usually involve fewer elements). Following on the suggested dimension of *Richness of the Content*, we would then expect those experiences involving restricted access to higher-level features to involve a disrupted perception of the passage of time, including the case of bodiless dreams and void experiences.

Finally, some ordinary experiences can also involve a sense of a disrupted passage of time, like in mind wandering. For instance, Terhune and colleagues (2014, 2017) found that participants reported an underestimation of the time interval it took for a stimulus to appear when they were distracted by their spontaneous thoughts. This decline in temporal discrimination was explained as the result of perceptual decoupling during mind wandering; our attention is away from our task and dissociated from perceptual input, giving place to attenuation of sensory processing that in turn leads to impaired temporal discrimination (see Terhune et al., 2017). Some authors have appealed to the role of perceptual decoupling to explain disruptions in the subjective experience of the flow of time. I will return to discuss this later point in the next subsection.

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3.4 Attentional Focus: From diffused attention to absorption

This subset of experiences of minimal awareness is characterised by a level of focused attention to the extent of obliviousness from everything else. In the literature, such a feature has been described as "absorption" or "flow". States of absorption involve a state of deep engrossment in a task or activity to the extent that one becomes oblivious to their surroundings (Csikszenthmihalyi, 1990). The paradigmatic example of *deep absorption* (Mohr, 2018) is found in meditation practices involving a shift in attention from the contents of one's mental state to the quality of the mental state itself, like that reached in *Mahamudra* or *Shamata* meditation (Dunne, 2015). These states of deep meditation are characterised by highly focused attention leading to a loss of self-consciousness (Csikszenthmihalyi and Nakamura, 2018; James, 1982). States of deep absorption involve a particular type of attention fixated on the qualitative features of conscious experience itself, resulting in the experience of pure awareness or consciousness-as-such also characteristic of mystical experiences (Bronkhorst, 2017; Forman, 1990). Some bodiless dreams and void experiences in sleep can also be deemed as states of deep absorption if they are described as experiences where there is only attention to the phenomenal character of consciousness itself (Alcaraz-Sanchez, 2021; Alcaraz-Sánchez et al., 2022). Finally, some REST states, such as prolonged exposure to a Ganzfeld environment (including those created in natural conditions), can also lead to a loss of self-consciousness (Suedfeld et al., 2018).

The term "absorption" is also employed in empirical research as a psychological construct to account for the *ability* to become absorbed (Tellegen and Atkinson, 1974). High levels of trait absorption have been associated with the occurrence of OBEs (Alvarado, 2000). Consequently, we would expect that individuals having OBEs would also experience a state of absorption, or a state of engrossment in a task or mental activity. Some studies suggest that individuals experiencing OBEs tend to lose awareness of their surroundings while engaged in highly focused activities (Alvarado et al., 1999). Absorption as a trait has also been linked to deep hypnotic states (Lynn et al., 2012), states involving just attention to the present moment (De Pisapia and Penazzi, 2022).

Other more ordinary experiences have also been associated with the *ability* to become absorbed, or the "tendency to become deeply engrossed in sensory or imaginative experiences" (Lifshitz et al., 2019) and the disposition to fully engage to "one's representational resources, including perception, imagination, and ideation (Tellegen and Atkinson, 1974, p. 268). One example is that of daydreaming, traditionally described as an episode of spontaneous sensory imagination (see Klinger, 1971).[11] Some instances of daydreaming appear to lead to a state of strong absorp-

[11] For the purposes of the paper, I adopt a standard definition of daydreaming. However, note that the term "daydreaming" has been highly conflated with that of "mind wandering" in the literature, and thus, it is unclear whether some authors refer to the same sort of states when describing "daydreaming". For a more careful discussion about the notion of daydreaming and a proposal for a unified account, see Lawson & Thompson (2024) in this special issue.

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tion. This is the case of the so-called phenomenon of "maladaptive daydreaming" (Somer, 2002) an extreme form of daydreaming to the point of dissociation from anything else (Soffer-Dudek, 2019). Individuals reporting this sort of daydreaming allude to a state involving a fixated sort of attention to their imaginings, like watching a movie inside their heads. This experience has been associated with higher scores on the absorption scale (Bigelsen et al., 2016) and increased fantasy proneness (Somer et al., 2016; Wilson and Barber, 1981), both of which are considered a trait of absorption. Although these forms of daydreaming can be characterised as states of absorption due to the strong fixation on the content of the imaginative act and perceptual decoupling, they seem to be subjectively different from the states of deep absorption mentioned earlier in that they do not seem to lead to a state of minimal awareness.

I propose the dimension of *Attentional Focus* (see Figure 4) to further understand the distinctive phenomenology of this subgroup of experiences in relation to other associated experiences and ordinary ones. One tentative claim is that some experiences of deep absorption involve such a degree of perceptual decoupling that we only have access to the low-level features of our experience, which in turn, bring us to experience them as states of minimal awareness. In those cases, there is such a level of perceptual decoupling that our attention is so focused on very few objects of awareness (i.e. the quality of our mind itself) that we are oblivious to any other features of our experience, including a sense of time or self. In those cases, these experiences would also score low in the *Richness of the Content* dimension. Support for this claim is found in some empirical studies that have correlated hypnotic depth, degree of absorption, and changes in global connectivity (Cardeña, 2005). Deeper hypnotic states lead to heightened absorption, involving an "inhibition or reduction in the peripheral range of one's experience" (Rainville and Price, 2003), which would explain why those states seem to lack any sort of conscious content. On the contrary, other experiences might still involve a state of strong absorption, but not to the same extent as experiences of deep absorption. Those experiences might then still involve access to higher-level representational features. Here, we would find some instances of daydreaming like that of maladaptive daydreaming. This might explain why daydreaming is sometimes more closely related to experiences of full or deep absorption, while other episodes are more akin to states of attentional attenuation or dispersion like mind wandering[12].

3.5 Self-Revelation: From insight to transcendence

Finally, I would like to draw attention to a distinctive aspect of this subgroup of ASCs, the fact that, in many cases, they instantiate a feeling of having gained some

[12] According to some, mind wandering involves a state of freely moving attention—we drift from one thought to another (Christoff et al., 2016; Irving, 2016). Thus, mind wandering should be regarded as a state of "dispersion" different from absorption, where one is completely engrossed with one idea (Irving, 2016).

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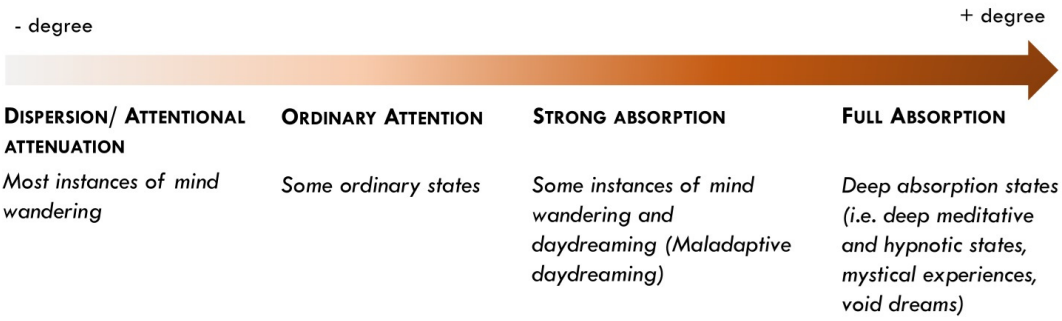

Figure 4: The dimension of *Attentional Focus* and its instantiation in different conscious experiences. On the high end of this dimension, we would find paradigmatic cases of states of deep absorption. Those states involve such a degree of sustained attention focused on a particular object that leads to a state of oblivion from anything else, ranging from attending to the contents of perception (i.e. what we see or feel), or the contents of our thoughts to attending merely to the quality of the mental state itself, as in cases of *Samadhi* and deep meditative absorption. Equally, we could situate here certain instances of daydreaming, like that of fantasy proneness or "maladaptive daydreaming". Ordinary states of consciousness can be situated in different regions of this dimension. For instance, on the lower end, we find most instances of mind wandering, a state generally described as one of "dispersion". Mind wandering involves a more dynamic state where there is a shift of attention to the contents of the experience. However, we also expect to find other ordinary states involving a more focused sort of attention to the contents of one's experience—lower than states of strong of full absorption, but higher than states of dispersion or attentional attenuation.

new knowledge about the world, ourselves, or our mind, such as discovering something essential about our conscious experience. In the literature, this sort of feeling is characteristic of the so-called "transcendental experiences", an umbrella term used to denote conscious experiences that are taken by some as going beyond any other conscious state, experiences that "transcend" ordinary consciousness (Travis, 2014). Transcendental states, in this sense, are linked to mystical or spiritual experiences, as they are said to be accompanied by a feeling of perceiving reality as "going beyond appearances" and the perception of their true nature (Yaden and Newberg, 2022). These feelings have also been associated with deep meditative states like *Samādhi* (Yamashiro, 2015), meaning "transcendence" (Wahbeh et al., 2018).[13] Different contemplative traditions regard the state of *Samādhi* as a state that does not involve a distinct object of awareness, including thoughts, emotions, or sensations, but only awareness itself (Shear, 1983, 2004). Similar mentions can

[13] Note that *Samādhi* is also understood as a state of tranquil or peaceful awareness, an absorptive and contentless state. For a review of how this term is used in different Indo-Tibetan traditions see Wahbeh et al. (2018).

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be found in other associated states like sleep paralysis and OBEs, which are sometimes regarded by their subjects as having "spiritual" features (Hufford, 2005). For instance, some individuals with recurrent isolated sleep paralysis (RISP) allude to a conviction that those experiences have been generated supernaturally (Terrillon and Marques-Bonham, 2001). Similarly, both OBEs and sleep paralysis are also sometimes taken to be the result of "psychic activity" (Rabeyron and Caussie, 2016) or "supernormal consciousness" (Crokall, 1964 in Alvarado, 2012). Under certain conditions, reports of Ganzfeld's experiences describe a state that leads to revelations about the world or the perception of unreal things or beings (Arzy et al., 2005; Brugger et al., 1999). Reports of hypnotic states also allude to a state of being "in a different reality" (Cardeña, 2005), as well as "having acquired greater insight or meaning" (Ludwig and Levine, 1965).

Despite descriptions alluding to a feeling of transcendence instantiated during these states of minimal awareness, it is not always clear in the literature whether those experiences were indeed accompanied by such feelings while one was having them. In some cases, in might be that those experiences were regarded as transcendental a posteriori due to the features those experiences had. Thus, we should distinguish between transcendence as a phenomenological feature and a subsequent metaphysical belief about the nature of a certain experience. For instance, seminal teachings from certain contemplative traditions deem states of "pure awareness" as those revealing the essence of the mind—that which makes a state conscious (Lama, 1997; Ponlop, 2006; Wangyal, 1998). Moreover, according to some authors, these are "higher states" of awareness that transcend ordinary experience (Maharishi, 1972; Travis, 1994; Travis and Pearson, 2000) and are considered to go over and beyond any other conscious state (Travis et al., 2005). Therefore, one possibility is that those experiences are "transcendental" because they appear to one as states lacking a conscious object; they are experienced as objectless states. As such, further examination of the *Richness of the Content* dimension should be conducted to investigate whether states that are low in this dimension are also regarded as transcendental or bring about a feeling of transcendence at the time of having them.

I propose the dimension of *Self-Revelation* to situate this subgroup of experiences of minimal awareness in relation to other more ordinary experiences (see Figure 5).[14] For instance, it seems that certain ordinary conscious states like mind wandering also involve, to some extent, a feeling of insight or revelation. In a study

[14] Of course, it might proof difficult to distinguish between transcendence as a phenomenological feature of an experience and as a retrospective judgment. Background beliefs about the constitution of those experiences can affect our subjective experience and thus, it might proof difficult to distinguish between transcendence as a phenomenal experience and as belief. Metzinger has regarded the impact of preestablished beliefs into the phenomenal character of an experience as the problem of "theory contamination" (2019). He highlights the strong relationship between the metaphysical assumptions certain practices aimed at inducing states of consciousness (like the ones reached during mystical states or deep meditation) rely upon, and the phenomenological descriptions provided by subjects following those practices. Thus, according to Metzinger, cer-

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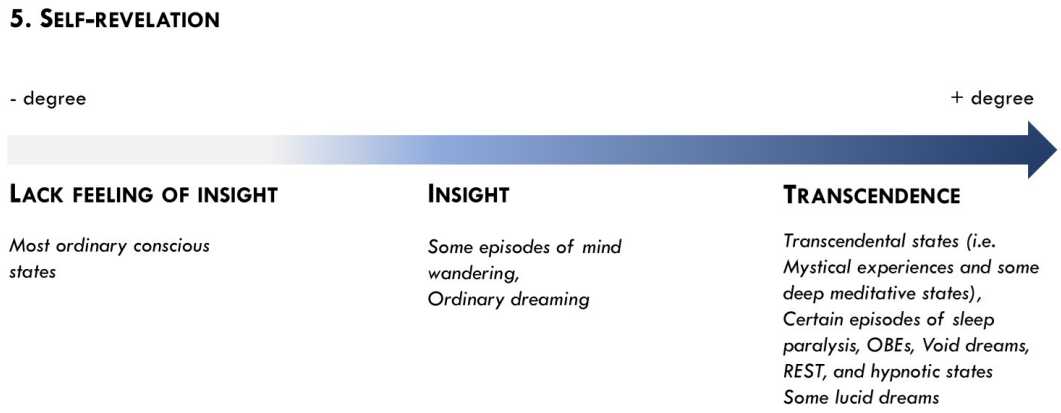

Figure 5: The dimension of *Self-Revelation* and its instantiation in different conscious experiences. On the upper end (right), we find "transcendent experiences" as those characterised by a strong feeling of having gained some new and distinctive knowledge about the mind, ourselves or the world. Further down on the left, we find more ordinary experiences characterised by a certain sense of "insight" or the feeling that those experiences are meaningful, such as certain episodes of mind wandering, but also, dream experiences. On the bottom end (left), we can situate those states that lack any feeling of insight.

by Morewedge and Norton (2014), they found that some episodes of mind wandering brought about feelings of "meaningful self-insight"—they are experienced as meaningful states. Similar feelings of insight are also attributed to dream experiences. In a different study, the same authors found that participants across different cultures regarded their dreams as important sources of information (Morewedge and Norton, 2009). In some cases, the specific plot of a dream was also reported to influence the participant's waking experience by shaping their affection towards others or the sort of decisions they took during the day. According to these authors, these feelings of self-insight are correlated with the perceived spontaneity of those states. The more participants deemed their dreams or episodes of mind wandering as spontaneous and undeliberated experiences, the more they were perceived as providing self-insight or a special meaning. Future research should explore further the extent to which this feature of spontaneity (the way an experience appears as self-generated) might bring about a feeling of transcendence in states of minimal awareness.

Lucid dreaming has also been regarded as a "transcendental state" (Walsh and Vaughan, 1992). For instance, some intense forms of lucid dreaming might prompt one to reflect on the nature of waking reality upon the realisation that one is having a self-generated experience (Metzinger, 2003, 2009). Other lucid dreams might bring about an experience of having been in contact with the "divine" (Bogzaran, 1991) or the "ultimate reality" (Esser, 2014). Recently, Stumbrys (2018) has also

tain belief systems impact the way we report about certain experiences; there's a way in which those beliefs shape the way we describe different aspects of our experience (2019, p. 5).

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highlighted the correlation between lucid dreaming expertise and higher scores in some dimensions of the Mysticism Scale (Hood, 1975), a psychometric scale used to assess the experience of mystical states (Stace, 1886/1960). Previous work from Stumbrys & Erlacher (2016) has found that some people follow lucid dreaming practices to have spiritual-like experiences. Thus, we could place lucid dreaming within this dimension of *Self-Revelation*, situating it closer to more paradigmatic cases of "transcendental experience". By doing so, we could investigate further how certain lucid dreaming experiences might be conductive to a state of "pure awareness" during sleep (Mota-Rolim et al., 2020; Stumbrys, 2018).[15]

4 Applying the multidimensional framework to the case of clear light sleep

Thus far, I have examined a subgroup of experiences of minimal awareness, experiences with conscious content that seem to be reduced or missing (i.e. deep meditative states, mystical experiences, hypnotic states, REST states, OBEs, bodiless dreams and void sleep experiences). I have spelled out the qualitative features that best capture those experiences and set them apart from other associated experiences and ordinary states. To that end, I have introduced a multidimensional framework that shows the distinctive placement of this subgroup of experiences across five phenomenological dimensions that emerged from the examination of subjective reports of this group of experiences in the literature and their comparison with other ordinary states. In this last section, I aim to show how such a framework can be used as a tool for mapping, comparing, and studying clear light sleep with more widely studied states. But first, I shall provide further details about this rare phenomenon.

Descriptions of clear light sleep can be found in traditional texts of the Advaita Vedānta, and some Indo-Tibetan Buddhist lineages such as Dzogchen (Bryant, 2009; Hariharānanda, 1989; Olivelle, 1998). In the translations of these texts, the experience has received different names, including "clear light sleep" (Padmasambhava and Gyatrul, 2008), "conscious dreamless sleep" (Olivelle, 1998) and "dreamless lucidity" (Rinpoche, 2002). Despite the varied terminology, these descriptions appear to converge on a common set of features. First, most authors describe clear light sleep as a *contentless* or *objectless* state, lacking the object-directedness of ordinary consciousness (Olivelle, 1998). Second, it is said to lack any sort of self-other distinction, or what is also regarded in the literature as a state of "non-dual awareness" (Dunne, 2011; Josipovic, 2019). Thus, there is no distinction between an experiencer "I" and other features of the experience, one is said to just be aware (Raveh, 2008). Given these features of lacking any sort of conscious content, clear light sleep has been regarded by many as a state of "pure awareness" (Wangyal,

[15] See §4 for a more detailed discussion on this point and how lucid dreaming has been linked to the so-called experience of "lucid dreamless sleep" (Windt et al., 2016).

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1998) or "bare awareness" (Ponlop, 2006), a state of consciousness-as-such. Moreover, within contemplative traditions, this state is often regarded as revealing the fundamental nature of our mind (Lama, 1997), a state of "luminosity" or "clarity" (Fremantle, 2001; Ponlop, 2006).[16]

Some contemporary authors have attempted to explain the nature of the state of clear light sleep by situating it within other sorts of sleep experiences. For instance, Windt et al. (2016) have introduced the construct of "dreamless sleep experiences" to delineate a class of sleep phenomena that differ from typical dreaming as it lacks the presence of a self-situated within a hallucinated dream-world. According to these authors, we can find different subtypes of dreamless sleep phenomena, including ones that lack clear linguistic and imagistic content, like clear light sleep. Moreover, certain instances of this phenomenon have been proposed as candidates for the minimal phenomenal experience, the simplest sort of conscious experience that one can have (Metzinger, 2020; Windt, 2015a).

Despite these efforts to explain the nature of clear light sleep, further conceptual and empirical work is needed. The heterogeneous descriptions and names found in the literature raise questions about whether a single phenomenon is being described or whether, instead, they refer to a wide range of phenomena (see Alcaraz-Sánchez et al., 2022 for a discussion). Additionally, given the scarcity of first-hand reports, there is a need to conduct more rigorous work spelling out the phenomenological blueprints of such a state. Preliminary findings suggest differences in what it is like to have an experience of "nothingness" during sleep, ranging from a very minimal sense of self-identification with an aspect of the experience to a bare feeling of being aware that does not involve a robust subject of the experience (see Alcaraz-Sanchez, 2021; Alcaraz-Sánchez et al., 2022 for some examples). Moreover, what constitutes a state of "pure awareness" remains a contentious topic of debate in philosophy. A wide body of literature has been devoted to spelling out what a state of bare consciousness is, questioning whether this should be completely absent of content or whether it could still involve certain intentional or representational content.[17] Similarly, different authors have also examined whether a true state of "pure awareness" not only is a metaphysical possibility, but an empirical one, and if so, whether it can be investigated through phenomenological reports (Gennaro, 2008; Griffiths, 1990). Thus, further research on the nature of clear light sleep requires a fully collaborative research programme across disciplines and integration of first-person reports with robust philosophical analysis.

[16] The state of "clear light" is conceived by Tibetan Traditions as a state that allows one to realise the "illusory" character of reality. According to the Tibetan Buddhist traditions, we usually live in ignorance about the real appearance of things during our ordinary conscious state, yet the clear light allows us to set free from that illusion (see Fremantle, 2001).

[17] For some work on this debate refer to Albahari (2009), Forman (1990), Josipovic & Miskovic (2020), Metzinger (2020), Shear (2004), Smith (2005).

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Here I provide suggestions on how my proposed framework can guide future scientific research on clear light sleep by examining the extent to which this phenomenon shares common features with the subset of altered states of consciousness (ASCs) I surveyed thus far, as well as with other more ordinary conscious states. Potentially, the proposed framework can be applied to contrast first-person reports of alleged instances of clear light with reports of other phenomena by identifying their individual values in each of the proposed framework's dimensions. Should the state of the clear light sleep prove to be a distinctive state of objectless sleep awareness, characterised by its unique phenomenology, we would anticipate discernible variations in aggregated scores across all proposed dimensions. On the contrary, if reports of other ASCs yield similar scores on the framework's phenomenological dimensions as those attributed to clear light sleep, we will conclude that these two reports refer to experiences that are phenomenologically the same. Further conceptual work should examine whether they point towards the same sort of state. I consider three sets of examples to illustrate how this future research could be conducted.

First, the framework can be used to distinguish genuine instances of clear light sleep from other forms of minimal awareness during sleep, like "bodiless dreams" and experiences of the void (Gillespie, 1991; Magallón, 1987). In the literature, these sorts of experiences have been posited by some as an instance of clear light sleep, achieved through the practices of sleep yoga and sustained awareness of the transition to sleep and dreaming, as well as after the dissolution of a dream (Evans-Wentz, 2000; Varela, 1997; Wangyal, 1998). One way to address empirically whether these sorts of minimal sleep experiences point towards a state of clear light sleep is by comparing the placement of both phenomena in the framework. For instance, some recently collected reports of these experiences allude to a state that lacks imagistic content, a robust sense of self, and apparent bodiless experience. Sometimes it has even been described as a state where there was just an awareness of the state itself (see Alcaraz-Sánchez et al., 2022), thus similar to the state of clear light. Yet, a more careful examination of those reports calls into question to what extent they should be regarded as instances of clear light sleep or as minimal forms of dreaming. According to some authors, a very minimal sense of spatiotemporal situatedness is necessary and sufficient for a sleep experience to be considered a dream (Windt, 2010, 2015a, 2015b). While a consensus on what should be considered as "dreaming" is still required, if we accept a simulation view of dreaming, we should consider further whether a minimal sense of embodiment, one involving a sense of "presence", would be enough for having a sense of spatiotemporal situatedness, and thus, to regard experiences of the void as a type of dreaming (see Alcaraz-Sanchez, 2021 for a discussion). To that aim, we could investigate how paradigmatic cases of clear light sleep are situated within the dimension of *Bodily-Awareness*. Given its purported lack of self-other distinction, one would anticipate this state to be entirely selfless. However, further conceptual work is essential to elucidate the

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phenomenology of such a state—whether it manifests solely as a sense of presence and how it distinguishes itself from other minimal forms of dreaming.

Second, the proposed framework can be employed to examine whether certain deep meditative states like *Samādhi* and clear light sleep are the very same state. According to *Mahamudra* and Dzogchen's teachings, clear light sleep is conceived as a self-luminous or self-illuminating state (Fremantle, 2001), a state where we are intrinsically aware of the qualitative aspect of consciousness.[18] Within this state, there is nothing to be aware of except the phenomenal character of the experience, like in *Samādhi*. Tibetan Buddhist authors refer to such a state as a recognition of the essence of consciousness—that very quality that makes a state conscious (Fremantle, 2001). Thus, there is a way in which experiencing clear light sleep leads to a state of "transcendence" since it brings about the feeling of having gained an essential truth, in this case, about the nature of consciousness. As such, experiences of clear light sleep are likely to also score high on the dimension *Self-Revelation*. Anecdotal reports hint at a state of awareness during sleep that solely involves the awareness of awareness itself, a state that is described as realising the nature of one's mind (Alcaraz-Sanchez, 2021, p. 180). However, as I pointed out before, we should distinguish between the metaphysical commitments of certain Tibetan Buddhist traditions regarding the nature of the mind and the phenomenological experience involved in this state. It prompts an examination of whether clear light sleep is genuinely experienced as a state surpassing any other form of consciousness or whether it is perceived as such due to specific beliefs about the nature of this state.

Additionally, both deep meditative states and clear light sleep are described as lacking awareness of one's environment or any other experiential features, involving a state of reflexive awareness and attention to the non-intentional features of the experience. Thus, we would expect those experiences to score high in the dimension of *Attentional Focus*. As I introduced earlier, high degrees of absorption are associated with states where the processing of information concerning the different aspects of ordinary experience is diminished or even absent (Berkovich-Ohana and Wittmann, 2017; Wittmann, 2015). This would explain why states involving awareness of awareness itself appear to the experiencer as objectless or contentless awareness. Therefore, both *Samādhi* and clear light sleep would score low on the dimensions of *Bodily-Awarenes*, *Passage of Time* and *Richness of the Content* dimensions. If reports of both *Samādhi* and clear light sleep were to receive identical scores across the proposed framework dimensions, we should conclude that both states are phenomenologically the same (see Figure 6). Alternatively, it could be that even though both states score similarly across all the dimensions in

[18] It should be noted that, for these traditions, the term "self-luminosity" is regarded as the self-reflexivity or self-awareness of consciousness, that aspect of consciousness that refers to itself (MacKenzie, 2007; Williams, 2000). In short, when talking about the luminosity or clarity of the clear light sleep, this tradition is talking about encountering the subjective or qualitative aspect of consciousness while in this state (Fasching, 2008; Fremantle, 2001; Ram-Prasad, 2007; Thompson, 2014) an aspect that is presented or given in the phenomenal character of the experience.

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Figure 6: Hypothetical comparison of different meditative states and clear light sleep. The graph depicts a hypothetical scenario comparing two different meditative states with a prototypical instance of clear light sleep. The Meditative State 1 (orange) would be a state reached through a "Focused Attention" practice, like mindfulness, involving an awareness of certain elements of the experience, like one's breath or bodily feelings. We would expect such a state to score very moderate-to-low in *Bodily-Awareness*. Similarly, because of the lower bodily awareness, such an experience might result in the perception of extended time (Wittmann and Schmidt, 2014). The Meditative State 2 (yellow) would be a state reached through a deeper sort of meditation aimed at attending to the qualitative features of consciousness itself, like in *Shamata* meditation, involving a much lower score of bodily-awareness that could perhaps lead to a state of apparent timelessness, experienced as stillness or presence. This second meditative state would be more akin to a prototypical case of clear light sleep (dotted green), which, according to descriptions found in contemplative traditions, is a state of non-dual awareness, like *Samādhi*.

the framework, individuals having them still describe them as qualitatively distinct. In that case, we should explore whether there might be additional phenomenological dimensions that are missing in the framework: dimensions that account for a relevant property of one of those states. As previously noted, the framework can be extended and modified in light of future research. Thus, further examining the reports of two experiences that score similarly in the framework yet are reported to be qualitatively different would be a good way to proceed.

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Finally, the proposed framework can be applied to gain a deeper understanding of the phenomenological similarities between clear light sleep and more ordinary states like mind blanking. Mind blanking, commonly associated with mind wandering, is a state characterised by the lack of conscious content, leaving one's mind seemingly "nowhere" (Kawagoe et al., 2019) or literally "blank" (Ward and Wegner, 2013). Despite its ubiquity, empirical research on mind blanking has only just started. Different researchers have proposed various explanations to account for this phenomenon.[19] Some have suggested that mind blanking involves a sort of content that is not remarkable enough to be remembered (Ward and Wegner, 2013), for instance, a sort of content that lacks linguistic-like thoughts or "inner speech" (Andrillon et al., 2019; Kawagoe et al., 2019; Ward and Wegner, 2013). Recent research suggests that states of mind blanking might lack content altogether, not just linguistic content. This hypothesis seems to be supported by experimental research showing the neural profile of mind blanking as not facilitating the "formulation of reportable content" (Mortaheb et al., 2022). If this latter hypothesis holds true, at least some episodes of mind-blanking could be considered genuine candidates for a state of true absorption or "full-absorption" (Metzinger, 2020). In such a state, attention may not even be directed towards low-level features of our experience, such as the quality of consciousness itself, which is said to be involved in the state of *Samādhi*. In a state of full-absorption there is a lack of attention to anything. One speculative claim is that mind-blanking episodes lack any representational content whatsoever, making them accessible only retrospectively, with reports provided after the experience has concluded.

Alternatively, it is plausible that some instances of mind blanking only lack the typical sort of linguistic and propositional content characterising many episodes of mind wandering (Smallwood and Schooler, 2015). Some recent research has pointed out that mind wandering can be instantiated in different representational formats, including quasi-visual and imagistic content (Stawarczyk et al., 2013), which is usually less investigated. As I noted earlier, it is a question for further empirical research whether different types of representational content in mind wandering lead to phenomenological differences across those experiences: whether there is an association between the type of representation and subjective richness of experience. It could be that some instances of mind wandering are more akin to some ASCs involving a sort of conscious experience regarded as more "minimal" or simple. For instance, it could be that some episodes of mind wandering involve a sort of sensory content that could also said to be ineffable, including sensations like "void" or "nothingness" characterising some states of minimal (see Boulakis et al. (2023) for a proposal on different types of mind blanking).

[19] It should be noted that classic explanations of mind blanking regarded it as unconscious states, states in which there is an interruption in conscious experience (James, 1980). Recently, some authors have criticised current research on mind blanking for not considering this possibility (see Fell, 2022 for a discussion). Since here I am only concerned by investigating conscious states, I set this possibility aside.

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Further research should be conducted to shed light on the question of the conscious content involved in the experience of mind blanking and the extent to which it differs from states of deep absorption like *Samādhi* and clear light sleep. In deep meditative states, such experiences tend to be described as involving some very minimal content about the qualitative character of the state itself, whereas, in mind blanking, they are said to lack content altogether. In this case, distinguishing between instances of clear light sleep resembling Samādhi, with instances more akin to mind blanking could be aided by the *Richness of the Content* dimension. In the former, the experience would be subjectively regarded as involving very minimal content about the state itself, while in the latter, it would be seen as lacking content altogether (see Figure 7). However, apart from the representational format and information processing, other cognitive abilities should also be considered. According to some, the state of clear light sleep might involve a certain sort of meta-awareness, one that does not require explicit note of the contents of one's mental state (Thompson, 2015). For instance, some authors take the state of the clear light to involve a similar sort of non-conceptual meta-awareness to that had during lucid dreaming: while in that state, one is aware in a non-conceptual manner of the nature of one's state (see Windt, 2015b).[20] Contemplative traditions also describe states of deep meditation as instances of "non-propositional meta-awareness," a sustained awareness of the non-intentional features of consciousness without propositional content (Dunne et al., 2019). A question for further research is whether the state of clear light sleep involves a form of absorption with non-conceptual and non-propositional meta-awareness or if, given that it is meant to be a contentless state, it also lacks any sort of awareness of awareness, and thus, meta-awareness. Future theoretical work should clarify whether a state of pure awareness, and thus, the state of clear light sleep, admits any form of meta-awareness, and if so, of which sort.

5 Conclusion

In this paper, I have introduced a novel multidimensional framework to guide research on altered and non-altered states of consciousness. I have shown how different experiences of minimal awareness, experiences in which the conscious content appears as disrupted, diminished, or even lacking could be situated within a multidimensional state space in relation to ordinary experiences by considering their distinctive values in a series of phenomenological dimensions, including *Richness of the Content, Bodily-Awareness, Passage of Time, Attentional Focus,* and

[20] Windt (2015b) has also proposed the possibility that two types of the clear light sleep exist, one involving this sort of non-conceptual awareness and another lacking epistemic access to the nature of one's own state. According to Windt we could then distinguish between instances of lucid dreamless sleep and non-lucid dreamless sleep respectively. Somewhere else I have raised the problems of making this distinction by appealing to the presence or absence of lucidity (Alcaraz-Sánchez, 2024).

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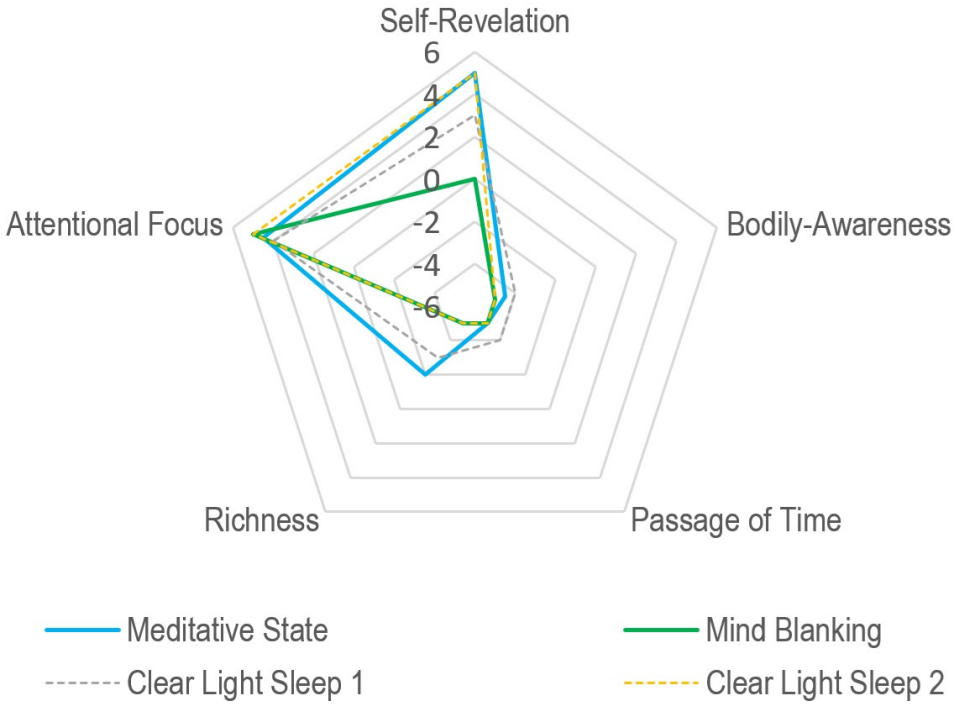

Figure 7: Different instances of clear light sleep compared to meditative absorption and mind blanking. The graph depicts a hypothetical comparison of two different instances of clear light (dotted grey and dotted yellow) with instances of a meditative state (blue) and an instance of mind blanking (green). While both meditative states and mind blanking are characterised as involving a high degree of *Attentional Focus* (i.e. they are states of deep absorption), we would expect the prototypical state of mind blanking to be an instance of deeper absorption since this is a state that is said to lack content altogether. However, even instances of deep meditative absorption are said to involve a sort of non-propositional meta-awareness as the sustained awareness of the phenomenal character of the experience (*Richness of the Content*). Those states of deep meditation could be said to be more similar to instances of the clear light also described as a self-luminous state; a state of pre-reflective awareness (see dotted grey). On the contrary, some other instances of the clear light might be more akin to a state of awareness that does not involve any sort of meta-awareness; a state of complete absorption that can only be accessed while entering or emerging from it (see dotted yellow).

Self-Revelation. This framework provides robust scientific terminology with the potential to propel the investigation of the nature of conscious states, particularly those that might seem elusive and intractable. I have shown the explanatory value of this framework by applying it to the live debate on the rare phenomenon of clear light sleep—a rare state recently targeted as a candidate for minimal conscious experience, or the simplest form of conscious experience one can have. The state of clear light sleep, although extensively studied in contemplative traditions, still requires further rigorous and systematic scientific investigation. My proposed

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framework holds the potential to empirically address the question of whether clear light sleep is identical to other associated states, like episodes of minimal awareness during sleeping, certain states of deep meditation, and mind blanking. I have offered pointers for future research and laid the groundwork for a research agenda aimed at making clear light sleep and other seemingly elusive phenomena tractable and subject to scientific enquiry.

Acknowledgements

I would like to thank Alistair Isaac and Fiona Macpherson for providing helpful and constructive feedback on the first versions of this paper. I'm also very grateful to Kyle Landrum for his additional support and advice for the revised version of the paper, as well as to Francesca Secco and Kael McCormack. This paper also benefited from further insights and comments from the audiences at the Postgraduate Seminar (University of Glasgow), the members of the Active Mind group (University of Edinburgh), the Good Attention group (University of Oslo), and my former colleagues at the Centre for Philosophical Psychology (University of Antwerp). My thanks as well to the two anonymous reviewers and Jennifer Windt for additional comments and suggestions for improvement.

Funding

This work was supported by the Scottish Graduate School for Arts and Humanities Doctoral Training Partnership (Grant AH/R012717/1) and a Postdoctoral Fellowship from the Institute for Advanced Studies in Humanities (IASH) at the University of Edinburgh.

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