

What do dreams really mean?

The relationship between dream content, age, recent experienced emotions and crisis episodes in adults

Nikolay Petrov, Oliver C Robinson, Josie Malinowski

Background

Dreams and the continuity hypothesis

The *continuity hypothesis* is the theoretical conjecture that there are continuities between recent experiences in waking life and the contents of dreams¹. A widely supported explanation of the continuity hypothesis is that negative waking life experiences, thoughts and emotions are *incorporated* into dreams for the purpose of further processing (2-5). With regards to emotions in waking life, the prevailing notion is that more negative dreams entail greater processing, hence are more incorporated in dreams, however some have argued that it is the *intensity* that is critical (6).

Dreaming has also been found to relate to age. A consistent finding is that dream recall frequency and occurrence of negative emotions in dreams are negatively related to age (7,8). In terms of dream themes, most research has found very few normative age-related differences (9). Nonetheless, scholars have found thematic differences in dream content in times of extreme stress, which attested for the continuity with dream life (10-12).

Adult Development and Crises

Developmental crisis is a non-pathological, time-limited period in which an individual undergoes the gradual demise of an existing life structure and the development of a new one. A developmental crisis is usually recognized retrospectively as a turning point and as an emotionally intense episode of life that overwhelms coping resources. The majority of crises are appraised as leading to growth (13). In young adults, crisis episodes typically revolve around feeling *locked out* of adult roles or *locked in* to relationship or jobs, and corresponding feelings of meaningless and inauthenticity (14). In midlife, crises typically revolve around job pressure or unemployment, bereavement and relationship difficulties (13).

Rationale and aim

Given that crisis episodes are times of intense emotion and life difficulties, we set the aim of exploring if they are systematically related to dream content, and whether the relationship is different in younger and older adults. We also explored the relationship of emotion to dreams across these two age groups too.

Hypotheses & Research Qs

Hypotheses re. dream emotion by age group

In younger adults (aged <40), and older adults (aged 40+)

1. The extent of waking life negative emotions over the past week will correlate negatively with the reported emotional valence (low = negative, high = positive) of a recently recalled dream
2. The extent of waking life negative emotion over the past week will correlate positively with the reported emotional intensity of a recently recalled dream
3. Waking life positive emotions will not correlate with emotional valence nor emotional intensity of a dream

Exploratory research questions re. dream theme content:

1. Do those who self-define as being in a high level of crisis have systematically different thematic dream content than adults who report a low level of crisis?
2. Do those who have high levels of waking emotions report systematically different dream theme content to those who report low levels?

NB. We did not break these research questions down by age group as the Chi Square analysis did not provide sufficient power with smaller sample groups.



This research was funded by a British Psychological Society Undergraduate Research Assistantship Award 2018

Method

Participants

N = 248; Age: n(age<40) = 143, n(>=40) = 105; Gender – 26.6% male, 72.2% female

Measures and qualitative assessments:

- Dream emotional intensity and valence scales, 0-9 scale
- Crisis Screening Questionnaire CSQ-5 (15)
- Single-item affect scales (16)
- Most Recent Dream protocol – a written description of a dream recalled from the past two weeks (17)

EXAMPLE 'MOST RECENT DREAM' REPORTS:

Male, Age 28, Valence = 8, Intensity = 6 "Unfamiliar setting characterised by a stunningly beautiful natural setting. As I walked through more and more beauty revealed itself, initially, there were no people in the dream but a few animals were dispersed in the background. I was filled with profound peace and awe. At one point I took a turn and entered a posh restaurant integrated into the natural setting. There were plenty of tables with a few people dining. On most tables, there were multiple plates of beef steaks with varying doneness. I felt a sense of choice, plenitude and peace."

Female, Age 28, Valence = 0, Intensity = 9. "I dreamt of me and my father aged 51 going to a bar to have a catch up, the place was unfamiliar with lots of arch bars and restaurants to choose from but looked like London. My sister aged 31 and her husband aged 33 kindly offered to pet sit my dog as I didn't want to leave him on his own. We agreed they would bring him to the bar where me and my father will be after 2 hours. A few hours passed and no one showed up. I tried calling my sister but her phone was switched off, the number you are calling automated message was played in Lithuanian not English, which I found very strange since I don't use Lithuanian language since moving to UK 9 years ago in my day to day life. I then tried calling her husband, who eventually picked up the phone and was crying down the phone. He explained that he was playing with my dog and accidentally choked him to death, he couldn't explain how this happened. I was devastated, angry and started crying as well, it was very unpleasant dream, I immediately woke up."

Micro-thematic analysis

12 themes were used to thematically categorise dream content, deductively derived from crisis theory, from the Hall-Van de Castle dream coding system (18), and amended following an inductive analysis of 30 random dreams from the study. See column 1 of Table 2 for names of themes. Inter-rater reliability was calculated at 88%. Resulting codes were turned into frequencies for analysis.

Findings #1

Dream emotion and waking affects

Emotion experienced in the recently recalled dream, rated on valence and intensity 9-point scales, were correlated with ratings of waking affects over the past week. Table 1 presents these correlations by two age groups; under 40s and over 40s.

TABLE 1	Dream Valence		Dream Intensity	
	Age <40	Age 40+	Age <40	Age 40+
Waking life				
Stressed	-.14	-.15	.01	.18*
Worried	-.20**	-.10	.06	.23*
Miserable	.02	-.03	.01	.18*
Angry	-.01	-.06	.05	.09
Happiness	0.08	.07	.00	-.20*
Enjoyment	-.01	-.01	.02	-.20*
Crisis	.19*	.12	-.01	.27**

**significant at 0.01, *significant at 0.05

Note: Variables "Stressed, Worried, Miserable, Angry" – one-tailed; Variables "Happiness, Enjoyment, Crisis" – two-tailed

Dream emotional valence correlated negatively with worry in the under 40s (more waking worry related to more negative dreams). However in the over 40s, it was intensity that correlated with waking emotion; more intense dreams correlated positively with 3 of 4 negative emotions and negatively with both positive emotions.

Findings #2

Dream thematic content and waking emotions / crisis

Emotions and crisis variables were dichotomised with a median split. The high and low groups were then compared for the prevalence of dream themes, and analysed using 2x2 Chi Square tests. The Chi values, significance, and direction of difference in significant values, are shown in Table 2.

TABLE 2	Crisis	Worry	Stress	Happy	Miserable	Angry	Enjoyment
Threat & Danger	0.05	0.00	0.12	1.05	0.44	0.29	0.01
Illness / Death	0.35	0.15	0.62	0.77	0.19	0.30	0.82
Active Search	0.16	3.88*	4.93*	6.88**	1.55	0.01	1.07
Success	0.76	0.02	1.09	0.71	0.02	1.09	0.81
Failure	0.81	2.66	0.58	1.18	0.39	0.28	2.71
Good Fortune	0.03	6.02*	2.53	3.71	0.62	1.85	0.64
Misfortune	0.31	1.44	2.29	0.03	0.02	0.37	1.99
Anger	0.31	1.88	3.84*	4.26*	0.00	1.35	0.41
Apprehension	0.09	8.77**	2.13	3.15	0.48	0.15	0.57
Sadness	4.98*	3.84*	3.18	0.77	0.04	1.20	0.98
Confusion	0.02	0.01	0.96	0.01	0.05	0.28	1.57
Happiness	1.60	0.16	0.00	0.92	1.67	0.91	0.49

**significant at 0.01, *significant at 0.05; for significant values, red = theme higher in presence of emotion, green = theme lower in presence of emotion

The highest Chi value was between the dream theme of Apprehension (which includes all forms of fear, anxiety and embarrassment), and waking Worry. This was significant at p<0.01.

The theme that was related to the highest number of waking affects was Active Search (which includes all forms of agentic seeking or solution-finding in dreams); this was higher in those with high levels of waking worry and stress, and lower in those who are high in happiness.

Discussion

All three hypotheses were partially supported and were found to be moderated by age. H1: there was a significant negative correlation between worry, crisis and dream emotion valence for under 40s but no other links between waking affect and dream valence. H2: dream intensity was found to relate to waking affects in the over 40s, but not for under 40s. H3: No relation between positive emotions for under 40s but in over 40s, dream intensity was inversely related to feeling happiness and enjoyment.

This set of findings fits with the evidence for the incorporation of negative waking life experiences into dreams (2-5). It also indicates that to understand the relationship between waking affect and dream emotion, it is important to consider age as a moderating factor. In young adults, waking worries link to having *negative* dreams, while in the over 40s, feeling stressed, worried and miserable links to *more intense* dreams, and feeling happiness and enjoyment links to having *less intense* dreams.

We conjecture the following interpretation of this finding: Given that older adults tend to have fewer dreams (8), while younger adults have more frequent and less intense dreams, we conclude that there is a shift from direct to an indirect incorporation of negative emotions. Less frequent incorporation would lead to more intense dreams due to the use of more adaptive strategies (e.g. compensation, avoidance) for the purpose of dream processing, while more frequent incorporation would require fewer adaptive strategies because the net time of processing is higher (2-4).

In our analysis of how waking emotions and crises relate to dream themes, we found that accounts of active search in dreams are associated with being worried and stressed in waking life. We interpret this as reflecting an urgency to *search and find solutions* in situations of worry and stress, and dreams incorporating this and helping process solutions. Conversely, when people report being happy, this search process in dreams is less prevalent. We also found a strong relationship between waking worry, and the theme of apprehension (which includes all fear, anxiety and embarrassment) in dreams. This supports the correlational finding linking worry to negative emotion in dreams in young adults.

Next steps

This study has highlighted novel links between crisis, emotion and dream content. Our intention is next to use (a) more sensitive and extensive measures to study all of these variables, using dream diaries, emotion experience sampling, and crisis evaluations made over time, and (b) a longitudinal within-person study of these variables over the course of 12 months.

References

¹Hall, C. S., & Nordby, V. J. (1972). *The individual and his dreams*. Signet Book.

²Breger, L. (1967). Function of dreams. *Journal of Abnormal Psychology*, 72(5p2), 1.

³Cartwright, R. D. (2010). *The twenty-four hour mind: The role of sleep and dreaming in our emotional lives*. Oxford University Press.

⁴Wright, J., & Koulack, D. (1987). Dreams and contemporary stress: A disruption-avoidance-adaptation model. *Sleep*, 10(2), 172-179.

⁵Domhoff, 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), 50-62.

⁶Malinowski, J. E., & Horton, C. L. (2015). Metaphor and hyperassociativity: the imagination mechanisms behind emotion assimilation in sleep and dreaming. *Frontiers in psychology*, 6, 1132.

⁷Zanasi, M., De Peris, S., Caporali, M., & Siracusano, A. (2005). Dreams and age. *Perceptual and motor skills*, 100(3_suppl), 925-938.

⁸Schredl, M., & Göritz, A. S. (2015). Changes in dream recall frequency, nightmare frequency, and lucid dream frequency over a 3-year period. *Dreaming*, 25(2), 81.

⁹Domhoff, G.W. (1996). *Finding Meaning in Dreams*. Plenum Press.

¹⁰Nielsen, T. (2012). Variations in dream recall frequency and dream theme diversity by age and sex. *Frontiers in neurology*, 3, 106.

¹¹Rasmussen, B. (2007). No refuge: An exploratory survey of nightmares, dreams, and sleep patterns in women dealing with relationship violence. *Violence against women*, 13(3), 314-322.

¹²Kron, T., Hareven, O., & Goldzweig, G. (2015). Dream Dome: Do dreams shield the psyche in times of continuous stress? *Dreaming*, 25(2), 160.

¹³Robinson, O. C., & Wright, G. R. (2013). The prevalence, types and perceived outcomes of crisis episodes in early adulthood and midlife: A structured retrospective-autobiographical study. *International Journal of Behavioral Development*, 37(5), 407-416.

¹⁴Robinson, O.C., Wright, G.R., & Smith, J.A. (2013). The holistic phase model of early adult crisis. *Journal of adult development*, 20(1), 27-37.

¹⁵Robinson, O.C. no date. The Crisis Screening Questionnaire (CSQ-5): On measuring the presence of developmental crisis episodes. Unpublished manuscript.

¹⁶Stone, A. A., Schwartz, J. E., Broderick, J. E., & Deaton, A. (2010). A snapshot of the age distribution of the psychological well-being in the United States. *Proceedings of the National Academy of Sciences*, 107(22), 9985-9990.

¹⁷Schneider, A., & Domhoff, G. W. (2018). The Quantitative Study of Dreams. Retrieved October 30, 2018 from <http://www.dreamresearch.net/>

¹⁸Hall, C. S., & Van de Castle, R. L. (1966). *The content analysis of dreams*. New York: Appleton-Century-Crofts.

¹⁹Birditt, K. S., & Fingerman, K. L. (2003). Age and gender differences in adults' descriptions of emotional reactions to interpersonal problems. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 58(4), 237-245.

²⁰Almeida, D. M., & Horn, M. C. (2004). Is daily life more stressful during middle adulthood. *How healthy are we*, 425-451.