

Nothingness is all there is: an exploration of objectless awareness during sleep

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Abstract

Recent years have seen a heightened focus on the study of minimal forms of awareness during sleep to advance the study of consciousness and understand what makes a state conscious. This focus draws on an increased interest in anecdotal descriptions made by classic Indian philosophical traditions about unusual forms of awareness during sleep. For instance, in the so-called state of witnessing-sleep or luminosity sleep, one is said to reach a state that goes beyond ordinary dreaming and abide in a state of just awareness, a state in which one is not aware of anything else other than one's own awareness. Moreover, for these traditions, this state is taken to be the essence or background of consciousness. Reports on such a state opens the door to exciting new lines of research in the study of consciousness, such as inquiry into the so-called "objectless" awareness during sleep—states of awareness that lack an ordinary object of awareness. In this two-staged research project, we attempted to find the phenomenological blueprints of such forms of awareness during sleep in 18 participants by conducting phenomenological interviews, informed by a novel tool in qualitative research, the micro-phenomenological interview (MPI) method. Following a phenomenological analysis, we isolated a

30 similar phase across 12 reported experiences labelled as ‘nothingness phase’ since it described what
31 participants took to be an experience of ‘nothingness’. his common phase was characterised by minimal
32 sense of self—a bodiless self, yet experienced as being ‘somewhere’—, the presence of non-modal
33 sensations, relatively pleasant emotions, an absence of visual experience, wide and unfocused attention,
34 and an awareness of the state as it unfolded.

35 1. Introduction

36 The investigation of the variety of conscious experiences during sleep has recently received growing
37 attention for the study of the nature of consciousness. In particular, recent years have seen an increased
38 interest in the investigation of minimal forms of consciousness during sleep reported in contemplative
39 traditions (see Thompson 2014, 2015; Windt 2020; Windt et al. 2016). Such forms of consciousness
40 have been widely reported for centuries in different Indian philosophical traditions, such as the Advaita
41 Vedānta and some lineages in Indo-Tibetan Buddhism. For instance, in the Vedas, we find mentions
42 to the state of ‘*sushupti*’, known as ‘witnessing-sleep’, taken by the Advaita Vedānta and Yoga schools
43 as a special state of consciousness, distinct from waking and dreaming.¹ During *sushupti*, we are said
44 to lack the sort of object-directed awareness experienced during ordinary wakefulness or dreaming; the
45 state of *sushupti* is said to lack any sort of cognition or perception (see Olivelle 1998). Thus, the state
46 of *sushupti* can only be known or accessed when one is entering or emerging from it. Nevertheless,
47 these schools take *sushupti* as a state of phenomenal consciousness—a state in which there is something
48 it is like to be in it, an experiential state (see Nikhilananda 1949; Thompson 2014; 2015). Some authors
49 understand such a state as a state of non-dual awareness—a state of awareness that does not involve
50 the distinction between the experiencer, an ‘I’, and an object of awareness, a state of self-luminous
51 awareness (Prasad 2000; Sharma 2001). Moreover, these schools take *sushupti* to be an instance of
52 ‘pure awareness’, a state of consciousness-as-such (see Metzinger 2019 for a discussion).

53 Similarly, in the Dzogchen tradition in Indo-Tibetan Buddhism, we find mentions to what is regarded
54 as the state of ‘clear light’ or ‘luminosity’, a state that can be reached during dreamless sleep through
55 highly skilled meditative practices, such as Yoga Nidra or luminosity yoga (Norbu 1983; Wangyal

¹ The state of ‘*sushupti*’ is mentioned in the Mandukya Upanishad and the *Yoga Sūtras of Patañjali*. For a more detailed account of *sushupti* in these texts, see the translations and commentaries by Nikhilānanda (1949), Gambhirananda (1937), and Olivelle (1998) (for the Mandukya), and Āraṇya (1983), Arya (1989) and Bryant (2009) (for the Yoga Sūtras)

56 1998). In such a state, we are said to encounter the nature or essence of the mind, to realise the true
57 nature of consciousness (cf. Ponlop 2006). Accounts of such a state of objectless awareness during
58 sleep have brought up the notion of ‘lucid dreamless sleep’, a state of meta-awareness during sleep in
59 absence of dream content (see Thompson 2014, 2015; Windt, 2015; Windt et al., 2016). Anecdotal
60 reports of this state of minimal consciousness during sleep open the door to exciting lines of research
61 in consciousness studies. For instance, Windt (2015) has proposed that some forms of objectless
62 awareness during sleep could be an instance of the minimal phenomenal experience—the simplest
63 form of consciousness one can have. Metzinger (2020) has followed on this and investigated further
64 the common denominator between different forms of experience that could be said to be minimally
65 conscious, including those had during meditation, to find the phenomenological structure of
66 consciousness-as-such.

67 Notwithstanding the descriptions of objectless conscious sleep found in contemplative traditions, the
68 phenomenological blueprints of such an experience are still unclear. First, most descriptions usually
69 rely on anecdotal reports and are rarely based on first-hand experiences. Second, these descriptions
70 tend to be provided by individuals embedded in a specific belief system (see Alexander 1990; Mason
71 et al. 1990, 1997; Mason & Orme-Johnson 2010; Travis 1994; Travis & Pearson 2000). Third, due to
72 its nature, an experience that is said to be ‘objectless’ and lacks a subject-object distinction is extremely
73 difficult to report and to characterise, and thus, presents great challenges for how it could be studied
74 empirically (Alcaraz-Sanchez 2021). Similarly, there is the question as to whether such reports are
75 indeed an instance of ‘objectless’ awareness or do indeed involve some sort of object-directed
76 awareness.

77 Despite the described challenges, theoretical accounts establishing what may count as an instance of
78 objectless awareness require a phenomenological clarification of such experiences. If one was to
79 experience an awareness lacking a distinct object of awareness during sleep, what would it look like?
80 Recent empirical and conceptual work has tried to shed light on this question by investigating reports
81 of objectless awareness in expert meditators (cf. Gamma & Metzinger 2021), or by focusing on reports
82 of this phenomenon had during sleep (cf. Alcaraz-Sanchez, 2021). The present research project aimed
83 at furthering the investigation of this phenomenon by exploring in more detail the phenomenology of
84 possible instances of ‘objectless’ awareness during sleep. The project involved two phases. The first
85 phase consisted of the distribution of an online survey that asked participants about different forms of
86 sleep phenomena they might have experienced within the last month, including forms of awareness

87 that could be taken to be ‘objectless’ or ‘contentless’ (lacking a clear content of awareness)(Alcaraz-
88 Sanchez, *under preparation*). The second phase, focus of the present paper, involved
89 phenomenological interviews with participants shortlisted from the survey.

90 **2. Methods**

91 **2.1. Research questions**

92 The study aimed at shedding light on different instantiations of objectless awareness during sleep,
93 defined here as an awareness that lacks a distinct object of awareness, by investigating systematically
94 the phenomenology of these experiences. The goal was to explore what is taken by individuals as an
95 experience that lacks a distinct object or content of awareness had during sleep, regardless of whether
96 such experience should properly be accounted as ‘objectless’, or whether this is the sort of state alluded
97 to by Indian philosophical traditions as ‘witnessing-sleep’ or ‘clear light sleep’. Moreover, our study
98 left aside any considerations as to whether such an experience is the most minimal possible form of
99 experience, or if it should be taken to be the essence of consciousness. As such, some of the research
100 questions poised to be answered were: which sort of sleep experience do people take to be ‘objectless’?
101 What are the potential markers, similarities, and descriptions of these candidate ‘objectless’
102 experiences?

103 **2.2. Participants**

104 The participants for this second phase of the research were selected from the ‘*Objectless sleep*
105 *experiences online survey*’ (Alcaraz-Sánchez, *under preparation*), which asked participants to answer
106 a series of open-ended and multiple-choice questions exploring their sleep experiences, including sleep
107 onset awareness, dream awareness, and sleep awareness lacking any other mentation. From those
108 participants wishing to participate in the second stage of the research, we shortlisted those mentioning
109 what they took to be an instance of objectless awareness during sleep had within the last month and
110 well-remembered. To that aim, we considered as entry points for exploring potential instances of
111 objectless awareness during sleep the following:²

- 112
- An awareness following the dream environment disappearing or dissolving

² A detailed account of the answers given to the survey for each question and the rationale on which of those questions alluded to the targeted experience will be provided in a separate paper (Alcaraz-Sanchez, *under preparation*).

- 113 • An awareness had whilst sleeping in absence of any other perception or cognition
- 114 • An awareness of the process of falling asleep or waking up without another object of
115 awareness
- 116 • A feeling of knowing that one was conscious while sleeping upon awakening without
117 relating it to a dream experience

118 We shortlisted a total of 38 participants who meet the selection criteria (from 573 answering the
119 survey), and of those, we selected 18 who were interviewed in a total of 21 interview sessions (total
120 34.19h, $\mu=1.62h$, $SD= 0.81h$). From the reports provided, we selected those describing experiences
121 that matched or approximated the definition of the targeted state of objectless awareness as indicated
122 above. Here, we will refer to ‘participants’ as the individuals whose experiences were selected for this
123 paper ($n=12$, $\mu= 36.5$, 7 male, 5 female).³ A follow-up paper will cover the remaining reports and the
124 experiences that were not included in the present analysis.

125 All participants signed an informed consent form to partake in the interview, and the study was
126 approved by the Ethics Committee of the College of Arts at the University of Glasgow.

127 **2.3. Interview procedure and protocol**

128 The interviews were carried out by the first author (AAS) and the second author (ED) in 1:1 sessions
129 via Zoom and lasted an average of 1.5h. We adopted an interview protocol inspired by the micro-
130 phenomenological interview (MPI) technique by Petitmengin (1999, 2006) to gather fine-grained
131 subjective reports. The MPI technique guides the interviewee through the recollection process and
132 helps them to focus on their subjective feelings—how they felt in a particular moment—moving them
133 away from preconceptions and judgments about their experience.⁴ Moreover, this method aids the
134 interviewee to uncover unnoticed aspects of their experience, which otherwise would have been
135 difficult to assess (for a full account of the an MPI protocol see Petitmengin 2006; Petitmengin et al.
136 2018). In the interview sessions, we began exploring the entirety of the reported episode, and then
137 zooming in to those phases that were of most interest for our research question, focusing both on how
138 the experience unfolded to a state taken to be ‘objectless’ and the specific experiential structures

³ A full description of demographics and answers provided in the survey by those participants can be found in **Supplement Materials**.

⁴ This subjective aspect of the experience is also called the ‘subjective character of the experience’, or the ‘what-it-is-likeness’ of the experience in philosophy (Nagel 1974).

139 involved (see **Supplement Materials** for examples of some interview questions and short excerpts
140 from the interviews).

141 The interview sessions consisted of two parts. First, participants were asked to perform a short mental
142 task consisting of mentally spelling a given word and were afterwards interviewed about this
143 experience of spelling. Second, they were interviewed about a recent experience of what they took to
144 be objectless awareness during sleep. For both reports provided (about the experience of spelling the
145 word and about their sleep experience), participants were asked afterwards to rate the degree of
146 completeness and accuracy of their reporting, the vividness of the recalled experience while they were
147 being interviewed, as well as the extent to which they felt they might have invented or fabricated some
148 elements of the description, and the ease (or difficulty) of articulating the experience within the
149 interview.

150 **2.4. Qualitative analysis**

151 We undertook a phenomenological analysis of the interviews verbatim using a combination of tools by
152 the MPI method (Petitmengin et al. 2018; Valenzuela-moguillansky and Vásquez-rosati 2019),
153 grounded theory (Charmaz 2006; Thornberg and Charmaz 2014), and thematic analysis (Braun and
154 Clarke 2021). The analysis procedure consisted of the following steps:

155 1. **Initial examination and data preparation:** AAS and ED undertook an initial examination
156 of the interviews and identified patterns, structures and research questions that emerged
157 from them. AAS selected those sections of the verbatim relevant for the analysis;
158 comments, judgements or evaluations made by the participants were removed, following
159 the micro-phenomenological analysis approach (cf. Petitmengin 2006; Petitmengin et al.
160 2018).

161 2. **Thematic and categorical analysis:**
162 AAS and ED started by identifying patterns in each of the interviews that described how
163 the experience reported unfolded over time (diachronic structure; see Petitmengin 2006;
164 Petitmengin et al. 2018). These patterns were compared across the reports selected in
165 several reiterations to identify similar diachronic structures as well as for isolating an
166 experiential episode resemblant to our targeted experience of objectless awareness during
167 sleep. From this commonly isolated phase, AAS and ED identified different dimensions

168 that emerged from the descriptions by considering the distinctive aspects of the phase
169 described (synchronic structure). These dimensions were converted into categories through
170 a process of thematic analysis by grouping those dimensions that could be classified under
171 the same theme (see Valenzuela-Moguillansky and Vázquez-Rosati 2019 and Charmaz
172 2006). Thus, each theme clustered similar descriptions by assigning a 'label' that could give
173 meaning to those descriptions and aimed at leaving outside any previous preconceptions or
174 theoretical accounts that the researchers might have had—the 'labels' are intended to work
175 as placeholders to group together a set of descriptions.

176 The resulting categories were classified into three levels: first (higher-level categories),
177 second (sub-categories), and third (sub-sub-categories). Given their level of abstraction, the
178 first level and second-level categories only considered those dimensions that were common
179 for most participants, while the third-level categories specified categories that might have
180 been present for only one participant. Thus, the most abstract categories are not meant to
181 comprise an exhaustive categorization.

- 182
- 183 3. **External analysis:** Two external researchers (TCF and SGTP) carried out another round of
184 coding of the phenomenal descriptions by assigning a pre-established code (consisting of a
185 category and sub-category). The external researchers were provided a list and full
186 descriptions of the categories and sub-categories isolated in the thematic analysis (see
187 **Supplement Material**). This process was assessed through an intercoder agreement score
188 (detailed in §2.5).
 - 189 4. **Final analysis and redefinition of categories:** AAS revised the external coding, examined
190 those categories that lead to higher disagreement amongst coders and redefined or
191 eliminated categories if necessary.

192 2.5. Quantitative analysis

193 We conducted two explorative quantitative analyses to inform the adequacy of the interview protocol
194 and the phenomenological analysis. For the first, during the interview sessions, we asked participants
195 to provide a self-rating of the degree of vividness, completeness, articulation, and accuracy of the
196 recollection of the experience ('0' meaning very low and '10' very high), as well as the extent to which
197 they felt they might have invented or fabricated some of the elements of the description ('0' meaning
198 none and '10' meaning all). They self-rated both, the recollection of the experience of spelling and the
199 potential experience of objectless sleep, explored respectively in the first and second part of the

200 interview session. We calculated the means for the scores provided for each dimension and each
201 condition (see [§3.2.1](#)).

202 For the second explorative analysis, we run Fleiss' Kappa to determine the degree of agreement
203 between the three coders (the two external researchers, and the main author) on their classification of
204 the different categories isolated in the thematic analysis. We also run Fleiss' Kappa for each
205 combination of categories and subcategories to explore which categories had a higher intercoder
206 agreement across coders for the phase of interest in the analysis (see [§3.2.2](#)).

207 The exploration of the self-ratings and the intercoder agreement was done using the open-access R
208 studio for statistical computing (R Core Team 2021).

209 **3. Results**

210 **3.1. Phenomenological analysis**

211 **3.1.1. Diachronic structure**

212 From the first step of the thematic and categorical analysis, we identified a common experiential phase
213 across participants labelled as 'nothingness phase' and identified three different 'diachronic structures'
214 (see [Figure 1](#)) across the reports.

215 **3.1.1.1 Diachronic structure 1: State of void following dream dissolution**

216 For participants matching this structure (P1, P2, P15, P18), the targeted episode preceded a lucid dream
217 where they felt very immersed in, with a sense of being able to control the unfolding events. The lucid
218 dream description was merely used during the interview to aid the recollection process and was not
219 fully explored. This first structure was characterised by the dream scenery dissolving and completely
220 disappearing. For three of the participants, the dissolution was triggered by something they actively
221 did in the dream, such as adopting a meditation posture (P2), jumping in the air (P15), or shouting to
222 another dream character (P18). Except for P2, who actively sought to dissolve the dream, the other two
223 did not consciously intend this to happen. P1 described how the dissolution was also unintended, in
224 this case, following an explosion in their dream.

225 The 'nothingness phase' following the dream's dissolution unfolded differently for each participant
226 (see [Figure 2](#)). P1, P15 and P18 reported moving to a phase in which, whilst remaining aware, they
227 said to lack any bodily sensations or imagery. For P2, the dissolution unfolded to an episode where

228 they said to have lost a sense of being ‘themselves’ in the experience, yet they identified themselves
 229 with a ‘light’. After the ‘nothingness phase’, both P1 and P18 mentioned moving to a different non-
 230 lucid dream. P1 described how a “blue light” came and “shake(d) them up” and, suddenly, they were
 231 transported to a new dream scenery. P18 actively sought to “recover” their dream scenery by looking
 232 for an element that was present in their previous lucid dream. P2 and P15 said not to remember what
 233 came after.

234 **3.1.1.2 Diachronic structure 2: State of nothingness following sleep onset awareness**

235 For five participants (P7, P8, P9, P16, P17), the ‘nothingness phase’ did not follow a dream’s
 236 disappearance, but instead occurred after a period of awareness during the process of falling asleep.
 237 For P16 there was a distinctive bodily feeling while falling asleep, as well as some brief non-lucid
 238 dream imagery which resulted in a state where they felt as being “bathing in light”. For the other four,
 239 there was a realisation of thoughts stopping (P7), the lack of bodily feelings (P9, P17), or the lack of
 240 any feelings at all (P8), after engaging in some form of relaxation technique while falling asleep. What
 241 followed was a phase characterised as the “void” (P8, P9, P17), “nothingness” (P7, P9), or “only light”
 242 (P16). This ‘nothingness phase’ terminated in a more heterogeneous manner than diachronic structure
 243 1 (see [Figure 3](#)). Both P7 and P8 said to become aware again of their thoughts, whilst P7 transitioned
 244 to a state in which they felt their body distorted accompanied with a feeling of being in bed. P8 reported
 245 that during this episode of being in the “void”, they realised to be having the sort of experience they
 246 wanted to discuss in their upcoming interview, and slowly recovered their bodily sensations, including
 247 a feeling of being in bed. Both P9 and P16 transitioned to a different phase, in which they chose to
 248 actively visualise imagery. P9 took the opportunity to execute what they regarded as “experiments” to
 249 see whether they could send “their energy” to a relative of theirs by imagining this energy travelling
 250 from the location of their sleeping body to a relative’s home. P16 visualised a series of colours and
 251 geometric forms hovering above their head, followed by an increasing awareness of their bodily
 252 sensations. P17, who reported experiencing the “void” frequently, described not being able to
 253 remember what happened after the “void” phase this time, but mentioned other instances during which
 254 they took advantage of this experience to initiate a lucid dream under their will in the past.

255 **3.1.1.3 Diachronic structure 3: Sudden awareness of the state of nothingness, no previous** 256 **memory**

257 For the remaining three participants (P3, P12, P13), there was not a recall of what preceded the
 258 ‘nothingness phase’. Instead, they said to have just “bec[o]me aware” of “nothing” while sleeping. In
 259 the case of P3, they remembered undertaking a relaxation technique while falling asleep, paying

260 attention to their bodily feelings, but were not able to recall what happened afterwards. All they
261 remembered was that, suddenly, there was a “tapping” which was not felt as a bodily sensation, but it
262 “felt like the tapping itself felt itself”, an experience they said lacked an “explicit sense of self”. P12
263 said that other nights they have been aware of transitioning from what they called the “black spot” to
264 this ‘nothingness phase’. However, in the case of the particular reported experience, they said to have
265 just become aware of a “dark spot” taking over the experience, without recollection of what came
266 before. Then, they transitioned into a non-lucid dream. P13 described the ‘nothingness phase’ as a
267 “very intense state”, where sound was all that there was, after which they became aware of their breath
268 and were able to engage in a meditative practice.

269 **3.1.2. Synchronic categories**

270 This section introduces the different experiential dimensions isolated only for the phase of the report
271 labelled as the ‘nothingness phase’ (see **Supplement materials** for a full list of dimensions across the
272 selected reports).

273 **3.1.2.1 Sense of self**

274 One of the most salient features of the common ‘nothingness phase’ across the 12 participants were
275 the numerous descriptions alluding to how participants felt ‘themselves’ within the experience or how
276 they took the experience to be their own. Since varied aspects of the experience of sense of self were
277 described, we isolated four sub-categories: ‘**1A-Bodily ownership**’, ‘**1B-Spatial self-location**’, ‘**1C-**
278 **Perspective**’, and ‘**1D-Agency.**’ Each sub-category was, in turn, broken down into third-level
279 categories (see [Table 1](#)). Whilst these categories aim to describe the distinctive features of each
280 description, they are not mutually exclusive, and one single description can pertain to more than one
281 second and third-level category.

282 The first one, ‘**1A-Bodily ownership**’, grouped mentions that alluded to the sense of having or owning
283 a body, or the lack thereof. This sub-category included descriptions without clear mentions of a body
284 or body parts, but also those that involved the awareness of owning a body without explicit bodily
285 sensations. For instance, three participants described what we labelled as ‘*Weak embodiment*’, a sense
286 of feeling embodied in their experience without strong bodily feelings (P13, P15, P18). P16 described
287 a ‘*Distorted*’ bodily awareness, such as feeling their body as a cloud of energy. Moreover, this sub-
288 category also included descriptions that lacked even this minimal sense of bodily ownership yet
289 involved some sort of self-identification with an aspect of the experience. In these cases, while

290 participants did not feel contained within some sort of bodily boundaries, or perceived their own body,
291 there was a sense in which they felt their experience as their own, either while the experience was
292 unfolding or afterwards. We classified these descriptions under the third-order category '*Minimal*
293 *identification*'. Four participants described a sensation of bodiless awareness, involving feeling that
294 they lacked a body (P7, P9, P17), including a "sensation of nothingness" (P1). Other three participants
295 self-identified themselves as "a sphere of light" (P2), a "speck of light" (P12), or "the void" (P8).
296 Finally, P3 reported lacking a "sense of ego" during the experience—they described lacking any sense
297 of themselves being within it. Nevertheless, they reported an awareness of a 'tapping' or 'pulsing' that
298 occurred in this phase, and it was just afterwards, during the report, that they assigned took this to be
299 their own experience (See [Table 2](#) for illustrative examples).

300 The second sub-category '**1B-Spatial self-location**,' referred to the sense of being somewhere within
301 the experience, or to how one feels one's location in the environment—the feeling of being located
302 'somewhere'. In many cases (5/12), participants described having a feeling of being "in the
303 nothingness" or being somewhere within the nothingness, yet with an '*Indeterminate*' location (P1, P9,
304 P12, P15, P18). We isolated the category '*Physical*' for those descriptions involving a sense of
305 spatiotemporal location similar to that experienced during wakefulness. For instance, P7 described the
306 experience of being in a room, which they took to be part of their dream experience and felt the distance
307 between them and the walls. We also distinguished between '*Minimal*' spatial location and '*No clear*
308 *boundaries*'. The former was constituted by descriptions involving merely the feeling of "being there"
309 without references to a spatial location, including a location somewhere in the nothingness (P8, P13,
310 P17). The latter classified descriptions mentioning a self who has become part of the whole experience
311 (P8, P12, P16). Finally, two participants reported lacking any sense of being located within the
312 experience whatsoever (P2, P3) (see [Table 3](#) for illustrative examples of each sub-category).

313 The third sub-category, '**1C-Perspective**,' intended to characterise the subjective point of view had
314 during the experience, or the egocentric point of origin of the experience. Some of the descriptions
315 included in the sub-category '**1B-Self-location**' were also included here since those also mentioned the
316 egocentric perspective of their experience. Two participants described a first-person perspective
317 similar to that had during wakefulness, such as an 'I' observing or perceiving the experience (P12,
318 P18), classified as '*Regular*'. Another two also had a similar sense of first-person perspective, yet their
319 descriptions alluded to a '*Fluctuating*' point of view; they could 'see' themselves from the outside
320 (P18), or they could see in multiple directions (P2). However, the most prominent third-level category

321 was that involving a ‘*Minimal*’ sense of subjective perspective— a way in which the experience felt
322 like happening from their point of view without this point or position being explicit. Two participants
323 described it as being “inside” the experience, or as being “part of” the experience (P16, P17). The other
324 two described a non-ordinary visual experience, in which they could rather feel (instead of seeing) the
325 presence of shapes or movements (P7, P15), or as seeing blank (P8) (see [Table 4](#) for examples). Finally,
326 as in ‘1B-Spatial self-location’, the experience of P3 did not involve any sense of subjective viewpoint
327 and they did not recognise themselves as being part of it while the experience was taking place.

328 The final sub-category, ‘**1D-Agency and attitude**’, grouped descriptions referring to a sense of agency,
329 the sense that one is the agent who generates or initiates action. We also included descriptions that
330 were not so explicit about feeling oneself as being in control of the actions taking place in the
331 experience, but merely as the subjective experience of having an intention We isolated three different
332 ways in which the sense of agency was instantiated. The first is an ‘*Active*’ sense of self involving an
333 agent taking control by either trying to keep their lucidity or awareness of their experience (P1, P18),
334 by actively engaging in exploring further their experience, or by manipulating their attention under
335 their will (P7, P13). The second was a ‘*Receptive*’ agency involving some degree of lost control and
336 an agent accepting this fact (P1, P7, P15). Other participants said to have just adopted an attitude of
337 not doing anything, of just observing or staying with the experience (P12, P16). Finally, some of those
338 participants also described how at times they felt to have ‘*Lost control*’ and could not proceed with
339 their intentions, either by not being able to go “deeper” to explore this state (P7), by feeling they could
340 not move (P9, P18), or by unintentionally transitioning to a different phase (P13, P17). Note that in
341 some cases these different sub-categories isolated can refer to the same experience and the same
342 participant—an experience could have been described as having ‘*Lost control*’ yet having a ‘*Receptive*’
343 attitude towards it (see [Table 5](#) for details).

344 **3.1.2.2 Sensations**

345 There were different sorts of sensations reported during this episode of the experience. To explore more
346 the differences between them, we grouped the sensations reported in three different groups: ‘**2A-Bodily**
347 **sensations**’, ‘**2B-Kinaesthetic sensations**’, and ‘**2C-Non-modal sensations**’. The first two sub-
348 categories are sensations that occurred within different sensorial modalities (including touch and
349 proprioception). We distinguished between those sensations that explicitly mentioned contact within
350 the body as ‘*Bodily sensations*’ from those that might involve the body, yet not direct contact with it

351 as '*Kinaesthetic sensations*'. Regarding the former, during the 'nothingness phase,' we only found
 352 mentions of a lack of bodily feelings, mentioned by four participants (P1, P8, P9, P12). It was only on
 353 other phases of the report that we found mentions to '**2A-Bodily Sensations**', including a feeling one's
 354 body, or a body part, or feelings of touch. As for '**2B-Kinaesthetic sensations**', most participants did
 355 not mention any in their descriptions during the 'nothingness phase' and only some reported having a
 356 sense of their body position (P15, P18), or a sense of being floating or suspended in the air (P1, P18)
 357 (see [Table 6](#)).

358 The most frequent sort of sensations described during the 'nothingness phase' were those that
 359 participants said not to pertain to a sensorial modality or '**2C-Non-modal sensations**'. For instance,
 360 many participants (5/12) alluded to a feeling that could be said to be modal, yet it was not felt by any
 361 of their senses, and so we classified them as '*Modality-like*'. Some descriptions mentioned sensations
 362 that were tactile-like yet did not involve contact with their body (P3, P16). Others mentioned an
 363 auditory-like sensation, such as sound with no source (P13, P15). One participant described them as
 364 vision-like sensations, different from ordinary seeing (P7). We also included in these sub-category
 365 descriptions of sensations that were difficult to categorise and that, in some cases, had an esoteric-like
 366 tone. These include descriptions by P7 and P15 about "the nothingness" as if having some physical or
 367 material properties, such as "the nothingness" or "darkness" "leaking from the door" (P7) or the "tiny
 368 movements" forming the nothingness (P15). In contrast, P1, P9 and P17 described this state as merely
 369 "feeling nothing" (See [Table 7](#) for illustrative examples of '**2C-Non-modal sensations**')

370 **3.1.2.3 Visual experience**

371 Another prominent feature of the 'nothingness phase' was the absence of any visual imagery. For all
 372 participants, the transition into this episode ended with the absence of complex visual imagery
 373 (understood as visual perception or imagery like ordinary visual experience during wakefulness). We
 374 explored this in more detail and classified the descriptions of their visual experience as '*Loss of*
 375 *imagery*' and '*Absence*'.

376 The sub-category '*Loss of Imagery*' referred to descriptions of participants mentioning that, in a way,
 377 they were able to perceive, yet there was not anything to be seen. P1 described this as "blackness" and
 378 P18 as lacking colour or light, whilst P12 described it as "darker than being in a dark room". P8
 379 described the absence of anything "as white", since there was nothing there, including black. The other
 380 three participants seemed to describe this state as involving some sort of perception of light, flashes,
 381 or colours (P2, P16, P15, P17), yet it was difficult to gather from their descriptions to what extent this

382 was experienced as an ordinary visual experience. For instance, P2 mentioned to ‘look’ at a “sphere of
383 light”, which they self-identified with. P15 described it as the experience of being with the eyes closed
384 and perceiving some “little flashes” or “holes”. P16 also described the presence of a light, which
385 changed colour, but like P2, they took themselves to be “in” this light. Finally, whilst P17 mentioned
386 ‘seeing’ “spirals, colours and shapes”, they also mentioned they were in “the void”, a state of
387 ‘blackness’ in which they could not see anything.

388 The sub-category ‘*Absence*’ includes three other descriptions emphasising not only the lack of imagery
389 but the lack of any sense of vision. For instance, P3 contrasted this state of nothingness to another
390 experience they described as a “dream lacking visuals”, a dream in which they were not seeing
391 anything. P7, P9, as well as P17 who mentioned the presence of “colours and shapes”, described this
392 experience as not ordinary ‘seeing’. Finally, P13 did not allude to any visual experience during this
393 state (see [Table 8](#) for illustrative quotes).

394 **3.1.2.4 Emotion**

395 The category ‘**Emotion**’ aimed at isolating descriptions that contained mentions to the ‘*Presence*’ or
396 ‘*Absence*’ of an emotional tone of the experience. Originally, this category was further broken down
397 into ‘affective valence’—the subjective attribution to the experience or different aspects of the
398 experience made by the participants—but eliminated afterwards given its very few mentions. Six
399 participants described the state of nothingness as accompanied by good sensations such as “feeling
400 good” or “refreshed” (P9), “happy” (P16, P17), “glad” (P18), or “relaxed” (P12). The other two
401 described the state as “contentment” (P1) or “acceptance” (P15), which was accompanied by a “slight
402 sense” of “disappointment” for having lost the dream scenery. The other three mentioned the absence
403 of any feelings or emotions. P2 reported not remembering having had any feelings, whereas P8
404 described how a relaxing and “narcotic feeling” they previously had when transitioned into the void
405 was lost. P3 described their feelings as “flat”, as lacking emotion. Finally, P13 did not allude to any
406 emotional sensations, either their presence or absence.

407 **3.1.2.5 Attention**

408 The category ‘**Attention**’ grouped the different ways participants were aware of any object or content
409 of awareness, that is, the sort of attention had towards their conscious experience.. We distinguished
410 amongst: ‘*Focused*’, ‘*Dynamic*’, ‘*Resting/Vague*’ and ‘*Wide, unfocused*’. As in the case of ‘*Agency*’,
411 these sub-categories are not mutually exclusive, and oftentimes the descriptions could be characterised

412 as involving more than one. Except for P1, all other participants described the type of attention had
 413 during the ‘nothingness phase’. The most common type, mentioned by 6 participants, was what we
 414 classified as ‘*Wide, unfocused*’ attention. This subcategory illustrates how the ‘nothingness phase’
 415 merely involved an awareness, yet “nothing to be aware of” (P8). This was described by some
 416 participants as the absence of thoughts or feelings (P2) or as nothing to pay attention to (P13, P17), a
 417 state of “just being conscious” (P3) or “feeling ultra-aware” (P9). This wide attention was slightly
 418 different from what we characterised as ‘*Resting/vague*’, attention still involving a distinct object of
 419 attention—such as attending to a specific feature of the experience—yet experienced as “implicit” by
 420 the participants. For instance, P15 said knowing the “tiny movements” were still there even if they
 421 were not paying “explicit attention” to them. This type of attention was also distinctive from that
 422 characterised as ‘*Focused*’ which alluded to the distinct awareness of one’s own thoughts or feelings,
 423 described as “self-reflective” by P13 and P15. Finally, P7 described how they were aware of having
 424 changed their focus of attention and how this fluctuated thorough the experience (see [Table 9](#) for
 425 details)

426 **3.1.2.6 Awareness of the state**

427 Finally, the category ‘**Awareness of the state**’ aimed at capturing what the participants took the overall
 428 experience to be. We classified mentions of knowing that one was: 1) sleeping or in bed, 2) dreaming,
 429 3) in a state of awareness. For most participants (8/12), there was an awareness of being aware, or an
 430 awareness of their awareness, a sense in which they knew that they were conscious (P2, P3, P7, P8,
 431 P12, P13, P17). In some cases, the descriptions mentioning the awareness of the state also alluded to
 432 their experience of a ‘self’, such as a sense in which they knew they were in the experience, or that
 433 they were in there (see ‘[Sense of Self](#)’). Similarly, other descriptions on this sub-category were also
 434 coded as ‘*Wide, unfocused*’ in the category of ‘Attention’, described as the sort of awareness involving
 435 attention that does not have a distinctive object of awareness. Other participants explicitly mentioned
 436 how they took this ‘nothingness phase’ to be a dream experience, and so, they knew they were dreaming
 437 (P1, P18, P15). Finally, the other two (P7, P13), said they knew they were in bed or sleeping, yet this
 438 knowledge was in the background, they did not “think about it”.

439 “Okay, so it's not that you consciously knew ‘Oh, I am asleep’. It's more that I need
 440 to do this otherwise I would wake up” (P13:28, emphasis added)

441 **3.1.2.7 Overall synchronic categories**

442 The phenomenological analysis for the ‘nothingness phase’ resulted in the isolation of 6 first-level or
443 higher-order categories. From those, the most representative third and second level categories, which
444 were present in more than half of the participants, were ‘*Minimal identification*’, ‘*Loss of imagery*’,
445 ‘*Presence of emotions*’ and ‘*Knowing they are aware*’ (see [Table 10](#) for a detailed summary).

446 **3.1.3 Explorative quantitative analyses**

447 **3.1.3.1 Individual self-ratings**

448 The calculation of means for the self-ratings carried out by the participants to the degree of vividness,
449 completeness, articulation, and accuracy of the recollection of the experiences reported in the interview
450 (during the spelling exercise and the potential experience of objectless dreamless sleep) revealed
451 similar ratings between the different dimensions of the recollection for the experiences in the first part
452 and second part of the interview session (see **Supplement materials**). The overall mean for ‘vividness’
453 and ‘recollection’ was quite high, while the overall mean for ‘articulation’ was slightly lower than the
454 rest. For ‘invention’ the overall means were quite low, but for this dimension, the score was inversed
455 (0= no invention; 10= a lot if invention).

456 **3.1.3.2 Intercoder agreement**

457 Fleiss’ Kappa was run to determine the degree of agreement between the three coders (the two external
458 researchers, and the main author) on their classification of the different categories isolated in the
459 thematic analysis. By accounting for those descriptions that alluded to more than one code (or a subset
460 of category and subcategory), a total of 220 classifications were considered for the statistical analysis.
461 Fleiss’ Kappa ($K=0.481$) indicated a moderate level of agreement amongst the three coders (cf. Fleiss
462 et al. 2003). We performed further analysis to investigate the level of agreement between different
463 coders, finding a good coefficient between Coder 1 (external researcher) and the main researcher
464 ($K=0.627$), and lower but still moderate between Coder 2 (external researcher) and the main researcher
465 ($K= 0.458$). The analysis showed a fair agreement between both external researchers ($K= 0.357$) (see
466 **Supplement Material**).

467 Finally, another Fleiss’ Kappa analysis revealed the categories and subcategories with a higher
468 intercoder agreement across coders for the ‘nothingness phase’. ‘*Emotion: Absence*’ had a very good
469 Kappa coefficient (over 0.8). We also found a good coefficient (between 0.6-0.79) for: ‘*Agency*’;

470 *Active*', *'Agency; Receptive'*, *"Bodily sensations; Absence"*, *'Non-modal sensations: Modality-like'*,
471 and *'Awareness of the state; Knowing they are sleeping and that they are in bed'*.

472 **4. Discussion**

473 This second phase of the research study *'Objectless sleep experiences'* offers one of the most detailed
474 and extensive phenomenological characterisations to date of conscious experiences during sleep
475 described as lacking a distinct object of awareness. From the phenomenological interviews conducted,
476 we selected the reports by 12 participants describing what they took to be an experience of
477 *'nothingness'* while sleeping. This episode followed either the awareness of the disappearance of a
478 dream, the ending of their sleep-mentation or was experienced suddenly after falling asleep without
479 previous recollection of events (see [§3.1.1](#)). Our analysis yielded the emergence of 6 experiential
480 categories with their corresponding second and third-level categories which shed light on the
481 phenomenological blueprints of such a state. The present results add up to previous research
482 investigating the phenomenology of such an experience (see Alcaraz-Sanchez 2021). In this last
483 section, we discuss the main findings by relating them to previous empirical and theoretical research
484 in the area, highlight the shortcomings of the study and introduce some pointers as to where to proceed
485 with future research.

486 **4.1. Alterations on self-awareness**

487 One of the most prominent features of the state of nothingness described by the participants was the
488 disruption of their self-awareness, understood here as one's self-perception within the experience. In
489 the literature, the phenomenology of sensations referring to how conscious experience feels
490 subjectively as one's own is widely known under the term of *'sense of self'*. However, this notion is
491 also heterogeneously defined in the literature, ranging from the subjective feeling of *'I'* or *'mineness'*
492 (see Zahavi 2005), the feeling of *'being someone'* (Metzinger 2003; Blanke and Metzinger 2008), or
493 the feeling of being the subject of the experience (see Gallagher 2000), to mention some. Similarly, the
494 descriptions made by our participants alluded to different dimensions of this *'sense of self'*
495 distinguished in the literature (see Millièrè 2020 for a review), which were recognised in the clustering
496 process during our phenomenological analysis. The analysis revealed that, whilst all participants
497 described a self-awareness different to that had during ordinary wakefulness, involving in most cases
498 an experience lacking any bodily sensations or bodily experience, with the exception of two, most of
499 them experienced themselves within the experience—there was a way in which they felt to be in the
500 experience, even if they said to lack the experience of a body or bodily sensations. Here, we explore

501 the most frequent sub-categories for self-awareness or sense of self: ‘Minimal identification’ to
502 describe ‘Bodily ownership’.

503 Following some accounts in the literature, the sense of bodily ownership can include an experience
504 without explicit mentions of the body, or body parts or bodily (see De Vignemont 2013). Similarly,
505 some other accounts also understand that one could feel their experience as their own, even if their
506 experience does not involve an explicit sense of being contained within certain bodily boundaries or
507 perceive one’s body as one’s own (see Gallagher 2017). Given this understanding of bodily ownership
508 and its relationship with the sense of feeling oneself as the subject of the experience, we might want to
509 consider the sub-category of ‘Minimal identification’ as involving an experience in which one feels
510 oneself as the subject of the experience or had a minimal sense of being in the experience. Such an
511 account could explain the presence of a minimal sense of self as the experience of being someone, or
512 subjectivity, even in those reports that described a lack of an explicit bodily sense or were said to be
513 ‘bodiless’. In the literature, the existence of these so-called *bodiless* states, or states that do not involve
514 the phenomenology of bodily ownership, suggests that self-awareness does not always necessitate the
515 experience of oneself within a body (see Millière 2020). For instance, research on self-awareness
516 during ‘*bodiless dreams*’ (see Occhionero et al. 2005; Cicogna and Bosinelli 2001; LaBerge and
517 DeGracia 2000), dreams in which the dreamer says to exist as a ‘disembodied entity’, suggests the
518 existence of a minimal sense of self in the absence of bodily awareness:

519 *“I was inside a gigantic photocopying machine. I knew I was inside, as an abstract*
520 *entity, as a mind, I was the machine, so I couldn’t see myself.” (Cicogna and*
521 *Bosinelli 2001, 32, emphasis added)*

522 In this brief report, the dreamer says not perceiving themselves in a regular way; nevertheless, they are
523 able to feel they are in the experience, instantiated by a sense of self-location (“I was inside...”), but
524 also, to self-identify with something (“as an abstract entity”, “I was the machine”). Similarly,
525 participants like P2 said to “no longer [had] an idea of a dream body”, yet still had a sense of minimal
526 self-identification within the experience, in this case, having been a “sphere of light”:

527 *“...when I was the sphere of light, it was that there was no sense of... of self, like*
528 *there was just, it was just the sphere of light. So, it was, it was almost like, how do I*
529 *explain that, but... it was maybe, a different... a different me, just not the me that I*
530 *think about when I’m awake.” (P2:41; emphasis added)*

531 Such reports seem to talk in favour of authors understanding the experience of bodily ownership as not
 532 amounting to bodily sensations (see De Vignemont 2013), however, we should consider further
 533 whether reports of this kind do in fact involve a minimal sense of bodily ownership given by this
 534 minimal self-identification with something (i.e. being the “machine”, or “a sphere of light”). Similar
 535 reports are found in individuals experiencing ‘asomatic’ out-of-body experiences (Metzinger 2013, 4)
 536 which are described as disembodied experiences in which one feels as being a “ball of light”, or a
 537 “point in space” (see Alvarado 2000, 186), but also a “gaseous ball” (see Rabeyron and Caussie 2016)
 538 or as their body having been “melted” (see LaBerge 1985). Other descriptions provided seemed to
 539 account for certain bodily ownership given by other elements of the experience, such as the sensations
 540 had. Some descriptions were more explicit than others, like P13 mentioning a bodily feeling given by
 541 an “inner sound”.

542 *“[...] And it was like an all-encompassing sound. So, not like a dream of like a bird*
 543 *chirping, but just like the STATE IS THE SOUND (P13:9) Yeah because the sound*
 544 *like had like an EMBODIED experience of it...(P13:34) I could, I guess like FEEL*
 545 *the sound if that makes sense. [...] That was part of the experience of the sound. So,*
 546 *I think before the sound, I wasn't thinking about the bodily sensations.” (P13:11,*
 547 *emphasis added)*

548 Finally, there is the case of P3, who reported a lack of sense of ‘ego’ during this episode and described
 549 a sense of ‘tapping’ or ‘pulsing’ as the only thing present during the experience.

550 *“There was not even a sort of sense of me being a, a person or anything like, you*
 551 *know, for...for me to say like, here's an outside and here's an inside, it was just this*
 552 *sort of tapping.” (P3:12, emphasis added)*

553 Nevertheless, while P3 were not aware of themselves being aware of the tapping (i.e. an awareness of
 554 the tapping as something that was happening to them), they remember having been aware of the tapping
 555 happening:

556 *“But I was definitely CONSCIOUS. I was definitely, there was some consciousness*
 557 *there, there was some sense that this tapping was happening. It was just that, that*
 558 *sense was very bare bones (P3:26, emphasis added).”*

559 One might wonder to what extent this was a truly selfless experience—an experience that lacked a
 560 sense of self whatsoever—or there was still a minimal sense of self involved. For P3, it was just after
 561 the experience ended that the ‘tapping’ was assigned as something that occurred to them, yet while the
 562 experience was unfolding there was an awareness of such tapping happening. Research on bodiless
 563 experiences during self-boundary dissolution in meditation could shed light on this sort of experiences
 564 in which one lacks a sense of ego, yet one is conscious of their experience unfolding. For instance,

565 Ataria (2015) presents the following example of a meditator engaging in formal practice describing
566 how they shift from being aware of the sound of an ice-cream truck entering their ear to becoming
567 aware of just the sound:

568 *“And then I observed that the object itself, the fact that it was an ice-cream truck,*
569 *disappeared. The next thing was the location. First the object itself disappeared, the*
570 *so-called ice-cream truck. Then the location, in other words, distance, disappeared,*
571 *and I began to focus on the sounds that entered my ear. And there was a sense that*
572 *it was no longer in the ear, but it was in the mind, that it was ... the hearing*
573 *consciousness ... arising in the mind. At that point there was no location; I would say*
574 *that the location was inside of me, and there was no object. There was a very small*
575 *object inside my mind ... It was pure sound—pure sound that was not associated in*
576 *any way to a thing. (M. K.)” (Ataria, 2015: 1134)*

577 From reports like the previous, Ataria has suggested that the sense of bodily ownership can be given
578 by the sensations experienced, such as the sound reported in the previous report—the sensation defines
579 the boundary between myself and the rest (Ataria, 20015:1133). Similarly, other researchers have
580 suggested that the sense of bodily ownership is not confined within one’s body and that a minimal
581 sense of self can remain in absence of bodily ownership, (see Ataria et al. 2015; Nave et al. 2021)

582 **4.2. Lack of sensory perception**

583 Another striking feature of the ‘nothingness phase’ was the absence of any visual perception. However,
584 from some of the descriptions provided, we might wonder whether there was in fact a total absence of
585 visual experience. On one side, some participants described this state as one that lacked a sense of
586 vision altogether. P3 compared this state of nothingness to a dream in which they could not see
587 anything, mentioning how different it felt seeing an absence of vision from lacking vision at all. On
588 the contrary, some other participants did provide descriptions of what seemed to involve some visual
589 perception. For instance, P15 compared it to having one’s eyes closed and said to perceive “tiny
590 movements” or “little flashes”, which at times were described as involving visual experience.
591 Similarly, others described the perception of “light” or a “source of light” (P2 and P16).

592 From those different reports describing the absence of visual experience, we can make different
593 speculations. One is to suggest that at least some participants were indeed having some visual
594 experience, and thus, what they were perceiving was the lack of any visual percepts. In a way, there
595 was an experience of ‘absence’, such as when one is in a completely dark room, or with the eyes closed.
596 Results from sensory and perceptual deprivation research can offer some insights into the

597 phenomenology of perceiving lack of visual stimuli. Several studies show how prolonged periods of
598 sensorial deprivation can give place to simple hallucinations, such as dots, patterns, and lights (see
599 Lloyd et al. 2012; Merabet et al. 2004) as well as more complex hallucinations (see Heron 1965; Heron
600 et al. 1956; Zubek et al. 1961). Similar reports are made during states that only lack visual experience,
601 but not perception altogether. For instance, some meditators provide reports of the so-called
602 ‘meditation-induced light experiences’ (see Lindahl et al. 2014;2017), the perception of lights whilst
603 engaging in meditation with the eyes closed. From these findings, we could take the perception of
604 simple visual precepts such as the “tiny movements” described by P15 or the more overwhelming “bath
605 of light” by P16 as instances of hallucinatory experiences.

606 Another alternate reading that could be made, is that the objects perceived (including lights, or flashes)
607 are indeed veridical percepts. For instance, Mavromatis (1987) has suggested that experiences of lights
608 or patterns had in environments with sensorial deprivation could be taken to be of retinal nature.
609 Similarly, we could speculate that some descriptions allude to the perception of external stimuli. It is
610 important to note that since our study was not carried out in an experimental environment, we are not
611 able to determine in which sleep stage participants were (or whether they were sleeping at all).
612 Moreover, even while sleeping we are not totally occluded from processing external stimuli and some
613 sleep stages allow more perceptual processing than others. There is also research indicating a
614 connection between the presence of altered states of consciousness during sleep, such as pre-lucid
615 dreams (Tyson et al. 1984), sleep onset hallucinations (Takeuchi et al. 1994), sleep paralysis and false
616 awakenings (Mainieri et al. 2020), and higher levels of alpha activity, which in turn has been linked to
617 more external sensory perception (Tyson et al. 1984; Darracq et al. 2018; Conduit et al.1997). Thus,
618 we could speculate that during the state described by our participants, there was some integration of
619 external stimuli which could have given place to some of the characteristic ‘Non-modal sensations’
620 reported, such as those involving what could be considered as esoteric or mystical-like elements like
621 “feeling the nothingness” or a “felt inner sound” (elements that could be taken to go above or beyond
622 the realm of ‘reality’ or what is possible in the natural world). Further comparison between the
623 phenomenology of sensations had during episodes of objectless awareness during sleep and other
624 altered states of consciousness paired with their electrophysiology could help us to understand better
625 the role that processing of external stimulation might be playing in those states.

626 Finally, regarding the relationship between the lack of sensory perception and those descriptions
627 grouped under sub-category of ‘non-modal’, we could also interpret those descriptions as alluding to

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628 certain sensations that cannot be accounted as pertaining to a particular sensorial modality. In the
629 micro-phenomenological literature, sensations that are not about a sensorial modality have been
630 regarded as ‘transmodal feelings’ and characterised as “fuzzy feelings which do not fall within a
631 particular sensorial modality” but that have properties that are “transposable from one sense to another”
632 (Petitmengin and Lachaux 2013 3), such as “temperature, texture, intensity, rhythm and movement”
633 (Petitmengin 2007). Thus, we could speculate that a subset of those descriptions talking about “tiny
634 movements” or “feeling the nothingness”, refer to the way in which this phase of ‘nothingness’ was
635 perceived: these elements in those descriptions regarded as ‘non-modal’ are merely placeholders for
636 describing one’s experience. Awareness of one’s awareness

637 Lastly, we shall consider the feature of the state of nothingness as a state in which one is aware in
638 absence of an object of awareness. This description itself seems at first contradictory since *awareness*
639 is usually taken to be *of* or *about* something and does not seem intuitive to say that one can be aware
640 without anything to be aware of. When asking participants to report a sleep experience they took to be
641 objectless, they described a state in which there was either nothing to be seen (visually), felt (bodily
642 perception), or no mental activity (thoughts). As P8 describes:

643 *“I am aware not in the traditional sense. Traditional sense would have to involve*
644 *some thing you can relate to, right? Time or thought. You know, you're definitely*
645 *crossing into esoteric thought here where... there is... you're there, there's an*
646 *awareness. But there's nothing to be aware of... (P8:65, emphasis added)”*

647 In the Dzogchen tradition in Indo-Tibetan Buddhism, such states of awareness are understood as states
648 of non-dual awareness or non-duality; a state of awareness that lacks the subject/object structure of
649 ordinary wakefulness (see Dune 2011:262). Nevertheless, states of non-dual awareness are taken to be
650 states of consciousness, states in which we are merely aware in virtue of their reflexivity; they have
651 the property of “referring to themselves” (Williams 2000). For some authors, states of non-dual
652 awareness are states that do not necessitate second-order representations to be conscious (either a
653 representation of itself or something else as an object; see Josipovic, 2019). As such, states of non-dual
654 awareness are understood as states of intransitive consciousness, states in which one is conscious in
655 virtue of having access to the phenomenal character of their experience.⁵

⁵ Such a view of non-dual awareness is supported by reflexive theories of consciousness (or self-illumination theories), which hold that when we are aware, we are necessarily pre-reflectively or tacitly aware of our own awareness (see Mackenzie, 2008 for a discussion). Reflexivist views on consciousness are found in certain schools of Indian, Chinese and Tibetan Buddhist philosophy, but are also defended by the phenomenological

656 Nevertheless, upon further exploration of the interviews, we can identify some ‘objects’ of awareness
 657 even if the descriptions provided seem to involve a different sort of awareness to that had during
 658 ordinary wakefulness. For instance, as we showed in the previous subsections, there was a way in
 659 which one was aware of lacking vision during the ‘nothingness phase’(there was an awareness of the
 660 absence of imagery), or that one was aware of the absence of bodily sensations (which in some cases,
 661 were accompanied with different sort of non-modality-based sensations). Similarly, some participants
 662 also described the presence of some thinking, yet they did not take this to be an instance of an awareness
 663 of one’s thoughts. This could be because they were aware of the process of thinking itself (the fact that
 664 they were in a state of thinking), yet they were not aware of the exact *content* of those thoughts. What
 665 those descriptions aimed at describing is how it felt to be aware of one’s own awareness, and whether
 666 that included an object of awareness other than their own awareness. In the micro-phenomenological
 667 literature, the notion ‘attentional disposition’ is used to describe this process of self-reflection about
 668 one’s subjective experience—the way in which one becomes aware of one’s own experience
 669 (Petitmengin and Bitbol 2009).

670 Some other participants, in particular, those classified in Diachronic Structure 1 (see [§3.1](#)), took a
 671 slightly different meaning of what ‘being aware’ meant. In this case, they related it to the experience
 672 of ‘lucidity’, similar to that had during lucid dreaming—they were aware of the fact they were in a
 673 dream, yet one that lacks dream scenery:

674 *“Because there it was the only thing that was left, like in the scenery disappeared,*
 675 *but my lucidity, the knowledge of being in a dream, didn't. (P15:69,70). I connect*
 676 *this to the fact that I knew that I was dreaming. So, in this mode disappeared in the*
 677 *moment we described earlier with the doubt, but then it was there all along. So, this*
 678 *is I could say instead of this mode, just being lucid (P15:68)”*

679 Further theoretical work should investigate whether we should distinguish between an awareness of
 680 one’s own awareness, the awareness that one is dreaming, and the awareness of a dream that lack visual
 681 experience, or whether all those experiences should be accounted under the term ‘lucidity’. A good
 682 starting point would be relating phenomenological descriptions from this ‘nothingness phase’ to those
 683 found during ‘open-monitoring’ meditative practices, a style of meditation aiming at dropping attention
 684 towards any object of awareness and, instead, sustaining attention to the experience itself (Dunne 2015;
 685 Lutz et al. 2012; Lutz et al. 2008) Examples of meditation in this style are the Shamata and Mahamudra
 686 meditation (see Dunne 2011) which are regarded as ‘objectless meditations’ by some authors (Lutz et

tradition (see Thompson 2011). Note that it is a contentious point of debate in analytic philosophy of mind as to whether such states would involve second-order representations, and whether such states should not be better understood as self-representational (see Kriegel 2019 for a discussion)

687 al. 2012), as well as Samadhi, which has also been related to the attainment of ‘objectless’ states (see
688 Millière et al. 2018 for a discussion). Moreover, some empirical research on case studies of expert
689 meditators showing a state of ‘content-free’ awareness indicate a similar experience of awareness to
690 that of our participants (Winter et al. 2020). Other recent empirical research has also investigated
691 systematically the relationship between experience with different meditation practices and the
692 experience of ‘pure awareness’ or ‘minimal phenomenal experience’ and the different features
693 characterising such a state (see Gamma and Metzinger 2021; Metzinger 2021)

694 **4.3. Strengths, shortcomings and future directions**

695 The phenomenological interviews conducted in this study yielded extensive and fine-grained reports
696 of experiences that were taken as involving the awareness of ‘nothing’ or an awareness lacking a
697 distinctive object of awareness by the participants. The interviews facilitated the exploration of
698 dimensions and aspects of the experience that were previously unnoticed by the participants but, also,
699 facilitated the gathering of descriptions that could have been difficult to obtain otherwise without
700 guidance, given its ineffable character. Previous research has stressed the importance of how asking
701 participants about specific aspects of their dream might impact the reports gathered (Nielsen, 2010).
702 For instance, some studies have shown an increase of reportable emotional content during dreams after
703 changing the scales used to self-assess emotions (Merrit et al., 1994). Similarly, other researchers have
704 claimed how the lack of reports on experiences with minimal content during sleep might be hampered
705 by the sort of questions prompted to participants when awakening (see Thompson 2015). There is also
706 the issue on how training in particular methods or experience practicing introspection might affect the
707 quality of reports. Several studies provide evidence on how meditation practitioners, which usually
708 have more experience in attending the qualitative character of their inner experience, provide more
709 accurate objective introspective reports than no meditators (see Sze et al, 2010; Fox et al. 2012). Other
710 authors have also suggested training participants in different techniques to increase the granularity of
711 reports (see Windt, 2013 and Solomonova et al. 2014 for a discussion). This practice of collaborating
712 with research participants to obtain better subjective reports has been used in the
713 ‘neurophenomenological’ framework to facilitate the comparison between first-person and third-
714 person data (see Lutz and Thompson, 2003). The micro-phenomenological approach takes this
715 principle of training participants into the method to facilitate the exploration of aspects of the
716 experience that otherwise would have been unnoticed (see Petitmengin, 2016). In the present study,
717 the micro-phenomenology inspired interview protocol helped participants to further their recollection

718 by focusing on a particular experience had in a specific space and time, moving them away from
719 generalisations and judgments about it. Thus, we would expect that further systematic studies using
720 micro-phenomenological tools to result in the gathering of additional first-person reports on objectless
721 experiences, either during sleep or during other conscious states.

722 Nevertheless, it should be noted that, in most cases, the interview process did not lead to a total
723 evocated state, as detailed under the MPI guidance (cf. Petitmengin 2006). There is a question as to
724 whether this poorer evocation was due to the nature of the experience we are targeting, an experience
725 occurring during sleep which is meant to be about ‘nothing’, or because there was a significant lag
726 between the original experience and the interview session. Further experimental research on this
727 phenomenon should be conducted in a sleep lab where not only participants can be interviewed just
728 after awakening, but an adequate assessment of their sleep can be made. Moreover, conducting this
729 sort of research in an experimental setting will help by shortening the temporal lag between experience
730 and report (see Windt 2013) and thus, to meet with the gold standard of dream research of facilitating
731 reports that are as close to the experience as possible. Although this might prove challenging, given
732 the rarity and spontaneity of these sorts of experiences, future studies should investigate whether
733 possible forms of objectless awareness like the one described here can be trained or be induced, like
734 lucid dreaming (Aspy 2020; Blanchette-Carrière et al. 2020; Sparrow et al. 2018; Voss et al. 2014).

735 The interview protocol took onboard one of the main tenets of the MPI method, which is to conduct
736 ‘content-free’ questions—questions that do not aim to influence the interviewee’s answers. It is
737 standard practice with the MPI method to not ask triggering questions about elements that the
738 researcher wants to investigate (unless the participant has previously mentioned those). However, as
739 with any other qualitative research tool, the influence of the researcher’s previous conceptions or
740 judgments cannot be totally avoided. Thus, not only the researcher can influence the answers by asking
741 leading questions, but it can also occur more implicitly by participants themselves assuming that certain
742 responses are expected or encouraged. For instance, one of our participants described how during their
743 experience in “the void” they realised this was the sort of experience the main investigator was after.
744 Similarly, those participants having previously experienced the targeted phenomenon might have
745 chosen to talk about a distinctive instance of such phenomenon by focusing on the most striking or
746 dramatic features. In psychological research, there is a debate as to what extent this behaviour change
747 is indeed a phenomenon and whether it impacts the research results (for a discussion see McCambridge
748 et al. 2012). Participants are also influenced by their previous preconceptions and beliefs which might

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749 affect the answers provided. Most participants were acquainted with the sort of experience we were
750 investigating, either because they had experienced it before or had learned about it. As we presented in
751 the introduction, this sort of awareness in absence of any distinct object of awareness during sleep is
752 considered by several contemplative traditions as one of the ultimate states one can reach in meditation,
753 and thus, is taken by many as proof that one is a very skilled practitioner. Such considerations can be
754 found under practices such as Yoga Nidra or luminosity yoga which guide practitioners to reach a state
755 of ‘clear light’, a state usually considered in Indo-Tibetan teachings as one of the highest states of
756 awareness (Mason et al. 1997; Travis 2014). As such, participants embedded in this sort of practices
757 might have been influenced by their expectations about the experience, and thus, we might question
758 whether their reports are about what they felt during the state or what they took the state to be (see the
759 issue of ‘Embodied theory contamination’ in Metzinger 2019). Whilst in qualitative research we cannot
760 completely remove participants’ preconceptions and judgements about the experience reported, we
761 attempted to overcome this challenge by exploring in-depth their phenomenology, thus guiding
762 participants out of descriptions that might contain judgements and evaluations of their experience and
763 inviting them to explore the subjective character of the experience. Similarly, we should also
764 acknowledge the difficulties and challenges by the participants to properly articulate their reports.
765 Given that the targeted experience was frequently described as ineffable, most participants found it
766 difficult to describe its elements. Whilst the self-ratings provided by the participants about the
767 recollection process were merely intended to be illustrative, were also useful to encourage participants
768 to reflect to what extent they may have invented some of the elements on their reports (i.e. they were
769 fabricated during the recollection, but were not part of the original experience), or how complete was
770 their recollection (i.e. some aspects of the original experience were missing). The lower overall means
771 in the dimension of ‘articulation’ was due to lower scores provided by two participants who explained
772 the difficulty of providing experiential reports on their second language, and thus, not necessarily
773 meant that all participants found it difficult to describe their experiences.

774 Finally, there is the question about the suitability of the selected analysis method. To accomplish a
775 more robust categorisation of the dimensions isolated during the phenomenological analysis, the first
776 and second author carried out a categorisation process of the reports. Moreover, two external
777 researchers who were not involved in the acquisition and preparation of data, nor the first steps of the
778 analysis, coded the reports analysed by assigning them a category from the categories isolated by AAS
779 and ED. However, the resulting scores from the intercoder agreement were not very high, showing that

780 in most cases, the external researchers would have coded the descriptions differently, either by
781 classifying them with a different category, or by naming the category differently. This resulted in the
782 modification of some categories and the re-assignment of some descriptions to the most appropriate
783 category.

784 The lower score obtained in the intercoder agreement calls into question the rigor of the categorisation
785 process undertaken in the analysis of the results. For instance, dream researchers utilising validated
786 scales for examining content analysis (see Van de Castle 1966) advocate for high scores in intercoder
787 agreement for the validation of the results (see Schredl et al. 2004). However, some studies have
788 pointed out the significant differences between self and external ratings of dream reports (i.e. between
789 self-ratings undertaken by the participants and ratings carried out by external judges) and how judges
790 tend to underate some elements of the reports (see Sikka et al 2014). Similarly, this problem occurs in
791 studies like ours undertaking phenomenological analysis. Given that the categorisation process results
792 from a bottom-down process, from the analysis of the reports to the creation of categories, the resulted
793 categories tend to be in a high level of abstraction. Moreover, these categories are oftentimes context-
794 sensitive, and as such, some dimensions (i.e. 'Sense of self') might be very difficult for an external
795 researcher to properly classify without further background involvement in the interview process. As
796 we showed in [§3.1.2](#), whilst some participants might have mentioned that their experience was
797 'bodiless' or 'selfless', other descriptions by the same participant provided further details on the
798 different aspects of their self-experience. Thus, there is an extent to which the categories isolated are
799 given meaning through engagement in the understanding of participant's answers, which requires a
800 certain level of interpretation by the coder (Krippendorff 2004). Moreover, the external coders were
801 not given the entire interview, but only selected excerpts. Nevertheless, we consider that the external
802 coding was a beneficial step in our analysis process, which identified categories that needed revision
803 and adjustment, but also those that seemed to work quite well and that should then be accounted for in
804 future research. Finally, it should be noted that the categories isolated refer to the sample of reports
805 analysed, and that for the creation of more robust categories, or even for the possible creation of
806 validated scales involving such categories, a larger sample would be needed.

807 **5. Conclusion**

808 This paper presented the results of the second stage of the research study on '*Objectless sleep*
809 *experiences*' which aimed at investigating possible instances of awareness had during sleep in absence
810 of a distinct object of awareness. To that end, we carried out 21 extensive phenomenological interviews

811 describing an occurrence of what participants took to be a sort of ‘objectless state’ during sleep. From
812 the phenomenological analysis, we distinguished a common phase across 12 of those participants that
813 we coined ‘nothingness phase’. Moreover, the analysis yielded the emergence of 6 experiential
814 categories with their corresponding second and third-level categories characterising the described
815 phase of nothingness as lacking an explicit bodily awareness, yet with a minimal sense of ownership
816 within the experience, as well as a minimal sense of first-person perspective and the feeling of being
817 in an indeterminate location. This phase was also characterised by the presence of a sense of agency,
818 with an agent that in most cases reported a lack of control of the situation. There were also frequent
819 descriptions of modality-like sensations, such as feeling ‘sound’ or visual percepts in absence of either
820 hearing or vision. Most participants also described the presence of positive or fairly positive emotions.
821 While initially, participants reported to have experienced a state in which there was nothing to be aware
822 of other than the fact that they were aware, our interview protocol unveiled different aspects of such a
823 state involving some contents of awareness. The results presented here add valuable data on how we
824 should characterise states of awareness that are said to be objectless—instances in which one says to
825 be aware of nothing.

826 **6. References**

- 827 Alcaraz-Sanchez, Adriana. 2021. “Awareness in the Void: A Micro-Phenomenological Exploration of
828 Conscious Dreamless Sleep”. *Phenomenology and the Cognitive Sciences*.
829 <https://doi.org/10.1007/s11097-021-09743-0>.
- 830 Alexander, Charles N. 1990. *Higher States of Human Development: Perspectives on Adult Growth*.
831 Edited by E. J. Alexander, C.N & Langer. New York: Oxford University Press.
- 832 Alvarado, Carlos.S. 2000. “Out-of-Body Experiences.” In *Varieties of Anomalous Experience:
833 Examining the Scientific Evidence*, edited by E. Cardeña, S.K. Lunn, and S. Krippner, 183–218.
- 834 Aranya, Swami. 1989. *Yoga Philosophy of Patañjali*. New York: University of New York Press.
- 835 Arya, Pandit (Trans.) 1986. *Yoga Sutras Of-Patanjali with The Exposition Of Vyasa*. The Himalayan
836 International Institute of Yoga Science and Philosophy of the USA.
- 837 Aspy, Denholm J. 2020. “Findings From the International Lucid Dream Induction Study.” *Frontiers
838 in Psychology* 11 (July): 1–12. <https://doi.org/10.3389/fpsyg.2020.01746>.
- 839 Ataria, Yochai. 2015. “Where Do We End and Where Does the World Begin? The Case of Insight
840 Meditation.” *Philosophical Psychology* 28 (8): 1128–46.
841 <https://doi.org/10.1080/09515089.2014.969801>.

- 842 Ataria, Yochai, Yair Dor-Ziderman, and Aviva Berkovich-Ohana. 2015. "How Does It Feel to Lack a
843 Sense of Boundaries? A Case Study of a Long-Term Mindfulness Meditator." *Consciousness and*
844 *Cognition* 37 (November 2017): 133–47. <https://doi.org/10.1016/j.concog.2015.09.002>.
- 845 Blanchette-Carrière, Cloé, Sarah-Hélène Julien, Claudia Picard-Deland, Maude Bouchard, Julie
846 Carrier, Tyna Paquette, and Tore Nielsen. 2020. "Attempted Induction of Signalled Lucid
847 Dreaming by Transcranial Alternating Current Stimulation." *Consciousness and Cognition* 83
848 (January): 102957. <https://doi.org/10.1016/j.concog.2020.102957>.
- 849 Blanke, Olaf, and Thomas Metzinger. 2008. "Full-Body Illusions and Minimal Phenomenal Selfhood."
850 *Trends in Cognitive Sciences* 13 (1): 7–13. <https://doi.org/10.1016/j.tics.2008.10.003>.
- 851 Braun, Virginia, and Victoria Clarke. 2021. *Thematic Analysis: A Practical Guide*. London: SAGE
852 Publications Ltd.
- 853 Bryant, Edwin F. (Trans.) 2009. *The Yoga Sutras of Patañjali*. North Point Press.
- 854 Cicogna, Piera Carla, and M Bosinelli. 2001. "Consciousness during Dreams." *Consciousness and*
855 *Cognition* 10 (1): 26–41. <https://doi.org/10.1006/ccog.2000.0471>.
- 856 Charmaz, Kathy. 2006. *Constructing Grounded Theory: A Practical Guide Through Qualitative*
857 *Analysis*. SAGE Publications Ltd.
- 858 Conduit, Russell, Dorothy Bruck, and Grahame Coleman. 1997. "Induction of Visual Imagery during
859 NREM Sleep." *Sleep* 20 (11): 948–56. <https://doi.org/10.1093/sleep/20.11.948>.
- 860 Darracq, Matthieu, Chadd M. Funk, Daniel Polyakov, Brady Riedner, Olivia Gosseries, Jaakko O.
861 Nieminen, Vincent Bonhomme, et al. 2018. "Evoked Alpha Power Is Reduced in Disconnected
862 Consciousness During Sleep and Anesthesia." *Scientific Reports* 8 (1): 1–10.
863 <https://doi.org/10.1038/s41598-018-34957-9>.
- 864 Dunne, J. D. 2011. Toward an understanding of non-dual mindfulness. *Contemporary Buddhism*,
865 12(1), 71–88. <https://doi.org/10.1080/14639947.2011.564820>
- 866 Dunne, John D. 2015. "Buddhist Styles of Mindfulness: A Heuristic Approach." In *Handbook of*
867 *Mindfulness and Self-Regulation*, edited by Brian D. Ostafin, Michael D. Robinson, and Brian P.
868 Meier, 1–301. Springer. <https://doi.org/10.1007/978-1-4939-2263-5>.
- 869 Fleiss, J.L, M.C. Paik, and B. Levin. 2003. *Statistical Methods for Rates and Proportion*. John Wiley
870 & Sons.
- 871 Fox, Kieran. C. R., Zakarauskas, Pierre, Dixon, Matt, Ellamil, Melissa, Thompson, Evan and Christoff,
872 Kalina. 2012. Meditation Experience Predicts Introspective Accuracy. *PLoS ONE*, 7(9).
873 <https://doi.org/10.1371/journal.pone.0045370>
- 874 Gallagher, Shaun. 2017. "Self-Defense: Deflecting Deflationary and Eliminativist Critiques of the
875 Sense of Ownership." *Frontiers in Psychology* 8 (SEP): 1–10.
876 <https://doi.org/10.3389/fpsyg.2017.01612>.

Nothingness is all there is: an exploration of objectless awareness during sleep

- 877 Gambhirananda, Swami (Trans.) 1937. *Eight Upanishads. Volume two: Aitareya, Mundaka, Mandukya*
878 *& Karika and Prasna*. Sharada Press.
- 879 Gamma, Alex and Metzinger, Thomas. 2021. The Minimal Phenomenal Experience questionnaire
880 (MPE-92M): Towards a phenomenological profile of “pure awareness” experiences in meditators
881 Alex. *PLoS ONE*, 1–39. <https://doi.org/10.1371/journal.pone.0253694>
- 882 Hall, Calvin and Van de Castle, Robert. 1966. *The Content Analysis of Dreams*. Appleton-Century-
883 Crofts.
- 884 Josipovic, Zoran. 2019. Nondual awareness: Consciousness-as-such as non-representational
885 reflexivity. In *Progress in Brain Research* (1st ed., Vol. 244). Elsevier B.V.
886 <https://doi.org/10.1016/bs.pbr.2018.10.021>
- 887 Kriegel, Uriah 2019. Dignaga’s argument for the awareness principle: An analytic refinement.
888 *Philosophy East and West*, 69(1), 143–155. <https://doi.org/10.1353/pew.2019.0003>
- 889 Krippendorff, Klaus. 2004. *Content Analysis: An Introduction to Its Methodology*. SAGE Publications
890 Ltd.
- 891 LaBerge, Stephen P., and D.J. DeGracia. 2000. “Varieties of Lucid Dreaming.” In *Individual*
892 *Differences in Conscious Experience*, edited by R.G Kundendorf and B. Wallace, 269–307.
893 Amsterdam: John Benjamins.
- 894 Lutz, Antoine, John D Dunne, and Richard J Davidson. 2012. “Meditation and the Neuroscience of
895 Consciousness.” In *The Cambridge Handbook of Consciousness*, edited by P Zelazo, M.
896 Moscovitch, and E. Thompson. Cambridge University Press.
897 <https://doi.org/10.1017/cbo9780511816789.001>.
- 898 Lutz, Antoine and Thompson, Evan. 2003. Neurophenomenology Integrating Subjective Experience
899 and Brain Dynamics in the Neuroscience of Consciousness. *Journal of Consciousness Studies*,
900 *No. 9–10*,(10), 31–52.Lutz, Antoine, Heleen A. Slagter, John D. Dunne, and Richard J. Davidson.
901 2008. “Attention Regulation and Monitoring in Meditation.” *Trends in Cognitive Sciences*.
902 <https://doi.org/10.1016/j.tics.2008.01.005>.
- 903 MacKenzie, Matthew. 2008. Self-Awareness without a Self: Buddhism and the Reflexivity of
904 Awareness. *Asian Philosophy*, 18(3), 245–266. <https://doi.org/10.1080/09552360802440025>
- 905 Mainieri, Greta, Maranci, Jean-Baptise, and Pierre Champetier. 2020. “Are Sleep Paralysis and False
906 Awakenings Different from REM Sleep and from Lucid REM Sleep? A Spectral EEG Analysis.”
907 *Journal of Clinical Sleep Medicine* 7 (4): 719–727. <https://doi.org/10.5664/jcsm.9056>.
- 908 Mason, Lynne, Charles N Alexander, Frederick Travis, and Jayne Gackenbach. 1990. “EEG Correlates
909 of Consciousness.” *Lucidity Letter* 209 (2): 2–4.
- 910 Mason, Lynne, Charles N Alexander, Frederick Travis, G. Marsh, D. W. Orme-Johnson, Jayne
911 Gackenbach, D. C. Mason, M. Rainforth, and K. G. Walton. 1997. “Electrophysiological

- 912 Correlates of Higher States of Consciousness During Sleep in Long-Term.” *Sleep* 20 (2): 102–10.
913 <https://doi.org/10.1093/sleep/20.2.102>.
- 914 Mason, Lynne, and David Orme-Johnson. 2010. “Transcendental Consciousness Wakes up in
915 Dreaming and Deep Sleep.” *International Journal of Dream Research* 3 (1): 28–32.
916 <https://doi.org/10.11588/ijodr.2010.1.595>.
- 917 Mavromatis, Andreas. 1987. *Hypnagogia: The Unique State of Consciousness between Wakefulness
918 and Sleep*. London: Routledge and Kegan Paul.
- 919 McCambridge, Jim, Marijn de Bruin, and John Witton. 2012. “The Effects of Demand Characteristics
920 on Research Participant Behaviours in Non-Laboratory Settings: A Systematic Review.” *PLoS
921 ONE* 7 (6): 1–6. <https://doi.org/10.1371/journal.pone.0039116>.
- 922 Merrit, Jane M., Stickgold, Robert, Pace-Schott, Edward, Williams, Julie, and Hobson, Allan. 1994.
923 Emotions profile in the dreams of man and woman. In *Consciousness and Cognition* (Issue 3, pp.
924 46–60).
- 925 Metzinger, Thomas. 2003. *Being No One. The Self-Model Theory of Subjectivity*. Cambridge, MA:
926 MIT Press.
- 927 ———. 2013. “Why Are Dreams Interesting for Philosophers? The Example of Minimal Phenomenal
928 Selfhood, plus an Agenda for Future Research.” *Frontiers in Psychology* 4 (October): 746.
929 <https://doi.org/10.3389/fpsyg.2013.00746>.
- 930 ———. 2019. “Minimal Phenomenal Experience: The ARAS-Model Theory: Steps toward a Minimal
931 Model Of Conscious Experience as Such.” *Mindriv.Org*, 1–38.
932 <https://doi.org/https://doi.org/10.31231/osf.io/5wyg7>.
- 933 ———. 2020. “Minimal Phenomenal Experience.” *Philosophy and the Mind Sciences* 1 (I): 1–44.
934 <https://doi.org/10.33735/phimisci.2020.I.46>.
- 935 Millière, Raphaël. 2020. “The Varieties of Selflessness.” *Philosophy and the Mind Sciences* 1 (I): 8.
936 <https://doi.org/10.33735/phimisci.2020.i.48>.
- 937 Millière, Raphaël, Carhart-Harris, Robin L., Roseman, Leor, Trautwein, F. Mathis, and Berkovich-
938 Ohana, Aviva. 2018. Psychedelics, meditation, and self-consciousness. *Frontiers in Psychology*,
939 9 (SEP). <https://doi.org/10.3389/fpsyg.2018.01475>
- 940 Nagel, Thomas. 1974. “What Is It Like to Be a Bat?” *The Philosophical Review* 83 (4): 435.
941 <https://doi.org/10.2307/2183914>.
- 942 Nave, Ohad, Fynn Mathis Trautwein, Yochai Ataria, Yair Dor-Ziderman, Yoav Schweitzer, Stephen
943 Fulder, and Aviva Berkovich-Ohana. 2021. “Self-Boundary Dissolution in Meditation: A
944 Phenomenological Investigation.” *Brain Sciences* 11 (6).
945 <https://doi.org/10.3390/brainsci11060819>.
- 946 Nielsen, Tore. A. 2010. Dream analysis and classification: The reality simulation perspective. In M.
947 Kryeger, T. Roth, & W. C. Dement (Eds.), *Principles and practice of sleep medicine*. Elsevier.

Nothingness is all there is: an exploration of objectless awareness during sleep

- 948 Nikhilananda, Swami. 1949. *Mandukya Upanishad with Gaudapada's Karika and Sankara's*
949 *Commentary* (3rd ed.). Bangalore Press.
- 950 Norbu, Namkhai. 1983. *Dream Yoga and the Practice of Natural Light*. Edited by M. Katz. Ithaca,
951 New York: Snow Lion Publications.
- 952 Olivelle, Patrick (Trans.). 1998. *The early Upanishads: Annotated text and translation*. Oxford: Oxford
953 University Press.
- 954 Occhionero, Miranda, Piera Carla Cicogna, Natale Vincenzo, Maria Jose Esposito, and Marino
955 Bosinelli. 2005. "Representation of Self in SWS and REM." *Sleep and Hypnosis*, 77–83.
- 956 Petitmengin, Claire. 1999. "The Intuitive Experience." In *View from Within. First-Person Approaches*
957 *to the Study of Consciousness*, edited by F. Varela and J. Shear, 43–77. Exeter: Imprint academics.
- 958 ———. 2006. "Describing One's Subjective Experience in the Second Person: An Interview Method
959 for the Science of Consciousness." *Phenomenology and the Cognitive Sciences* 5 (3–4): 229–69.
960 <https://doi.org/10.1007/s11097-006-9022-2>.
- 961 ———. 2007. "Towards the Source Of Thoughts." *Journal of Consciousness Studies* 14 (3): 54–82.
962 <https://doi.org/10.20314/als.8584e0642b>.
- 963 Petitmengin, Claire, and Michel Bitbol. 2009. "The Validity of First-Person Descriptions as
964 Authenticity and Coherence." *Journal of Consciousness Studies* 16 (10): 363–404.
- 965 Petitmengin, Claire, and Jean-Philippe Lachaux. 2013. "Microcognitive Science: Bridging Experiential
966 and Neuronal Microdynamics." *Frontiers in Human Neuroscience* 7 (September): 617.
967 <https://doi.org/10.3389/fnhum.2013.00617>.
- 968 Petitmengin, Claire, Anne Remillieux, and Camila Valenzuela-Moguillansky. 2018. "Discovering the
969 Structures of Lived Experience." *Phenomenology and the Cognitive Sciences*.
970 <https://doi.org/10.1007/s11097-018-9597-4>.
- 971 Ponlop, Dzogchen. 2006. *Mind Beyond Death*. Ithaca, New York: Snow Lion Publications.
- 972 Prasad, H. S. 2000. "Dreamless Sleep and Soul: A Controversy between Vedanta and Buddhism."
973 *Asian Philosophy* 10 (1): 61–73. <https://doi.org/10.1080/09552360050001770>.
- 974 R Core Team. 2021. "R: A Language and Environment for Statistical Computing." R Foundation for
975 Statistical Computing, Vienna, Austria.
- 976 Rabeyron, Thomas, and Samuel Caussie. 2016. "Clinical Aspects of Out-of-Body Experiences:
977 Trauma, Reflexivity and Symbolisation." *Evolution Psychiatrique* 81 (4): e53–71.
978 <https://doi.org/10.1016/j.evopsy.2016.09.002>.
- 979 Schredl, Michael, Burchert, Natalie, and Gabatin, Yvonne. 2004. The effect of training on interrater
980 reliability in dream content analysis. *Sleep and Hypnosis*, 6(3), 139–144.

- 981 Sikka, Pillerin, Valli, Katja, Virta, Tiina and Revonsuo, Antti 2014. I know how you felt last night, or
 982 do I? Self- and external ratings of emotions in REM sleep dreams. *Consciousness and Cognition*,
 983 25(1), 51–66. <https://doi.org/10.1016/j.concog.2014.01.011>
- 984 Sharma, Ramesh Kumar. 2001. “Dreamless Sleep and Some Related Philosophical Issues” 51 (2): 210–
 985 31.
- 986 Solomonova, Elizaveta, Fox, Kieran., and Nielsen, Tore A. 2014. Methodological considerations for
 987 the neurophenomenology of dreaming: commentary on Windt’s “Reporting dream experience”.
 988 *Frontiers in Human Neuroscience*, 8(317), 1–3. <https://doi.org/10.1023/B>
- 989 Sparrow, Gregory, Ryan Hurd, Ralph Carlson, and Ana Molina. 2018. “Exploring the Effects of
 990 Galantamine Paired with Meditation and Dream Reliving on Recalled Dreams: Toward an
 991 Integrated Protocol for Lucid Dream Induction and Nightmare Resolution.” *Consciousness and*
 992 *Cognition* 63 (June): 74–88. <https://doi.org/10.1016/j.concog.2018.05.012>.
- 993 Sze, J., Gyurak, A., Yuan, J., & Levenson, R. 2010. Coherence Between Emotional Experience and
 994 Physiology: Does Body Awareness Training Have an Impact? *Emotion.*, 10(6), 803–814.
 995 <https://doi.org/doi:10.1037/a0020146>
- 996 Takeuchi T, Miyasita A, Inugami M, Sasaki Y, Fukuda K, (1994). Laboratory-documented
 997 hallucination during sleep-onset REM period in a normal subject. *Perceptual and Motor Skills*
 998 *Research Exchange*, 78(3): 979-985.
- 999 Thompson, Evan. 2011. Self-no-Self? Memory and Reflective Awareness. In *Self, no self*.
- 1000 ———.2014. *Waking, Dreaming, Being: Self and Consciousness in Neuroscience, Meditation, and*
 1001 *Philosophy*. New York, NY: Columbia University Press.
- 1002 ———. 2015. “Dreamless Sleep, the Embodied Mind, and Consciousness.” *Open MIND* 37.
 1003 <https://doi.org/10.15502/9783958570351>.
- 1004 Thornberg, Robert, and Charmaz, Kathy 2014. “Grounded Theory and Theoretical Coding.” In *The*
 1005 *SAGE Handbook of Qualitative Data Analysis*, edited by Uwe Flick, 153–70. SAGE Publications
 1006 Ltd. <http://dx.doi.org/10.4135/9781446282243>.
- 1007 Travis, Frederick. 1994. “The Junction Point Model: A Field Model of Waking, Sleeping, and
 1008 Dreaming, Relating Dream Witnessing, the Waking/Sleeping Transition, and Transcendental
 1009 Meditation in Terms of a Common Psychophysiologic State.” *Dreaming* 4 (2): 91–104.
 1010 <https://doi.org/10.1037/h0094404>.
- 1011 ———. 2014. “Transcendental Experiences during Meditation Practice.” *Annals of the New York*
 1012 *Academy of Sciences* 1307 (1): 1–8. <https://doi.org/10.1111/nyas.12316>.
- 1013 Travis, Frederick, and Craig Pearson. 2000. “Pure Consciousness: Distinct Phenomenological and
 1014 Physiological Correlates of ‘Consciousness Itself.’” *International Journal of Neuroscience* 100
 1015 (1–4): 77–89. <https://doi.org/10.3109/00207450008999678>.
- 1016 Tyson, Paul, Robert Oglivie, and Harry Hunt. 1984. “Lucid, Prelucid and Nonlucid Dreams Related to

- 1017 the Amount of EEG Alpha Activity during REM Sleep.” *Psychophysiology* 21 (4).
- 1018 Valenzuela-Moguillansky, Camila, and Alejandra Vásquez-Rosati. 2019. “An Analysis Procedure for
1019 the Micro- Phenomenological Interview.” *Constructivist Foundations* 14 (2): 123–45.
- 1020 Vignemont, Frederique De. 2013. “The Mark of Bodily Ownership.” *Analysis* 73 (4): 643–51.
1021 <https://doi.org/10.1093/analys/ant080>.
- 1022 Voss, Ursula, Romain Holzmann, Allan Hobson, Walter Paulus, Judith Koppehele-Gossel, Ansgar
1023 Klimke, and Michael a Nitsche. 2014. “Induction of Self Awareness in Dreams through Frontal
1024 Low Current Stimulation of Gamma Activity.” *Nature Neuroscience* 17 (6): 810–12.
1025 <https://doi.org/10.1038/nn.3719>.
- 1026 Wangyal, Tenzin. 1998. *Tibetan Yogas of Dream and Sleep* (M. Dahlby, Ed.). Ithaca, New York: Snow
1027 Lion Publications [Ebook].
- 1028 Williams, Paul. 2000. *The Reflexive Nature of Awareness*. Delhi: Motilal Banarsidass.
- 1029 Windt, Jennifer M. 2013. Reporting dream experience: Why (not) to be skeptical about dream reports.
1030 *Frontiers in Human Neuroscience*, 7(NOV), 1–15. <https://doi.org/10.3389/fnhum.2013.00708>
- 1031 ———.2015. *Just in Time—Dreamless Sleep Experience as Pure Subjective Temporality Target*
1032 *Author. Open MIND*. Vol. 37. <https://doi.org/10.15502/9783958571174>.
- 1033 ———. 2020. “Consciousness in Sleep: How Findings from Sleep and Dream Research Challenge
1034 Our Understanding of Sleep, Waking, and Consciousness.” *Philosophy Compass* 15 (4).
1035 <https://doi.org/10.1111/phc3.12661>.
- 1036 Windt, Jennifer M., Tore A. Nielsen, and Evan Thompson. 2016. “Does Consciousness Disappear in
1037 Dreamless Sleep?” *Trends in Cognitive Sciences* 20 (12): 871–82.
1038 <https://doi.org/10.1016/j.tics.2016.09.006>.
- 1039 Winter, Ulf, Pierre Levan, Tilmann L Borghardt, Burak Akin, and Marc Wittmann. 2020. “Content-
1040 Free Awareness : EEG-FcMRI Correlates of Consciousness as Such in an Expert Meditator” 10
1041 (February): 1–11. <https://doi.org/10.3389/fpsyg.2019.03064>.

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1044 **Conflict of Interest**

1045 The authors declare that the research was conducted in the absence of any commercial or financial
1046 relationships that could be construed as a potential conflict of interest.

1047 **Author Contributions**

1048 All authors have made a direct contribution to the present work. AAS conceived the study and secured
 1049 funding. Both ASS and ED designed the study protocol, recruited participants, and carried out the
 1050 interviews; ED prepared the interviews' verbatims and AAS prepared the data for analysis; both AAS
 1051 and ED undertook the initial phenomenological analysis and AAS executed the final analysis; TCF and
 1052 SGTP undertook the external coding of the interviews; AAS wrote the first draft of the manuscript and
 1053 prepared the last version; ED, TCF, and SGTP provided substantial feedback and comments on the
 1054 subsequent versions of the manuscript; AAS created the diagrams and figures.

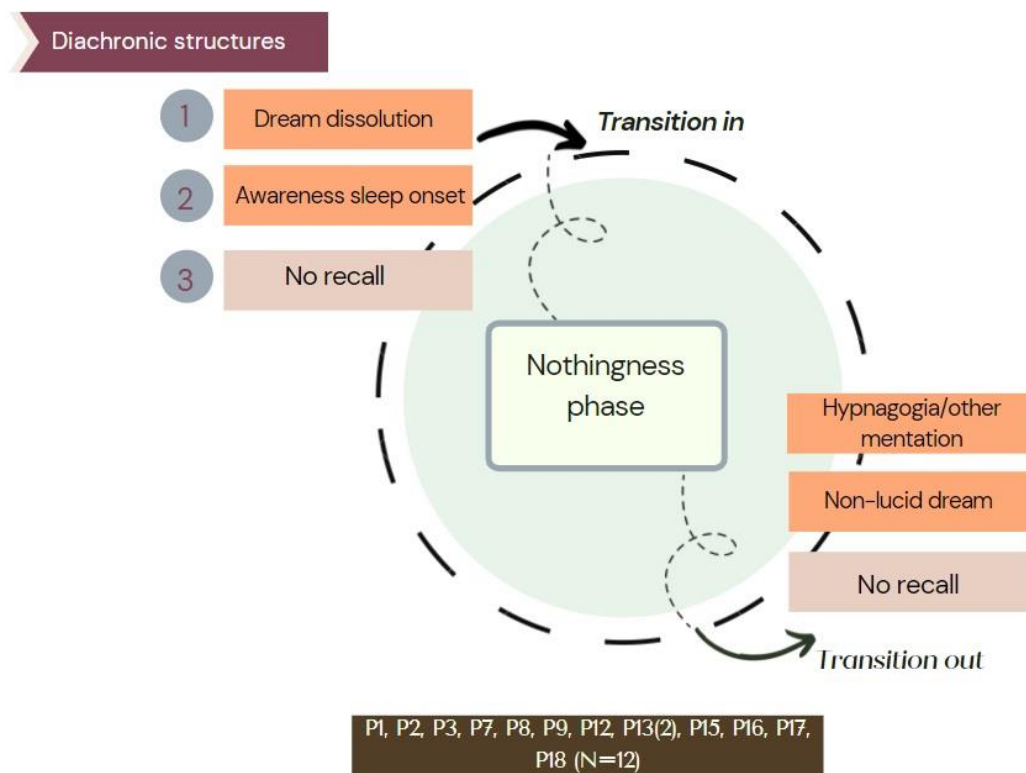
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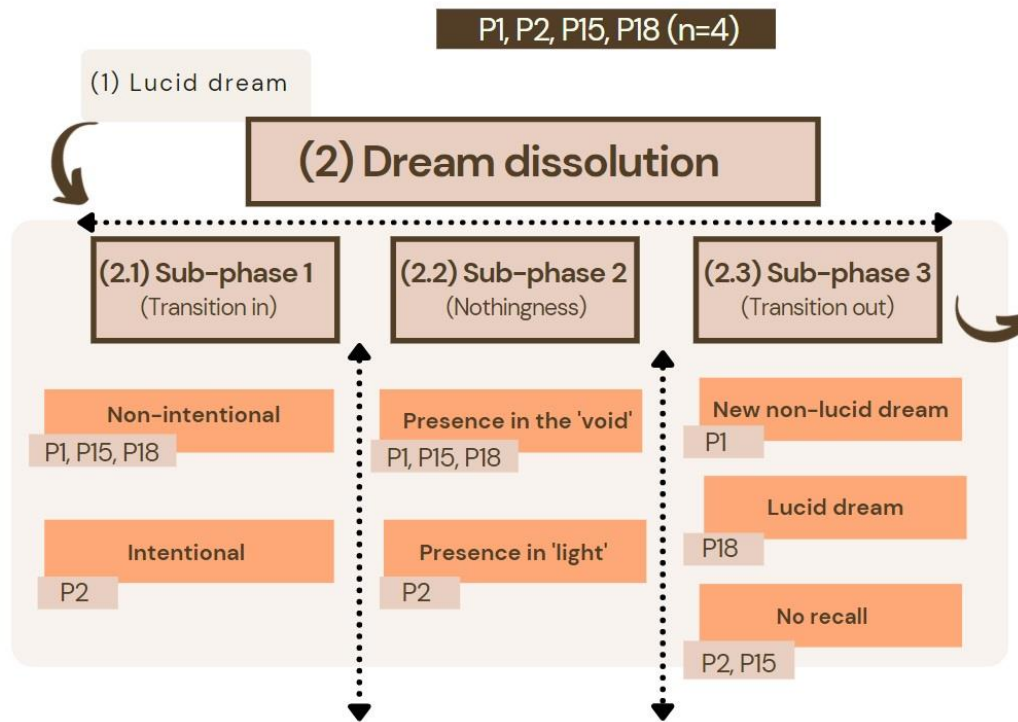
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1066 **Figures**

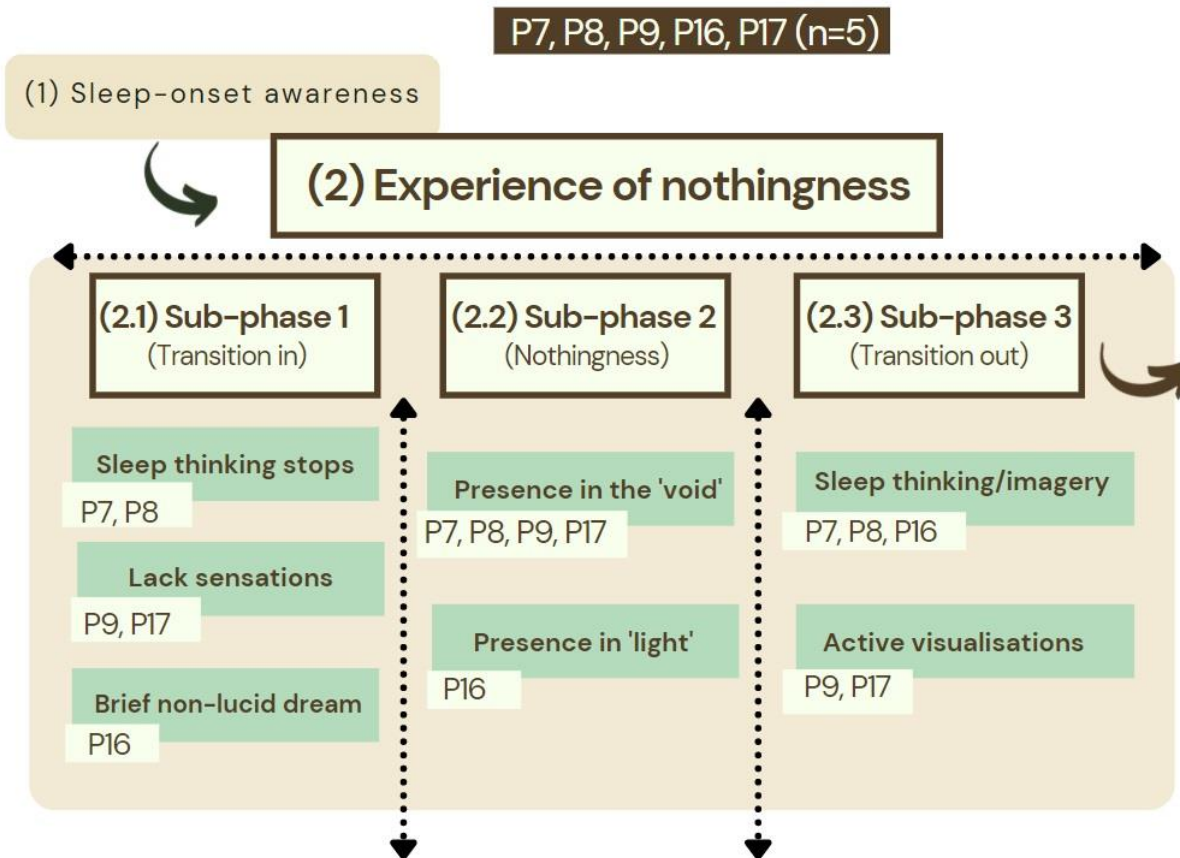


1067 **Figure 1.** Common phase isolated in the reports. This common phase was a sub-phase of their overall
 1068 described experience, labelled as “nothingness phase” in the analysis.
 1069



1070

1071 **Figure 2.** Diachronic structure 1 was characterised by the experience of the dissolution of a lucid dream
1072 preceding the sub-phase 'nothingness' in participants P1, P2, P15 and P18 (n=4). This sub-phase can
1073 be reached intentionally or non-intentionally.



1074

1075 **Figure 3.** Diachronic structure 2 was characterised by a transition into the void or nothingness without
 1076 a preceding lucid dream dissolution in participants P7, P8, P9, P16 and P17 (n=5). Instead, for these
 1077 participants there was an awareness of their sleep onset and perception of brief hypnagogic/dreaming
 1078 imagery, noticing their thoughts stopping, or the absence of bodily sensations.

1079 **Tables**

1. Sense of self

1A. Bodily ownership	<p>2- Weak embodiment/lack form: P13, P15, P18 (n=3)</p> <p>3- Distorted: P16 (n=1)</p> <p>4- Minimal identification: P1, P2, P13, P7, P8, P9, P12, P17 (n=8)</p>
1B. Spatial self-location	<p>1- Physical: P7 (n=1)</p> <p>3- Indeterminate: P1, P9, P12, P15, P18 (n=5)</p> <p>4- Minimal: P8, P13, P17 (n=3)</p> <p>5- No clear boundaries: P8, P16 (n=2)</p> <p>6- Absent: P2, P3 (n=2)</p>
1C. Perspective	<p>1- Regular: P12, P18 (n=2)</p> <p>2- Fluctuating: P2, P18 (n=2)</p> <p>3- Minimal: P7, P8, P15, P16, P17 (n=5)</p> <p>4- Absent: P3 (n=1)</p> <p>None: P1, P9 (n=2)</p>

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1D. Agency and attitude	1- Active: P1, P7, P13, P18 (n=4)	1080
	2- Receptive: P1, P7, P12, P15 (n=4)	
	3- Lost control: P7, P9, P13, P17, P18 (n=5)	1081
	None: P2, P3, P8, P16 (n=4)	1082

1083 **Table 1.** 2nd and 3rd level categories and the number of participants mentioning them for the 1st level
 1084 category “*Sense of self*”. The number of each 3rd level category refers to the number given in the coding
 1085 during the thematic analysis undertaken across all the phases of the reported experiences, and thus,
 1086 corresponds to the ordinal numbering in the list of coding (see **Supplement Materials**).

1A. Bodily ownership	
4 - Minimal Identification	
A sensation	<p><i>So, this sensation of nothing was letting me know that I was still in a dream, because I made the comparison to, I can't feel any of my limbs. So, I know that I'm not just in bed right now with my eyes closed. Because none of my body's there. So, the sensation of nothing was actually letting me know that I was still in the dream. (P1:26)</i></p>
Bodiless awareness	<p><i>And then, and then all of a sudden, there was just nothing I couldn't, I've gone from, from my body, I guess. And I've had other bodies before and this, this felt very, very, very different where I didn't like there was no dream body no dream scene. No, no ANYTHING. It's almost like seems like a form about a body. But it almost seems like you're, you're caught between, caught between somewhere where you're trying to get in and the physical, you're, you're somewhere else. [...] And so, so I was able to feel that I guess. (P9:18)</i></p>
A sphere of light	<p><i>[...] I no longer have an idea of a body a dream body at that point (P2:37) And then I [emphasis] became or was this just like this little ball of light, [...]. So like I knew that the sphere of light was ME, but also like the light that was around the sphere was me, [...] (P2:36) Once I become the sphere, you're asking if I have any body perception? I don't have any at that point [...] (P2:47) [...] having a dream body is just completely gone. [...] (P2:48).</i></p>

1087 **Table 2.** Illustrative examples of the sub-category ‘*Minimal identification*’ and the different ways in
 1088 which this was instantiated. Note that for each report we have indicated the participant number and the
 1089 description number in the report.

1B. Spatial self-location

1- Physical	<i>I suddenly felt like I was in this BUILDING, like a factory (P7/1, 40). For once, I can FEEL [the space]. I could feel the DISTANCE from my awareness in there, to the walls and the door, and so on. And yes... there are different points that make up this space. [...] (P7:47-48)</i>
3- Indeterminate	<i>So, I'm still the same as I was before. Except there is no relation to other things around me. So, I didn't as the scenery disappeared. I didn't feel like I somehow move or anything. Just, I was in the same location? (P15:51)</i>
4- Minimal	<i>It's like, there's no beginning there's no end, there's not like a locational type of thing (P17:22) But I'm IN, [...] It's because it's just infinite (P17:23) I... just I'm just there. (P17:20)</i>
5- No clear boundaries	<i>It's more like I was the void. [...] (P8:44)</i> <i>It's just total darkness. And you..., there's very little difference between you and what's around you. [...] (P12:30)</i>
6- Absent	<i>But in that experience, there was not even a sort of sense of me being a, a person or anything like, you know, for...for me to say like, here's an outside and here's an inside, it was just this sort of tapping (P3:12)</i>

1090 **Table 3.** Sub-categories (2nd level) for the dimension ‘*IB-Spatial self-location*’ and some quotes
1091 exemplifying each sub-category.

1C. Perspective	
3 - Minimal	
Point of view as part of the experience	<i>(I: Is there a point of view that you are you present IN this light or are you looking AT that light....?) No, I'm present IN that light (P16: 9) Yeah, it was really like a bath in this energy and light. (P16:45) [...] Yeah, having a BATH inside of this light (P16:48) [...] I'm INSIDE the experience [...] (P16:28, edited)</i> <i>Imagine like, just BEING in the point of view of just like being in those colours [...] But I'm IN, I'm in the point of view of like, anywhere I go, [...] I'm not like able to like TURN this environment or like OBSERVE it from like different points of view[.] I'm seeing and just like IN, immersed IN these colours. (P17: 23)</i>
Not ordinary 'seeing'	<i>It's like, if, in one, you're looking at a movie screen that has nothing on it. And in other, someone turns out, light [...] Yeah, it's kind of like seeing white in front of me. That's not exactly what's going on. But that's the closest I can get to describing it (P8: 61-65)</i>

1092 **Table 4.** Examples of quotes referring to a ‘*Minimal*’ sort of first-person perspective of point of view
1093 and the different ways in which it is instantiated.

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1D. Agency and Attitude

<p>[...]. And that all went away and just disappeared. [...] (P1, 22) And I could always wake myself up at any point in time if I wanted to. I could. But I didn't want to (P1:25)</p> <p>And then I just remained there. And I just tried to keep my awareness and my lucidity with clear intent to not let it go... [...] (P1:10)</p>	<p>P1 describes how the dream scenery disappeared, and that they knew they could wake up, but they didn't, they accepted this state (2- Receptive). Then, they tried to actively keep their awareness during this state (1- Active).</p>
<p>I had the intention before that... I wanted to EXPLORE this state and to go as deep into it as I can. And this still remained... (P7:73)</p> <p>[...] I couldn't do that; something was stopping me then. (P7-1, 52) [...] There was something holding me back. And so, there was like an invisible barrier, but I couldn't get through [...] (P7:76)</p> <p>Yes, at some point, I noticed that I just can't go there now. And so, I thought, Okay. [...] (P7: 89)</p>	<p>P7 mentions how their intention was always to go 'deeper' into the state and explore it (1-Active), yet when they tried, something was holding them back (3-Lost control), but they end up accepting it (2-Receptive).</p>
<p>[...] the main thing that remains and that has been kind of prevailing since I became lucid is this determination of maintaining awareness. [...] (P18:33) [...] [The lucidity] remains and I think it's because I'm very determined to maintain lucidity and not to, I don't want to like get IMMERSED in the dream, I want to stay aware [...] (P18:60)</p> <p>And at the same time, it's a bit strange, because I cannot really like control it completely. [...] (P18:50)</p>	<p>P18 also mentioned having had the intention to maintain the awareness, and that this determination was kept thorough the experience (1-Active), however, in a sense, they couldn't completely control it (3-Lost control).</p>

1094 **Table 5.** Quotes characterising the dimension of '1D-Agency and Attitude' for three of the
 1095 participants alluding to more than one 3rd level category in their descriptions (P1, P7 and P18) during
 1096 the 'nothingness phase'.

2. Sensations

<p>2A-Bodily sensations</p>	<p>4- Absent: P1, P8, P9, P12 (n=4)</p>
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2B-Kinaesthetic sensations	1- Position: P15, P18 (n=2)	1097
	3- Floating/hanging or suspending in the air: P1, P18 (n=2)	1098
	4- Release tension: P17 (n=1)	
	5- A force/barrier: P7 (n=1)	1099
	6- Absent: P1 (n=1)	1100
	None: P2, P3, P8, P12, P13, P16 (n=6)	
2C-Non-modal sensations	1- Modality-like: P3, P7, P13, P15, P16 (n=5)	1101
	2- As having material properties: P7, P15 (n=2)	
	3- As lacking anything: P1, P9, P17 (n=3)	1102
	None: P1, P2, P8, P12 (in a different phase)	1103

1104

1105

1106 **Table 6.** 2nd and 3rd level categories and the participants identified for each for the 1st level category
 1107 Sensations. The number for each 3rd level category corresponds to the number given in the coding for
 1108 the thematic analysis (see **Supplement Materials**).

2C. Non modal sensations

1 - Modality-like

Tactile-like: Whilst P3 described what could be taken as a tactile or bodily sensation in their chest, in different parts of their report they stressed how not only do they lack any bodily sense during the experience, but also a sense of 'a self', so all there was it was just this tapping or pulsing.

I'm feeling this sort of sensation in the chest with no sense of, of MYSELF feeling (P3-1, 4) [...] it was just a sort of bare Morse code, code like pulsing at the chest. [...] (P3-1,9) It wasn't like, as if someone were tapping the... my chest, you know what I mean? It wasn't at the surface of my chest. It was INSIDE the chest. (P3-1, 11) So if I were to translate it in terms of like, audio information, it'd be something like ta-ta-ta-ta-ta, ta-ta-ta-ta-ta-ta, ta-ta-ta-ta-ta-ta, ta-ta-ta-ta-ta-ta-ta... Now, of course, I'm not HEARING anything. [...]. It was just this sort of like, a tactile sense in that rhythm. (P3:10)

Sound-like: Both P13 and P15 described a sound that overtook the experience. P13 described the sound as being part of the experience, as a sound, they could feel, yet not hear as such. P15 described that after the dream scenery disappear, they were some 'tiny motor movements', which they describe by referring to the sort of buzzing or noise that the TV does when the signal is out.

[...] the sound like had- like an EMBODIED experience of it...(P13:34) I could, I guess like FEEL the sound if that makes sense. [...] (P13(2), 35) [...] And the sound was the overwhelming part of it. And it was like an all-encompassing sound. So not like a dream of like a bird chirping, but just like the STATE IS THE SOUND. (P13: 9)

Like the television screen! You know when it goes bad. It's similar to that. But smaller and less irritating than the TV screen. You know, they're and they could have the "shshsh", but a lot quieter (P15:49)

2- As having material properties

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Something is there	<p>[...] I could already feel it before that there is very thick darkness inside that room behind the door, it kinda came leaking out of the door (P7: 42) It was like I was feeling it through the door. (P7:55) [...] But, am... That there, it's not only DARKNESS, it's that there ISN'T anything, it's NOTHINGNESS. And so, I felt this kind of VOID in there. (P7/1), 57) [the nothingness] felt very ABSOLUTE... and... somewhat EXPANDING[...] (P7: 59)</p> <p>it feels very, very MIGHTY. [...] (P7:70)</p>
A sense that can be seen; it could also be coded as a visual-like modality	<p>(I: And so is there a feeling that you are that there is a space that is dark? And doesn't have anything visual in it? Or is there a feeling that you are in nothingness?) P: Hm!! I think definitely didn't have the feeling of emptiness. I still had a feeling of something being there. Me being there. And also the tiny movements... existing, you know, it was the fact that I perceived them was the opposite of they're just being nothing. No, it was something. [...]. I think that tiny movements, was there something as opposed to nothing (P15:47)</p> <p>Yes. I see the tiny movements. So, like, the tiny movements are, in a way, the fact of fading and disappearing. But at the same time, it's something that I somehow see, I, or maybe, let's say, perceive, because as I see it, it doesn't really have like a shape or a colour. But it's still something that moves, something that is happening (P15:33, earlier quote from a different phase)</p>

3- As lacking anything

But then once [the senses] disappeared, I had nothing. And I was just floating in nothingness (P1:3) And that just feels like total nothingness. Like just emptiness. (P1:33) Because the only sensation that you have, if you could even call this sensation would be this sensation of nothing (P1:26)

1109 **Table 7.** Illustrative quotes referring to the different 3rd-level categories for the sub-category '2C-Non-
1110 modal sensations'.

3. Visual experience	
(3) Loss of imagery (n=8)	
Absence of imagery; blackness	<ul style="list-style-type: none"> • Everything is...is black (P1:11) • [...] like, actually being in a dark room in which there is... absence of light (P12:18) • It's just kind of colourless and lightless (P18:3)

Absence of imagery; whiteness	of	<ul style="list-style-type: none"> • There's just white, [...] For lack of anything else, I mean, it's not black. (P8:61-65)
Absence of imagery: light	of	<ul style="list-style-type: none"> • [...] it's almost like I was LOOKING at the sphere of light too (P2:45) • [The light] has no source, it's everywhere (P16: 8)
Absence of imagery; flashes/colours	of	<ul style="list-style-type: none"> • [...] it looks like white against a colour. So, I guess they're like a little, they could be holes. But I rather describe them as little flashes. (P15:49) • [...] almost as like this water's being shaken up. And like the colours of the ink are just being like, shifted around and going around each other and moving all which way. [...] (P17:23)

(4) Absence: P3, P7, P9, P17

- **And I could tell the difference between, like, you know, having my eyes closed, and just not being aware of any kind of visual information [...]** There was NO sense of vision (P3:8)
- **Not like seeing with my EYES** (P7:43)
- **And, and you had, you had no sensory perceptions, and you had NOTHING.** (P9:15)
- **just SEEING isn't, isn't a thing there** (P17:28)

1112 **Table 8.** Illustrative descriptions for the category “*Visual experience*” and the sub-categories isolated
 1113 during the ‘nothingness phase’.

4. Attention	
(1) Focused	<p><i>Like, there's more, I guess, like, like, self-reflective thinking there. Not as much about like, like me as a person, but just as thinking that's happening.</i> (P13:39)</p>
(1) Focused; (3) Resting/vague	<p>So, I... had these thoughts. They were a realization that the scenery was disappearing. They were a direct response to what I was saying. They were in Slovenian. "Quickly try to remember something else. Where can you go?" (P15:56-57)</p> <p><i>I don't remember right now, particularly focusing on the tiny movements as such in that moment. I know there were there. They were constantly part of the experience. But I wasn't explicitly focusing on them. I was somehow letting myself... Ha! Observing. So, observing. But observing is not like, just looking and focusing on them. Observing is looking at wanting to give something to it, to give it meaning, to figure out what it is. Just looking would be just letting into the visual perception, I guess.</i> (P15:80)</p>
(2) Dynamic	<p><i>I felt that, that my awareness is everywhere inside this room, but it's not always in all places, but it changes.</i> (Mhm.) Like it's here and there and moves around. (P7:36) [...] [the transition] is like going into different directions of, am... of possibilities that are in my awareness somewhere. The experience of this factory setting was the main place of my experience, then... there would come</p>

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(4) Wide, unfocused

*up some thoughts while being there. And if I just ... **if I then went with these thoughts, I would do somewhere else.** (P7:51) **when the door opened, I was JUST with my awareness somewhere else.** (P7:53)*

*because **you kind of go from awake to all of a sudden... AWARE** (P9:30-31) Am... In that state, it's just...just like, yeah, **just pure consciousness** where you're there and at first, I just relaxed in... and just relaxed in it (P9:12)*

*No, **there's nothing... there would be like really NOTHING to pay attention to, I guess. Unless you can count, like being attentive to nothing** (P13-2:30)*

1114 **Table 9.** Illustrative examples of each of the types of ‘**Attention**’ isolated from the phenomenological
1115 analysis.

<i>1st level category</i>	<i>2nd level category</i>	<i>3rd level category</i>	<i>Mentions/total</i>	<i>No mentions/total</i>
1. Sense of self	Bodily ownership	Minimal identification	8/12	0
	Spatial self-location	Indeterminate	5/12	0
	Perspective	Minimal	5/12	2/12
	Agency	Lost control	5/12	4/12
2. Sensations	Non-modal sensations	Modality-like	5/12	3/12
3. Visual experience	Loss of imagery	-	8/12	1/12
4. Emotions	Presence emotions	-	7/12	2/12
5. Attention	Wide attention, no focus	-	6/12	0
6. Awareness of the state	Knowing they are aware	-	8/12	0

1116 **Table 10.** Summary of mentions provided to the most frequent 3rd level and 2nd level categories.