A study of the sources of nap mentation in the light of the continuity theory

Olivia Curzio[1], Marco Di Galante[2], Ugo Faraguna[3], Sandra Maestro[4], Massimo Magrini[5], Paolo Paradisi[5], and Laura Sebastiani[3]

[1]Institute of Clinical Physiology of the National Research Council (IFC-CNR), Pisa, Italy
[2]Sleepacta srl, Montacchiello, Pisa, Italy
[3]Department of Translational Research and New Technologies in Medicine and Surgery, University of Pisa, Pisa, Italy
[4]Italian Psychoanalytic Society (SPI); Child and Adolescent Rehabilitation Clinic "Orti di Ada", Pisa, Italy
[5]Institute of Information Science and Technologies "Alessandro Faedo" (ISTI-CNR), Pisa, Italy

Summary. The aim of this paper was to describe the properties of sources of mentation during morning naps. The analyzed sources, which consisted in waking-life events and concerns, were obtained by asking the participants, immediately after their naps, for a report of their mentation and for associations with the various mentation items. The participants comprised 18 Italian students aged 19-22 years, 12 females and 6 males. All participants reported mentation, which was rich and articulated in most cases, and all but one indicated the mentation sources with precision and in detail. The properties of these sources were consistent with those reported in the literature for night dreams. In fact: (a) most participants (n = 14) indicated three or more detailed sources; (b) all of the sources were correlated with present concerns of the participants; (c) most participants (n=13) indicated more than one present concern; (d) in all cases conceptual and/or emotional links connecting at least two sources (three or more for nine participants) provided the set of sources with a network structure; (e) for almost all the participants (n=16) the links between sources determined a change of negative waking-life content into positive, and this change was actually realized in the mentation experience.

Keywords: Morning Naps, Sleep Mentation, Continuity Theory of Dreams, Dream Sources, Dream Associations

1. Introduction

Since the early years of this century, a line of research has focused on the study of naps, either by analysing morning or afternoon naps or by implementing appropriate protocols of repeated naps (Palagini et al., 2004; Suzuki et al., 2004; Chellappa et al., 2009; Kussé et al., 2012; Carr & Nielsen, 2015a, 2015b; Scarpelli et al., 2017). This line of research has strongly underlined the usefulness of studying mentation during naps, including, in additions to dreams, characterized by a plot structure, other significant contents, such as isolated images and thought-like items. Indeed, a basic result provided by research on naps is the high value of the recall rates, which are larger than 90% after awakening from REM and larger than 80% after awakening from NREM stages. These rates are remarkably higher than the typical rates for night sleep, i.e. about 80% for REM and much lower for NREM. Specifically, mentation recall rates have been found very abundant from morning naps, which appear to allow easier access to semantic-emotional networks (Suzuki et al., 2004; Carr & Nielsen, 2015b).

As regards nap mentation reports, a comparison between reports from REM and reports from NREM has shown that the reports from REM were characterized by higher ratings for word counts, bizarreness, emotional intensity, and sensorial experience. These results for naps are like those obtained for night sleep. A further important similarity between naps and nighttime sleep regards the content profiles (Carr & Nielsen, 2015b).

These forms of similarity strongly suggest that the theory of mental continuity between wakefulness and night sleep can be interestingly extended to naps.

Indeed, extensive research on dreaming has been carried out in the framework of the continuity theory, which is based on the observation that dream mentation, far from being disconnected from daytime mental life, represents a symbolic, narrative and affective reworking of it (Hobson & Schredl, 2011; Domhoff, 2011; Bulkeley, 2016; Schredl, 2017). In fact, it has been shown that dream content patterns reveal the dreamer's conceptions, concerns and interests in waking life. The theory of continuity has also fruitfully inspired research on the factors (especially, the type of waking-life experience and emotional involvement) that modulate the incorporation rate of waking-life experiences into dreams (Schredl & Hofmann, 2003; Nielsen et al., 2004; Blagrove et al., 2011a, 2011b; Malinowsky et al., 2014; Wamsley, 2014).

Corresponding address:
Olivia Curzio, Institute of Clinical Physiology of the National Research Council (IFC-CNR), Pisa, Italy.
Email: olivia.curzio@cnr.it

Submitted for publication: October 2025
Accepted for publication: January 2026
DOI: 10.11588/ijodr.2026.1.113629

Although important results have been obtained by means of the Hall/Van de Castle system (Domhoff, 1996; Hall & Van de Castle, 1996), which does not require associations, the method of asking the dreamer for associations with the dream items has made it possible to observe in detail the correspondences between dream content and specific feelings and experiences in the dreamer's life. Historically, the use of associations for the analysis of dreams was introduced by Freud and has a long tradition in psychoanalysis. However, this method has been successfully applied and consolidated also in a vast range of non-psychoanalytic therapeutic contexts. For instance, it is notable that nearly all the many methods described about 30 years ago by Delaney (1993) were actually based on associations. This approach remains central in contemporary models as well, such as Clara Hill's, which in its first, so-called exploratory phase, focuses precisely on the evocation and analysis of personal associations to the dream (Gupta & Hill, 2014; Kline & Hill, 2014). Among the most insightful applications of the association methods is The StoryTelling Method (DeCicco, 2007; DeCicco, 2019), which interestingly exploits the dreamer's associations to obtain a new story, additional to, but derived from, the dream report.

The effectiveness of these methods, all based on various forms of associations provided by the dreamer, shows that the associations offer a privileged tool for the study of the continuity between awake life and dream contents. In particular, the recognition of specific events, definite in time and space, has played an important role in research based on the continuity theory (Blagrove et al., 2011a; Blagrove et al., 2011b; Eichenlaub et al., 2018).

From a cognitive perspective, the method of associations – i.e., asking the dreamer to provide thoughts, images or memories related to dream elements – has proven to be an effective approach for tracing the mental pathways leading from lived experience to dream content (Cavallero, 1993). The analysis of the associations provided by the dreamer offers a very useful tool for revealing the semantic and narrative structure of dreams and for highlighting the links between autobiographical memory, symbolic processing and unconscious cognitive processes.

Our research was based on the application of the association methods to the analysis of mentation during naps in the light of the theory of continuity between waking life and dreams. Specifically focusing on the mentation sources of morning naps, data obtained from healthy young participants has been analyzed. The aim of the research was to see to what degree the correlation between nap mentation and waking life existed and to what extent an analysis of this correlation could shed interesting light on the basic properties of nap mentation.

2. Methods

Eighteen students from the University of Pisa, 12 females and 6 males, aged 19-22 years, volunteered to participate in the experiment. Data collection and analysis were performed according to the criteria approved by the Committee on Bioethics of the University of Pisa (Review No. 2/2019).

After a night of normal sleep, the participants arrived at the sleep laboratory at about 9 a.m. After polysomnographic recording montage, the participants were invited to lie down on a bed and to relax. All of them had a nap whose duration ranged between a minimum of 39 minutes to a maximum of 113 minutes. All the naps were fragmented and included periods of intermediate wakefulness. According to a slightly simplified version of the protocol described in Barcaro et al. (2016), the participants were asked: (1) to report their mentation, (2) to indicate key words or short phrases that characterized the mentation, (3) and finally to indicate events, possibly specific in time and space, that they associated with these key words or short phrases.

The analyses of the mentation reports aimed to distinguish the various types of mentation, degrees of recall, and different times of their occurrence during the nap. The results of these analyses, which focused on the content of mentation and did not address the associations, have already been documented in Sebastiani et al. (2023).

The associations provided by the participants were then examined to verify and describe the possible occurrence of the following phenomena, which were observed for dream sources within the framework of the continuity theory (Barcaro & Magrini, 2019):

1. The sources are closely interconnected by conceptual (and/or emotional) links.
2. A "heuristic rule" can account for these links: they are such that present concerns in the waking life are made less negative or even reversed into positive.
3. In the association process a "shift of the present concern" often takes place: after an initially identified present concern, a second more important one can be recognized.
4. The mentation experience implies the overcoming of negative content described by the heuristic rule, thus fulfilling a "representative function".

This analysis was carried out in four steps.

The first step aimed to identify the sources.

The second step aimed to recognize and classify the present concerns; a specific aim was to see if more than one concern existed (point 3 of the above list).

The third step consisted in recognizing conceptual (and emotional) links between the identified mentation sources (point 1 of the above list). These links provided the sources with a complex network structure (Barcaro & Carboncini, 2018).

This step constituted an effective extension of Freud's theory of "condensation", which was subsequently largely confirmed by experimental dream research. (see in particular Hartmann, 2010): Quoting from Freud (1973), condensation is brought about "by latent elements which have something in common being combined and fused into a single unit in the manifest dream". In addition to links corresponding to condensations, our method allowed recognizing additional links, i.e., links between real-life events that had only been indicated by the associations, without direct reference in the mentation report. The participants, while providing the associations, were generally far from being aware of the existence of these links. After being told about them, the participants were generally surprised and found them very significant.

The criterion for the recognition of links between events consisted in observing either words with the same root or obvious synonyms in the description, made by the participant, of two different sources.

The fourth step involved determining how the specific mentation items actually provided a representation of the change of negative content into less negative or even positive (points 2 and 4 of the above list).

The analysis of the associations was separately carried out by three of the authors. The results provided were found to be in substantial agreement.

3. Results

3.1. General properties of reported mentation

We now concisely indicate the general properties of the nap mentation reported by the participants, as described in detail by Sebastiani et al. (2023).

In their after-nap reports, the participants spontaneously distinguished between the mentation that they assigned to a time immediately preceding the final awakening ("recent mentation") and the mentation that they assigned to the beginning of the nap or to a sleep period preceding an interval of intermediate wakefulness ("previous mentation"). This assignment was given spontaneously and with subjective certainty. Twelve of the participants reported both kinds of mentation, five only reported recent mentation, and one only reported previous mentation. The average word count was 121 for reports containing a dream with a plot and 58 for the other reports.

Five distinct categories of mentation were observed. These categories can be ordered according to a plausible criterion of increasing complexity: Forgotten Image(s) (when the participant was sure of having had one or more images but was unable to recollect them), Recollected Image(s), Recollected Fragment(s) (when the participant was sure of having had a dream with a plot but only recollected a detailed fragment), Forgotten Dream (when the participant was sure of having had a dream with a plot but was unable to recollect its content), and Recollected Dream.

Stage 2 epochs were prevalent during the naps (52% of total time). Eight participants showed N3 epochs. The average time spent in wakefulness after the sleep onset was 19% of the nap time. Twelve participants had a REM epoch during the nap (average duration 13 seconds); the mentation reports of ten out of these twelve participants included a dream with a plot.

A comparison between the hypnogram and the mentation highlighted some significant correlations, including a positive correlation between the sum of the N1 time and the N2 time and the complexity of recent mentation.

3.2. The sources of mentation

The associations allowed the participants to identify those waking events (including specific current concerns) that constituted the mentation sources. Of course, the associations only regarded recollected items (either images or fragments or dreams). The subjective certainty about the recognition of the mentation sources was confirmed by precise correspondences between the mentation items and the recognized sources. The only participant who did not identify waking life events was P14, who, having had a very complex pattern of mentation, was intensely interested in recollecting the mentation items completely, and being only focused on this task, which he/she considered very important, did not actually engage in the identification of sources. Henceforth, we will describe the properties of the mentation sources considering all the participants except P14 (17 participants). For reasons of anonymity, we will not specify gender and will also omit items that are too personal.

Out of the 17 considered participants, three identified only two sources, three identified three sources, while the remaining 11 identified more than three sources (11/17 = 65%). All the dream sources were assessed by the participants as consisting of a present concern or as directly related to a present concern.

Most of the recognized events had occurred in the last week or in the last few weeks, while a considerable number had occurred in the last one or two years, prior to changes in the participant's life due to the transition from high school to university. Childhood events were indicated by only two participants, respectively regarding doing homework at primary school and frequent childhood fantasies.

For five participants a mentation source was related to watching movies or TV series. In all these cases, the reference to a movie or series played an important role in the mentation experience.

Three participants reported a previous nocturnal dream while associating with the mentation items. More precisely: a participant who had a present concern about university exams associated his/her mentation with a previous dream about a school teacher who considered him/her a brilliant student; a participant who had a present concern about family relationships referred to a dream in which he/she was walking in a distant town far from his/her family; a participant who was intensely interested in movies associated his/her mentation with a dream in which he/she had been cast in a film.

The participants in the experiment showed great interest in recollecting the mentation items and in discovering the relationships of these items with awake events and concerns.

3.3. The present concerns

All the present concerns belonged to one of the following categories:

1. Related to university exams
2. Related to friends (these concerns were often connected with changes due to the transition from high school to university)
3. Related to a partner (either previous or current)
4. Related to family
5. Related to extracurricular activities (especially sports)
6. Related to the experiment (two different, somewhat opposite, kinds: concerns about being able to fulfill the task of reporting mentation; concerns about participation in the experiment creating problems for the usual activities of the day.) (In one case, P4, no concern about the experiment was indicated in the associations although references to the experiment existed in the mentation.)

For each category, Table 1 reports the number of participants whose associations indicated a present concern belonging to the category in the left column. Most participants (13) indicated more than one present concern in the course of the associations; 6 of them indicated three present concerns.

3.4. Links between mentation sources

Conceptual (and emotional) links between mentation sources were observed for the 17 participants that were considered. In other words, the real-life events recognized by the association process presented a richly interconnected structure.

Table 1. For each of the six categories of present concerns, the number of participants is indicated. Participant P14 was not considered.

Category	Number of participants	Percentage
Exams	5	29%
Friends	8	47%
Partner	8	47%
Family	8	47%
Activities	3	18%
Experiment	7	41%

For each of the 17 participants, Table 2 illustrates the links that plausibly appeared as the most significant. Ten of these links (10/17 = 59%), were "pervasive", i.e., they connected more than two mentation sources. An asterisk in the right column of Table 2 indicates these links.

As above underlined, the set of these links constitutes an extension of the set of condensations. For instance, the link "Classmates" indicated for P1 in Table 2, although being very significant in the pattern of sources, did not correspond to a condensation. In fact, although the pervasive concept of "Classmates" was common to real-life events that the participant associated with mentation items, no mentation item explicitly included this concept. On the contrary, the link "Girl" indicated for P2 corresponded to a condensation, because his/her mentation actually included the image of a girl. The link "Civil rights" indicated for P5 also corresponded to a condensation, because his/her mentation actually included a discussion about civil rights. Eight of the 17 links illustrated in Table 2 corresponded to condensations (those respectively related to P2, P5, P6, P7, P12, P15, P17, and P18).

3.5. Representative value of the mentation experience

The mentation represented overcoming present concerns due to a change from negative to less negative or to positive; this change was produced by the links among sources. The recognition of this phenomenon offered a plausible understanding of the basic emotional value of the link patterns between the sources. In fact, the representative value of the mentation experience, which was logically recognized, presented a fundamental emotional significance. Table 3 concisely reports the logical terms of this representative value of the mentation experience for 16 participants, excluding, in addition to P14, also P3, since his/her mentation did not clearly exhibit this phenomenon.

4. Discussion

The present study has demonstrated that mentation during naps is characterized by significant richness and variability, exhibiting a noteworthy level of recall and a substantial capacity for interpretation in the context of the aforementioned criteria. Indeed, reports of mentation were easily available just after the mentation experience, and mentation recall tended to extend to previous periods that could be distant from the awakening instant, up to the beginning of the nap.

The obtained results present interesting implications from the cognitive and therapeutic point of view. In fact, they agree with data that underlines the remarkable significance of mentation during naps. Carr & Nielsen (2015a, 2015b) observed that recall rates for REM and NREM naps were elevated compared to typical recall rates for nighttime dreams, suggesting an enhanced circadian influence. They also pro-

Table 2. Conceptual (and emotional) links between mentation sources were observed for the 17 participants that were considered.

	Sources	*Link*	
P1	High-school classmates / University classmates / Holiday with classmates	Classmates	*
P2	A (specific) girl / Another (specific) girl / A girl in a TV serial	Girl	*
P3	Sacrifices made for parents / Sacrifices for young sister	Sacrifices	
P4	Separation from a (specific) friend / Separation from previous partner	Separation	
P5	A (specific) song about civil rights / A (specific) discussion about civil rights	Civil rights	
P6	Meeting an old friend again/ Returning to family / Resuming studying	Resuming	*
P7	Sleeping during the experiment / A (specific) relation had sleep problems	Sleeping	
P8	Obligations to mother / The nap experiment as an obligation / Feeling obliged to a (specific) partner	Obligation	*
P9	Friends at the high school / New friends / A discussion with a (specific) friend	Friends	*
P10	Preparing the next exam / Two (specific) friends preparing exams	Exams	*
P11	Interrupted contacts with a partner / Interrupted studies / Interrupted contacts with a relation	Interruption	*
P12	Being in a boat in an Italian seaside / Being in a boat in a European town / Being in a boat on a lake	Boat	*
P13	The experiment as a task / Task as an actor in the theater / The task of stopping smoking	Task	*
P14	*[This participant did not identify any sources, see text]*		
P15	Interruption of sport activity / Interruption of contacts with a (specific) friend	Interruption	
P16	Delay in exams / Delay in decisions with a partner / Delay caused by the experiment	Delay	*
P17	Interruption of sports activity / Proposal of joining a sports team	Sports	
P18	Childhood fantasies about warriors / (Specific) imaginative film	Imagination	

Note. For each of them, the links that appeared as plausibly the most significant are illustrated. Ten links (indicated with an asterisk in the right column) were "pervasive", i.e., they connected more than two sources.

Table 3. For all the participants, except P3 and P14, the logical terms of the representative value of the mentation experience are concisely reported.

	Logical terms of the representative value of the mentation experience
P1	One of his/her concerns was about exams. His/her mentation included carefully attending the university lessons.
P2	One of his/her concerns was about the experiment. He/she dreamed of awakening and leaving the lab.
P4	Two important characters in his/her life respectively played soccer and volleyball. He/she had the image of a sports field, perhaps a soccer field or perhaps a volleyball court.
P5	Some friends did not appreciate his/her commitment to civil rights. He/she dreamed of singing a specific song whose lyrics were about civil rights.
P6	One of his/her concerns was that of having been long separated from friends. He/she had the vivid image of a (specific) friend.
P7	One of his/her concerns was about the experiment. He/she dreamed of awakening during the experiment.
P8	One of his/her concerns was that often people took advantage of him/her. He/she dreamed of participating in a very big experiment.
P9	One of his/her concerns was about friends. He/she dreamed of being at home with friends who had behaved well and without other friends who had behaved badly.
P10	In spite of some family problems, his/her relationship with grandparents was however very good. In his/her dream he/she went to the grandparents' house.
P11	One of his/her concerns was about preparing for three exams. He/she dreamed of eating three sweets.
P12	One of his/her concerns was about his/her partner. He/she had images of pleasant trips with this partner.
P13	He/she was very interested in movies. In his/her dream he/she was exactly mimicking the scene of a film.
P15	His/her concerns were about sports activities and the relationship with a (specific) friend. In the dream, he/she and this friend performed a brilliant soccer move and marked a goal.
P16	One of his/her concerns was about exams. He/she dreamed of going to the bar where he/she often went while preparing for a successful exam.
P17	One of his/her concerns was about resuming sports activity. He/she dreamed of playing volleyball.
P18	In the past, his/her imagination allowed him/her to overcome several difficulties. His/her mentation consisted of living childhood fantasies and fantastic movie scenes.

vided data showing that morning REM sleep naps facilitate broad access to emotional semantic networks. The results given by our analysis confirm the richness and significance of nap mentation.

Importantly, the obtained results amply extend the validity of the continuity theory, based on night dreams, to the mentation during naps. A very clear example is given by the identification of the six above-indicated categories of present concerns, which are closely connected to life events and concerns typical of university students.

The analysis of the sources of mentation during naps has also shown that significant phenomena that have been observed for night dreams also occur, and can be described very clearly, for nap mentation, including: the plurality of present concerns, the network structure of the sources, the change of negative content into less negative or positive content, and the ability of the mentation experience to represent this change or reversal. These phenomena are complexly interrelated and their description offers an interesting insight into the significance of nap mentation and its relationship with one's awake emotional life.

The results obtained also suggest that the study of nap mentation can offer a very fruitful therapeutic tool. In fact, the analysis of nap mentation and of the associations with its items can provide an enlightening insight into the current psychological stage of the dreamer and into the means adopted to represent and overcome present concerns, thus suggesting interesting indications about the therapeutic criteria to apply. The short, easily accessible dreams of naps can therefore facilitate the processing of inner conflicts and their integration into consciousness.

A significant point is that the recognized events were connected to present concerns of the participants. As Table 1 has shown, the present concerns belonged to six categories, "exams, friends, partner, family, activities and experiment". A comparison with results obtained by an important paper by Vallat et al. (2019), based on the continuity theory as well, can be useful. They found that the main concerns belonged to the following six categories: "self-related, love relationship, everyday life, leisure, family / friends, work / study". The results are very similar as regards the concerns that we have indicated as "exams", "friends", "partner", "family", and "activities". The fact that concerns about the experiment were not found was obviously due to the different experimental methods, because they based their analyses on detailed questionnaires about night dreams. The reason why we did not find "self-related" concerns was probably simply due to the fact that we assigned these concerns to the other categories.

Vallat et al. (2019) underlined the significance of the connection between the recognized events and the present concerns: 70% of the participants incorporated at least one waking life element related with their current concerns. Analyzing nap mentation, we observed this kind of connection for all the participants: this result shows that from this point of view the study of mentation during morning naps can be even more insightful than the study of night dreams.

Interesting research was carried out in the first decade of this century about the concerns of college students in U.S.A (Erder-Baker et al., 2006). Three large-scale studies involving 1 non-clinical and 2 clinical samples, were based on the administration of very detailed questionnaires containing a 42-item list. Principal Component Analysis of the responses

gave results that were similar for the three datasets. The three more important factors obtained were: 1) academic concerns, 2) relationships with roomates and friends, and 3) romantic relationship issues. These categories closely correspond to the categories that we have respectively indicated as “exams”, “friends”, and “partner”. In that study, concerns about leisure activities and about family were not found as important as in our study.

The complex and insightful information given by the analysis of the sources of nap mentation suggests that future research on nap mentation, possibly extended to a variety of groups of participants, and/or applied in different therapeutic contexts, can be useful for a better understanding of the dreaming experience and for the introduction and application of effective therapeutic tools.

References

Barcaro, U., & Carboncini, M.C. (2018). Network properties of dream sources. International Journal of Dream Research, 11, 120-126. https://doi.org/10.11588/ijodr.2018.2.42736.

Barcaro, U., Paradisi, P., & Sebastiani, L. (2019). A hypothesis about parallelism vs. seriality in dreams. Front. Psychol., 10, article 2299. doi: 10.3389/fpsyg.2019.02299

Barcaro, U., Delogu, A., Righi, M., Virgillito, A., & Carboncini, M. (2016). A protocol for eliciting dream associations oriented to the recognition of episodic dream sources. Dreaming 26, 79–93. https://doi.org/10.1037/drm0000019

Barcaro U, & Magrini M. (2022). A model of the Dream-Building System. International Journal of Dream Research, 15, 242-247. https://doi.org/10.11588/ijodr.2022.2.89024

Blagrove, M., Fouquet, N.C., Henley-Einion, J.A., Pace-Schott, E.F., Davies, A.C., Neuschaffer, J.L., & Turnbull, O.H. (2011a). Assessing the dream-lag effect for REM and NREM stage 2 dreams. PLoS One, 6(10), e26708.

Blagrove, M., Henley-Einion, J., Barnett, A., Edwards, D., & Heidi Seage, C. (2011b). A replication of the 5–7-day dream-lag effect with comparison of dreams to future events as control for baseline matching. Consciousness and Cognition, 20(2), 384–391. https://doi.org/10.1016/j.concog.2010.07.006

Bulkeley, K. (2016). Big dreams. New York, NY: Oxford University Press.

Carr, M., & Nielsen, T. (2015a). Morning REM sleep naps facilitate broad access to emotional semantic networks. Sleep, 38(3), 433–443. https//doi.org/10.5665/sleep.4540

Carr, M., & Nielsen, T. (2015b). Daydreams and nap dreams: Content comparisons. Consciousness and Cognition, 36, 196–205. https//doi.org/10.1016/j.concog.2015.06.012

Cavallero, C. (1993). The quest for dream sources. Journal of Sleep Research, 2, 13-16- https://doi.org/10.1111/j.1365-2869.1993.tb00054.x

Chellappa, S. L., Münch, M., Blatter, K., Knoblauch, V., & Cajochen, C. (2009). Does the circadian modulation of dream recall modify with age? Sleep, 32(9), 1201–1209. https://doi.org/10.1093/sleep/32.9.1201

DeCicco, T. L. (2007). What is the story telling? Examining discovery with the storytelling method (TSM) and testing with a control group. Dreaming, 17(4), 227–238. https://doi.org/10.1037/1053-0797.17.4.227

DeCicco, T. L. (2019). The storytelling method (TSM). In R. J. Hoss, K. Valli, & R. P. Gongloff (Eds.), Dreams: Understanding biology, psychology, and culture - Volume 2, Chapter 21 (pp. 554-558). Greenwood.

Delaney, G. (2003). New perspectives in dream interpretation. Albany, NY: SUNY Press.

Domhoff, G.W. (1996). Finding meaning in dreams: A quantitative approach. New York, NY: Plenum Press. https://doi.org/10.1007/978-1-4899-0298-6

Domhoff, G. W. (2011). Dreams Are Embodied Simulations That Dramatize Conception and Concerns: The Continuity Hypothesis in Empirical, Theoretical, and Historical Context. International Journal of Dream Research, 4(2), 50–62. https://doi.org/10.11588/ijodr.2011.2.9137

Eichenlaub, J., van Rijn, E., Gareth Gaskell, M., Lewis, P., Maby, E., Malinowski, J., Walker, M., Boy, F. & Blagrove, M. (2018). Incorporation of recent waking-life experiences in dreams correlates with frontal theta activity in REM sleep. Social Cognitive and Affective Neuroscience, 13(6), 637-647. http://dx.doi.org/10.1093/scan/nsy041

Erdur-Baker, O., Aberson, C.L., Barrow, J.C., & Draper, M.R. (2006). Nature and severity of college students’ psychological concerns: A comparison of clinical and non-clinical national samples. Professional Psychology: Research and Practice 37(3), 317–323.

Freud, S. (1973). Introductory lectures on psychoanalysis (Strachey J., Trans.). London: Penguin.

Gupta, S. & Hill, C.E. (2014). The outcome of dream sessions: The influence of dream recency, emotional intelligence, and salience. Dreaming, 24, 89-103. https://doi.org/10.1037/a0036391

Hall, C. S., & Van de Castle, R. L. (1966). The content analysis of dreams. New York: Appleton-Century-Crofts.

Hartmann, E. (2010). The nature and functions of dreaming. New York, NY: Oxford University Press.

Hobson, J. A., & Schredl, M. (2011). The continuity and discontinuity between waking and dreaming: A dialogue between Michael Schredl and Allan Hobson concerning the adequacy and completeness of these notions. International Journal of Dream Research, 4(1), 3–7. https://doi.org/10.11588/ijodr.2011.1.9087

Kline & Hill (2014). Client involvement in the exploration stage of the Hill cognitive-experiential dream model. Dreaming, 24, 104-111. http://dx.doi.org/10.1037/a0036392

Kussé, C., Shafii-Le Bourdiec, A., Schrouff, J., Matarazzo, L., & Maquet, P. (2012). Experience-dependent induction of hypnagogic images during daytime naps: a combined behavioural and EEG study. Journal of Sleep Research, 21, 10-20. https//doi.org/10.1111/j.1365-2869.2011.00939.x

Malinowski, J., Fylan, F., & Horton, C. L. (2014). Experiencing “continuity”: A qualitative investigation of waking life in dreams. Dreaming, 24(3), 161–175. https://doi.org/10.1037/a0037305

Nielsen, T. A., Kuiken, D., Alain, G., Stenstrom, P., & Powell, R. A. (2004). Immediate and delayed incorporations of events into dreams: Further replication and implications for dream function. Journal of Sleep Research, 13(4), 327–336. https://doi.org/10.1111/j.1365-2869.2004.00421.x

Palagini, L., Gemignani, A., Feinberg, I., Guazzelli, M., & Campbell, I. G. (2004). Mental activity after early afternoon nap awakenings in healthy subjects. Brain Research Bulletin, 63(5), 361–368. https//doi.org/10.1016/j.brainresbull.2003.12.008

Scarpelli, S., D’Atri, A., Mangiaruga, A., Marzano, C., Gorgoni, M., Schiappa, C., Ferrara, M., & De Gennaro, L. (2017). Predicting Dream Recall: EEG Activation During NREM Sleep or Shared Mechanisms with Wakefulness? Brain Topography, 30, 629-638. https//doi.org/10.1007/s10548-017-0563-1

Schredl, M., & Hofmann, F. (2003). Continuity between waking activities and dream activities. Consciousness and

cognition, 298-308. https://doi.org/10.1016/S1053-8100(02)00072-7

Schredl, M. (2017). Theorizing about the continuity between waking and dreaming: Comment on Domhoff. Dreaming, 27(4), 351–359. https://doi.org/10.1037/drm0000062

Sebastiani, L., Barcaro, U., Paradisi, P., Frumento, P., & Faraguna, U. (2023). Morning naps architecture and mentation recall complexity. Journal of Sleep Research, e13915. https://doi.org/10.1111/jsr.13915

Suzuki, H., Uchiyama, M., Tagaya, H., Ozaki, A., Kuriyama, K., Aritake, S., Shibui, K., Tan, X., Kamei, Y., & Kuga, R. (2004). Dreaming during non-rapid eye movement sleep in the absence of prior rapid eye movement sleep. Sleep, 27(8), 1486–1490. https//doi.org/10.1093/sleep/27.8.1486

Vallat, R., Chatard, B., Blagrove, M, & Ruby P. (2017) Characteristics of the memory sources of dreams: A new version of the content-matching paradigm to take mundane and remote memories into account. PLoS One 12(10): e0185262. https://doi.org/10.1371/journal.pone.0185262

Wamsley, E. J. (2014). Dreaming and offline memory consolidation. Current Neurology and Neuroscience Reports, 14(3), 433. https://doi.org/10.1007/s11910-013-0433-5