Making Sense of Dream Experiences: A Multidimensional Approach to Beliefs About Dreams

Dominic Beaulieu-Prévost
Centre de Recherche Fernand Seguin, Hôpital Louis-H. Lafontaine, Quebec, Canada

Catherine Charneau Simard and Antonio Zadra
Université de Montréal, Quebec, Canada

There exists little research on dream-related beliefs and their role in peoples' lives. Our aim was to develop a questionnaire (the Inventory of Dream Experiences & Attitudes [IDEA]) to assess dream-related beliefs and investigate their relations to waking-state variables. Seven hundred twenty-five participants completed the IDEA, and 357 participants also completed questionnaires on dreams, personality, and well-being and recorded their dreams for 2 or more consecutive weeks. A factor analysis of the IDEA revealed 7 dimensions: significance, positivity, recall, apprehension, entertainment, continuity, and guidance. Using these dimensions, individuals were classified into three distinct profiles that showed differential relations to measures of personality and well-being. The findings indicate that the IDEA is a useful instrument for researchers and that dream-related beliefs can play important psychological roles.

Keywords: beliefs, scale construction, personality, nightmares, well-being

Research on dream-related beliefs has been scarce, with the exception of peoples' attitude toward dreams, a global trait representing a general interest in dreams (e.g., Cernovsky, 1984; Robbins & Tanck, 1988; Rochlen, Ligiero, Hill, & Heaton, 1999; Schredl & Doll, 2001). Most studies show a moderate-sized relation between attitude toward dreams and dream recall frequency (e.g., Schredl & Montasser, 1996–1997). However, a recent meta-analysis revealed that the size of the relation is probably overestimated because of methodological considerations regarding how dream recall is assessed (Beaulieu-Prévost & Zadra, 2007). More-

Dominic Beaulieu-Prévost, Centre de Recherche Fernand Seguin, Hôpital Louis-H. Lafontaine, Montreal, Quebec, Canada; Catherine Charneau Simard and Antonio Zadra, Department of Psychology, Université de Montréal, Montreal, Quebec, Canada.

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Correspondence concerning this article should be addressed to Antonio Zadra, Department of Psychology, Université de Montréal, C. P. 6128, succ. Centre-ville, Montreal, Quebec, Canada H3C 3J7. E-mail: antonio.zadra@umontreal.ca

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over, there is evidence to suggest that the traditional construct of attitude toward dreams is probably oversimplified and that in fact it is composed of two distinct dimensions, namely an *attitude factor* and a *recall factor*, each with differing relations to dreaming (Schredl, Ciric, Götz, & Wittman, 2003). Beyond these general findings, however, the current state of research cannot inform us as to people's varying dream-related beliefs or about the role these beliefs might play in their lives, except for the fact that women tend to have a generally more positive attitude toward dreams than men (e.g., Robbins & Tanck, 1988; Schredl, 2003).

The goal of the present study was to develop a questionnaire, the *Inventory of Dream Experiences & Attitudes* (*IDEA*), to assess a wide range of beliefs and attitudes people may have about their dreams (i.e., their cognitive representations of the dream experience), and to investigate how these beliefs relate to gender and to a range of waking state variables. Given of the paucity of data in the area, specific hypotheses were kept to a minimum. Two main research questions were investigated: (1) How do individuals represent their experience and understanding of dreams and dreaming? (2) Can profiles of individuals—based on their responses to the IDEA— explain individual differences on measures of personality, well-being, and dream-related variables? It was hypothesized that among the dimensions derived from the IDEA, two dimensions corresponding to Schredl et al.'s (2003) *attitude factor* and *recall factor* would be identified. No specific predictions were formulated about the nature of other dimensions, the profiles that would emerge, or potential differences between profiles.

METHOD

Participants

A total of 725 nonpaid French-speaking volunteers (88 men, 460 women, 177 unidentified) were recruited from a series of undergraduate psychology courses. The participants' age ranged from 19 to 57 years (M = 22.7 years, SD = 4.5). Participants did not receive any form of compensation or course credit for their participation. All participants completed the IDEA, and a subgroup of 357 participants (294 women, 63 men) also completed questionnaires on dreams, personality, and well-being and recorded their dream experiences each morning in a daily dream log for a at least 2 consecutive weeks.

Materials

IDEA

This questionnaire was developed for the purpose of this study. The original version includes 80 items describing different experiences, beliefs, and attitudes about dreams. Participants indicate the degree to which they agree or not with each statement using a 5-point Likert scale (from 1 = "*I strongly disagree*" to 5 = "*I strongly agree*"). Many of the questionnaire items are based on items commonly found in scales measuring attitude toward dreams (e.g., Beaulieu-Prévost & Zadra,

2005a; Hill, 2004; Schredl et al., 2003; Wolcott & Strapp, 2002), while other items were either adapted from the literature or created by our research team.

Sleep and Dream Questionnaire (SDQ)

This 72-item questionnaire evaluates several dimensions of dream experiences, including dream recall frequency, frequency and content of nightmares, bad dreams, lucid dreams, and recurrent dreams (Brown & Donderi, 1986). The items of interest for the present study were retrospective estimates of dream recall frequency and of nightmare frequency.

Boundary Questionnaire–Short Version (BQ)

Based on the original BQ (Hartmann, 1989), this 18-item questionnaire measures "boundary permeability"; that is, the overlap ("thinness") or separation ("thickness") between mental states (Kunzendorf, Hartmann, Cohen, & Cutler, 1997). The short version is highly correlated with the original version ($r = .87$), which has high internal consistency ($\alpha = .93$) and test–retest reliability (6-month; $r = .77$).

Differential Personality Questionnaire: Absorption Scale (DPQ)

This 34-item questionnaire measures psychological absorption—that is, an openness to absorbing and self-altering experience (Tellegen & Atkinson, 1974). The internal consistency ($\alpha = .88$) and test–retest reliability ($r = .91$) are high.

Nightmare Distress Questionnaire (NDQ)

This 13-item questionnaire measures emotional distress resulting from nightmares (Belicki, 1992). The internal consistency varies between 0.83 and 0.88.

Beck Depression Inventory–Second Version (BDI-II)

This 21-item questionnaire measures depressive symptoms (Beck, Steer, & Brown, 1996). The coefficient of internal consistency is 0.92 and the test–retest reliability is $r = .62$ (Bourque & Beaudette, 1982).

State–Trait Anxiety Inventory–Trait Scale (STAI)

This 20-item questionnaire measures feelings of anxiety as they are generally experienced (Spielberger, Gorsuch, & Lushene, 1970). The coefficients of internal

consistency and the test–retest reliability are high (between 0.86 and 0.90; Gauthier & Bouchard, 1993).

Symptoms Checklist-90 (SCL-90)

This 90-item questionnaire measures the intensity of various symptoms of psychopathology (Derogatis, 1977). The Global Severity Index was used as an indicator of overall psychological distress. The coefficients of internal consistency vary between 0.77 and 0.90 and test–retest reliability between 0.68 and 0.90.

Dream Diary

Participants were required to record upon awakening all remembered dreams for 2 to 5 consecutive weeks. In addition to providing a complete written description of each dream recalled, participants were required to specify the date, the main emotions present (if any), the intensity of these emotions, the clarity of recollection associated with each remembered dream and the type of dream (nightmare, bad dream, lucid dream, recurrent dream, sex dream, dream of flight), if any. In this study, the dream diary was used to obtain prospective measures of dream recall frequency and of nightmare frequency.

Analytical Procedure

To evaluate how participants represent their experience and understanding of dreaming, responses to the IDEA were modelized through an exploratory factor analysis and the scale construction procedure was guided by recent methodological recommendations (Henson & Roberts, 2006). Independent-samples *t* tests were used to evaluate gender differences for each scale. The scales emerging from the questionnaire were then used to classify individuals into profiles using a hierarchical cluster analysis. The resulting profiles were then compared on their average scores on external variables (i.e., measures of dream recall, nightmare recall, personality and well-being). Additional details on this type of classification procedure can be found in Vachon, Beaulieu-Prévost, Ouellette, and Achille (2005).

RESULTS

Exploratory Factor Analysis of the IDEA

The adequacy of the dataset was first assessed. The result of the Kaiser-Meyer-Olkin test was excellent (0.89), and the Bartlett's test of sphericity reached statistical significance ($\chi^2_{approx} = 23{,}069$, $p < .001$), suggesting that an adequate factorial solution could be extracted from the dataset.

The optimal number of factors was then estimated via three methods. The Kaiser criterion suggested 19 potential factors, the Scree test identified 7 potential

factors, and a Monte Carlo principal component analysis for parallel analysis (Watkins, 2002) identified 11 factors. The Monte Carlo procedure was exclusively used to assess the number of potential factors. It was not the main factor analysis.

The exploratory factor analysis was based on an Unweighted Least Square extraction and an Oblimin rotation to produce the factors (Tabachnick & Fidell, 2007). This oblique rotation was used because the factors were expected to be correlated. Only variables with a pattern matrix loading of at least 0.30 on a factor and a communality of at least 0.20 were retained. Variables with a complex structure (i.e., pattern matrix loadings of at least 0.30 on two or more factors) were eliminated. Solutions with 7 to 11 factors were explored and a 7-factor solution was retained because it was the most conceptually coherent and relevant.

The final solution maintained 50 of the 80 questionnaire items, explained 46% of the variance in the original dataset, 39% of the variance in the final dataset, and produced a sufficiently small proportion of nonredundant residuals (10% with a value greater than 0.05) to be adequate. Seven scales were created based on the seven extracted factors. The variance separately explained by each factor in the final dataset is presented in the Scale Interpretation section below. To improve the usability and interpretability of the IDEA, the score on each of the scales was defined as the average item score (items with a negative loading being reversed) and not as the factorial score resulting from the exploratory factor analysis. Cronbach's alpha for each of the scales ranged from 0.66 to 0.85 ($M = 0.75$), which indicates that the reliabilities of the scales are between acceptable (0.60 to 0.79) and good (≥ 0.80). Table 1 presents the initial eigenvalues, the pattern matrix loading, the mean and *SD* of each item, as well as the mean, *SD*, and alpha for each scale. Only the pattern matrix loadings of 0.30 or greater are presented. The correlations between the scales and with the other measures in the study are presented in Table 2, and the gender-specific scores for each scale are presented in Table 3.

Table 1. Presentation of the Seven Scales of the Inventory of Dream Experiences and Attitudes (IDEA) and of the Items Included in Each Scale, Their Pattern Loadings, and Their Descriptive Statistics

Scales and items	Eigenvalue	Load	*M* (*SD*)
1. Dream significance ($\alpha = 0.85$)	**7.66**		**3.55 (0.70)**
I do not take my dreams seriously		−0.63	2.39 (1.16)
My dreams do not seem to have a deeper meaning		−0.57	2.35 (1.03)
I sometimes think it is best to forget a dream rather than try to understand it		−0.55	2.41 (1.16)
I attach a lot of significance to my dreams		0.54	3.30 (1.17)
Dreams are random products of the brain		−0.52	2.58 (1.11)
I pay close attention to my dreams		0.50	3.33 (1.15)
Dream interpretation should not be part of psychology training		−0.44	1.66 (0.96)
People who often think about their dreams are avoiding dealing with reality		−0.42	1.70 (0.90)
If I am affected by a dream, I try to find its meaning		0.41	3.85 (1.22)
I feel that my dreams are about nothing in particular		−0.38	2.82 (1.25)
I prefer dealing with my life rather than my dreams		−0.38	3.48 (1.22)
If the opportunity presents itself, I would like to work on my dreams with an expert in order to find their meaning		0.38	3.56 (1.36)
2. Dream positivity ($\alpha = 0.84$)	**4.61**		**3.08 (0.76)**
In my dreams, I am more likely to be lucky than unlucky		0.82	3.10 (0.91)

(*table continues*)

Table 1. (*continued*)

Scales and items	Eigenvalue	Load	*M* (*SD*)
My dreams are more often pleasant than unpleasant		0.78	3.34 (1.03)
In my dreams, I experience success more often than failure		0.78	3.15 (0.90)
In my dreams, I tend to be anxious more often than calm		−0.69	2.90 (1.13)
In general, I feel safe in my dreams		0.65	3.07 (1.03)
The most intense emotions I have experienced in my dreams are positive emotions		0.53	2.53 (1.22)
In my dreams, I am often running away or being followed		−0.39	2.76 (1.18)
3. Dream recall (α = 0.83)	**2.93**		**3.19 (0.76)**
When I wake up, I am generally able to remember my dreams quite easily		0.85	3.07 (1.14)
When I wake up, I generally remember my dreams in their entirety, or close to their entirety		0.82	2.94 (1.14)
I tend to forget my dreams as soon as I wake up or when I get out of bed		−0.73	3.10 (1.16)
I dream a lot		0.60	3.73 (1.11)
When I remember my dreams, I often remember many details		0.52	3.69 (1.00)
My ability to recall dreams is consistent, meaning that I recall approximately the same number of dreams per week		0.48	2.69 (1.20)
In general, my dreams are very intense		0.36	3.45 (0.89)
I can sometimes remember past dreams with such clarity and vividness that it is like reliving them again or almost reliving them again		0.31	3.08 (1.27)
4. Dream apprehension (α = 0.64)	**2.33**		**1.53 (0.64)**
I am sometimes afraid of dreaming		0.82	1.51 (0.94)
Sometimes, before going to bed, I fear that I will have bad dreams or nightmares		0.60	1.66 (1.08)
I think it can be dangerous to try to seek the meaning of some dreams		0.44	1.43 (0.81)
People who dream a lot often have problems		0.34	1.55 (0.83)
5. Dream entertainment (α = 0.66)	**2.10**		**3.59 (0.64)**
Some of my dreams are just as interesting as a good movie or a good play		0.51	3.07 (1.14)
For me, dreaming is a form of entertainment		0.51	3.71 (1.12)
I remember certain dreams even after many years		0.43	3.99 (1.23)
I remember some of my childhood dreams		0.43	3.84 (1.31)
I often daydream		0.37	3.42 (1.29)
I wish I would dream more often		0.36	3.80 (1.18)
I often have strange dreams		0.36	3.79 (1.00)
I sometimes have special powers in my dreams (ability to fly, to read peoples' minds, etc)		0.36	2.79 (1.41)
In the morning, I sometimes continue sleeping so that I can finish a dream		0.32	3.34 (1.35)
6. Dream continuity (α = 0.69)	**1.97**		**3.78 (0.68)**
When I experience a significant event or change in my life, I tend to dream about it afterwards		0.64	3.73 (1.06)
I often dream about events that occur in my daily life		0.62	3.69 (1.06)
When I am stressed or experiencing an important event, I dream a lot more than I usually do		0.58	3.56 (1.19)
I believe that our fantasies and desires manifest themselves in our dreams 0.44			3.98 (0.90)
I believe that our fears manifest themselves in our dreams		0.43	3.94 (0.89)
7. Dream guidance (α = 0.71)	**1.51**		**2.76 (0.95)**
I believe that some dreams could be premonitory		0.65	3.31 (1.23)
On occasion, I will consult a book to help interpret my dreams		0.62	2.46 (1.49)
Some of my dreams turned out to be premonitory		0.57	2.61 (1.44)
I have read a book (or several books) about dreams.		0.50	2.94 (1.59)
I believe that dreams and spirituality are closely connected		0.39	2.48 (1.23)

Table 2. Correlations Between the Scales of the Inventory of Dream Experiences and Attitudes (IDEA; $N = 725$) and With Measure of Well-Being, Personality, Nightmare, and Dream Recall Frequency

	S1	S2	S3	S4	S5	S6	S7
S1 (Dream significance)							
S2 (Dream positivity)	−.09						
S3 (Dream recall)	.36**	−.09					
S4 (Dream apprehension)	−.07	−.26**	.14**				
S5 (Dream entertainment)	.31**	.01	.30**	−.05			
S6 (Dream continuity)	.33**	−.16**	.12*	.07	.18**		
S7 (Dream guidance)	.33**	.06	.26**	.12*	.25**	.09	
BQ ($n = 339$)	.13*	−.01	.09	.15**	.40**	.04	.16**
DPQ ($n = 341$)	.17**	.03	.13*	.16**	.38**	.16**	.27**
NDQ ($n = 311$)	.32**	−.43**	.31**	.47**	.11*	.29**	.22**
BDI-II ($n = 341$)	.14*	−.21**	.08	.14*	.22**	.06	.20**
STAI ($n = 340$)	.08	−.42**	.07	.24**	.16**	.17**	.12*
SCL-90 ($n = 317$)	.11	−.28**	.04	.28**	.18**	.16**	.21**
Dream recall, daily log ($n = 263$)	.21**	−.08	.38**	.02	.21**	.11	.04
Nightmare recall, daily log ($n = 296$)	.08	−.16**	.12*	.19**	−.01	.10	.09

Note. BQ = Boundary Questionnaire; DPQ = Differential Personality Questionnaire; NDQ = Nightmare Distress Questionnaire; BDI-II = Beck Depression Inventory–Second Version; STAI = State–Trait Anxiety Inventory; SCL-90 = Symptoms Checklist-90.
* $p < .05$. ** $p < .01$.

Scale Interpretations

Scale 1: Dream Significance (15% of Explained Variance)

This scale is comprised of 12 items related to the personal significance, meaning, and importance that people attribute to the experience of dreaming. It is globally equivalent to the unidimensional construct of "attitude toward dreams" traditionally measured in the field. However, items related to Schredl et al.'s (2003) *recall factor*, to the desire to dream, or to the pleasure of dreaming are not included in this scale. The term "dream significance" thus appears more appropriate and less ambiguous than the traditional expression of "attitude toward dreams" or "interest toward dreams." This scale is very similar to Hill's

Table 3. Average Score for Women and Men and Gender Differences for Each Subscale of the Inventory of Dream Experiences and Attitudes (IDEA)

	M (*SD*)		
	Women ($n = 460$)	Men ($n = 88$)	*t*-test
S1 (Significance)	3.59 (0.69)	3.43 (0.79)	1.98*
S2 (Positivity)	3.03 (0.78)	3.38 (0.69)	3.89**
S3 (Recall)	3.24 (0.77)	2.99 (0.71)	2.89**
S4 (Apprehension)	1.51 (0.61)	1.45 (0.63)	0.74
S5 (Entertainment)	3.59 (0.61)	3.63 (0.68)	0.52
S6 (Continuity)	3.83 (0.66)	3.52 (0.69)	3.94**
S7 (Guidance)	2.77 (0.95)	2.46 (0.93)	2.86**

* $p < .05$. ** $p < .01$.

(2004) *attitude toward dreams* scale. As reported in previous studies (e.g., Robbins & Tanck, 1988; Schredl, 2000, 2003), women reported a higher average level of *Dream significance* than did men.

Scale 2: Dream Positivity (9% of Explained Variance)

This scale reflects the perceived emotional aspects of peoples' dream content. It is exclusively comprised of seven items concerning peoples' perceived frequency of positive or negative emotional states (e.g., calm vs. anxious) or events (e.g., success vs. failure) in their dreams. Individuals with high scores on this scale tend to view the content of their dreams as being usually positive. Men tended to report higher levels of *Dream positivity* than did women.

Scale 3: Dream Recall (6% of Explained Variance)

This scale is very similar to Schredl et al.'s (2003) *recall factor*. It is comprised of eight items concerning peoples' dream recall, including its perceived frequency, clarity, consistency, intensity, and vividness. Individuals with high scores on this scale feel that they remember much of their dream life. As suggested by previous studies (e.g., Schredl & Reinhard, 2008), women tended to report higher levels of *Dream recall* than did men.

Scale 4: Dream Apprehension (5% of Explained Variance)

This scale contains four items concerning peoples' apprehensions about dreaming, about seeking the meaning of specific dreams, and the belief that dreaming a lot is an indicator of personal difficulties. Individuals with high scores on this scale can be said to have dream-related apprehensions or worries (e.g., they tend to believe that it is sometimes best to avoid remembering one's dreams or at least to avoid thinking about them). Gender differences were not statistically significant.

Scale 5: Dream Entertainment (4% of Explained Variance)

This scale is comprised of nine items assessing peoples' tendency to derive pleasure from dreaming and their desire to dream or daydream, to stay in bed to continue dreaming, to remember some of their childhood dreams, and to experience unusual dreams. Individuals with high scores on this scale view dreams as entertaining experiences and tend to have long-lasting memories for some of their dreams. Gender differences were not statistically significant.

Scale 6: Dream Continuity (4% of Explained Variance)

This scale includes five items concerning peoples' belief that the content of their dreams reflects waking-life experiences (e.g., daily events, significant events,

fears, fantasies, desires and stressors). Individuals with high scores on this scale tend to view the content of their dreams as reflections of their daily life. Women tended to report higher levels of *Dream continuity* than did men.

Scale 7: Dream Guidance (3% of Explained Variance)

This scale includes five items related to peoples' belief that dreams are closely connected to spiritual dimensions, that they can be premonitory in nature, and on people's tendency to read books on dreams and dream interpretation. Individuals with high scores on this scale tend to view dreams as a source of guidance in that they provide access to important information concerning the present or future that could not be necessarily accessed through more conventional methods. Women tended to report higher levels of *Dream guidance* than did men, which is consistent with previous observations regarding similar topics like beliefs in astrology and spiritualism (e.g., Gray, 1990; Irwin, 1993).

Relations to External Variables

Although the correlations between the scales of the IDEA and the personality, well-being, and dream diary measures presented in Table 2 will not be interpreted in depth because of space constraints, the interested reader is invited to look at them to understand their specific patterns of interrelations. For example, it is worthwhile to note that boundaries thinness (BQ) and psychological absorption (DPQ) are mainly related to *Dream entertainment*.

Elaboration of IDEA-Based Dreamer Profiles

To better understand the diversity of peoples' beliefs and attitudes about dreaming, a hierarchical cluster analysis was used to construct participant profiles based on their scores on the IDEA's seven scales.

The Ward method and a Euclidian space were used for the cluster analysis of the original untransformed variables. Two-cluster and three-cluster solutions were considered optimal, both in terms of interpretability and presence of statistically significant differences between profiles on each scale. The latter was evaluated with an analysis of variance (ANOVA) and post hoc tests of Lowest Significant Difference with an alpha set at 0.05. Because of missing data, only 691 of the original 725 cases (95.3%) were used. In addition, only 548 of these 691 individuals (79.3%) provided information about gender. Consequently, the gender-specific prevalence of each profile was only calculated for this latter subsample, whereas the global prevalence was calculated based on the 691 participants. The results of these comparisons are presented in Table 4.

Profile 1: Indifferent Dreamers (55% of the Sample, 69% of Men, and 54% of Women)

The first profile, which includes a majority of participants, is characterized by average scores on the Positivity scale and low scores on every other scale. These

Table 4. Comparison Between Inventory of Dream Experiences and Attitudes (IDEA)-Generated Dreamer Profiles

	M (*SD*)			
	Indifferent	Concerned	Interested	Apprehensive
Dream scales	(*n* = 381)	(*n* = 310)	(*n* = 162)	(*n* = 148)
S1 (Significance)	3.39 (0.72)	3.77 (0.62)	4.04 (0.57)	3.47 (0.53)[a,c,d]
S2 (Positivity)	3.10 (0.81)	3.05 (0.71)	2.90 (0.76)	3.22 (0.62)[b,c,d]
S3 (Recall)	3.07 (0.75)	3.34 (0.76)	3.86 (0.57)	2.78 (0.48)[a,c,d]
S4 (Apprehension)	1.37 (0.50)	1.72 (0.73)	1.56 (0.68)	1.90 (0.74)[a,b,c,d]
S5 (Entertainment)	3.44 (0.67)	3.78 (0.55)	3.91 (0.53)	3.64 (0.53)[a,b,c,d]
S6 (Continuity)	3.68 (0.73)	3.91 (0.60)	4.15 (0.51)	3.65 (0.59)[a,c,d]
S7 (Guidance)	2.12 (0.65)	3.54 (0.63)	3.73 (0.61)	3.33 (0.57)[a,b,c,d]
Questionnaires	(*n* = 182)	(*n* = 123)	(*n* = 74)	(*n* = 49)
BQ	29.7 (8.5)	33.0 (8.4)	32.2 (8.7)	34.3 (7.7)[a,b,c]
DPQ	16.6 (6.4)	21.0 (6.1)	20.7 (6.6)	21.4 (5.1)[a,b,c]
NDQ	28.8 (6.2)	32.7 (7.7)	34.4 (7.5)	30.2 (7.4)[a,c,d]
BDI-II	7.3 (6.2)	10.2 (9.3)	10.6 (9.8)	9.6 (8.4)[a,c]
STAI	38.9 (9.5)	41.5 (10.6)	41.9 (10.9)	40.8 (10.3)[a,c]
SCL-90	0.61 (0.4)	0.83 (0.5)	0.84 (0.5)	0.84 (0.6)[a,b,c]
Weekly dream recall	(*n* = 144)	(*n* = 101)	(*n* = 61)	(*n* = 40)
Retrospective	4.3 (2.5)	4.8 (2.9)	5.6 (3.2)	3.5 (1.7)[c,d]
Daily log	5.3 (6.4)	5.6 (3.7)	6.5 (4.1)	4.1 (2.4)[d]
Monthly nightmare recall				
Retrospective	0.74 (1.40)	0.96 (1.58)	1.36 (1.89)	0.34 (0.50)[c,d]
Daily log	0.59 (1.21)	0.91 (1.65)	1.20 (1.93)	0.48 (0.96)[c,d]

Note. BQ = Boundary Questionnaire; DPQ = Differential Personality Questionnaire; NDQ = Nightmare Distress Questionnaire; BDI-II = Beck Depression Inventory–Second Version; STAI = State–Trait Anxiety Inventory; SCL-90 = Symptoms Checklist-90.
[a] The difference is statistically significant between the Indifferent and Concerned profiles ($p < .05$).
[b] The difference is statistically significant between the Indifferent and the Apprehensive profiles ($p < .05$).
[c] The difference is statistically significant between the Indifferent and the Interested profiles ($p < .05$).
[d] The difference is statistically significant between the Interested and the Apprehensive profiles ($p < .05$).

individuals can be generally considered as being indifferent to dream-related issues and activities.

Profile 2: Concerned Dreamers (45% of the Sample, 31% of Men, and 46% of Women)

The second profile, which includes less than half of the participants, is characterized by average scores on the Positivity scale and high scores on every other scale. These individuals can be generally considered as being concerned by dream-related issues and experiences. In a three-cluster solution, this profile subdivides into two subprofiles named *Interested dreamers* and *Apprehensive dreamers*.

Profile 2a: Interested dreamers (23% of the sample, 19% of men, and 32% of women). This subprofile is characterized by high scores on the Significance, Recall, Entertainment, Continuity, and Guidance scales; average scores on the Apprehension scale; and low scores on the Positivity scale. Individuals with this profile thus tend to report having a rich dream life with dreams that are meaningful, entertaining, related to their daily life, but generally negative in terms of content. These individuals can be considered as being very involved and interested by dream-related issues and experiences.

Profile 2b: Apprehensive dreamers (21% of the sample, 11% of men, and 15% of women). This subprofile is characterized by high scores on the Apprehension scale and, strangely, on the Positivity scale, average scores on the Entertainment and Guidance scales and, like for the Indifferent profile, low scores on the Significance, Recall and Continuity scales. Thus, individuals with this profile tend to report having an average dream life with dreams that are generally positive but not particularly meaningful or related to their daily life. However, they report a high level of dream-related apprehensions. This profile is similar to the Indifferent profile but with somewhat higher scores on the Positivity, Entertainment and Guidance scales and the presence of dream-related apprehensions.

External Validation of the Profiles

To assess the meaningfulness and usefulness of the profile classification, the scores of 357 participants classified into one of these profiles were compared on measures of dream recall, nightmare frequency, dream-relevant personality variables (BQ, DPQ) and well-being (NDQ, BDI, STAI, SCL-90). Because of incomplete or missing data, 305 cases were used for the personality and well-being variables and 245 cases for the daily log measures of dream recall and nightmare frequency. Group differences were evaluated with an ANOVA and post hoc tests of Lowest Significant Difference (alpha set at 0.05).

As can be seen in Table 4, participants with the *Interested dreamer* profile reported the highest levels of dream recall and of nightmare frequency (on retrospective questionnaires as well as on prospective dream diaries), and these scores strongly contrasted with the low dream and nightmare recall frequencies that characterized the *Apprehensive dreamer* profile. A similar pattern was noted for nightmare distress, with the *Interested dreamer* profile presenting greater levels of distress than the two other profiles. The personality variables showed that the *Indifferent dreamer* profile had thicker psychological boundaries and a lower level of psychological absorption than both the *Interested dreamer* profile and the *Apprehensive dreamer* profile. Finally, *the Indifferent dreamer* profile was systematically characterized by the highest level of well-being (lowest anxiety, depression, and psychological distress), and these scores contrasted the most with the lower levels of well-being associated with the *Interested dreamer* profile.

DISCUSSION

Our results validate the conception that there exists much variability in the way people represent and understand dream experiences. In fact, the types of subjective relations people hold with regards to dreams and dreaming were so diverse that they could only be adequately revealed through a multidimensional approach. The scale construction process of the IDEA yielded seven dimensions that further our understanding of people's relation to dreams and dreaming.

As expected, we found two key dimensions, termed *dream significance* and *dream recall,* which were very similar to Schredl et al.'s (2003) *attitude* and *recall factor*s. This finding supports the idea that people tend to conceptualize these two

aspects of dreaming as separate entities and suggests that researchers should also consider them as two separate constructs. The study's main original contribution, however, was to identify five additional dimensions of people's representation of dream experiences; *dream positivity*, *dream apprehension*, *dream entertainment*, *dream continuity*, and *dream guidance*. These additional dimensions and the potential insights they procure are discussed below.

Dream positivity represents one's global perception or retrospective evaluation of the positive components in the content of one's own dream experiences. Although this scale can be viewed as an indirect measure of dream content, its use in this regard requires care because dream content is not the only element involved in the process of evaluating one's dream positivity. For example, a high level of dream positivity could result from unusually positive dream content or from a personal tendency to remember or report dream content in a positive way or it could reflect a lower sensitivity to negative experiences. Indeed, a study comparing participants' questionnaires and 2-week logs found no relationship between estimated frequency for the appearance of aggressive, friendly, and sexual elements and their frequency in the dream reports (Bernstein & Belicki, 1995). Similarly, a subsequent study (Beaulieu-Prévost & Zadra, 2005b) showed that when people's level of dream recall is poor, their beliefs about the level of anxiety in their dreams is not related to the actual affective content of their everyday dreams as recorded prospectively in home logs, but rather to their current emotional state. Thus, people's retrospective evaluation of their dream content is best considered as a construct of its own and not necessarily as a valid indicator of people's actual dream experiences.

Dream apprehension captures people's dream-related fears and worries as an independent dimension and points to one of the ways people can deal with unpleasant dream experiences, namely, by avoiding such dreams and the thoughts associated to them. This scale of the IDEA is probably the one with the greatest potential for clinically oriented research. Questions of interest that could be explored with this scale include why some people choose to avoid thinking about their dreams and whether or not this is an adaptive way of coping with disturbing dreams.

Dream entertainment captures one's tendency to derive pleasure from dreaming and provides a way of separating pleasure-seeking versus meaning-seeking interests in dreams. For instance, meaning-seeking can be reflected in people's interest in developing or using techniques for dream interpretation (following the traditions of Freud, Jung, and others), whereas pleasure-seeking can be represented by the approach to dreams that characterized the pioneering work of Hervey de Saint-Denys (1867/1982), who focused his attention on lucid dreaming. Questions of interest include the investigation of dream content differences between people who score at the extreme ends of this scale, the extent to which the *dream entertainment* dimension predicts the frequency and content of spontaneously occurring lucid dreams, and who is most likely to gain from training in lucidity induction techniques.

The *Dream continuity* dimension shows that the concept of continuity between one's waking state and dream content is not only a theoretical model held by many dream researchers and clinicians (e.g., Domhoff, 1996, 2003), but also a notion that makes intuitive sense to nonexperts. Furthermore, this dimension also brings forth the idea that not everybody considers their dream experiences as a reflection of their waking life. However, it remains unclear whether these individual differences

express a genuine disparity in people's waking/dreaming continuity or simply a tendency to observe (or not) continuity between one's waking life and dream experiences.

Dream guidance represents the tendency to view and use dreams as a source of personal guidance. This scale captures both spiritual and paranormal beliefs related to dreams' guidance potential and distinguishes them from the beliefs represented by the more traditional *dream significance* construct. How and when such beliefs impact sessions of dream work (e.g., Davis, 2003; Hill, 2004) and what kind of parallels exist between this dimension and other forms of beliefs in the paranormal (e.g., Irwin, 1993) are two questions that could be investigated with this scale.

When compared with men, women reported higher levels of *Dream significance, Dream recall, Dream continuity,* and *Dream guidance*; lower levels of *Dream positivity*; and similar levels of both *Dream apprehension* and *Dream entertainment*. These results are consistent with previous results concerning gender differences on measures of attitude toward dreams, dream recall frequency, and beliefs in paranormal phenomena, but they also show that some dream-related beliefs are held equally by men and women.

Profiles

Three different individual profiles emerged from the classification procedure: (a) *Indifferent dreamers*, globally uninvolved in and uninterested by dream-related issues and activities, (b) *Interested dreamers*, highly involved in and interested by dream-related issues and reporting having rich but generally negative dream content, and (c) *Apprehensive dreamers*, characterized by their reportedly general positive dream content and high level of dream-related worries and fears. The main gender difference for these profiles was that, when compared with women, men were more frequently classified as *Indifferent dreamers* and less frequently as one of the two types of *Concerned dreamers*. This pattern is consistent with women's greater level of interest in dreams as reported in previous studies (e.g., Robbins & Tanck, 1988; Schredl; 2000, 2003).

Beyond proposing three qualitatively distinct and prototypical ways of describing people's relation to dreaming, this classification is also of interest because it may help explain variations in people's recall of nightmares as well as in their scores on measure of personality and well-being. The causal or associative mechanisms underlying these differences could not be uncovered via this study but the findings are rather striking and suggest at least three interesting venues for research.

First, although *Apprehensive dreamers* are characterized by a high level of dream-related fears and worries, *Interested dreamers* are clearly more prone to experience frequent nightmares and nightmare-related distress than are people with the other profiles. These results might appear contradictory at first sight, but they are consistent with the profiles' reported dream content positivity. In addition, it is possible that *Dream apprehension* protects against nightmare-related difficulties by reducing the importance attributed to dreams in one's life. It is also possible

that the higher level of meaning-seeking demonstrated by *Interested dreamers* either (a) exacerbates nightmare-related problems by making people interpret disturbing dream content as a sign of deeper psychological difficulties, or (b) is partly the result of a desire to find an explanation for the experience of frequent and distressing nightmares. Additional research is needed to clarify these questions but the present findings raise interesting issues with regards to nightmare distress and point to the potential usefulness of belief modification as a therapeutic way of decreasing nightmare distress (e.g., Krakow & Zadra, 2006).

One of the main differences between the *Indifferent dreamers* and the two *Concerned profiles* is the *Indifferent dreamers*' markedly lower scores on both the absorption and psychological boundaries scales. If we presume that personality traits are generally less malleable than beliefs and attitudes, these findings suggest that people's relation to dreaming is associated to the broader sphere of how they view and relate to their inner world experiences. Specifically, being open to absorption, to self-altering experiences, and having thin boundaries could increase the likelihood of being highly sensitive to dream experiences and to consider them as relevant aspects of one's life. Thus, these findings suggest psychological mechanisms that potentially shape and structure people's representation of dreaming and their relation to it.

Finally, the results indicate that when compared to individuals who are concerned by their dreams, people who feel indifferent toward or disinterested by their dreams and dream-related questions actually report higher levels of well-being. This seemingly perplexing observation warrants further investigation to clarify the nature of these relations. For instance, does psychological distress contribute to people's increased sensitivity and interest in their dream experiences? If so, why and through what mechanisms? Alternatively, could dream-related concerns and psychological well-being be affected by people's degree of psychological absorption or boundary permeability? Although the causal direction of such relations as well as the nature of presumed underlying processes remain unclear, the present results suggest that dream-related beliefs could either reflect or play a role in the regulation of mood and psychological health.

CONCLUSION

The *IDEA* is a novel, sound, and highly relevant research instrument that opens new horizons to dream researchers and clinicians interested in a variety of questions including the interactions between beliefs and dream content, the complex relations between dream experiences and both waking life and psychological health, and even cultural and gender differences in dream content and dream practices. For example, the present findings suggest that peoples' dream-related beliefs might play an active role in the emergence of nightmare-related difficulties and in the maintenance of psychological health. Finally, the fact that the *IDEA* measures its seven dimensions independently of one another makes it easy for researchers interested in only some of these dimensions to use an abbreviated version of the questionnaire, thereby reducing participants' workload and facilitating its inclusion in large-scale studies.

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