

Themes in participants' understandings of meaning in their Most Recent Dream: Worries, relationships, and symbolism

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Summary. The ways in which individuals construct meaning in their dreams may be influenced by well-known psychological theories, popular understandings of dream meaning, or religious interpretations of dream meaning, but little research so far has been conducted investigating the kinds of meaning people ascribe to their dreams. The present study aimed to paint a snapshot picture of individuals' understandings of one of their own dreams. Participants (N=106) reported their Most Recent Dream and answered the open-ended question "What do you think this dream is about, or means?". Data were analysed with inductive thematic analysis. Six major themes were created, all of which pertained to how the dream related to participants' own waking lives: 1) Worries and Emotions; 2) Relationships; 3) Work and Studies; 4) Events and Situations; 5) Desiring, Wanting, and Longing; and 6) Symbolism. Further analyses were conducted to investigate whether there were any noticeable differences between participants who saw symbolic relations between their waking life and their dream (N=25), and those who saw only literal relations with waking life (N=46). It was found that symbolic interpreters had more trait thought suppression, more aggression/violence in their dream, more intense emotions in their dream, and more continuity between their dream and their waking-life emotions, than literal interpreters. Difficulties around and suggestions for researching dream symbolism are discussed.

Keywords: dream, symbolism, Continuity Hypothesis, thought suppression, Sigmund Freud

1. Introduction

Academic journals and bookshops are replete with theories about why we dream. Arguably the most famous is Freud's (1900) wish-fulfilment theory of dreams, in which he suggested that dreams are all representations of wishes that we want to see fulfilled. Some of these wishes that we desire, such as those that are sexual or aggressive in nature, are unacceptable to our conscious awareness, so they appear instead in dreams in a disguised (symbolic) format. Besides Freud's early attempt to provide a psychological explanation for dreaming there are countless others in the field of psychology alone: Jung's (1934, 1948a, 1948b) compensation theory, the Cognitive Theory (Hall, 1953), the Neurocognitive Theory (Domhoff, 2010), the Threat Simulation and Social Simulation Theories (Revonsuo, 2000; Revonsuo, Tuominen, & Valli, 2015), the Protoconscious Theory (Hobson, 2009), emotion-regulation / emotional memory assimilation theories (e.g. Cartwright, 2011; Hartmann, 1996a; Malinowski & Horton, 2015), the Continuity Hypothesis (Hall & Nordby, 1972), and so on.

In addition to the many academic explanations for dreaming, so-called "dream dictionaries" that purport to allow dreamers to look up the symbolic meaning of their dreams abound. The concept that it is possible to glean universal

meaning from dream symbols or to divine future events from them has existed at least as long as the written word, and probably much longer, as evidenced in ancient texts such as Artemidorus' *Oneirocritica* (Artemidorus / Harris-McCoy, 2012), and the ancient Egyptian 'Ramesside Dream Book' (Szapkowska, 2003). Similarly many religious texts include dream interpretation passages, often indicating that dreams have the potential to be prophetic, such as in the Bible and the Talmud (Bar, 2001).

That so many dream dictionaries and dream guides exist in bookshops and online today suggests that many people still engage with their dreams and want to understand their meaning. However, aside from the development of the Inventory of Dream Experiences and Attitudes (IDEA) (Beaulieu-Prévost, Simard, & Zadra, 2009), little empirical research exists that has investigated how people understand dream meaning in the modern "Western" world. The research presented here thus investigated participants' understandings of the 'meaning' of their Most Recent Dream. The intention behind this was not to find evidence for one or another theory of dream meaning *per se*, but primarily to uncover participants' understandings of dream function and meaning, and then to consider whether any influence of dream theories may also be detectable within these constructions. Participants were mostly second year undergraduate psychology students, who may not be overly familiar with the more recent academic theories on dreaming, but would be likely to be familiar with some of the more well-known theories, and/or with ancient, religious, and/or popular understandings of dream meaning.

The aim of the study, then, was to investigate participants' understandings of the meaning of their Most Recent Dream, and so to further knowledge about dream-related beliefs and attitudes. In addition the study investigated whether there is any discernible evidence of the influence of aca-

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democratic, popular, religious, or other types of theories of what dreams are, and what they are for, in participants' understandings of dream meaning.

2. Method

2.1. Participants

106 (85 female) participants completed the full online questionnaire and consented to have their data used in the analyses, with an age range of 18-56 ($M=24.03$, $SD=7.72$). 18 participants did not provide their age. The majority of participants ($N=71$) were second-year undergraduate psychology students at the University of Bedfordshire who participated in the questionnaire as part of a class on dreaming and were given the option of refusing their data to be used in the analysis. The remainder were recruited via the website Reddit on the subreddit /dreams/ ($N=27$), and via word of mouth ($N=7$). One participant did not report how they heard about the study.

2.2. Materials

Participants were asked a series of three questionnaires, all hosted in one weblink via the online questionnaire resource Qualtrics.

The first questionnaire asked participants to report their most recent dream. They were instructed as follows (as adapted from the 'Most Recent Dream' form at http://www2.ucsc.edu/dreams/Forms/most_recent_dreams.html):

"Please write down the last dream you remember having, i.e. your most recent dream. This could be as recent as last night or from as far back as childhood, but should be the most recent one you can remember having, no matter how long or short it is. Please describe this dream exactly and as fully as you remember it. Your report should contain, whenever possible: a description of the setting of the dream, whether it was familiar to you or not; a description of the people, their age, sex, and relationship to you; any animals that appeared in the dream. If possible, describe your feelings during the dream and whether it was pleasant or unpleasant. Be sure to tell exactly what happened during the dream to you and the other characters."

Following this, participants were asked to detail what, if anything, they thought the dream was about, or meant, a series of other questions about the dream (how emotional, violent/aggressive, sexual, and friendly it was, and how much overlap there was with various elements of waking life such as emotions), and the White Bear Suppression Inventory (WBSI: Wegner & Zanakos, 1994) and Big Five Inventory (BFI: John & Srivastava, 1999). Results from the relationships between dream content and personality traits are reported in Malinowski (2015). The exact question that participants were asked in respect of dream meaning was "What, if anything, do you think this dream is about, or means?"

2.3. Procedure

Participants either took part during a scheduled class at the University of Bedfordshire, or in their own time via an advertisement placed on the subreddit /dreams/ at www.reddit.com. After reading the first page in which they were informed that they would be asked to recount a recent dream and answer some questions on it as well as some personali-

ty questions, participants could either indicate their consent to participate or close the webpage if they preferred not to participate. Students at the University of Bedfordshire were given the third option of participating in the study for their learning but refusing their data to be used in the analysis. Once consent had been obtained, participants were asked to recount their Most Recent Dream and then answer three sets of questions (one set about the dream, and two sets to measure personality traits, as described in section 2.2). Following completion of the questionnaire participants were debriefed on the nature of the study and thanked for their time. Responses were automatically recorded on Qualtrics and then downloaded for analysis in IBM SPSS software.

The study abided by the British Psychological Society's ethical guidelines, and received ethical approval from the Research Centre for Applied Psychology's Research Ethics Committee at the University of Bedfordshire.

3. Results

3.1. Thematic analysis on dream meaning

The responses participants gave to the question "What, if anything, do you think this dream is about, or means?" were collated and analysed using the Braun and Clarke (2006) method of thematic analysis in order to analyse the kind of things participants believed their dreams were about or meant. Following extensive coding of the data, themes were devised for both internal homogeneity, that is, the coded extracts cohered meaningfully within the theme, and external heterogeneity—there were "clear and identifiable distinctions" (Braun & Clarke, 2006, p. 91) between the themes. Following this, themes were reviewed and refined and quotes were selected that best illustrated the essence of each theme. The analysis was conducted inductively, that is, with the intention of allowing the data to lead the analysis, rather than deductively. Although it was intended to look for evidence of the influence of extant theories of dreaming in participants' responses, this was to be carried out once themes had been inductively identified, rather than to look for evidence of specific theories within each response.

The overwhelming majority of interpretations pertained to how the dream related to the participants' personal waking life. These were organised thematically into six major themes and four minor themes. The major themes accounted for the majority of the interpretations, whereas the minor themes were found less frequently, but illustrated something interesting about participants' interpretations of the dreams. The major themes were: Worries and Emotions; Relationships; Desiring, Wanting, and Longing; Work and Studies; Situations and Events; and Symbolism. (In the present study, the word "symbolism" was adopted as opposed to related words such as "metaphor" or "figurativeness", because of the participants who explicitly used a term to denote nonliteral wake-dream relationships, they unanimously used the word "symbolism".) The minor themes were: Helpful Dreams; The Past and Future; Portraying the Hidden; and Influence from Television. Illustrative examples of each theme can be found in Tables 1 and 2. In addition to these themes, many participants stated that they did not know what the dream was about. Only one participant stated that their dream had no meaning at all.

3.1.1 Major themes

The theme 'Worries and Emotions' detailed when dreamers recognised that the dream was about something that they were experiencing emotionally in waking life, in particular negative emotions, especially things that were concerning or worrying to them. Within this theme there were two subthemes: Pressure, Anxiety, and Stress; and Fear and Paranoia. The first two subthemes accounted for the vast majority of the waking-life emotions participants identified as the source or meaning of the dreams. Thus, in line with Domhoff's (1996, 2003, 2011) account of the Continuity Hypothesis, most dreams in this theme were thought by participants to reflect worries or concerns from waking life. It is also in line with the findings of the Inventory of Dream Experiences and Attitudes (Beaulieu-Prévost, Simard, & Zadra, 2009), which found "Dream Continuity", i.e. overlap with waking life, and "Dream Apprehension", which involved fear of dreams and nightmares, to be two factors associated with dream-related beliefs and attitudes.

The theme 'Relationships' was one of the biggest themes created; participants dreamt of their waking-life girlfriends and boyfriends, mothers and fathers, grandparents, cousins, unborn children, friends, and sports teams. It is not surprising that this was a huge theme, since it has previously been found that dreams are peculiarly interpersonal and social experiences (McNamara, McLaren, Smith, Brown, & Stickgold, 2005;; Revonsuo, Tuominen, & Valli, 2015). For the most part, again as found in the theme 'Worries and Emotions', this generally involved anxiety – the dream represented an interpersonal situation that the dreamer was presently worried about. This theme also included dreams of deceased loved ones.

The theme 'Work and Studies' appeared in many of the responses. Again, in keeping with previous findings regarding waking-life emotions and relationships in dreams, work and studies were usually dreamt of in terms of anxieties surrounding them. There were, however, some exceptions to this, such as a participant who dreamt of her happiness at the grade she had achieved at university. This theme was also found in a previous thematic analysis of participants' understanding of dream meaning (Malinowski, Fylan, & Horton, 2014).

The theme 'Events and Situations' was a smaller theme, and simply represents the responses in which participants recognised that the dream related to something that had happened in waking life, usually recently. Events such as shopping, playing sports, moving home, having an argument, and getting a haircut appeared in dreams. Sometimes the dreams simply represented a current situation, such as the dreamer's attempt to conceive a child. This is in line with Domhoff's (2007) finding that many dreams are similar to everyday waking reality.

The theme 'Desiring, Wanting, and Longing' was created to pull together responses in which participants stated that the dream represented something they wanted from waking life: these were varied, and included such diverse wants as sex, a relationship, to go to a party, a better car, social support, to travel, and to eat cake. In the most obvious sense this theme is a manifest version of the wish-fulfilment theory of dreaming (Freud, 1900).

The final major theme, 'Symbolism', was created to represent responses in which dreamers either explicitly described the dream as a symbolic representation of waking life, or described the way in which the dream bore a

Table 1. Major Themes

Theme	Examples of answers to the question "What do you think this dream is about, or means?"
Worries and Emotions	<p>"I think it's connected to the general anxiety in my waking life."</p> <p>"I have been going through a lot of stress and confusion recently."</p> <p>"It probably has to do with my fears. I have been going through a lot of psychological pain and terror."</p> <p>"I have anxiety so it could have some significance to me feeling as though I'm being held back."</p>
Relationships	<p>"I believe it to be relating to my relationship with my partner."</p> <p>"I think this dream is about myself and C_'s relationship."</p> <p>"I think there's too many confusing aspects to my relationship right now that are causing me to dream a solution."</p> <p>"I recently found out my current girlfriend had an emotional affair with her (married) ex-boyfriend during the very beginning of our relationship. I have been dealing with the fallout from that."</p>
Work and Studies	<p>"Means me being anxious about the exams."</p> <p>"Last week I experienced a lot of tension at work."</p> <p>"I believe it is an encouragement to put in more effort into my assignments and reading."</p> <p>"Yearly evaluations were recently conducted at my office and I was disappointed about my scores, which I thought were unfair."</p> <p>"It generally happens when I have important exams or educational situations such as choosing subjects/ courses etc."</p>
Events and Situations	<p>"As I am actually moving home, it is clearly on my mind, to the point that I am also dreaming about it."</p> <p>"I recently cut my hair short, and thinking of new hairstyles."</p> <p>"It means couple of days ago I had a massive argument with him in gym and it didn't end well."</p>
Desiring, Wanting, and Longing	<p>"It seems to be nothing but an expression of unfulfilled sexual desires."</p> <p>"It probably shows my wishes to have a normal mum again."</p> <p>"I think it represents my desire to dominate my man because he's like the ultimate Dom."</p> <p>"In my life while awake I do tend to yearn for companionship."</p>
Symbolism	<p>"I think it symbolizes the way I felt after the event took place."</p> <p>"There are a lot of stressful events coming together into my life at the moment and perhaps the exploration of dark corridors is symbolic of this."</p> <p>"The fact that I was repeatedly tackling the same person could relate to doing the same things over again which I've found myself to be doing recently."</p> <p>"This dream represents me drowning myself because I did not feel I was performing as well as I should."</p>

non-literal relationship with something from waking life. In a previous thematic analysis of participants' understandings of their dreams we similarly found that dreamers often talk about their dreams in terms of metaphorical, symbolic, or otherwise non-literal portrayals of waking life (Malinowski, Fylan, & Horton, 2014).

The themes generated in the analysis were devised to richly describe and provide a full account of the data, and conform to Braun and Clarke's (2006) criterion of external heterogeneity, with each theme illustrating something different about participants' interpretation of their dream's meaning. Nevertheless there are aspects of the themes that have some overlap with each other. For example, many of the

Table 2. Minor Themes

Theme	Examples of meaning given by participants
Helpful Dreams	"This dream is like a warning sign to warn me that if I do not control my speed then there will be dangerous consequences." "I think that the dream was reminding me of the festival and that to be careful when wondering alone."
Past and Future	"The dream showed [the] possibility of moving to next stage of my life which may involve my career and future progress in life." "I think I might have had the dream because I am scared of dogs in real life but have been thinking about buying a dog in the future."
Portraying the Hidden	"I think it means I am afraid to face a part of me that I've kept hidden." "I am a student who live (sic) at home with my parents it feels like it was my outlet of how I really feel about that."
Influence from Television	"I think this dream stemmed from the fact that I watched a scary movie last night." "The night before watching this dream I watched the film '2012' which is about the end of the world. I think that this was the reason for my dream."

themes contain worries and emotions, such as "Work and Studies" and "Symbolism". However, it was decided to create "Worries and Emotions" as a separate theme, as there were many descriptions that included allusions to non-specific worries and emotions from waking life.

3.1.2 Minor themes

The small theme 'Helpful Dreams' comprised interpretations of dream meaning whereby the dream represented something helpful to a situation in waking life: reminders to be careful, warnings, indicating the right path, helping to process something, making decisions, problem solving, representing different options, and so on. Similarly in our aforementioned study, we developed separate subthemes for dreams that simply represented waking life, and dreams that appeared to be helpful to some aspect of it (Malinowski, Fylan, & Horton, 2014). The Inventory of Dream Experiences and Attitudes (Beaulieu-Prévost, Simard, & Zadra, 2009) likewise identified a "Dream Guidance" subscale.

The theme 'Past and Future' encompassed dreams that hark back to something from memory, or look forward to something that has not yet occurred, unlike most of the rest of the dreams, which were thought to deal with the present. Future dreams were more numerous than past. Among the most interesting of these were a dream that the dreamer thought may be about a repressed childhood memory, and a participant who believed her dream was precognitive for the future. However, all of the other future dreams simply dealt with an anticipated upcoming situation.

The theme 'Portraying the Hidden' was a small but important theme in which some participants expressed that their dream was an outlet for a waking-life secret, or compensated waking-life feelings, or was an expression of the subconscious, or represented something they were avoiding in waking life. Thus this theme is similar, though not identical, to the Jungian (1934, 1948a, 1948b) concept of compensation, in which dreams portray things that are insufficiently concentrated on during wakefulness, or may alternatively

relate to the dream rebound effect discovered in a number of experiments (e.g. Wegner et al., 2004).

The theme 'Influence from Television' simply pulls together the many statements made by participants that their dream came from something they had seen on television immediately prior to sleeping. In addition to television, there were examples of reading or hearing horror stories before bed influencing dreams.

3.2. Further exploration of perceived dream symbolism

The finding that symbolism was a major theme in the present study is in line with Malinowski, Fylan, and Horton's (2014) findings in their thematic analysis of participants' understanding of relationships between the dream and their waking life, and with other researchers' contention that dreams are often symbolic or figurative representations of waking life (e.g. Domhoff, 2003; Hall & Nordby, 1972). As such, it was decided to investigate whether the participants who perceived symbolism in their dreams differed on hypothetically relatable variables to those who saw only literal relationships with waking life.

First, data from participants who did not give an explanation for their dream, or explicitly said they did not know what the dream was about or meant, or who provided an explanation that was partly figurative and partly literal, were removed (N=40). The remaining data were split between unambiguously symbolic interpretations (N=25) and literal interpretations (N=46), judged by the author. A second independent judge blindly coded a subset of the symbolic and literal interpretations for the purposes of gauging inter-rater reliability in this measure of symbolic versus literal. The second independent judge was a final year undergraduate student with two years' worth of experience in conducting dream research. Instructions for literal and symbolic were provided with fictional examples and examples from the dataset that were not part of the subset. As the number of symbolic or literal interpretations was 71, 15 (20%) interpretations were coded. The dreams to be coded by the independent judge were determined by a random number generator. It was found that there was 100% exact agreement between the two coders on the subset of interpretations, indicating that the coding of symbolic and literal interpretations was reliable.

Six analyses were then conducted, comparing symbolic interpreters to literal interpreters on six dimensions. To account for inflated Type I error in multiple testing significance was determined using the Holm-Bonferroni sequential correction method (Holm, 1979).

3.2.1 Testing Freud's disguised wish theory

According to Freud's wish-fulfilment theory, which is currently perhaps the most famous and influential of all psychological dream theories, dreams symbolically picture waking-life wishes such as sexual or aggressive urges because they are unacceptable, and so the waking, conscious mind represses them. Based on this theory, it could be expected that individuals who have a tendency to want to suppress waking-life thoughts more than others would also have more symbolism in their dreams than others. Two separate dependent variables were calculated based on scores from the White Bear Suppression Inventory: thought suppression, and thought intrusion (Schmidt et al., 2009). Data

for the symbolic interpreters were non-normally distributed for both thought suppression and thought intrusion, so the data were compared using a non-parametric Mann Whitney U test comparing median scores. It was found that symbolic interpreters had significantly more thought suppression ($Md = 4.14$) than literal interpreters ($Md = 3.50$), $U = 794.5$, $p = .002$, $r = .31$. However, symbolic interpreters and literal interpreters did not differ significantly in thought intrusion, $U = 693$, $p = .035$, $r = 0.17$.

Next, in order to test the Freudian notion that dreams may be perceived as symbolic for unacceptable content, such as sexual or aggressive, two further analyses were conducted comparing participants who made symbolic associations to waking life with those who only made literal ones on their answers to the questions "how sexual is this dream?" and "how much violence or aggression is in this dream?". Symbolic interpreters did not score significantly differently on amount of sexuality in the dream ($Md = 15$) compared to literal interpreters ($Md = 8.5$), $U = 107.50$, $p = .46$, $r = .11$, 1 tailed. However, symbolic interpreters did score significantly differently on amount of violence or aggression in the dream ($Md = 31$) compared to literal interpreters ($Md = 11$), $U = 436.50$, $p = .005$, $r = .31$, 1 tailed.

3.2.2 Testing the suppressed emotion rebound theory

Finally, because in Malinowski (2015) it was found that thought suppressors dreamt more of their waking-life emotions than non-suppressors, and thus it was suggested that waking-life suppression of emotions may lead to dreaming of them, the effect of symbolic interpretation was also investigated in relation to dream emotions and dream continuity with waking-life emotions, hypothesising that symbolic interpreters would report more emotions and more emotional continuity in their dreams. It was found that symbolic interpreters reported more emotional dreams ($Md = 80$) than literal interpreters ($Md = 60$), $U = 775.50$, $p = .005$, $r = 0.31$, 1 tailed. Likewise symbolic interpreters reported more continuity in their dreams with waking-life emotions ($Md = 80$) than literal interpreters ($Md = 62$), $U = 742.00$, $p = .014$, $r = 0.26$, 1 tailed.

4. Discussion

4.1. Main findings

Six major themes were drawn together from participants' responses to the question "What do you think this [Most Recent Dream] is about, or means?": 1) Worries and Emotions; 2) Relationships; 3) Work and Studies; 4) Events and Situations; 5) Desiring, Wanting, and Longing; and 6) Symbolism. All six of these themes pertained to how the dream related to the dreamer's waking life. In addition, four minor themes, which did not describe a large portion of the data but indicated something interesting about participant perceptions of their dreams, were created: i) Helpful Dreams; ii) Past and Future; iii) Portraying the Hidden; and iv) Influence from Television.

The theme "Symbolism" was further investigated, to investigate whether individuals who perceived symbolism in their dream differed in noticeable ways from those who perceived only literal, direct relationships with waking life in their dream. It was found that symbolic interpreters had more trait thought suppression, measured by the White Bear Suppression Inventory (Wegner & Zanakos, 1994), than liter-

al interpreters, and in addition perceived more aggression/violence in their dreams, and more intense emotions and well as more continuity with their waking-life emotions, but did not score higher on thought intrusions, nor sexual content in their dreams.

4.2. Dreaming of negative aspects of waking-life

Based on the major themes, it is clear that participants mainly interpreted their dreams as having a basis in an aspect of their waking life, and, in particular, aspects of waking life that were especially troublesome for some reason, be it worry, stress, fear, or some other unpleasant emotion. The huge influence of waking-life worry and other (primarily negative) emotions on dreams has often been noted by dream researchers. Domhoff (e.g. 2003), in his extensive coding of participants' dreams and dream series using the Hall-van de Castle (1966) content analysis method, found that dreams primarily pictured participants' conceptions of the world and their concerns about it. Others have noted a so-called "negativity bias" in dreams, denoting the preponderance of negative emotions in dreams compared with positive emotions (e.g. Domhoff, 1996; Hall and Van de Castle, 1966; Merritt et al., 1994; Snyder, 1970). Such evidence as this lends credence to an emotion-processing theory of dreaming (e.g. Cartwright, 2011; Hartmann, 1996a), since it indicates that dreaming preferentially pictures waking-life concerns, perhaps in order to creatively come up with solutions, and/or ameliorate the emotions.

However, other research has indicated that the negativity bias is an artefact of methodology: it is only found when independent judges rate the emotions in dreams, and not when the dreamers themselves rate them (Schredl and Doll, 1998; Sikka et al., 2014). Furthermore, there is an emerging consensus that it is the emotional intensity and/or personal significance of a waking-life event, but not the valence (i.e. it doesn't matter if it is a positive or a negative event, as long as it is emotional or significant), that influences whether or not it is subsequently dreamt of (Malinowski & Horton, 2015; Schredl, 2006; van Rijn et al., 2015). This line of evidence is more in accordance with a memory assimilation theory of dream function; and in particular, emotional and autobiographical memories (Horton & Malinowski, 2015; Malinowski & Horton, 2015).

How can these divergent findings be reconciled? On the one hand the evidence from Domhoff's and other work on wake-dream continuity is extensive, and convincing in its assertion that dreams primarily picture waking-life concerns; on the other hand several independent experiments have now confirmed the intensity-but-not-valence effect. Perhaps differing methodologies and methods of analysis may be the reason for the differences. In the present study, participants reported their Most Recent Dream. It may be that there is a memory bias toward recalling dreams that are particularly troubling, since they reflect what is troubling also in waking life, which the participants may have been ruminating upon. Similarly, the bias towards negative life events and situations in the present study may, perhaps, be accounted for by expectation; it may be that participants expect dreams to represent negative waking-life experiences because this is their understanding of what dreams are for. Some of the more well-known theories of dream function that are available in bookshops today include the emotion-regulation function (e.g. Cartwright, 2011; Hartmann, 2014). Anecdotally, I often hear people tell me that they believe

dreams are the brain's way of working through emotions and thoughts overnight.

In Domhoff's and other content analysis work, the preponderance of negative waking-life emotions may come from the use of independent judges as opposed to self-report. In studies which have found an even split between positive and negative waking-life events in dreams, participants recorded their dreams systematically, and rated the emotionality themselves. Thus, it may be that the bias towards waking-life worries or concerns in the present study and in content analysis work comes from participant memory bias and the misjudgement of independent judges. If this were to be the case, it adds levity to the argument that dream research must apply careful, systematic methods of dream report collection, lest they draw conclusions that are based on participants' memory biases rather than the dreams themselves. Similarly, it would suggest that, wherever possible, both independent judges and participant ratings are used, in order to facilitate comparison between the two. Further study is needed to investigate these matters.

4.3. Dreaming of waking-life relationships

One of the major themes found was Relationships: participants dreamt very often of the important people in their lives, those with whom they shared some sort of close relationship with (family, friends, romantic attachments, colleagues, etc.). This is in keeping with previous findings that dreams are highly social experiences. McNamara et al (2005) found that social interactions were more frequent in dreams than in waking reports. Similarly, Roussy (2000) and Roussy, Camirand, Foulkes, de Koninck, Loftis, and Kerr (1996) found that interpersonal themes are dreamt of more than they are thought about – whereas finances and work are thought about more than they are dreamt. In keeping with the idea that the relationships pictured in dreams often related to concerns, research has also found that the most frequently reported theme in bad dreams is interpersonal conflict (Robert & Zadra, 2014). Continuity between one's social experiences and dreams has also been empirically evidenced: for example, people tend to dream up characters who are their own race and the race of their own interpersonal exposure (Hoekstra, Stos, Swendson, & Hoekstra, 2012), and gender role constructs in dreams have been shown to reflect gender role constructs in waking life (Schredl, Sahin, & Schäfer, 1998).

Thus, several lines of evidence converge to indicate that dreams are very social and interpersonal experiences: we interact with people often in our dreams, we dream of people that are important in our lives, and our dream characters reflect our social experiences. The preponderance of social interactions in dreams, and the high frequency with which we dream of people from our waking lives, may support the theory that dreams help us to consolidate and assimilate important waking-life experiences (Malinowski & Horton, 2015). The evidence here suggests that perhaps social experiences are especially important to consolidate; more so than, for example, experiences to do with work, finances, and so on. This suggestion is in keeping with Dunbar's (1998) social brain hypothesis, which argued that human intelligence evolved to enable us to survive in complex social groups. Bonded relationships of the kind experienced by humans are cognitively demanding (Dunbar, 2009), so it may be that dreaming about relationships is a way of practising or rehearsing interpersonal interactions (see e.g.

Bulkeley, 1993, 2004). A recent theory of dream function suggests that dreams act as a simulation of our social realities (Revonsuo, Tuominen, & Valli, 2015).

4.4. Evidence for the influence of dream theories in perceived meaning

One aim of the study was to consider whether the themes that were pulled together provided any evidence for participant awareness of various theories of dream meaning and function that exist. Overwhelmingly participants said that their dreams reflected waking-life worries. The theory that this is most clearly in line with is the Continuity Hypothesis (e.g. Domhoff, 2011; Hall & Nordby, 1972). However, this is not a particularly popularised theory, so it seems unlikely that the preponderance of this response is due to familiarity of the Continuity Hypothesis. Rather, it seems more likely that it is due more simply to the fact that the Continuity Hypothesis accurately describes dreaming: that we do dream of our waking-life concerns often.

The fact that a major theme was Desiring, Wanting, and Longing would appear to reflect Freud's (1900) wish-fulfilment theory. Freud suggested that some dreams picture waking-life wishes veridically, as long as these wishes are not unacceptable ones; it is only when the wish is unacceptable that it undergoes censorship and disguise in the dream through symbolism. That Desiring, Wanting, and Longing was found to be a major theme in the present study may indicate that Freud's theory accurately describes at least some dreams. Conversely, it may indicate that people interpret their dreams in this way because Freud's theory is so well known.

The theme Symbolism may evidence the very influential and well-known concept that dreams provide symbolic, metaphorical, or disguised meaning for waking life, which is known from popular psychoanalysis (e.g. Freud, 1900, Jung, 1934, 1948a, 1948b), from the innumerable "dream dictionaries" which purport to translate dream symbolism into waking-life meaning, and from historical and religious texts which indicate that dreams can be symbolically prophetic. Conversely, or in addition to this, it may evidence actual symbolism in dreams. Symbolism in dreams is extraordinarily difficult to research objectively, because dream symbolism is necessarily a subjective experience. Contrary to what dream dictionaries would have people believe, dream symbolism draws on individual, personal experience, and individual, personal mythology (as well as collective experience and collective mythology). Thus, each dream symbol is likely to have a unique meaning for each dreamer (Domhoff, 2003). Indeed, the majority of oneirologists do not attempt to investigate dream symbolism, because, although they recognise that dreams are likely to be symbolic for waking life, the extreme difficulties in doing so make it prohibitively unwieldy (e.g. Bulkeley & Kahan, 2008). Nevertheless, there is much speculation and interest in the topic (e.g. Domhoff, 2003; Hall & Nordby, 1972; Hartmann, 1996a; Malinowski & Horton, 2015).

4.5. The effect of perceived symbolism in dreams

One way of investigating symbolism in dreams, while acknowledging its inherent subjectivity, is to look at individual and dream content differences in individuals who perceive symbols in their dreams, compared to individuals who do not (and only see literal relationships with waking life). Par-

ticipants who saw symbolic meaning in their dreams in the present study scored higher on thought suppression than those who only saw literal relationships with waking life. This could be interpreted as supporting Freud's contention that dreams symbolically picture repressed waking-life thoughts: it may be that those who are more likely to suppress thoughts are also more likely to have symbolic, rather than literal, representations of those thoughts in dreams. Of course, it is equally possible that the relationship between thought suppression and dream symbolism is only to do with the likelihood of perceiving symbolism, rather than the likelihood of actually experiencing symbolism. There are more objective methods for investigating non-literal dream content (e.g. Davidson & Lynch, 2011), which may pave the way for further investigation into individual differences in dreaming symbolically versus literally.

Staying with Freud for a moment, it was also found that symbolic interpreters in the study had more violence/aggression, but no more sexual content, than literal interpreters. Again acknowledging that this is a measurement of perception rather than actual experiencing, this could also be interpreted in light of Freud's theory. He suggested that it is unacceptable waking-life wishes that appear in dreams, such as sexual and aggressive. The present study found evidence for the latter, but not former contention. Of course, one of the major issues with Freud's theory is that it cannot be falsified, and it could be argued that the lack of relationship between symbolism and sex is because the symbolism in the dream disguised the sexual element so well that the participant could not perceive it. The relationship between perceived symbolism and dream aggression/violence is, however, noteworthy. An investigation into trait thought repression (Bell & Cook, 1998) found that repressors (people who deliberately avoid consciously experiencing things such as sexual and aggressive thoughts) had more aggression and fewer flight behaviours in their dreams than non-repressors, which was interpreted as illustrating that these are the kind of thoughts that are repressed during wakefulness.

Finally, it was found, as anticipated, that symbolic interpreters perceived more emotions in their dreams, and more overlap between waking-life emotions and their dreams, than literal interpreters. This again could be perceived as evidence for a theory that symbolism in dreams is related to picturing suppressed waking-life thoughts, particular those that are emotional; or, it could merely be that people who believe in the notion that dreams are symbols for waking life, also perceive lots of emotion in their dreams.

4.6. Limitations and ideas for future research

Clearly, this study is limited in what it can tell us about symbolism in dreams, both because it refers to perceived symbolism, rather than symbolism per se, and because it used the Most Recent Dream method, so participants contributed only one dream each. It is entirely possible that participants who perceived symbolism in this particular MRD might only see literal relations with waking life in another one, and vice versa. There are a number of ways in which (perceived) dream symbolism could be researched in future studies. It would be interesting to conduct longitudinal research with participants who are able to perceive both symbolic and literal relationships with waking life, and see whether there are certain waking-life experiences or thoughts that appear in dreams in symbolic ways, and others that appear in more

literal ways. For example, research conducted with Vietnam veterans who experienced traumatic dreams upon their return from the war found that to begin with, when the experience was not yet adapted to, the dreams were highly literal, but as the experience began to be assimilated and coped with, the dreams became more bizarre and symbolic (Hartmann, 1996b; Wilmer, 1996). Similar findings have been noted elsewhere (Schreuder et al., 2000).

In addition to researching whether some waking-life situations or issues are more prone to symbolic representation and/or interpretation in dreams, individual differences in symbolic perception could be researched further, such as personality traits like boundariness or openness, or general attitude towards dreams. Furthermore, it would be interesting to investigate whether individuals who mostly or only perceive literal relationships between their dreams and waking life would perceive symbolic relationships with more experience or training in dream exploration.

Another potential avenue of research could be to identify whether deliberately suppressed thoughts appear in dreams in symbolic and/or bizarre ways, as opposed to literal ways, and what effect emotionality has on this. Individual differences in perceived symbolism could be further investigated with longitudinal methods also, comparing those who perceive much symbolism to those who tend to only perceive literal relationships with waking life; and in addition to this, individuals differences in dream symbolism could be investigated using more objective methods of detecting non-literal relationships between waking-life events and dreams such as that of Davidson and Lynch (2011).

The sample of participants in the study comprised primarily female psychology students, although there were also a smaller number of male psychology students and non-students in the sample, and aimed to paint a snapshot picture of their understandings of their Most Recent Dream. It is not claimed that the findings here are generalizable to the wider population. Future research should investigate dream meaning among other demographics, and more quantitative research with representative samples is also needed to further our understanding of dream beliefs and attitudes.

5. Conclusions

This study has painted a snapshot picture of participants' understandings of dream meaning among psychology undergraduates and people generally interested in dreams. Despite the very different methods, there were notable crossovers between the findings identified here, and those of the Inventory of Dream Experiences and Attitudes (Beaulieu-Prévost, Simard, & Zadra, 2009), and Malinowski, Fylan, and Horton (2014). These three studies combined, using a range of methodologies, begin to uncover the construction of meaning and understanding of dreams among a general Euro-American population. The fact that so many people identified patterns of meaning in relation to their waking life suggests that dreams may be an untapped resource, able to provide greater insight into one's waking life, perhaps especially their worries. While dreamworkers, therapists, and other healthcare workers have long worked with dreams as tools able to provide personal insight and therapeutic value, experimental psychology has only recently been able to provide empirical evidence for the efficacy of dreamwork: working with dreams not only provides high levels of insight (Edwards et al., 2013), but does so more efficaciously even than working with a waking-life event (Edwards et al., 2015).

Further, the relationships between thought suppression, dream symbolism, dreaming of waking-life emotions, and aggression/violence in dreams, may offer empirical evidence for psychoanalytical theories of dreaming. Much more work is required to further understandings of how working with dreams can lead to insights in waking life, whether dreams picture and can uncover suppressed thoughts, and what role symbolism has to play in dreaming.

References

- Artemidorus, *Oneirocritica*. In: Harris-McCoy, D. E. (2012). *Artemidorus' Oneirocritica: Text, Translation, and Commentary*. OUP Oxford.
- Bar, S. (2001). A letter that has not been read: Dreams in the Hebrew Bible. Hebrew Union College Press.
- Beaulieu-Prévost, D., Simard, C. C., & Zadra, A. (2009). Making sense of dream experiences: A multidimensional approach to beliefs about dreams. *Dreaming*, 19 (3), 119-134.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3 (2), pp. 77-101.
- Bulkeley, K. (1993). Dreaming is play. *Psychoanalytic Psychology*, 10 (4), 501-514.
- Bulkeley, K. (2004). Dreaming is play II: Revonsuo's Threat Simulation Theory in ludic context. *Sleep and Hypnosis*, 6 (3), 119-129.
- Cartwright, R. (2011). *The twenty-four hour mind: the role and sleep and dreaming in our emotional lives*. Oxford: Oxford University Press.
- Davidson, J., & Lynch, S. (2011). Thematic, literal and associative dream imagery following a high-impact event. *Dreaming*, 22 (1), Mar, pp. 58-69.
- Domhoff, G. W. (1996). *Finding meaning in dreams: a quantitative approach*. New York: Plenum Press.
- Domhoff, G. W. (2003). *The scientific study of dreams*. Washington DC: APA Press.
- Domhoff, G. W. (2007). Realistic simulation and bizarreness in dream content: past findings and suggestions for future research. In: Barrett, D., & McNamara, P., eds. *The new science of dreaming: volume 2. Content, recall, and personality correlates*. Westport, CT, US: Praeger Publishers/Greenwood Publishing Group, pp. 1-27.
- Domhoff, G. W. (2010). The case for a cognitive theory of dreams. Retrieved August 8, 2011 from the World Wide Web: http://dreamresearch.net/Library/domhoff_2010.html
- Domhoff, G. W. (2011). Dreams are embodied simulations that dramatize conceptions and concerns: the continuity hypothesis in empirical, theoretical, and historical context. *International Journal of Dream Research*, 4 (2), Oct, pp. 6-18.
- Dunbar, R. I. M. (1998). The social brain hypothesis. *Evolutionary Anthropology*, 6:178-190.
- Edwards, C., Malinowski, J. E., McGhee, S., Bennett, P., Ruby, R., & Blagrove, M. (2015). Comparing exploration-insight gains due to consideration of a recent dream and consideration of a recent event using the Ullman and Schredl dream group methods. *Frontiers in Psychology*, 6 (831), 1-10, doi:10.3389/fpsyg.2015.00831.
- Edwards, C. L., Ruby, P. M., Malinowski, J. E., Bennett, P. D., & Blagrove, M. T. (2013). Dreaming and insight. *Frontiers in Psychology*, 4 (979), 1-14.
- Freud, S. (1900). *The Interpretation of Dreams*. Hertfordshire: Wordsworth.
- Hall, C. & Nordby, V. (1972). *The individual and his dreams*. New York: New American Library.
- Hall, C. & van de Castle, R. (1966). *The content analysis of dreams*. New York: Appleton-Century-Crofts.
- Hartmann, E. (1996a). Outline for a theory on the nature and functions of dreaming. *Dreaming*, 6 (2), Jun, pp. 147-170.
- Hartmann, E. (1996b). Who develops PTSD nightmares and who doesn't. In: Barrett, D., ed. *Trauma and dreams*. Cambridge, MA: Harvard University Press, pp.100-113.
- Hobson, J. A. (2009). REM sleep and dreaming: towards a theory of protoconsciousness. *Nature Reviews Neuroscience*, 10 (11), Nov, pp. 803-813.
- Hoekstra, S. J., Stos, A. N., Swendson, J. R., & Hoekstra, A. H. (2012). Racial bias in dream content. *Dreaming*, 22(1), 10-17. doi:10.1037/a0026474
- Holm, S. (1979). A simple sequential rejective multiple test procedure. *Scandinavian Journal of Statistics*, 6, pp. 65-70.
- Horton, C. L. & Malinowski, J. E. (2015). Autobiographical memory and hyperassociativity in the dreaming brain: Implications for creativity and memory consolidation in sleep. *Frontiers in Psychology*, 6 (874), 1-14.
- John, O. P., & Srivastava, S. (1999). The Big-Five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research*, 2, 102-138.
- Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: a research paradigm whose time has come. *Educational Researcher*, 33 (7), Oct, pp. 14-26.
- Jung, C. G. (1934). *The practical use of dream-analysis*. In Jung, C. G. *Dreams*. Translated from the German by R. F. C. Hull. London: Routledge, pp. 85-108.
- Jung, C. G. (1948a). *General aspects of dream psychology*. In Jung, C. G. *Dreams*. Translated from the German by R. F. C. Hull. London: Routledge, pp. 23-68.
- Jung, C. G. (1948b). *On the nature of dreams*. In Jung, C. G. *Dreams*. Translated from the German by R. F. C. Hull. London: Routledge, pp. 69-84.
- Hall, C. S. (1953). A cognitive theory of dreams. *The Journal of General Psychology*, 48, pp. 169-186.
- Malinowski, J. E. (2015). Dreaming and personality: wake-dream continuity, thought suppression, and the Big Five Inventory. *Consciousness & Cognition*, 38, 9-15.
- Malinowski, J. E., Fylan, F., & Horton, C. L. (2014). Experiencing "continuity": A qualitative investigation of waking life in dreams. *Dreaming*, 24 (3), 161-175.
- Malinowski, J. E. & Horton, C. L. (2015). Metaphor and hyper-associativity: the imagination mechanisms behind emotion assimilation in sleep and dreaming. *Frontiers in Psychology*, 6 (1132), 1-19.
- McNamara, P., McLaren, D., Smith, D., Brown, A., & Stickgold, R. (2005). A "Jekyll and Hyde" within: aggressive versus friendly interactions in REM and non-REM dreams. *Psychological Science*, 16 (2), Feb, pp. 130-136.
- Merritt, J. M., Stickgold, R., Pace-Schott, E., & Williams, J. (1994). Emotion profiles in the dreams of men and women. *Consciousness & Cognition*, 3 (1), Mar, pp. 46-60.
- Revonsuo, A. (2000). The reinterpretation of dreams: an evolutionary hypothesis of the function of dreaming. *Behavioral & Brain Sciences*, 23 (6), pp. 793-1121.
- Revonsuo, A., Tuominen, J., & Valli, K. (2015). The avatars in the machine: Dreaming as simulation of social reality. In T. Metzinger & J. M. Windt (Eds). *Open MIND*: 32 (T). doi: 10.15502/9783958570375.
- Robert, G., & Zadra, A. (2014). Thematic and content analysis of idiopathic nightmares and bad dreams. *Sleep: Journal of Sleep and Sleep Disorders Research*, 37(2), 409-417.

- Roussy, F. (2000). Testing the notion of continuity between waking experience and REM dream content [Online]. Ottawa: University of Ottawa. Available from: [Accessed 20 November 2012].
- Roussy, F., Camirand, C., Foulkes, D., de Koninck, D., Loftis, J., & Kerr, N. H. (1996). Does early-night REM dream content reliably reflect presleep state of mind? *Dreaming*, 6 (2), 121-130
- Schmidt, R. E., Gay, P., Courvoisier, D., Jermann, F., Ceschi, G., David, M., ... Van der Linden, M. (2009). Anatomy of the White Bear Suppression Inventory (WBSI): a review of previous findings and a new approach. *Journal of Personality Assessment*, 91(4), 323-30. <http://doi.org/10.1080/00223890902935738>
- Schredl, M. & Doll, E. (1998). Emotions in diary dreams. *Consciousness & Cognition*, 7 (4), Dec, pp. 634-646.
- Schredl, M., Sahin, V., & Schäfer, G. (1998). Gender differences in dreams: Do they reflect gender differences in waking life?. *Personality And Individual Differences*, 25(3), 433-442. doi:10.1016/S0191-8869(98)00035-X.
- Sikka, P., Valli, K., Virta, T., and Revonsuo, A. (2014). I know how you felt last night, or do I? Self- and external ratings of emotions in REM sleep dreams. *Conscious. Cogn.* 25, 51-66
- Snyder, F. (1970). The phenomenology of dreaming. In: Madow, L. & Snow, L., eds. *The psychodynamic implications of the physiological studies on dreams*. Springfield, IL: Thomas, pp. 124-151
- Szpakowska, K. (2002). *Behind close eyes: Dreams and nightmares in ancient Egypt*. Swansea: Classical Press of Wales.
- Wegner, D. M., Wenzlaff, R. M., & Kozak, M. (2004). Dream rebound: The return of suppressed thoughts in dreams. *Psychological Science*, 15 (4), Apr, pp. 232-236.
- Wegner, D. M., Wenzlaff, R. M., & Kozak, M. (2004). The return of suppressed thoughts in dreams. *Psychological Science*, 15(4), 232-236.
- Wilmer, H. A. (1996). The healing nightmare: war dreams of Vietnam veterans. In: Barrett, D., ed. *Trauma and dreams*. Cambridge, MA: Harvard University Press, pp. 85-99.