Typical dreams across the life cycle

Alfio Maggiolini[1], Mauro Di Lorenzo[1], Elisa Falotico[1], Denise Gargioni[1], and Mara Morelli[2]

[1]Department of Psychology, University of Milano-Bicocca, Milan, Italy
[2]Department of Human and Social Sciences— University of Valle d'Aosta, Aosta, Italy

Summary. To date, most studies of dream content have involved samples of young adults. Far less research has been conducted on continuity and discontinuity in dream content as dreamers age. The present study on dreams across the life cycle (involving 1,546 participants aged 8 to 70 years), using the Typical Dreams Questionnaire (TDQ; Dumel, Nielsen, & Carr, 2012; Nielsen et al., 2003), found that 55.8% of dream reports expressed one or more typical themes, and the prevalence of these themes was quite stable across age brackets. Children and older adults reported more dreams with a TDQ theme, while young adults reported the fewest. Children demonstrated more diversity in their typical dream themes than did participants in other age groups. In children, the most frequently reported dream content related to threats and to magic. In older people, dreams featuring "A person now dead as alive" were most frequent, while dreams featuring "A person now alive as dead" were more commonly reported by children and preadolescents. Dreams involving "School, teachers, and studying" were most frequently reported by adolescents and those involving "Sexual experiences" were most commonly reported by young adults. Adults and older adults dreamt more often of "Trying again and again to do something" and "Arriving too late." Changes in typical dream themes may relate to emotional concerns linked with different phases of the life cycle.

Keywords: typical dreams, content analysis, life cycle

1. Introduction

1.1. Dreams Across the Life Cycle

Most analyses of dream content have involved samples of young adults, who are taken as norms (Hall & Van de Castle, 1966). Many studies have found no age differences in the dream reports of participants ranging in age from young adult to elderly, and normative findings based on the reports of young adults have also been used with samples of elderly dreamers (Domhoff, 2018). Dreams, however, can be an important aspect of developmental studies, not only with respect to changes in dream recall or the complexity of dream narratives, but also with respect to the states of the mind that are analyzed through dream content (Foulkes, 1999; Siegel, 2005; Strauch & Meier, 1996).

There is broad consensus, based on the results of both survey and laboratory studies, that dream recall frequency (DRF) decreases with advancing age (Funkhouser, Hirsbrunner, Cornu, & Bahro, 1999). However, all existing studies of DRF have been cross-sectional, rather than longitudinal. Studies have shown that children between the ages of 5 and 9 demonstrate lower DRF than preadolescents and adolescents (Domhoff, 2018), while men aged 70 to 87 show lower DRF (43.5%) than younger adults (80–90%) (Kahn & Fisher, 1968, p.31). In a sample of participants aged 10 to 79 years, DRF was found to increase from adolescence (aged 10–19) to early adulthood (aged 20–29), then to decrease for the next 20 years. This finding might be due to the influence of a parallel decrease in REM sleep or to progressive deficits in other memory and cognitive mechanisms (Nielsen, 2012). In preschool-aged children, dreams predominantly include active self-representations (Colace, 2010; Sándor, Szakadát, Kertész, & Bódizs, 2015). According to Domhoff (2018), there are only gradual changes in the frequency of dreaming between the ages 5 and 9. Children aged 9 to 11 report dreams that are shorter, more static and less structured in narrative relative to those of adults (Foulkes, 1999). However, children aged 13 to 15 report dreams that are similar to those of adults.

Studies of age differences in dream content have generally employed a cross-sectional research design to compare age groups, rather than a longitudinal design, which would be more conclusive for determining continuity and discontinuity across the life cycle. Overall, studies have shown a decline with age in dreams featuring aggressive and friendly interactions and negative emotions for both men and women. Relative to adolescents, adults report dreams with less physical aggression and fewer situations in which the dreamer is a victim (Avila-White, Schneider, & Domhoff, 1999; Oberst, Charles, & Chamarro, 2005; Riva Crugnola, Maggiolini, Caprin, De Martini, & Giudici, 2008). Dream reports from men and women aged 30 to 80 years show small declines in aggression and friendliness compared to reports from younger dreamers (Hall & Domhoff, 1963). Schredl (2010) found some associations between nightmare topics (but not nightmare frequency) with age in a representative sample aged 14 to 92 years. While no dream content was found to increase, several themes decreased with age in the

Corresponding address:
Alfio Maggiolini, Via Omboni, 4, 20129, Milano, Italy.
Email: alfio.maggiolini@gmail.com

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entire sample; these themes included horror films, exams, embarrassment, quarrelling, marital separation, loss of job, sexual harassment, and being late. The results of an online study (Schredl, Paul, Lahl, & Göritz, 2010) of the most recent dreams of 2,894 persons (aged 14 to 86 years) indicated that sex role orientation (femininity/expressivity and masculinity/instrumentality) affected some dream characteristics (e.g., sexual dream content, physical aggression), but the study did not include an analysis of these differences in relation to age.

The dream content of males and females ranging in age from adolescent to elderly has been the subject of a few recent studies (Dale, Lafrenière, & De Koninck, 2017; Dale, Lortie-Lussier, & De Koninck, 2015) using the Hall and van de Castle method (Domhoff, 1999); specifically, these studies have examined different age groups throughout the life cycle (12–17, 18–24, 25–39, 40–64, and 65–85 years). The results have shown no significant effect of age in men and women's dreams on the total number of characters, male characters, or sexual interactions. In women, a significant decrease in female and familiar characters, activities, aggression, friendliness, and situations in which the dreamer was a victim has been found. In men, studies have found a decrease in dreams with aggressive interactions between the youngest age bracket (12–17 years) and the young adult bracket (25–39 years), but a slight increase from that point on, continuing into old age; no significant trends have been found for friendliness, emotions, and (specifically) negative emotions. In a study of 47 women aged 25 to 56 years, a slight decline was found in the total number of emotions present in the dreams of the oldest group, demonstrating more pleasant outcomes, but no other significant differences across age groups were found (Côté, Lortie-Lussier, Roy, & De Koninck, 1996).

A study on dream words carried out by Maggiolini, Azzone, Provantini, Viganò, and Freni (2003) on a sample of early adolescents and adolescents found that, among the most frequent words used to describe dreams, were those denoting familiar characters to the dreamer; references to friends, in particular, increased with age. A word analysis of dream reports of participants ranging in age from early adolescent to young adult identified five typical narrative clusters used to describe dreams: (a) fear and escape, (b) school, (c) competition and sport, (d) attack, and (e) falling and spatial disorientation (Maggiolini, Morelli, Falotico, & Montali, 2016). In this study, dreams of attack and threat were more typical of early adolescents (aged 11–12 years), while dreams about school were more frequent in young adult women (aged 19–25 years). Dreams about sport and competition were more typical of males, and dreams about falling and spatial disorientation were most common among females aged 11 to 12 years and 19 to 30 years.

1.2. Typical Dreams

A commonly used method for studying dreams focuses on typical dreams, using questionnaires such as the Typical Dream Questionnaire (TDQ; Nielsen et al., 2003; Zadra & Nielsen, 1999) and the Dream Motif Scale (DMS; Yu, 2012). Studies using these measures have demonstrated that typical dreams are widespread (Nielsen et al., 2003; Nielsen, Zadra, Germain, & Montplaisir, 1999; Schredl, Ciric, Götz, & Wittmann, 2004; Yu, 2008, 2011; Zadra & Nielsen, 1997, 1999). However, only some themes listed on these scales are especially widespread (e.g., "Being physically attacked," "Sexual experiences," "School, teachers, and studying," "Flying," "Arriving too late," "Trying again and again to do something," "A person now alive being dead," and "A person now dead being alive"); other themes are quite rare (e.g., "Being an object," "Someone having an abortion," and Seeing a UFO") (Mathes, Schredl & Göritz, 2014).

Dream theme diversity (DTD) in typical dreams changes with age, demonstrating a linear decrease in both men and women up to the ages of 50 to 59 years, and a sharp decrease during the ages of 60 to 79. This decrease in the variety of dream content has been hypothesized to be due to age-related changes in sleep structure (e.g., a decreasing proportion of REM sleep) or age-related changes in episodic or autobiographical memory (Nielsen, 2012).

A study on upper-secondary and university students in Hong Kong (Yu, 2012) found that the prevalence and frequency profiles of typical dream themes were highly similar for the two groups. The five most prevalent themes ("School, teachers, and studying"; "Being chased or pursued"; "Failing an examination"; "Arriving too late"; and "Falling") were also the five most frequently reported themes by both upper-secondary school and university participants. The earliest experienced dream themes were "Being chased or pursued"; "School, teachers, and studying"; and "Falling." The upper-secondary school participants experienced the themes of "Sexual experiences" and "Being nude" less frequently than the university participants, while they experienced the theme of "Being inappropriately dressed" more often than the university sample. Moreover, higher proportions of university participants dreamed about "Being tied" (51.1% vs. 33.3%), "Teeth falling out" (49.4% vs. 29.6%), and "Towers" (33.1% vs. 19.3%; Yu, 2012).

In a sample of participants aged 14 to 86 years, the frequency of dreams about "Sexual experiences," "School, teachers, and studying," "Insects or spiders," and "Seeing yourself in a mirror" was found to decrease with age (Mathes et al., 2014); another study found dreams about "Flying" to decrease with age (Schredl & Piel, 2007). Still other studies have found that certain dream themes increase with age, such as "Trying again and again to do something," "A person now dead being alive," "Falling," and "Finding money." According to Mathes and Schredl (2014), since students dream of "School, teachers, and studying" and "Failing an examination" more often than do older participants who are no longer in an educational context, typical dream themes may reflect waking life issues.

It is important to underline not only that the majority of people remember typical dreams, but also that the themes of typical dreams are especially frequent in dream reports. In research on participants' most recent dreams (Mathes et al., 2014), typical dream themes were found in 58.69% of all reports, with the most prevalent themes being "Flying"; "Trying again and again to do something"; "Being chased"; "Sexual experiences"; and "School, teachers, and studying." In the dream diaries of 425 participants (Mathes & Schredl, 2014), 68.4% of dreams had at least one typical theme. The most prevalent themes were "School, teachers, and studying"; "Being chased or pursued"; and "Arriving too late" (Mathes & Schredl, 2014). According to Yu (2016b), however, content analytical methods tend to underestimate the frequencies of typical themes in dreams. A study using the DMS (Yu, 2015, 2012) found at least one typical theme in 94.1% of dreams recalled by participants from the previous night.

1.3. Recurrent Dreams

Most recurrent dreams (dreams that reoccur over time in the same person, even in different phases of the life cycle) also demonstrate typical dream themes. "Being chased and pursued," "School, teachers, studying," "Searching for a certain place," "Falling," "Flying," and "Arriving too late" are among the most recurrent themes (Yu, 2009a, 2009b, 2011, 2012). Recurrent dreams in children and adolescents tend to display negative themes, such as "Being attacked" (e.g., by an animal) and "Falling," while themes about death or "Being too late" are less frequent (Gauchat, Séguin, McSween-Cadieux, & Zadra, 2015). Recurrent dreams of early adolescents frequently contain encounters with strangers, while misfortunes and failures are more prevalent in adult recurrent dreams (Gauchat et al., 2015), as are attack themes (in approximately 40% of adult recurrent dreams; Zadra, 1996; Zadra, Desjardins, & Marcotte, 2006). Children's recurrent dreams are more likely to contain themes about threatening events, while adults' recurrent dreams are more likely to reflect incompetence (Gauchat et al., 2015). Finally, older people report dreams of deceased people more often (Schredl & Piel, 2005).

1.4. Consistency in Dream Series

Recurrences and changes in dreaming across the life cycle can be studied through dream series. Dreams from a single individual seem to be characterized by themes that recur at various phases of the life cycle. A surprising finding from studies of 25 dream series is the consistency of the findings over months, years, and even decades (Domhoff, 2017, p. 87).

Hall and Nordby (1972) analyzed 600 dreams from a participant named Dorothea, between the years of 1912 (when she was 25 years old) and 1965 (the year of her death). They found 10 themes that occurred with considerable frequency: food and eating, loss of an object, the dreamer's mother, the dreamer in a disorderly or small room, the dreamer's room being invaded, trying to use the toilet, and being late (Hall & Nordby, 1972, p. 83). Five of these themes (loss of an object, the dreamer in a small or disorderly room, the dreamer's room being invaded, trying to go to the toilet, and being late) were found in almost 62% of her dreams (Domhoff, 1996, p. 206).

In Kafka's dreams, Hall and Nordby (1972, p.108) found seven major themes: preoccupation with the body, body disfigurement, an emphasis on clothing and nakedness, scoptophilia, passivity, ambivalence toward men and women, and masculinized women.

Another subject in their study, Phil, was a humanities professor who had written out his dreams for most of his life. DreamBank.net has an archive of 506 dream reports from three periods in Phil's life. When two sets of dream reports (one from Phil's late 20s and one from his early 60s) were compared using the Hall and Van de Castle method, only two statistically significant differences were found: fewer dream reports with at least one sexual experience and more reports with at least one experience of misfortune in the sample from his older age (Domhoff, 2017).

Overall, there was great consistency in Phil's dreams between the two ages, but dreams themes that change in the life cycle are of interest in terms of developing an understanding of dream content (Domhoff, 2017, p.96). According to Hall and Nordby (1972), dream consistency may be due to constancy in personality or to an experience from prenatal development or childhood. Domhoff claimed that the fact that dream content does not change much over the span of the adult years fits with the idea that dreams are about personal interests and preoccupations; when changes do occur in dreams, these tend to relate to parallel changes in the dreamer's personal concerns (2017, p. 82).

1.5. Continuity Between Waking and Dreaming

The study of dreams across the life cycle raises questions about whether there is continuity or discontinuity between dreams and waking life. As life conditions change with age, one might expect dream contents to also differ at various stages of the life cycle, according to different experiences and emotional concerns. While some dream themes seem to be continuous with waking life (e.g., "Taking an exam"), other themes seem quite discontinuous (e.g., "Flying"). Discontinuous themes might be more stable across the life cycle because they are based more on the functioning of the dreaming mind than on actual experiences.

Some typical contents that seem particularly discontinuous, however, may not be as discontinuous as commonly thought, if one considers different aspects of continuity. In fact, continuity and discontinuity can be considered from different perspectives—not only with respect to experiences or concerns, but also in relation to conceptions, actions, thoughts and emotions (Schredl, 2012). For example, a decrease in dreams about "Taking an examination" or "Losing a job" with age could be expected, as older persons do not take exams very often and tend to have permanent jobs (Schredl, 2010). On the other hand, adolescents with high examination anxiety tend to report that examination dreams are their worst nightmares (Schredl, Pallmer, & Montasser, 1996). Continuity can be direct or indirect and can include different kinds of correspondences—thematic, emotional, and metaphorical. Some typical discontinuous themes, for example (e.g., "Flying"), can be understood as metaphors and not necessarily reproductions of real experience.

1.6. Life Cycle

Personal concerns often change across the life cycle, related to changes in developmental tasks and culture-specific manifestations of universal behavioral predispositions. The theory of motivation and social behavior describes many motivational systems. Such systems regulate care-seeking (attachment) and care-giving (parenting), competition (dominance hierarchies), cooperative behavior, sexual behavior, and body regulation (Gilbert, 2005; Lichtenberg, Lachmann, & Fosshage, 2011; Mikulincer & Shaver, 2012). These basic motivations (attachment, caring, competition, sex, cooperation) are present in all persons throughout the life cycle, but are modulated by development. Attachment is a particularly important motivation in the early stages of the life cycle, sexuality in adolescence, and care-giving in adulthood; competition and collaboration accompany different stages of development, but are particularly important in regulating skills acquisition and social identity. Developmental tasks are challenges (based on basic motivations, through the interaction between physical processes, personal attributes, and societal expectations) that everyone faces at specific points. These tasks tend to follow a normative sequence and may differ from significant life events (e.g., unemployment, death of a spouse, divorce). Some tasks are universal,

while others are more affected by culture (McCormick, Kuo, & Masten, 2011).

Human development can be divided into eight stages: infancy (aged 0–2 years), early childhood (aged 2–4 years), middle childhood (aged 5–8 years), late childhood (aged 9–12 years), adolescence (aged 13–19), early adulthood (aged 19–29) middle adulthood (aged 30–60), and late adulthood (aged 60 years and older). Each stage is characterized by specific normative tasks, as well as corresponding conflicts and concerns (Erikson, 1950, 1982; Havighurst, 1972). For Shakespeare (*As You Like It*, monologue, Act II, Scene VII), there are seven ages, ranging from infancy to old age, and every man plays many parts in his life, as if on a stage.

As concerns of attachment, sexuality, parenting, competition, and collaboration in study or work, change from infancy to adolescence, adulthood, and old age, it might be assumed that such changes are mirrored in the themes of dreams. The present study researched dreams across the life cycle, from childhood to old age. The study aimed at answering the following questions: How frequent are typical dreams in dream narratives? What themes are most frequent in dream content? Does dream theme diversity decrease with age? Are typical themes more frequent in children, adolescents, adults, or the elderly? Do typical dreams change across the life cycle? The hypothesis was that dream themes would vary according to typical developmental tasks across the life cycle.

2. Method

2.1. Participants

The sample was composed of 1,546 Italian participants aged 8 to 70 years old; 47% were male (n = 727). Specifically, participants were divided into the following age ranges: 200 were aged 8 to 10 years (47% male), 250 were aged 11 to 12 years (50% male), 250 were aged 15 to 16 years (50% male), 250 were aged 17 to 18 years (50% male), 250 were aged 19 to 30 years (50% male), 120 were aged 31 to 45 years (35% male), 86 were aged 46 to 59 years (27% male), and 140 were aged 60 to 70 years (45% male). Participants were recruited in different ways, according to age: participants aged up to 18 years were recruited from public secondary schools; young adults were recruited from university courses in psychology, law, and economics; and adults and older adults were recruited both through snowball sampling and from recreation centers for the elderly.

2.2. Narrative Collecting Procedures

Each participant submitted their "most recent dream" (Hartmann, Elkin, & Garg, 1991) in the form of a written dream report. Each report was read and coded for the occurrence of dream themes in the 56-item TDQ (Dumel, Nielsen, & Carr, 2012). A judge coded the first half of the sample and another judge coded the second half. Both judges also independently coded 150 (10%) randomly selected dreams in order to estimate inter-rater reliability. Reliability was calculated as inter-rater agreement on the coding of each item in the dreams. The results showed good reliability, with Cohen's kappa > .73.

Dream themes were sorted by rank (with the most frequent theme marked as 1, the second most frequent theme marked as 2, etc.). When two or more themes were equally frequent, the mean rank number was calculated (see Mathes & Schredl, 2014). SPSS version 13.0 was used for the analyses. Spearman's rho coefficients were calculated between the ranked order of TDQ themes in the dream reports and between the sets of the current sample and those of Mathes et al. (2014). A t-test was performed to verify differences in TDQ themes between independent groups (i.e., relating to gender and age). Logistic regressions were run to investigate gender and age influences on typical theme frequencies.

Table 1. Length of Dream Report.

	No. words (M ± SD)
Children (aged 8–10)	135.0 ± 48.1
Preadolescents (aged 11–12)	122.8 ± 56.9
Adolescents (aged 15–16)	116.2 ± 47.7
Adolescents (aged 17–18)	131.0 ± 56.0
Young adults (aged 19–30)	119.8 ± 74.1
Adults (aged 31–45)	121.1 ± 71.6
Adults (aged 46–59)	107.7 ± 40.5
Older adults (aged 60–70)	105.1 ± 93.3
Total	126.5 ± 62.8

3. Results

3.1. Length of Dream Reports

The average length of dream reports was 126.5 words (SD = 62.808). There was a difference of approximately 20 words between male and female reports, in favor of the latter. The highest average length was found in the reports of children and late adolescents, while the lowest was found in those of older adults (Table 1).

At all ages, female dream reports had more words than those of males, $F(1, 1544) = 21.59$, $p < .001$. There was a significant, though weak, correlation between the number of words and the frequency of typical themes in dreams, $r = .07$; $p = .007$. There was no significant difference in the number of words between dream reports with at least one typical theme and those with no typical theme, $F(2,1544) = 2.421$, $p = .12$.

3.2. Prevalence and Dream Theme Diversity

Table 2 shows the number of typical dreams per dream report, compared to the results of Mathes et al. (2014) in an online sample (aged 14–86), Mathes and Schredl (2014) in a sample of students, and Yu (2015) in most recent dreams and diary dreams. Typical contents were very frequent in dreams: 55.8% of the dreams had one or more typical content themes.

The prevalence and presence of typical dreams was quite stable across age groups, $\chi^2(7) = 51.663$, $p < .0001$, with more dreams with a TDQ item in children (73% of dreams with one or more items) and older adults (69.2%), and the fewest dreams with a TDQ item in young adults (45.2%). Table 3 shows the number of dreams with at least one TDQ item across all ages per dream report.

To calculate the *Dream Theme Diversity* (Nielsen, 2012),

Table 2. Number of TDQ Items per Dream.

	One or more items
Most Recent Dreams, TDQ	55.8%
Most Recent Dreams, TDQ (Mathes et al., 2014)	59%
Diary dreams, TDQ (Mathes & Schredl, 2014)	69%
Most Recent Dreams, DMS (Yu, 2015)	60%
Diary dreams, DMS (Yu, 2015)	57%

the number of items with a frequency of 0 was subtracted from the 56 TDQ items across each age group. The typical themes range was found to decrease across the life cycle: an ANOVA showed that children had more diversity in typical themes than other age groups, $F(7,1538) = 14.695$, $p < .0001$. Children also had a higher density of typical dream content, while young adults had a lower density.

3.3. Most Frequent Typical Dreams

Table 4 shows the proportion of typical dream content ranked in decreasing order. In column 2, the prevalence of typical dream themes for the total sample are depicted, followed by their rank and the rank of the same item in Mathes and Schredl (2014) (column 4). A significant correlation was found between the item ranking in the present study and that of Mathes et al. (2014), $r_s = .67$, $p < .01$. The following three columns show any changes in item frequency according to age, gender, or the interaction between age and gender, respectively.

Among the items with a frequency higher than 1%, "Being physically attacked," "Killing someone," "Having magic powers," "Losing control of a vehicle," and "Vividly sensing a presence in the room" were significantly more frequent in males. Mathes and Schredl (2014) found that "Finding money," "Being unable to find or being embarrassed about using a toilet," "Sexual experiences," "Fire," and "Losing control of a vehicle" were more frequent in the dreams of males. There was a correspondence between the two results only for this last item.

3.4. Changes in Typical Dreams Across the Life Cycle

There were many significant changes in dream content across the life cycle. Some of these changes displayed a linear trajectory from childhood to old age, while others peaked in specific phases of the life cycle.

Among the more frequent items, "Being chased or pursued, not physically injured," "School, teachers, and studying," "Trying again and again to do something," "Falling," "A person now dead as alive," and "Magical powers, not flying" showed significant changes.

The most frequent items reported by children related to threats, a magic topic, and food. "Being chased or pursued," "Being physically attacked," "Wild and violent beasts," "Killing someone," "Being killed," "Insects or spiders," "Seeing extra-terrestrials," "Magical powers," and "Eating delicious food" were more frequent in children's dreams. "Being chased" (see Figure 1) decreased in frequency from childhood to old age, though it increased during late adolescence.

Two items with similar content demonstrated an opposite trend. "A person now dead as alive" (see Figure 2) was more frequent in the dreams of older people, while "A person now alive as dead" (see Figure 3) was more frequent in the dreams of children and preadolescents.

The theme of "School, teachers, and studying" was most frequent in adolescent dreams; its frequency increased from childhood to adolescence, then decreased in young adulthood but increased again from adulthood to old age (see Figure 4). The theme of "Sexual experiences" was most frequent in the dreams of young adults, as were (but with lower prevalence) the themes of "Being unable to find or being embarrassed about using, a toilet" (30), "Being inappropriately dressed" (13), and "Being nude" (14).

4. Discussion

The results of the present study confirm that the majority of dreams illustrate one or more typical theme, confirming that such thematic content is an important part of dream narratives. On the other hand, the results demonstrate that not all themes are truly frequent. Among the most frequent items found in the present sample were "Being chased or pursued, not physically injured" (1), "School, teachers, and

Table 3. Items per Dream and Dream Theme Diversity

Age	No. items per dream (M, DS)	Range of TDQ items	No. of dream with at least one typical item
Children (aged 8–10)	1.32 ± 1.11	40	147 (73.5%)
Preadolescents (aged 11–12)	0.88 ± 0.94	35	167 (66.8%)
Adolescents (aged 15–16)	0.75 ± 0.84	33	148 (59.2%)
Adolescents (aged 17–18)	0.73 ± 0.82	32	137 (54.8%)
Young adults (aged 19–30)	0.58 ± 0.71	31	118 (47.2%)
Adults (aged 31–45)	0.70 ± 0.88	33	58 (48.3%)
Adults (aged 46–59)	0.83 ± 0.91	25	52 (60.5%)
Older adults (aged 60–70)	0.89 ± 0.73	28	97 (69.3%)
Total	0.83 ± 0.90	54	924 (59.8%)

Table 4. Most Frequent Typical Dream Themes (Frequency Ranks)

	Dream (N=1,546) (%)	Dream ranks (N=1,546)	Ranks (Mathes & Schredl, 2014)	Age Exp (B)	Gender Exp (B)	Gende* Age Exp (B)
Being chased/pursued, not phy. injured (1)	9.26	1	3	0.858*		
School, teachers, and studying (31)	7.83	2	5	0.848**		
Trying again and again to do something (3)	5.37	3.5	2	1.395**		
Falling (12)	5.37	3.5	11.5	0.819**		
Being physically attacked (2)	5.11	5	9		3.650**	0.758*
Sexual experiences (32)	4.34	6	4			
A person now dead as alive (35)	3.69	7	7	1.445**		
A person now alive as dead (36)	3.11	8	8			
Wild and violent beasts (40)	3.04	9	11.5			0.545**
Killing someone (42)	2.52	10	27		3.688**	0.462**
Magical powers, not flying (20)	2.46	11	44.5	0.435**	3.460**	
Swimming (7)	1.88	12	10			
Being locked up (8)	1.49	13	15			
Flying or soaring through the air (11)	1.42	15	1			1.662*
Losing control of vehicle (33)	1.42	15	21			
Being killed (27)	1.42	15	17	0.665*		
Being at a movie (41)	1.29	17	52.5	0.584*		
Failing an examination (38)	1.17	18	28.5			
Vividly sensing a presence (29)	1.10	19	18.5		5.436*	0.714
Being a child (50)	1.04	20.5	30			
Floods or tidal waves (21)	1.04	20.5	13			1.682*
Insects or spiders (24)	0.97	22	25			
Being on the verge of falling (37)	0.91	23	22.5	1.537*		
Fire (34)	0.84	25	22.5			
Arriving too late (6)	0.84	25	6			
Seeing extra-terrestrials (47)	0.84	25	49.5			
Eating delicious food (5)	0.78	27	14	0.432*		
Seeing yourself as dead (28)	0.71	28.5	46.5	0.551*		2.072*
Smothered, unable to breath (39)	0.71	28.5	26	0.888**	2.165*	0.545*
Being tied, unable to breath (15)	0.65	30	16			
Being inappropriately dressed (13)	0.58	31	24			
Snakes (9)	0.52	32	43			
Being frozen with fright (4)	0.39	35	35			
Finding money (10)	0.39	35	20			
Teeth falling out (18)	0.39	35	33			
Half awake and paralyzed (44)	0.39	35	41.5			
Travelling to another planet (48)	0.39	35	44.5			
Seeing a UFO (46)	0.32	39	49.5			
Being a member of the opposite sex (25)	0.32	39	52.5			
Earthquakes (23)	0.32	39	48		0.007*	
Unable to find or being embarrassed about using a toilet (30)	0.26	43	28.5			

continued...

Table 4 (continued). Most Frequent Typical Dream Themes (Frequency Ranks)

	Dream (N=1,546) (%)	Dream ranks (N=1,546)	Ranks (Mathes & Schredl, 2014)	Age Exp (B)	Gender Exp (B)	Gende* Age Exp (B)
Seeing a face very close to you (45)	0.26	43	41.5			
Tornadoes or strong winds (22)	0.26	43	33			
Being nude (14)	0.26	43	39			
Having superior knowledge/mental ability (16)	0.26	43	33			
Seeing an angel (51)	0.19	48	55			
Creatures, part animal, part human (17)	0.19	48	40			
Lunatics or insane people (43)	0.19	48	38			
Seeing yourself in a mirror (19)	0.19	48	36.5			
Someone having an abortion (55)	0.19	48	52.5			
Discovering a new room at home (53)	0.13	51.5	31			
Encountering God in some form (52)	0.13	51.5	46.5			
Being an animal (49)	0.06	53	52.5			
Being an object (e.g., tree or rock) (26)	0.00	54.5	56			
Seeing a flying object (e.g., airplane) crash (54)	0.00	54.5	36.5			

Note. Age and gender effects were calculated using logistic regression. Only statistically significant Exp (B) are reported. *p < .05; **p < .01.

studying" (31), "Trying again and again to do something" (3), "Falling" (12), "Being physically attacked" (2), "Sexual experiences" (32), "A person now dead as alive" (35), and "A person now alive as dead" (36). Many other items were very infrequent. The least frequent themes included "Seeing an angel" (51), "Creatures, part animal, part human" (17), "Lunatics or insane people" (43), "Seeing oneself in a mirror" (19), "Someone having an abortion" (55), "Discovering a new room at home" (53), "Encountering God in some form" (52), "Being an animal" (49), "Being an object (e.g., tree or rock)" (26), and "Seeing a flying object (e.g., airplane) crash" (54).

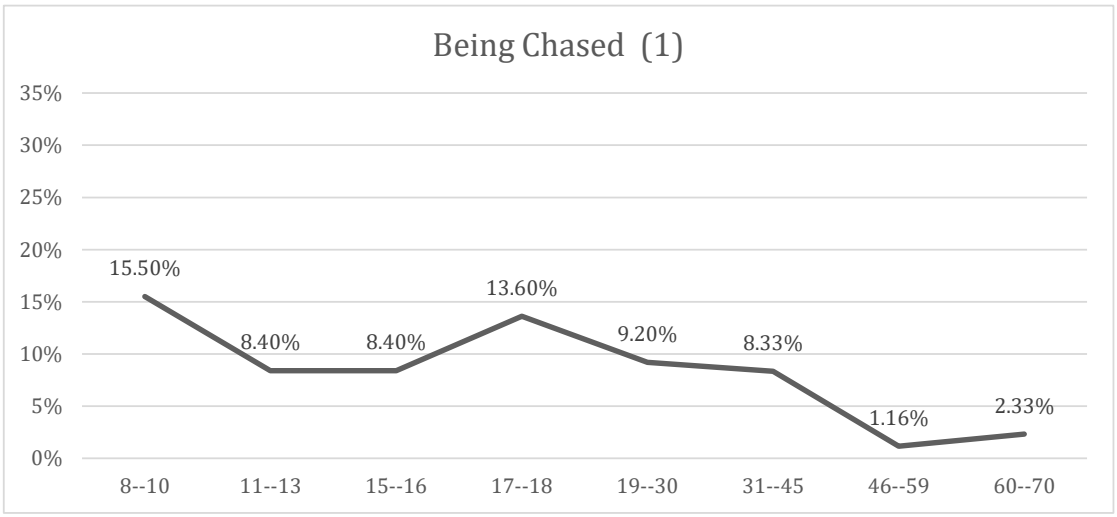
The length of dreams in the preadolescent and older adult groups in the present sample was comparable to that of the sample of males and females in Dale et al. (2015, 2017); however, the dreams of the adolescent and adult groups were shorter. For example, in the present sample of young adults (aged 19–30 years), the mean number of words in the dream reports was 119.82, while in Dale et al.'s (2017) study, the dream report length of males aged 18 to 24 was 156.86; that of females aged 18 to 24 was 195.92.

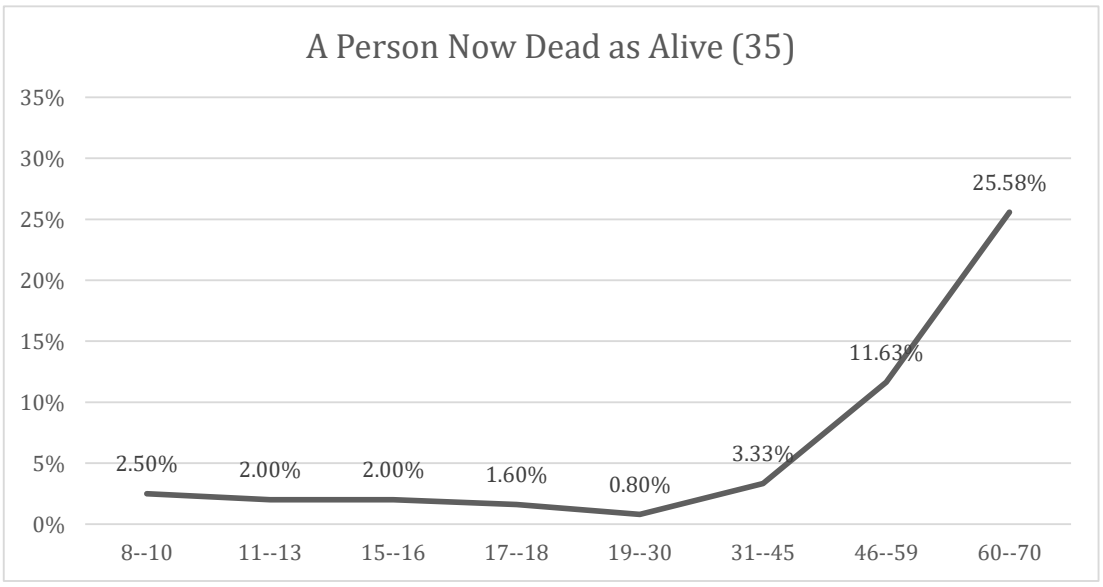
From the perspective of the life cycle, the research confirms some results of previous studies, such as the decrease in themes of attack and threat with increased age (Dale et al., 2015; Domhoff, 1996; Riva Crugnola et al., 2008). The high frequency of threat dreams in children may relate to children's protection needs, expressions of personal concerns (Domhoff, 2017), or virtual rehearsals for possible threats in real life (Revonsuo, 2000). Dreams about "School, teachers, and studying" are among the most frequent typical dreams, but their frequency is generally related to adolescent and young adult samples, as confirmed by the present results. The high frequency of dreams with themes of sex and nudity in young adults (see also Yu, 2012) also shows that some typical contents may change in line with waking life concerns and developmental tasks.

The present finding of an increase with age of dreams of "Trying again and again to do something" is consistent with the results of Mathes et al. (2014), which found an increase in dreams of this theme in participants aged 14 to 86 years (Mathes & Schredl, 2014). Adults and older adults have been found to have more dreams about failure, being late, and inhibition (Gauchat et al., 2015). It is difficult to interpret this finding. From the perspective of personal concerns across the life cycle, the increase with age of a feeling of hindrance could be an expression of an increased sense of responsibility. If threats are major concerns in children, being unable to execute one's own responsibilities or losing control or mastery might be typical concerns in adults.

According to Hall and Nordby (1972), dreams of misfortune are typical, occurring in one out of every three dreams. There are many types of misfortune: "death, bodily injury or illness, destruction of, injury to, or loss of a possession, threats from the environment, falling, and frustration. Included under frustration are such experiences as encountering an obstacle, inability to move, being lost, missing an airplane, train or boat, being late for work or an appointment, and finding oneself in an embarrassing situation, such as appearing nude in public" (1972, p. 25).

In the present research, dreams of death and the deceased trended in two directions. Dreams of the loss of a living person were more frequent in children, while dreams in which a dead person appeared as alive were more frequent in older adults. Dreams with the theme of "A person now dead as alive" were also found to increase with age in Mathes et al. (2014). Children's fear of losing someone could be an expression of their attachment to their parents, while for the elderly it could relate to the real loss of close





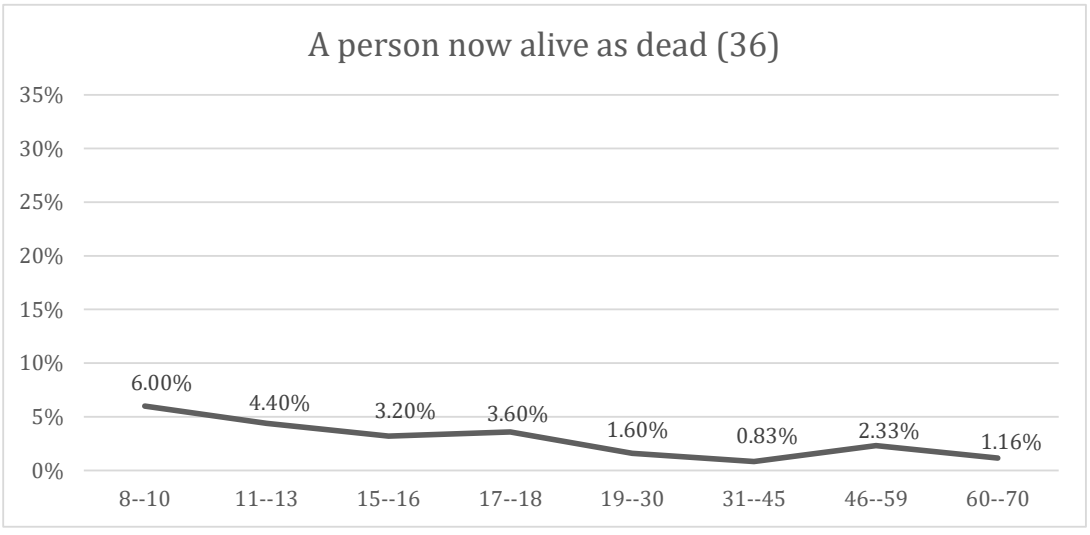
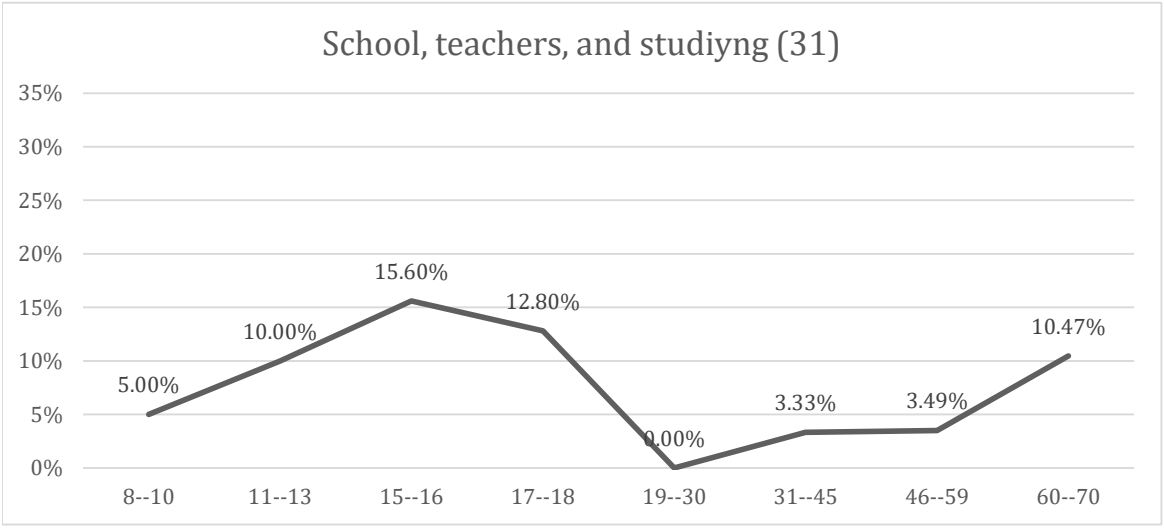


Figure 1-3. (1, top) Trend of "Being Chased" (1), in Relation to Age, (2, middle) Trend of "A Person Now Dead as Alive" (35), in Relation to Age, (3, bottom) Trend of "A Person Now Alive as Dead" (36), in Relation to Age.



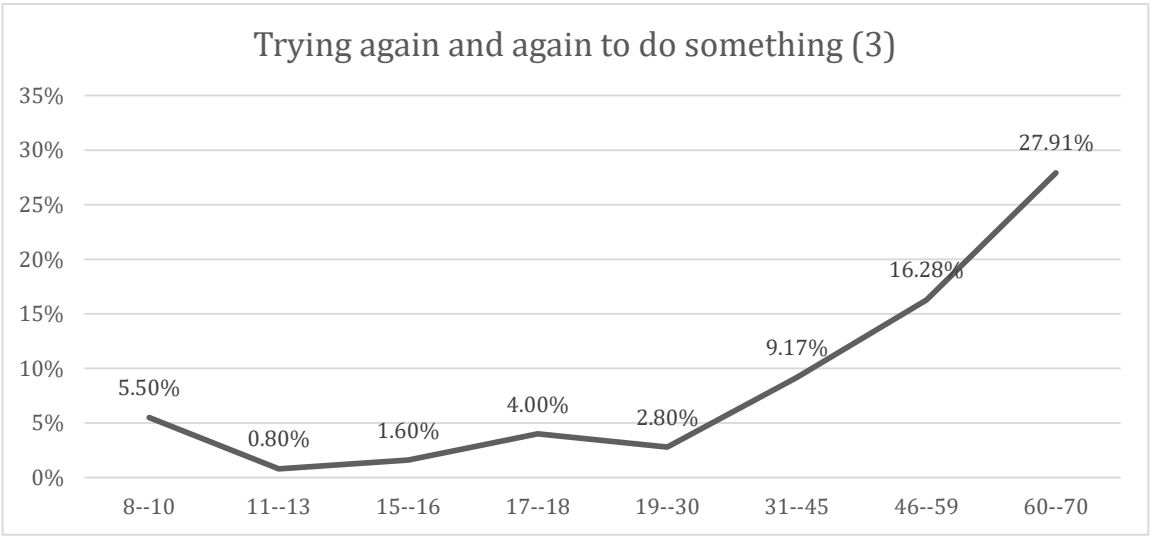


Figure 4-5. (4, top) Trend of "School, Teachers, and Studying" (31), in Relation to Age, (5, bottom) Trend of "Trying Again and Again to Do Something" (3), in Relation to Age.

relatives. Both themes could be considered expressions of the attachment motivational system. While a child may fear losing his or her parents, and therefore dream of their death, an elderly person may have experienced a real loss in his or her life, and therefore dream of acquaintances, parents or partners who have died but returned in the dream.

Gravity dreams, such as dreams of "Flying" and "Falling," showed a non-linear trend in the present study. While dreams of "Flying" and "Floods or tidal waves" were more frequent in older adults (Mathes et al., 2014), dreams of "Falling" were more frequent in children, showing a progressive decrease followed by an increase in adulthood and old age. Gravity themes have been found to be frequent in content related to sleep paralysis, often associated with threatening themes and paralysis (Cheyne, 2003; Cheyne & Girard, 2007). Such content is very frequent in dreams, particularly when considered in a broader category including ascending/descending stairs or elevators (Maggiolini, Persico, & Crippa, 2007). In future research, it would be interesting to identify not only flying and falling in dreams, but also all gravity themes, and to verify if there is a relation between falling and descending, or between flying and ascending. A hypothesis to be tested is that, in adults' dreams, descending could replace falling and flying could replace ascending. Such content could be related not to specific developmental tasks, but to vestibular sensations during sleep (Cheyne, 2003; Schönhammer, 2005; Yu, 2016b), wherein dreams of flying may be "a logical, direct, and unsymbolic way of synthesizing information generated endogenously by the vestibular system" (Hobson & McCarley, 1977, p. 1339).

The present study may have some limitations. A convenience sample was used and it was not representative of the population, especially in the range of young to older adults. Moreover, data were collected through self-report instruments and may have been affected by social desirability. Finally, the data were cross-sectional and no causal relationship could be inferred.

4.1. Open Issues in Studying Typical Dream Themes

The results of the present study could indicate new directions in the study of typical dream themes. The TDQ and DMS items have not been defined according to a life span

perspective. It would therefore be useful to consider whether some themes are typical of specific life cycle phases. Researchers should seek to define typical themes for different ages and not only verify how a list of dreams—mainly based on dream research with young adults—may vary by age. Some decrease in dream theme frequency, in fact, could relate to a content issue and not only to a change in recall or in REM sleep from infancy to old age (Nielsen, 2012).

Because some typical themes occur only rarely in dreams, Mathes and Schredl (2014) suggested setting a cut-off for prevalence (of approximately 10–15%) for dream themes to be classified as truly typical. On the other hand, some themes are especially frequent in dreams but not listed as items in the standard measures; such themes include having an accident, disease, travelling, competition, and being or encountering a famous person. It may be worth adding these as new items.

A list of typical dreams should be built on both theoretical and empirical bases. Mathes and Schredl (2014) suggested asking a large number of dreamers what themes are typical in their dreams; however, even following this method, one would have to consider different age groups. Yu (2016b) proposed that, to be considered "typical," a theme should be reported by the majority of people (> 50% of a sample in questionnaires), have theoretically substantive reasons, and be confirmed by exploratory and confirmatory factor analyses.

Many people begin experiencing certain dream themes in childhood and continue to experience these themes throughout other developmental stages across the life cycle (Yu, 2016b). Considering new items, however, it is important to recognise that dream content can also change across the life cycle. For example, competition can be represented in adolescents' dreams through sports and games themes, while in adults' dreams it may be represented in work conflicts. It may also be possible to find a theme equivalent to failing an exam for adults, such as losing a job.

Yu (2012) proposed new items from a theoretical perspective, such as object relations theory or modifying the description of the content. According to him, the theme of "Finding money" could be expanded to "Finding money, winning the lottery, or becoming rich," in order to better assimilate its grandiose nature. We agree to the proposal of underlining the subjective meaning of a theme (e.g., grandiosity), but objective circumstances or behavior may change according to age. If typical themes are connected with emotional concerns, one should start by defining emotions, rather than describing objects or context (e.g., "Insects or spiders" or "School, teachers, and studying"). The items that describe typical dreams are in fact not homogeneous at all. For example, a dream with the theme of "School, teachers, and studying" may be very generic; dreams about "Snakes" may focus on a single object; and dreams of "Falling", "Swimming" or "Flying" are actions. It would be useful to try new directions for defining typical dreams. For example, rather than starting from a list of single items as in the TDQ, researchers could begin by looking at content categories, factors, or scripts. For example, if "the two most common forms of aggression in dreams are chasing-attacking and quarrels-admonitions" (Hall & Nordby, 1972, p. 49), then it is surprising that while there are some TDQ items about being chased and attacked, there is no item about admonitions. We propose to group TDQ items into categories (Maggiolini et al., 2007; Maggiolini et al., 2010), using typical dream items as prototypes (Rosch, 1978): (a) attack dreams (being chased, being threatened by a person or animal); (b) hindrance dreams (trying something repeatedly, feeling stuck, being unable to do anything, not having control); (c) gravity dreams (flying, falling, rising, swimming, being in a relationship with gravity); (d) examination dreams (taking an exam, being evaluated, undergoing a test or competition); (e) loss dreams (losing something/someone, seeing a person now alive as dead, seeing a person now dead as alive); (f) sex dreams (being in a sexual relationship, experiencing love or jealousy); (g) spatial disorientation dreams (experiencing disorientation in the relationship with an environment that is unpredictably changed); (h) performance dreams (doing something well, being famous, meeting famous people); (i) dreams of nudity and embarrassment (feeling embarrassed for any reason); and (j) dreams of time (arriving late, not meeting a deadline, not having enough time). Content analysis could start from the categories that are similar to those generated by previous factor analyses, instead of from single items.

In order to increase the consistency and reliability of this proposal, we are working to develop a new list of typical themes based on the perspective of the affective mind (Solms & Panksepp, 2012). The basis for the new classification will be basic emotional and motivational systems in the internal world, rather than objects in the external world.

Yu (2016a, 2016b) proposed a categorisation of dream themes based on a neuroscientific model. He classified typical delusional dream themes into "Ego Ideal," "Grandiosity," and "Persecution" categories (2009). The Ego Ideal category does not directly involve classic delusions, but issues about falling short of social expectations, such as arriving late, feeling embarrassed, and using a toilet. The Grandiose category comprises wish fulfillment items, such as having superior knowledge or mental ability, having magical powers, and encountering a deity in some form. Finally, the Persecution category is composed of vestibular-motor excitement and paralysis and terror themes.

One could consider some dream content to stem from memories of daily experiences and other content to be a product of the dreaming mind (drawing on emotions and motivations) or the specific way in which the brain works during sleep (Yu, 2016a). For instance, themes of being stuck, gravity, and threat have been understood as manifestations of the sleeping condition of the dreamer's body (Schönhammer, 2005). Another theory is that typical dreams are archaic themes and that the themes of "Being chased by wild, violent animals," "Floods," "Tidal waves," and "Being attacked" are vestiges of evolutionary development, as these were important topics for ancient humans (Nielsen et al., 2003). From a different perspective, Mathes and Schredl (2014), following the continuity hypothesis, proposed that these themes are due to an incorporation of everyday experiences. They propose the example that, as students probably often repeat things when they study, "Trying again and again to do something" could be an expression of this experience (Mathes & Schredl, 2014).

One should, however, bear in mind the difference between typical content as "very common in dreams" and content that is "typical of dreams." In particular, "common themes" (universal dream content) should be distinguished from "typical themes" (content that is typical of dreams). In defining typical themes, one should combine two criteria: (a) dreams with similar content reported by a high percentage

of dreamers, and (b) dream content that is typical of dreams, compared to waking narratives. One way to compare dream content with waking narratives is to simply collect narratives of dreams—for example, using the most recent dream method—and daytime episodes—asking about a recent episode that the subject remembers (Maggiolini et al., 2010). Another way is to compare the contents of day journals and dream journals (Malinowski & Horton, 2011; Schredl & Hofmann, 2003; Schwartz, 2004).

According to Domhoff, "the overall findings in both lab and non-lab settings reinforce the claim that typical dreams are very rare. They are therefore very unlikely to be a good basis for future theorizing" (Domhoff, 2017, p. 69). Hall and Nordby (1972), however, analyzing individual dream series across the life cycle, identified the following themes that occurred with considerable frequency and could be considered as typical: food and eating, loss of an object, use of the toilet, being late, preoccupation with one's body, an emphasis on clothing, and nakedness. The frequency of these themes, therefore, may be due to figurative thinking (Domhoff, 2017, p. 97) and "studying dreams with discontinuous elements is a very promising field for future research" (Schredl, 2012, p.2).

From the perspective of the life cycle, dreams may not relate to wishes (as in Freudian theory), but may instead relate to developmental tasks, as a way of reminding the dreamer what he or she must do and face in waking life. The dreams of children may protect them from threats and maintain their bonds; the dreams of adolescents and young adults may guide them to build new competitive and sexual relationships; the dreams of adults may encourage them to uphold their responsibilities; and the dreams of the elderly may help them face death. Changes in typical dream themes, therefore, could be interpreted as changes in the expression of emotional concerns typical in different phases of the life cycle. The universality of typical themes across different cultures could be a manifestation of the universality of these tasks.

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