Conscious Use of Dreams in Waking Life (Nontherapy Setting) for Decision-Making, Problem-Solving, Attitude Formation, and Behavioral Change

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The study explored to what extent dreams have been perceived as being helpful in waking life. More specifically, for "important" waking life (conscious) decision-making, the solving of emotional or nonemotional (practical/technical/work-related) problems, forming/changing an attitude about something or somebody, or a conscious behavioral change of the dreamer (N = 667). On a general level, 62,1% of participants indicated that dreams at some point had been of help or good use (regression analysis found a strong association with dream attitude, measured on Dream Attitude Scale [DAS]). Most often mentioned areas of help were creative input (55,8%) and emotional problem-solving (52,9%). There was a positive association between dream attitude (DAS) and emotional problem-solving and creative input. In all, 8.9% of participants reported that a "dream had influenced an important decision" (e.g., leaving a job, moving, buying a house, or leaving the partner). A regression analysis again indicated that a more positive attitude toward dreams (DAS) was associated with dreams influencing important decisions. Higher dream recall was also associated with all mentioned aspects.

Keywords: decision-making, attitude formation, problem-solving, dreams

Numerous studies have investigated—and shown–how waking life events travel into the content of our dreams (Domhoff, 2018; Hall & Van de Castle, 1966). These studies largely support the so-called continuity hypothesis—that waking life experiences are reflected in our dreams (Schredl, 2018). A more limited number of studies have looked into how dreams affect waking life, for example, dreams influencing daytime mood (Pagel & Vann, 1992; Schredl, 2000, 2009; Wasserman &

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ISSN: 1053-0797

2020, Vol. 30, No. 3, 257–266
http://dx.doi.org/10.1037/drm0000138

Ballif, 1984). Especially, research is limited when it comes to specific elements like conscious decision-making and attitude formation and/or change of attitude, based on dreams (Barrett, 2001; Kuiken, Albrecht, & Cook, 2019).

Pagel and Vann (1992) in a questionnaire survey in a medical family practice found that 19.3% of participants stated that dreams affect decisions, and more generally, 33.2% stated that dreams affect waking life, women even more so stating this. In addition, dream recall is strongly associated to these aftereffects, the higher dream recall, the higher a tendency to state that dreams affect waking life. In all, 32% of participants stated having experienced that dreams helped them solve personal problems, just as 29% stated that dreams "changed the way of life" (Pagel & Vann, 1992). Many of these findings were replicated by Schredl (2000), but an additional finding was that 47% stated that they had had dreams that triggered an action in waking life. Kuiken and Sikora (1993) found that so-called impactful dreams, transcendent (also labeled spiritual) dreams, existential dreams, and nightmares impact thinking—and to a certain extent behavior—in waking life. Dreams can also inspire creativity (Barrett, 2001), for example, creating new music, art, literature, inventions. About 50% of participants incubating on a given problem or challenge, experienced having a dream the following night considered an answer to the problem incubated on (Barrett, 1993). Schredl and Erlacher (2007) reported that 8% of the recalled dreams had a stimulating effect on waking life creativity: (a) dream images were used for art, work, or similar areas; (b) dreams helped to solve a problem; (c) dreams provided the impetus to do something that the dreamer otherwise had difficulty doing; and (d) dreams contained emotional insights.

In an overview article, Kuiken et al. (2019) described how impactful dreams (with three categories; nightmares, existential dreams, and transcendent dreams) have led to changes in waking life perception. Existential dreams were thus seen as dreams leading to increased sensitivity to previously ignored aspects of life; that is, the dream led to changes waking life in thinking and behavior. The extent to which dreams are as such helpful in waking life, and more specifically whether they influence conscious decision-making, as well as attitudes about oneself, others, or a given subject, is however something that had not been studied in a systematic way.

The aim of this study was to look into the following four areas related to dream effect on waking life: (a) frequency of dreams generally being of any help, (b) in what way did those dreams help them, (c) the extent to which important life decisions have been taken based on dreams, and (d) the extent to which dreams have influenced an individual's attitude toward a person or a topic. In an exploratory approach, it was studied whether age, gender, education, dream recall frequency, and attitude toward dreams are associated to the effect of dreams on waking life.

Method

Participants

In total, 667 participants answered the full questionnaire: 401 women (60.1%) and 266 men (39.9%). The age distribution was as follows: 10 to 25 years (7.2%), 26 to 39 years (54.1%), 40 to 59 years (33.9%), and 60 years and above (4.8%). Education was as follows: primary school (3.75%), high school/youth education

(17.24%), college/university (bachelor's degree; 31.63%), university (master's degree; 45.13%), and doctoral degree (2.25%). A total of 587 respondents (88.0% of sample) completed a Danish version of the survey, and 80 (12.0% of sample) completed an English version.

Measures

Demographic measures. Participants answered questions about their gender (male/female), their age categorized into four groups (10–25, 26–39, 40–59, or 60 and above), and educational level (1 = *primary school*, 2 = *gymnasium/youth education*, 3 = *college/university - bachelor's degree)*, 4 = *university (master's degree)*, and 5 = *doctoral degree.*

Dream recall. Dream recall frequency was measured by an item eliciting how often the participant remembers having had a dream after waking up in the morning. This was scored on a seven-item Likert frequency scale, ranging from 0 (*never*) to 6 (*almost every day*). The item is almost identical with the scale of Schredl (2004), which showed high retest reliability (r = .85).

Dream Attitude Scale. General attitude toward dreams was measured with the Dream Attitude Scale (DAS) consisting of five Likert items (1 = *strongly disagree*, 2 = *disagree*, 3 = *neutral*, 4 = *agree*, 5 = *strongly agree*). Three items used positive wording, for example, "I view dreams as interesting and meaningful," and two items reflect negative statement, for example, "Dreaming is of no importance to me." For the total score, which was derived as a mean ranging from 1 to 5, these two negative items were inverted. The internal consistency (Cronbach's α) was high: r = .824.

Dream effect on waking life, decisions, and attitude toward others. This topic was covered via the following six items (also see Appendix for a listing of these). The first items elicited whether the participant had experienced a helpful dream (Yes, No, Do not know). The 7-point frequency scale of helpful dreams ranged from 0 (*never*) to 6 (*almost every day*). If a participant checked "Don't know" and at the same time reported helpful dreams at least "A few times in my life" then s/he was coded as "Yes" (experiences helpful dreams), otherwise the coding was "No". The question in what way dreams had helped provided the following six options with multiple answers allowed: "Creative input" (i.e., an invention, music, handicraft work, painting, or similar), "nonemotional problem-solving" (i.e., work issues, a specific nonemotional problem you are dealing with), "emotional problem-solving" (i.e., emotional issues/relationship issues etc.), "providing personal insight" (i.e., making you realize something about yourself that you were not aware of), "I am not too sure, only I know that the dream(s) helped me," and "Other." An open-ended question followed to elicit a brief description of how the dream(s) were helpful.

Two 7-point scales (ranging from 0 [*never*] to 6 [*almost every day*]) elicited the effect of dreams on specific aspects of waking life: "How often has a dream you have had influenced your opinion about something or somebody?" and "Has a dream you have had made you consciously change an aspect of your behavior?" The last and third question in this section was, "Has a dream you have had ever made you decide to leave your job, move, switch career, buy a house, leave your

partner—or other important actions?" (*no, do not know, yes—please indicate what*).

Procedure

A convenience sample was recruited via LinkedIn (www.linkedin.com, a "professional" community) and Facebook (www.facebook.com, a "social" community). In addition, a smaller group of psychology students at a university participated. The questionnaire was answered via an online survey—constructed in Danish and English. In the individualized e-mail invitation to participants, the survey was referred to as being a survey on "dreams, sleep quality, and relationships." Two analyses (Olsen, Schredl, & Carlsson, 2013, 2016) on dream sharing and dream beliefs have already been published but the present study focused on how dreams affect—or are being used for—attitude formation, decision-making and actions in waking life. Invitees were further encouraged to invite others to answer the questionnaire, so-called snowball sampling.

Statistics

Data were analyzed in SAS for Windows 9.4 (Cary, North Carolina; https://sas.com). Nonparametric tests were used when appropriate. For exploratory purposes, we applied logistic and ordinal regressions for the binary respective ordinal scales and included gender, age group, educational level, dream recall frequency, and attitude toward dreams.

Results

For dream recall, the participants reported the following: almost every day (10.64%), several times/week (26.99%), once a week (13.19%), a few times per month (25.94%), once per month (11.54%), a few times per year (10.64%), and never (1.05%). The mean of the attitude toward dreams scale (DAS) was 3.65 ± 0.71.

A total of 414 participants (62.1%) experienced dreams that had been of help or good use. The frequency of helpful dreams is depicted in Table 1. About 15% experiences such dreams once a month or more often, whereas about 40% never had helpful dreams. The frequency of dreams that have influenced the opinion about something or someone as well as the frequency of dreams that changed waking behavior are shown in Table 1. These two specific effects were rarer than the frequency of helpful dreams (helpful vs. influencing dreams: S = .19015.5, $p <$ .0001; helpful vs. changing dreams: S = 19,953, $p <$ .0001; sign-rank tests) but differed not from each other (S = 1,324, p = .0509). Regression analyses (Table 2) found that there was a strong significant association with the DAS and all three elements, general frequency of helpful dreams, frequency of dreams influencing opinion about others, and frequency of dreams changing behavior. Likewise, there was a smaller association with dream recall and the three elements.

Table 1
Frequency of Scales Measuring Effect of Dreams on Waking Life

Category	Frequency of helpful dreams (%)	Frequency of dreams influencing the opinion about others (%)	Frequency of dreams changing behavior (%)
Several times/week	0.60	0.15	0.00
Once a week	1.05	0.30	0.15
A few times a month	5.70	1.35	0.90
Once a month	7.20	2.70	1.95
A few times a year	22.65	10.94	11.54
A few times in my life	24.44	40.48	39.73
Never	38.38	44.04	45.73

The different areas in which dreams were helpful are depicted in Table 3: Creative input and emotional problem-solving were mentioned most often. Examples reported by participants who chose the "other" category were "It told me that I was more worried about a certain thing than I was aware of" and "If I am too stressed out, I can sense it via my dreams very early in a stressful period, and I then know that I need to cut down on the amount of activities." A total of 299 participants provided a brief description of how the dreams were helpful; the classification of these responses is depicted in Table 4 and parallels the figures presented in Table 3. Logistic regression analyses (Table 5) showed a positive association between the DAS and emotional problem-solving and creative input. There were no other relevant associations.

Of the total sample (two missing values), 8.87% of the participants reported that a dream has influenced an "important decision," for example, leaving a job, moving, buying a house, or leaving the partner. The topics mentioned were decision to leave partner ($N = 20$), change job/career ($N = 20$), clarification about partner ($N = 4$), move/relocate ($N = 5$), new direction in life ($N = 7$), and other, for example, "break with family," "secretly being in love," "start therapy (posttraumatic stress disorder)," "terminate professional partnership," "I have let the dream of my mother influence me in picking the day for a Caesarean section," and "date a girl I dreamed of and have sex with her the following night." Again, the logistic regression analysis indicated that higher dream recall and a more positive attitude

Table 2
Ordinal Regression Analyses for the Frequency of Dreams Affecting Waking Life (N = 667 Participants)

	Frequency of helpful dreams			Frequency of dreams influencing the opinion about others			Frequency of dreams changing behavior		
Variable	*SE*	χ^2	*p*	*SE*	χ^2	*p*	*SE*	χ^2	*P*
Age group	−.0119	0.1	.7757	−.0117	0.1	.7855	−.0138	1.6	.7506
Gender (1 = f, 0 = m)	−.0008	0.0	.9850	−.0822	3.4	.0648	−.0566	1.6	.2058
Education	−.0437	1.1	.2927	−.0938	4.8	.0292	.0034	0.0	.9385
Dream recall frequency	.2991	43.4	<.0001	.2281	23.4	<.0001	.1718	13.4	.0003
Dream Attitude Scale	.7259	168.4	<.0001	.5946	115.8	<.0001	.6114	118.6	<.0001
	$R^2 = .3963$			$R^2 = .2872$			$R^2 = .2761$		

Note. *SE* = standardized estimates.

Table 3
Types of Helpful Dreams Reported by the Participants Who Experienced Helpful Dreams (n = 414)

Type	Occurrence (%)
Nonemotional problem-solving, e.g., work issues	29.23
Emotional problem-solving, e.g., relationship issues	52.90
Creative input	55.80
Providing personal insight	32.13
Helpful dream, but unspecified	16.91
Other	5.07

Note. Multiple answers were possible.

toward dreams (DAS) was associated with having a dream had influenced an important decision (Table 6).

Discussion

This study examined to what extent dreams have been of constructive use in waking (conscious) life, for instance in terms of conscious decision-making, or in terms of solving emotional or nonemotional (practical/technical/ work-related) problems. We found that about two thirds of the participants had experienced one or more dreams being of help or good use. This figure is somewhat higher compared to previous studies (Kuiken & Sikora, 1993; Schredl, 2000). One explanation could

Table 4
Classification of the Descriptions of Helpful Dreams (n = 299 Participants Provided Reports)

Topics	*N*	Percentage
1. Attention to unacknowledged problem (stress, conflict, unhealthy life style, fears, worries, family issues, or unacknowledged feelings in general)	69	23.1
2. Self-insight generally (unspecified)	46	15.4
3. Problem-solving at work / creative solution for work	38	12.7
4. Problem-solving personal problems, conflicts etc.	35	11.7
5. Problem-solving unspecified	27	9.0
6. See things clearer	27	9.0
7. Decision-making - Input, comment on or affirmation	25	8.4
8. Creative input—art, literature, music, design	19	6.4
9. Other/new angles to problem	18	6.0
10. Other (including "too personal")	15	5.0
11. Don't know (don't know, cannot recall)	15	5.0
12. Reminder that life is good/all is well—"don't worry be happy"	14	4.7
13. Let go of diseased person/help during deep sorrow	12	4.0
14. Divorce—helpful before and after	11	3.7
15. Attention to own (unmet) need	9	3.0
16. Better understanding of other people	9	3.0
17. Predicting future happenings	7	2.3
18. Mood improvement (good mood when waking up)	7	2.3
19. Led to specific action (unspecified)	6	2.0
20. Bringing attention to others	4	1.3
21. Increased closeness/intimacy with others	3	1.0
22. Attention to dangers (unspecified)	2	0.7
23. Career/job change	2	0.7

Table 5
Binary Regression Analyses for the Subtypes of Helpful Dreams (n = 414 Participants With Helpful Dreams)

	Nonemotional problem-solving			Emotional problem-solving			Creative input			Providing personal insight			General impression having helpful dreams		
Variable	*SE*	χ^2	*p*	*SE*	χ^2	*p*	*SE*	χ^2	*p*	*SE*	χ^2	*p*	*SE*	χ^2	*p*
Age group	−.0384	0.4	.5365	−.0282	0.2	.6259	−.0635	1.2	.2639	−.0424	0.5	.4762	.0306	0.2	.6754
Gender (1 = f, 0 = m)	−.1296	4.5	.0332	−.0138	0.1	.8143	.0785	1.9	.1685	−.1166	3.7	.0542	.1422	3.2	.0721
Education	.0537	0.8	.3779	.1240	4.6	.0329	−.0248	0.2	.6610	−.0026	0.0	.9651	−.0894	1.5	.2181
Dream recall frequency	.0395	0.4	.5369	.0548	0.9	.3608	.0503	0.7	.3906	.0122	0.0	.8443	−.0975	1.6	.2008
Dream Attitude Scale	−.1228	3.8	.0504	.3175	25.6	<.0001	.1752	8.9	.0029	.1448	5.5	.0187	−.1040	1.9	.1732
	R^2 = .0359			R^2 = .1172			R^2 = .0561			R^2 = .0311			R^2 = .0346		

Note. *SE* = standardized estimates.

Table 6
Logistic Regression Analyses for the Occurrence of Dreams That Affect Decisions in Waking Life (N = 665)

Variable	Dreams affecting decisions		
	SE	χ^2	*p*
Age group	.0272	0.1	.7142
Gender (1 = f, 0 = m)	.0001	0.0	.9994
Education	−.1195	2.4	.1187
Dream recall frequency	.2009	4.9	.0271
Dream Attitude Scale	.4366	19.6	<.0001
		R^2 = .1298	

Note. *SE* = Standardized estimates.

be that the questions asked did not specify that a given decision should be based on a specific recalled dream (i.e., because of this one recalled dream, the participant decided to do this or that). This might have led some participants having a more general *feeling* that their dreams have helped them, to answer yes to this question. It thus appears important in future studies looking at this, to further specify that the participants should answer yes only when remembering that, for example, the waking life decision had been taken on an actively recalled dream.

In terms of frequency, 15% of participants experienced such helpful dreams once a month, and 40% of participants never had helpful dreams. The exploratory analyses indicated that these marked interindividual differences are related to a positive attitude toward dreams and dream recall frequency, and this potentially indicates huge potential for a major part of the general population in terms of using their nightly dreams for solving waking life problems to a much greater extent. That is, persons who are interested in dreams also are more likely to "listen to dreams" when it comes to for example, conscious decision-making. On the other hand, having once experienced how a dream could be highly useful for, for example, solving waking life problems, might lead to a more positive attitude toward dreams. For dreams influencing the conscious opinion about others and dreams changing waking life behavior, frequencies were generally lower, as they are both more specific. This is something that could be explored further in larger studies involving more participants.

When generally asked to specify how dreams had been of help, "creative input," "emotional problem-solving, e.g., relationship issues," and "providing personal insight" were mentioned most often (Table 3). A positive attitude toward dreams was related to dreams providing emotional problem-solving and creative input—again supporting the notion of a two-way relationship; that is, persons with a positive attitude toward dreams might take dreams more seriously and experiencing helpful dreams might affect attitudes toward dreams in a positive way. The other variables like age, gender, and education did not show marked effects on the dream effect variables and, thus, could suggest that other variables are at play, for example, "thin boundaries." These are individuals who are generally sensitive, creative, vulnerable, experience mental in-between states, and involve themselves quickly in relationships (Hartmann, 1991).

The qualitative analysis (Table 4) indicated that topics like "attention to unacknowledged problem" was most often mentioned and not measured by the

items measuring effects of dreams on waking life. Future studies should also include items tapping into the areas listed in Table 4.

To summarize, this study indicates that a sizable number of persons used their nightly dreams as input on waking life issues, or simply point their attention to issues not yet adequately dealt with in waking life. As the study also raised a lot of questions, further research would be highly recommended. One interesting paradigm would be to increase positive attitude toward dreams (and dream recall frequency) by psychoeducation and study whether this approach increases the probability to experience helpful dreams.

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(*Appendix follows*)

Appendix

Questionnaire Items Covering Dream Effect on Waking Life, Decisions, and Attitude Toward

- How often do you experience having a dream that helps you in some way?
- In what way did the dream(s) help you? (If you have had several helpful dreams, please select all that apply.)
  - Creative input (i.e., an invention, music, handicraft work, painting, or similar)
  - Nonemotional problem-solving (i.e., work issues, a specific nonemotional problem you are dealing with)
  - Emotional problem-solving (i.e., emotional issues/relationship issues, etc.)
  - Providing personal insight (i.e., making you realize something about yourself that you were not aware of)
  - I am not too sure, only I know that the dream(s) helped me.
  - Other
- Please describe in your own words how the dream(s) helped you.
- How often has a dream you have had influenced your opinion about something or somebody?
- Has a dream you have had made you consciously change an aspect of your behavior?
- Has a dream you have had ever made you decide to leave your job, move, switch career, buy a house, leave your partner–or other important actions? (If yes, please indicate what.)