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I-E locus of control and aspects of dreaming

Tammy Thientam Nguyen
San Jose State University

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I-E LOCUS OF CONTROL AND ASPECTS OF DREAMING

A Thesis

Presented to

The Faculty of the Department of Psychology

San José State University

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

by

Tammy Thientam Nguyen

August, 2001

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APPROVED FOR THE DEPARTMENT OF PSYCHOLOGY

Robert A. Hicks, Ph.D.

Robert Pellegrini, Ph.D.

Cheryl Chancellor-Freeland, Ph.D.

APPROVED FOR THE UNIVERSITY

ABSTRACT

I-E LOCUS OF CONTROL AND ASPECTS OF DREAMING

by Tammy T. Nguyen

Past research has shown evidence to support relationships between aspects of dreaming and traits of personality (e.g., anxiety). The present study examined relationships between one dimension of personality, locus of control, and certain major dimensions of dreaming. In Phase I of the study, retrospectively, 325 participants completed a battery of questionnaires that included personality scales, dream frequency and intensity scales. Pearson correlation, standard multiple regression, and ANOVA were performed to examine relationships among personality and dream variables. In Phase II of the study, prospectively, 37 participants of the same population completed a 4-week daily dream diary.

Our findings indicate that the external locus of control individuals consistently report higher dream intensity than the "internals," retrospectively and prospectively. Importantly, the "internals" do not report high dream intensity but show higher dream frequency on prospective assessment compared with retrospective assessment suggests that dream recall is positively related to dream intensity.

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I-E Locus of Control and Aspects of Dreaming

Tammy T. Nguyen

San José State University

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Footnotes

**Request for reprints should be sent to Tammy T. Nguyen, Department of Psychology,
San José State University, San Jose, California 95192.**

Abstract

Past research has shown evidence to support relationships between aspects of dreaming and traits of personality (e.g., anxiety). The present study examined relationships between one dimension of personality, locus of control, and certain major dimensions of dreaming. In Phase I of the study, retrospectively, 325 participants completed a battery of questionnaires that included personality scales, dream frequency and intensity scales. Pearson correlation, standard multiple regression, and ANOVA were performed to examine relationships among personality and dream variables. In Phase II of the study, prospectively, 37 participants of the same population completed a 4-week daily dream diary. Our findings indicate that the external locus of control individuals consistently report higher dream intensity than the "internals," retrospectively and prospectively. Importantly, the "internals" do not report high dream intensity but show higher dream frequency on prospective assessment compared with retrospective assessment suggests that dream recall is positively related to dream intensity.

I-E Locus of Control and Aspects of Dreaming

Over the years, dream researchers have focused on understanding the different types of dreams, studying the frequency and intensity of dreams, and the relationships between dreams and aspects of moods and traits of personality (e.g., anxiety, Type A-B behavior). To extend the research in this area, the present study examined the possible relationships between one dimension of personality, i.e., locus of control and certain major dimensions of dreaming.

Dreams and Personality

Several studies have measured the relationships between nightmares and levels of anxiety. For example, Hersen (1971) measured nightmare frequency and levels of anxiety in a group of hospital patients who were diagnosed with psychotic disorders. He obtained self-reports of nightmare frequency using a four-point Likert-type scale that ranged from never, seldom, sometimes, to frequently; and levels of anxiety was measured using the Taylor Manifest Anxiety Scale (TMAS) (Taylor, 1953). Hersen selected 26 subjects (14 men and 12 women); all were inpatients at a large state hospital diagnosed primarily with psychotic disorders. A striking feature of Hersen's findings was that the TMAS mean for the Frequent Nightmare Group ($\bar{M} = 31.12$) was 228% greater than the TMAS mean for the Never Nightmare Group ($\bar{M} = 13.65$). Subsequently, Haynes and Mooney (1975) replicated and extended Hersen's study with two different samples of college students. As was the case in Hersen's study, they used both the TMAS to measure levels of anxiety and self-reports of nightmare frequency. Their results indicated that students who reported having frequent nightmares scored significantly

higher levels of anxiety on the TMAS than students who reported no nightmares.

Recently, Nguyen, Madrid, and Marquez (in press) replicated Hersen's original study by demonstrating that nightmare frequency and anxiety were significantly and positively correlated in a sample of college students. Overall, these data indicate that there is a direct-relationship between nightmare frequency and level of anxiety.

Another study by Hicks, Chancellor, and Clark (1987) examined the relationship between Type A-B, a dimension of personality, and dreams. They used the Glass' (1977) version of the Jenkins Activity Survey, a measure of Type A-B behavior, and items on a sleep questionnaire for reports of dreams (i.e., the number of dreams, "No dreams" "Positive dreams" and "Disturbing dreams"). Their results indicated that more Type A students reported having dreams than Type B students, and that more Type A students reported having disturbing dreams than Type B students. They also stated that "if this relationship proves replicable, these data may have clinical implications in that the manifest content of the dreams of Type A patients may provide added insight into the acuteness and the nature of the Type A individuals' struggle with the stresses of life." (p. 750). In a more recent study, Tan and Hicks (1995) demonstrated the relationship between Type A-B behavior and nightmares among a sample of college students. Seven hundred and eighty college students responded to the Glass's measure of the Type A-B Behavior, and a the Spadafora and Hunt(1990) Dream Types Survey, a measure of dream frequency. Their results showed that Type A participants reported greater frequency with fantastic nightmares and posttraumatic nightmares.

Similar to anxiety, cognitive arousability is a dimension of personality that is

associated with intense emotions. Often arousability appears as a physiological measure (i.e., galvanic skin response, blood pressure) for stress-related health symptoms; however, levels of arousability can also be assessed as a cognitive component.

In 1988 Coren developed the Arousal Predisposition Scale, a self-reported measure of arousability as a trait dimension of personality. The development of this measure extended from an investigation that some forms of insomnia may be a result of cognitive hyperarousal. In 1991, Coren and Aks administered the Arousal Predisposition Scale along with the Thayer's Activation Deactivation-Adjective Check List before and after visual and auditory distraction tasks to measure the task-related arousal changes in a sample of 315 undergraduate students. Their findings showed that individuals who scored high on the Arousal Predisposition Scale showed a significantly higher increase of arousability after the distraction tasks compared with individuals who scored low on the Arousal Predisposition Scale.

The Arousal Predisposition Scale was used by Hicks, Conti, and Nellis (1992) to examine the levels of arousability, stress-related symptoms and self-reports of general health. Their results showed that individuals who reported high levels of arousability reported more stress-related physical symptoms and lower levels of health than did the individuals who reported low levels of arousability.

A recent study by Saliba, Henderson, Deane, and Mahar (1998) examined the differences between men and women on the Arousal Predisposition Scale in relation to state and trait anxiety. Their results showed that trait anxiety is significantly correlated with Arousal Predisposition Scale and that women scored higher on both Trait Anxiety

and Arousal Predisposition Scales. In addition, their findings indicated that individuals who scored high on the Arousal Predisposition Scale also scored high on the State Anxiety Scale; however, state anxiety was not a significant predictor of arousability predisposition after accounting trait anxiety variable. These findings clearly support that cognitive arousability is associated with anxiety and it is a trait dimension of personality.

Collectively these data suggest that nightmare and intense dreaming experiences may be related to dimensions of personality. Thus, this research was designed to explore the relationships between a major personality dimension, i.e., locus of control, and dreaming in college students.

Locus of Control

Rotter (1966) developed the Internal- External Locus of Control Scale (I-E) to measure people's general beliefs about their ability to control the events in their lives. As specified by Rotter, the "internals" generally feel certain that they have the ability to influence their life events; and the "externals" generally believe that life events happen as a matter of chance. As a dimension of personality, The Rotter's scale measures individual differences in people's general beliefs of their ability to control their life events and outcomes.

Since Rotter's development of the I-E Scale, there have been many other modifications of the locus of control construct. Each modified construct intended to measure a different dimension of locus of control. For example, the Norwicki-Strickland Locus of Control Scale for Children (1973) measures children's locus of control. Wallston and Wallston (1981) developed the Health Locus of Control Scale.

Bigoness, Keef and Du Boise (1988) studied the effect of locus of control and its relationship with goal-difficulty and performance among a sample of nurses. Their measurements included: a 4 item scale to measure goal-difficulty, the Rotter's I-E Locus of Control Scale, a self-rating report on performance, and a supervisor's rating report on performance. Their results suggested that locus of control was significantly correlated with supervisors' ratings on performance. Also, the "internal" nurses rated themselves more highly on performance than did the "external" nurses. They concluded that "locus of control is a personality difference which affects a number of work-related behaviors." (p. 480).

Recently, Henson and Chang (1998) examined the relationship between locus of control and the different dimensions of moods. Their measures were The Modified I-E Scale, a 12-item self-report (Mirels, 1970), that measures locus of control, and the PANAS-X (Watson & Clark, 1994) 60 item self-report measure of positive and negative moods. The positive moods were described with joviality, self-assurance, and attentiveness. The negative moods were described with fear, hostility, guilt, and sadness. Other moods, shyness, fatigue, serenity, and surprise, were also assessed. Their results showed that individuals who scored high on the external locus of control scale scored significantly higher across the negative moods than "internals," and the individuals who scored high on the internal locus of control measure scored higher on the positive moods than "externals."

Hill and Huntley (1998) studied the relationship between I-E dimension and aspects of epistemic orientation to achievement motivation. They used the Mehrabian

Achieving Tendency Scale (Mehrabian, 1994) to measure achievement motive, the Epistemological Profile (Royce & Mos, 1980) to measure epistemic style, and the I-E Scale (Rotter, 1966) to measure locus of control. Their findings showed significant intercorrelations between all three scales. There was a negative relationship between the external locus of control and the achievement motive. The relationship between the internal locus of control and the achievement motive was not significant, however, the relationship was in the positive direction. They concluded that “Looked at as a whole, these findings support the thesis that an internal orientation in epistemic preference and an internal locus of control are positively related to achievement motivation” (p. 1334).

In general, scales of locus of control have been widely used to assess the differences in the individuals’ view point about the situations they experience or expect in life. Whether it is a professional performance (Bigoness, Keef, & Du Boise, 1988), a perceived mood (Henson & Chang, 1998), or an achievement motivation (Hill & Huntley, 1998), the locus of control scales tend to be able to make the distinction between the internal and external groups of participants.

Locus of Control and Sleep

In research on sleep patterns and personality, Hicks and Pellegrini (1978) examined the personality differences between 15 short and 15 long sleepers. As cited by Hicks and Pellegrini, their past research (1977) showed that “short sleepers were more anxious than long sleepers on a short form of the Taylor Manifest Anxiety Scale” (p. 1338). They hypothesized that short sleepers should be more conformist, less reflective, and would score higher (external) on the Internal-External Locus of control Scale than

the long sleepers. Their findings were reported to be consistent with Hartmann's (1971, 1972, 1973) predictive descriptions of short and long sleepers, and that short sleepers scored higher on the I-E scale than long sleepers.

To re-examine the conclusion of Webb (1979) that there are no personality differences between short and long sleepers, Kumar and Vaidya (1986) investigated the differences between short and long sleepers using a Hindi version (Kumar & Srivastava, 1983) of the Rotter's Internal-External Locus of Control Scale. They selected 50 short sleepers and 50 long sleepers in a similar selection method as that used by Hicks and Pelligrini (1977). Their findings showed that the difference between short and long sleepers was statistically significant on the Rotter's I-E Scale and that short sleepers were more likely to be "internals" compared with long sleepers.

Recently, Hill, Welch, and Godfrey (1996) conducted a study to examine the influence of locus of control on mood state after a short-term sleep loss. They found that after a 1-night of sleep loss, individuals identified as "externals" showed an increase in mood disturbance, while sleep loss showed no significant effect in individuals with internal locus of control. Despite that locus of control personality dimension and its relationship with aspects of sleep have not been extensively studied, the above findings showed that these dimensions are significantly associated.

The present study was conducted in an attempt to tie a connection between the individual differences regarding their beliefs about their ability to influence their life events and the possible effects of their life events on dreams. From past research, there is evidence to support the correlation between I-E locus of control and the expected

outcomes of moods and professional performances. There is also evidence to support the association between types of dreams (Spadafora & Hunt, 1990), sleep patterns and levels of anxiety. Since, trait anxiety has been shown to be one of the major personality dimensions associated with dream frequency and nightmare intensity, and cognitive arousability is a trait personality that is associated with trait anxiety (Saliba et al, 1998), this study examined the relationships between one's locus of control, anxiety, cognitive arousability, and aspects of dreaming: dream frequency and dream intensity.

The purposes of this study were: (1) to identify the interrelationships between participants' reports of dreams, in terms of frequency and intensity, and dimensions of personality (locus of control, trait anxiety, and cognitive arousability); (2) if the intercorrelations exist, to examine the differences in dreaming between the "internals" and the "externals;" and (3) to examine these relationships by a comparison of retrospective and prospective assessment methods.

Hypothesis one: Participants' reports of dream frequency and dream intensity are correlated with levels of cognitive arousability, levels of anxiety, and internal-external locus of control for both assessment methods: retrospective and prospective.

Hypothesis two: There are significant differences between the "internals" and "externals" in different aspects of dreaming for both assessment methods: retrospective and prospective. More specifically, the "external" group is more likely to report higher dream frequency and higher dream and nightmare intensity than is the "internal" group.

Phase I of this Study

In Phase I, the present study examines, with a retrospective assessment, whether

or not there is an association between dreaming and certain personality characteristics. To do this, we selected a measure of dream frequency, a measure of expression of nightmare intensity, and three measures of personality dimensions: cognitive arousability, anxiety and locus of control. In this phase of the study, dream frequency and dream intensity were measured retrospectively. And since we were interested in the possible differences in outcomes of dreaming among people with different views of life events; in this study, such dimensions were measured by the Rotter's Internal-External Locus of Control.

Method

Participants

Three hundred and twenty-five students (161 male and 164 female) from an introductory psychology course participated in Phase 1 of the study. Students responded to a questionnaire that included demographic questions and scales for dream research. Participants' mean age was 19.39 ranging from 17 to 30. Ethnicity was 3.1% African-American, .9% American Indian, 34.3% Asian, 25.9% Caucasian, 11.4% Mexican-American, 2.2% Other Hispanic, 15.7% Pacific Islander, and 6.5% of unspecified others. Participation fulfilled research credit requirements.

Measures

Demographic items included gender, age, and ethnicity. The two scales used to measure aspects of dreaming are the Spadafora and Hunt's Dream Frequency Scale and the Belicki's Nightmare Distress Scale. The three scales used to measure dimensions of Personality are the Arousal Predisposition Scale, the Short-Form Unidimensional of The

Taylor Manifest Anxiety Scale, and the Rotter's Internal-External Locus of Control.

The Spadafora and Hunt's (1990) Dream Frequency Scale (DFS) (Appendix A) includes 7 items; lucid dreams, archetypal dreams, fantastic nightmares, prelucid dreams, control dreams, posttraumatic nightmares, and night terrors, with a Likert-type scale ranging from 1 = never, 2 = seldom, 3 = occasionally, 4 = frequently, to 5 = always. This scale was used to measure the frequency of different types of dreams and nightmares. A total score of the scale was used as a measure of dream frequency; in addition, score of each item was used to examine the relationships of these items with the Nightmare Distress Scale.

To measure expressions of nightmare intensity, The Belicki's (1992) Nightmare Distress Scale (NDS) (Appendix B) was used. This scale includes 13 items with scores ranging from 1 = never, 2 = sometimes, 3 = often, to 4 = always. An example from this scale is "Do you feel you have a problem with nightmares?" A higher score of this scale indicates that the person expressed awareness of intense dreams and nightmares.

The Coren's (1990) Arousal Predisposition Scale (APS) (Appendix C) was used to measure the level of arousability one generally experiences. This scale includes 12 items with answer choice ranging from N (never or almost never), S (seldom), O (occasionally), F (frequently), to A (always or almost always). An example from this scale is "I am easily frustrated." A higher score on this scale shows a higher level of predisposition cognitive arousability.

The Unidimensional Short-Form of the Taylor Manifest Anxiety Scale (S-FAS) (Hicks, Ostle, & Pellegrini, 1980) (Appendix D) was used to measure participants'

general levels of anxiety which is a trait dimension of personality. The scores of this scale were based on true/false responses. An example from this scale is, "I worry quite a bit over possible troubles." A higher score on this scale suggests that the respondent is generally anxious.

The Rotter's (1966) Internal-External (I-E) Scale (Appendix E) was included to measure the dimension of personality based on what extent a person's belief is internal or external. This scale includes 29 items with 6 items being fillers. Each item includes either an (a) statement or a (b) statement. An example from this scale is (a) The idea that teachers are unfair to students is nonsense, and (b) Most students don't realize the extent to which their grades are influenced by accidental happenings. A lower score of this scale indicates that the respondent is an "external" who, more likely, believes that whatever happens in life is by luck, chance and other external forces. A higher score indicates that the respondent is an "internal" who believes that life's outcomes reflect from one's own behavior and characteristics.

Procedure

The questionnaires were distributed in class at the beginning of the semester. Students were given the option to participate in sleep research by completing the questionnaires at home and returning them for research credit. Collected data were entered in Statistical Package for Social Sciences (SPSS) for statistical analyses. Pearson correlation and standard multiple regression correlation analyses were performed to determine the relationships between dream frequency (the Dream Frequency Scale), nightmare intensity (the Nightmare Distress Scale), and measures of personality: the

Arousal Predisposition Scale, the Unidimensional Short-Form of the Taylor Manifest Anxiety Scale and the Internal-External Locus of Control Scale. Also, one-way analysis of variance (ANOVA) was performed to examine the differences between the “internals” and the “externals” on levels of cognitive arousability, levels of anxiety, the frequency of dreaming, and expression of nightmare intensity.

Results and Discussion

Table 1 shows the means and standard deviations of two measures of dreams, Dream Frequency Scale (DFS) and Nightmare Distress Scale (NDS), and three personality measures, Arousal Predisposition Scale (APS), Short-Form Anxiety Scale (S-FAS) and Internal-External Locus of Control (I-E). Table 2 presents the Pearson correlation analyses of the above five scales. Results show that all measures are significantly intercorrelated.

The statistically significant correlation between dream frequency and expression of nightmare intensity ($r = .48, p < .01$) indicates that individuals who report more frequent dreams are more likely to experience and/or concern about intense dreams and nightmares. In support of this relationship, the Nightmare Distress Scale shows positively significant correlations with each and all of the dream and nightmare items of the Dream Frequency Scale at the .01 level: Lucid Dreams ($r = .27$); Archetypal Dreams ($r = .18$); Prelucid Dreams ($r = .30$), Control Dreams ($r = .23$); Fantastic Nightmares ($r = .40$); Posttraumatic Nightmares ($r = .35$); and Night Terrors ($r = .28$). Results of the standard multiple regression correlation showed a significant relationship $\{R = .52, F_{(5, 324)} = 16.99, p < .001; R^2 = .27, R^2 \text{ adj.} = .26\}$. The items of Dream Frequency Scale

Table 1: The Means and Standard Deviations for Dream Frequency Scale (DFS), Nightmare Distress Scale (NDS), Arousal Predisposition Scale (APS), Short-Form Anxiety Scale (S-FAS), and Internal-External Scale (I-E)

Scale	<u>M</u>	<u>SD</u>
Dream Frequency Scale	13.95	4.04
Nightmare Distress Scale	19.70	5.80
Arousal Predisposition Scale	32.90	6.53
Short-Form Anxiety Scale	8.37	4.54
Internal-External Scale	13.95	4.04
<u>N</u> = 325		

Table 2: The Intercorrelations Between Dream Frequency Scale (DFS), Nightmare Distress Scale (NDS), Arousal Predisposition Scale (APS), Short-Form Anxiety Scale (S-FAS), and Internal-External Scale (I-E)

Scale	DFS	NDS	APS	S-FAS	I-E
Dream Frequency Scale					
Nightmare Distress Scale	.48**				
Arousal Predisposition Scale	.32**	.31**			
Short-Form Anxiety Scale	.37**	.40**	.51**		
Internal-External Scale	-.18**	-.12*	-.19**	-.19**	

N = 325; * $p < .05$; ** $p < .01$

accounted for the variance of prediction of the Nightmare Distress Scale are in this order: Fantastic Nightmares, Posttraumatic Nightmares, Prelucid Dreams, Lucid, Dreams, Night Terrors, Archetypal Dreams, and Control Dreams.

To examine the relationships among dream frequency, nightmare intensity and the three personality dimensions, two standard multiple regression correlation analyses were performed. The overall results of these analyses showed significant relationships between the three predictors (anxiety, cognitive arousability, locus of control) and Dream Frequency Scale $\{R = .41, F_{(2, 324)} = 21.79, p < .001; R^2 = .17, R^2 \text{ adj.} = .16\}$; and Nightmare Distress Scale $\{R = .42, F_{(2, 324)} = 22.29, p < .001; R^2 = .17, R^2 \text{ adj.} = .17\}$. Also, the results showed that anxiety was the strongest predictor of the three variables; cognitive arousability was stronger than locus of control; and that the three variables overlapped each other. Although Locus of Control Scale did not account for a large variance in explaining dream frequency and nightmare intensity, it showed significant correlations with these variables; moreover, it showed significant relationships with anxiety and cognitive arousability. Thus, it is fair to conclude that the overall statistically significant correlations among these dream and personality measures indicate that anxiety and arousability are the variables underlie the presence of dream frequency, nightmare intensity and locus of control and that these personality dimensions are important in the understanding of dream frequency and nightmare intensity.

In order to examine the differences between the "internals" and the "externals" of Locus of Control Scale, participants were categorized into dichotomous groups. Scores from 0 to 10 were categorized as "external," and scores from 11 to 23 were categorized as

"internal." Table 3 summarizes the means, standard deviations, and one-way analysis of variance for "internals" and "externals" on the Dream Frequency Scale, the Nightmare Distress Scale, the Arousal Predisposition Scale, and the Short-Form Anxiety Scale. Based on the ANOVA results, "externals" scored significantly higher than the "internals" on the Dream Frequency Scale ($p < .001$), the Nightmare Distress Scale ($p < .01$), the Arousal Predisposition Scale ($p < .01$) and the Short-Form Anxiety Scale ($p < .001$). The above results indicate that these dimensions of personality are intercorrelated with one another. Among aspects of dreaming, all three dimensions of personality are correlated with the Dream Frequency and the Nightmare Distress Scales. The "internals", viewing life events as results of one's own actions, show an association with lower levels of cognitive arousability and anxiety. Conversely, the "externals" view life events as results of external forces, show an association with higher levels of cognitive arousability and anxiety which are predictive variables in explaining dream frequency and nightmare intensity.

Phase II of this Study

The results of Phase I of this study demonstrated the association between certain personality dimensions and aspects of dreaming with a retrospective assessment. A second phase of this study was designed to observe participants' prospective reports of dream frequency and dream intensity. In Phase II of this study, participants from the same population were recruited to complete daily diaries of dreams. The data from the dream diaries were used to determine the differences between the "internals" and "externals" for their daily reports of number of dreams, the intensity for each dream they

Table 3: The Means, Standard Deviations, and One-Way Analysis of Variance (ANOVA) for the Internals and Externals on Dream Frequency Scale, Nightmare Distress Scale, Arousal Predisposition Scale, and Short-Form Anxiety Scale

	Internal		External		ANOVA	
Scale	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>F</u> (1, 324)	<u>p</u>
Dream Frequency Scale	13.30	3.89	15.12	4.08	15.68	.001
Nightmare Distress Scale	19.05	5.48	20.89	6.11	7.71	.01
Arousal Predisposition Scale	32.09	6.60	34.38	6.15	9.44	.01
Short-Form Anxiety Scale	7.72	4.54	9.55	4.33	12.40	.001

Internal $n = 210$; External $n = 115$

experienced during 28 consecutive days.

Method

Participants

Included in the questionnaire completed for Phase I of the study were questions asking participants if they would like to participate in the second phase of a dream study. Based on this information, participants were recruited for the second phase of the study. Participation fulfilled research credit requirements.

The total of 60 participants signed up for Phase II of the study. Since, dream diaries require a long-term commitment (28 consecutive days) and promptness, participation was monitored and screened weekly to decrease the likelihood of dated-memory data. Participants who failed to turn in diaries on time were excluded from the data collection. By the end of the data collection period, 23 sets of diaries were excluded from Phase II of study. As a result, 37 students (14 male, 23 female) with a mean age of 19.36 (ranging from 18 to 28) were included in Phase II of the study.

Measures

Participants received a one-page instruction that explained the purpose of the study, the procedure of diary completion as well as the length of time required for diary completion. With an agreement to participate in the study, participants then completed a questionnaire that included demographic variables and items assessing their general mood state, possible post-traumatic events (i.e., Are you suffering from a post-traumatic event?), and whether the person was going through a difficult time in life. Participants completed dream diaries (Appendix F) at home everyday for four consecutive weeks.

Participants were asked to report the number of dreams and nightmares they experienced during the night and to record the dream contents or themes if they remembered them. The dream content report could be as brief or as detailed as they felt comfortable describing. They were also asked to rate each and every dream they experienced. Dream ratings were based on a 5-point scale ranging from 0 = not at all intense, 1 = slightly intense, 2 = moderately intense, 3 = very intense, to 4 = extremely intense.

Procedure

Diaries were collected weekly to increase the validity of continuous daily completion. Twenty-three participants completed only two or three weeks of dream diaries and were excluded from Phase II of study. Again, collected data were entered in SPSS for statistical analyses. According to their responses from Phase I of the study, these participants were divided into "internal" and "external" groups based on the same method of selection in the Phase I of the study; low scores on the Locus of Control Scale were categorized as "external" and high scores on the Scale were categorized as "internal." Generally, people categorized dreams and nightmares differently; in this case, we hoped to observe dream frequency and the ratings of dream intensity, thus, the number of dreams and nightmares were combined for the analyses. Computation was performed to obtain the averages among the 28 days of diary reports on the ratings of intensity for first and second dreams. One-way analysis of variance (ANOVA) was performed to determine to differences between "internals" and "externals" for the reported number of dreams (including nightmares), and the reports of dream intensity.

Results and Discussion

First, a computation similar to that of Phase I study was performed to examine the differences between the "internals" and the "externals" of this smaller sample of participants. These results remained consistent with those computed in Phase I of the study (see Table 4) that is the "externals" showed higher dream frequency and nightmare intensity than did the "internals" on retrospective measures. Then, analyses for the daily dream dairies were computed. Table 5 presents the means, standard deviations, and one-analyses of variance for the "internals" and "externals" pertaining to the total number of dreams, and averages of intensity ratings of first and second dreams. Since there were only a few participants who reported having third dream, calculation for the rating of third dreams was excluded. Based on one-way ANOVA results, there was no statistically significant difference between the "internals" and the "externals" for the number of dreams reported ($F_{1,36} = .35$, n.s.); however, a Levene test of homogeneity of variances showed a significant difference for the variance between the two groups, $F_{(1,35)} = 4.47$, $p < .05$. For the first dream, the "externals" rated their dreams significantly higher than did the "internals." For the second dream, although there was no significant difference between the two groups, the results showed the same direction as those of the first dream. In short, these results suggest that with the prospective reports there are no differences between "internals" and "externals" on the number of dreams they experienced. However, when they experienced dreams, the "externals" are more likely to rate their dreams as more intense than are the "internals."

General Discussion

Table 5: The Means, Standard Deviations, and One-Way Analysis of Variance (ANOVA) for the Internals and Externals on the Number of Dreams, Intensity Ratings of First Dreams, and Intensity Ratings of Second Dreams

Variable	Internal		External		ANOVA	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>F</u>	<u>p</u>
Number of Dreams	37.25	24.03	27.08	14.44	.35 ^a	<u>n.s.</u>
Intensity Ratings of First Dreams	1.03	.48	1.66	.72	9.16 ^a	.01
Intensity Ratings of Second Dreams	.98	.54	1.77	.89	2.39 ^b	<u>n.s.</u>

Internal $\underline{n} = 22$; External $\underline{n} = 15$

^a $df = (1, 36)$; ^b $df = (1, 31)$

Over half of a decade ago, a prominent sleep researcher (Kleitman, 1939) stated, "Practically all we know about dreaming is derived from the subjective experiences and reports of the dreamers." (p. 152). This statement remains true to many respects of dreaming. As in many clinical settings, psychoanalytic therapists sometimes rely on patients' dream narratives to account for underlying problematic issues in the patient's daily life. The reports of dreams may not illustrate the exact real life happenings, but instead they may reflect the person's personality characteristics and attitudes towards life events and outcomes. While dreams often appear as a different story from one's real life, it is a fortunate happening to the dreamer that prevents further worries about intense dreams and nightmares.

The primary purposes of the present study were to, retrospectively and prospectively, (1) examine the relationships among certain dimensions of personality (locus of control, anxiety, cognitive arousability) and aspects of dreaming (dream frequency and intensity) and (2) observe the differences among the individuals' experiences with dreaming based on the dichotomous categorization of locus of control. The findings of this research provide support that the interrelationships among the above personality dimensions and aspects of dreaming exist. Dream frequency is related with dream intensity. Locus of control is related with anxiety and cognitive arousability. In addition, all three personality dimensions: locus of control, anxiety, and cognitive arousability have predictive relationships with dream frequency and intensity. In terms of differences between the "externals" and the "internals" of locus of control on dream frequency and intensity, the results for dream intensity are consistent, retrospectively and

prospectively, with statistical significances; however, the results for dream frequency depend on whether the assessment is retrospective or prospective which suggest that dream recall is positively correlated with dream intensity and the outcomes could be explained by certain personality dimensions, e.g., locus of control, anxiety, and cognitive arousability.

In examining the relationships between personality dimensions and dreaming, the present study shows results that are consistent with previous studies (Hersen, 1971; Haynes and Mooney, 1975; Nguyen et al., in press) that anxiety is associated with dream and nightmare frequency and intensity. Anxious individuals report having greater dream frequency and are more worried about their intense dreams and nightmares. The relationships between these variables on retrospective assessment demonstrate consistent findings with earlier studies (Hersen, 1971; Haynes and Mooney, 1975; Nguyen et al., in press) which indicates that people are more likely to remember having dreams when they are intense dreams or nightmares. Furthermore, our data support previous findings (Saliba et al., 1998) that anxiety is significantly related to cognitive arousability. Importantly, our findings yield implication for the theoretical link between locus of control personality dimension and aspects of dreaming; frequency and intensity. Individuals who identify with the "external" characterization of the locus of control are more likely to show high levels of anxiety, high levels of cognitive arousability and report having greater frequency of dreams and are more aware of their nightmares compared with individuals who are characterized as "internals." While locus of control does not play a major role in explaining the variance account for dream frequency and

nightmare intensity, the direct relationships between locus of control and the levels of anxiety, cognitive arousability, dream frequency and dream intensity provide support that one's attitudes towards life events and outcomes contribute to one's reports of anxiety, cognitive arousability, dream frequency and dream intensity.

As pointed out by past research (Belicki, 1985; Wood & Bootzin, 1990) that individuals who experience dreams frequently do not always experience intense dreams or nightmares, therefore, responses for dream frequency are not always highly correlated with reports of dream intensity or nightmare distress. In the second phase of this study, we examined the differences between "internals" and "externals" from the same population of the Phase I of the study on their prospective reports for the number of dreams they experienced each night and their intensity ratings of the dreams. Although there is no significant difference between the two groups on the number of dreams reported, this result may be due to the significant difference in variances between the groups. Evidently, the "internals" do not feel intense about their dreams when they do experience them. The dream ratings on this prospective assessment further support our hypothesis that "externals" are more likely to report higher dream intensity than are the "internals." Comparing the results for the retrospective and prospective reports from the same individuals, it appears that individuals with internal locus of control do not pay attention to the outcomes of their dreams, reported having more dreams when asked to report them daily but did not feel as intense about their dreams when they experience them, therefore, do not remember dreams when asked how frequent do they dream in a general sense.

Consequentially, when assessing the frequency and intensity of dreams, whether for research or clinical purposes, it is important to differentiate the interpretations for retrospective and prospective assessment methods and give the results of each method a fair analysis. The findings of this study provide support for the connection between a dimension of personality, locus of control, and aspects of dreaming, frequency and intensity in both assessment methods: retrospective and prospective. While some people believe, in general, that they do not dream at all, it may be due to their fact that their dreams are not intense therefore they do not remember them. Perhaps these people would report having many dreams if they were asked to record them on a daily diary. Undoubtedly, personality traits, e.g., anxiety, cognitive arousability and locus of control, serve as underlying components of dream intensity, which is directly related with dream recall. These findings suggest important implications for clinical and research purposes, however, it is important to note that the relationships among locus of control and these variables were only moderately significant and that the underlying variables, anxiety and cognitive arousability accounted for a larger percentage in explaining the variances of dream frequency and intensity. Future research is necessary to further investigate these effects.

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Appendix A

The Spadafora and Hunt (1990) Dream Frequency Scale (DFS).

Please read the definitions provided for each dream type and identify the frequency with which you experience each type.

1 = Never, 2 = Seldom, 3 = Occasionally, 4 = Frequently, 5 = Always

LUCID DREAMS (vivid dreams in which you realize that you are dreaming while you are still in the dream). N S O F A__

ARCHETYPAL DREAMS (dreams that carry a sense of awe and fascination and/or include encounters with strange and unusual beings – perhaps reminiscent of mythology and fairy tales). N S O F A__

FANTASTIC NIGHTMARES (very vivid, upsetting dreams that you remember in detail upon awakening and can involve a wide range of negative emotions). N S O F A__

PRELUCID DREAMS (where one questions whether one is dreaming, but cannot decide). N S O F A__

CONTROL DREAMS (where control not possible in waking life is deliberately exercised in the dream, with or without lucid awareness of dreaming). N S O F A__

POST TRAUMATIC NIGHTMARES (dreams repeating an actual past trauma). N S O F A__

NIGHT TERRORS (terrifying awakenings without any recall of dream content). N S O F A__

Scoring key: for a total of dream frequency, add scores of all items.

Appendix B

The Belicki's (1992) Nightmare Distress Scale

CHOOSE THE NUMBER THAT BEST DESCRIBES YOUR ANSWER AND PUT IT
NEXT TO THE QUESTION.

1 = NEVER; 2 = SOMETIMES; 3 = OFTEN; 4 = ALWAYS

- ___ 1. When you awake from a nightmare, do you find you keep thinking about it and have difficulty putting it put of your mind?
- ___ 2. Do you ever find yourself avoiding or disliking or fearing someone because they were in your nightmare?
- ___ 3. Are you ever afraid to fall asleep for fear of having a nightmare?
- ___ 4. After you wake from a nightmare, do you have difficulty falling back asleep?
- ___ 5. Do you have difficulties coping with nightmares?
- ___ 6. Do you feel you have a problem with nightmares?
- ___ 7. Do you ever have the feeling that something which happened in your nightmare has really occurred?
- ___ 8. Do your nightmares foretell the future?
- ___ 9. When you have a nightmare, does it ever seem so real that when you awaken you have difficulty convincing yourself it's just a dream?
- ___ 10. In the past year have you considered seeking professional help for your nightmares?

FOR THE NEXT QUESTIONS USE THE SCALE BELOW IT AND PLACE THE
NUMBER OF THE ANSWER ON THE LINE. CHOOSE THE ONE THAT BEST

DESCRIBES YOUR NIGHTMARES FOR THE PAST YEAR.

1 = Not at All, 2 = Slightly, 3 = Somewhat, 4 = Definitely, 5 = A Great Deal

___ 11. Do nightmares affect your well being?

___ 12. Do nightmares interfere with the quality of your sleep?

___ 13. If a therapy program were available which might help you control or to stop nightmares, how interested would you be in participating?

Scoring key: for a total score of nightmare distress, add scores of all items.

Appendix C

The Coren's (1988) Arousal Predisposition Scale

Instructions: This questionnaire deals with a number of common behaviors and self-perceptions. For each question select the response which best describes you and your behaviors. Select from among the following response alternatives:

Never (or almost never) Seldom Occasionally Frequently

Always(or almost always)

1. I am a calm person. N S O F A_____
2. I get flustered if I have several things to do at once. N S O F A_____
3. Sudden changes of any kind produce an immediate
emotional effect on me. N S O F A_____
4. Strong emotions carry over for one or two hours after I
leave the situation which caused them. N S O F A_____
5. I am restless and fidgety. N S O F A_____
6. My mood is quickly influenced by entering new places. N S O F A_____
7. I get excited easily. N S O F A_____
8. I find my heart keeps beating fast for a while after I have
been "stirred up". N S O F A_____
9. I can be emotionally moved by what other people
consider to be simple things. N S O F A_____
10. I startle easily. N S O F A_____
11. I am easily frustrated. N S O F A_____

12. I tend to remain excited or moved for long periods of time. N S O F A_____

Scoring key: for item #1 score N = 5, S = 4, O = 3, F = 2, A = 1; for items # 2 to 12
score N = 1, S = 2, O = 3, F = 4, A = 5; then add scores for all 12 items.

Appendix D

The Unidimensional Short-Form of the Taylor Manifest Anxiety Scale (Hicks, Ostle, and Pellegrini, 1980)

The statement in this test represent experiences, or feelings, that are true of some people but are not true of others. Read each statement and decide whether or not it is true with respect to yourself. If it is true or mostly true, check in the A in the answer column. If the statement is not usually true or is not true at all, check the letter B.

Reminder A for true or mostly true

B for false or mostly false

A	B	
—	—	1. I often dream about things I don't like to tell other people.
—	—	2. I often find myself worrying about something.
—	—	3. At times I lose sleep over worry.
—	—	4. My sleep is restless and disturbed.
—	—	5. At times I feel that I am going to crack up.
—	—	6. I feel anxious about something or someone almost all the time.
—	—	7. I work under a great deal of strain.
—	—	8. I worry quite a bit over possible troubles.
—	—	9. At times I have been worried beyond reason about something that really did not matter.
—	—	10. I am the kind of person who takes things hard.
—	—	11. My feelings are hurt easier than most people.

- — 12. I worry over money and business.
- — 13. I have nightmares every few nights.
- — 14. At times I am so restless that I cannot sit in a chair for very long.
- — 15. Sometimes I become so excited that I find it's hard to get to sleep.
- — 16. I find it hard to keep my mind on a task or job.
- — 17. Life is often a strain to me.
- — 18. I am more self-conscious than most people.
- — 19. I have often felt that I faced so many difficulties that I could not
overcome them.
- — 20. I have been afraid of things or people that I knew could not hurt me.

Scoring key: for items # 4 and 10 score 1 for answer B and score 0 for answer A; for all other items score 1 for answer A and score 0 for answer B. Add scores for all items.

Appendix E

The Rotter's (1966) Internal-External Locus of Control Scale

This is a questionnaire to find out the way in which certain important events in our society affect different people. Each item consists of a pair of alternatives lettered a or b. please select (by circling a or b) the one statement of each pair (and only one) which you more strongly believe to be the case as far as you're concerned. Be sure to select the one you actually believe to be more true rather than the one you think you should choose or the one you like to be true. This is a measure of personal belief: obviously there are no right or wrong answers.

1. a. Children get into trouble because their parents punish them too much.
 b. The trouble with most children nowadays is that parents are too easy with them.
2. a. Many of the unhappy things in people's lives are partly due to bad luck.
 b. People's misfortunes result from the mistakes they make.
3. a. One of the major reasons why we have wars is because people don't take
 enough interest in politics.
 b. There will always be wars, no matter how hard people try to prevent them.
4. a. In the long run people get the respect they deserve in this world.
 b. Unfortunately, an individual's worth often passes unrecognized no matter how
 hard he tries.
5. a. The idea that teachers are unfair to students is nonsense.
 b. Most students don't realize the extent to which their grades are influenced by
 accidental happenings.

6.
 - a. Without the right breaks one cannot be an effective leader.
 - b. Capable people who fail to become leaders have not taken advantage of their opportunities.
7.
 - a. No matter how hard you try some people just don't like you.
 - b. People who can't get others to like them don't understand how to get along with others.
8.
 - a. Heredity plays the major role in determining one's personality.
 - b. It is one's experiences in life which determine what they're like.
9.
 - a. I have often found that what is going to happen will happen.
 - b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.
10.
 - a. In the case of the well prepared student there is rarely if ever such a thing as an unfair test.
 - b. Many times exam questions tend to be so unrelated to course work that studying is really useless.
11.
 - a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.
 - b. Getting a good job depends mainly on being in the right place at the right time.
12.
 - a. The average citizen can have an influence in government decisions.
 - b. This world is run by the few people in power, and there is not much the little guy can do about it.
13.
 - a. When I make plans, I am almost certain that I can make them work.

- b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.
- 14.
 - a. There are certain people who are just no good.
 - b. There is some good in everybody.
- 15.
 - a. In my case getting what I want has little or nothing to do with luck.
 - b. Many times we might just as well decide what to do by flipping a coin.
- 16.
 - a. Who gets to be the boss often depends of who was lucky enough to be in the right place first.
 - b. Getting people to do the thing depends upon ability, luck has little or nothing to do with it.
- 17.
 - a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.
 - b. By taking an active part in political and social affairs the people can control world events.
- 18.
 - a. Most people don't realize the extent to which their lives are controlled by accidental happenings.
 - b. There really is no cover up one's mistakes.
- 19.
 - a. One should always be willing to admit mistakes.
 - b. It is usually best to cover up one's mistakes.
- 20.
 - a. It is hard to know whether or not a person really likes you.
 - b. How many friends you have depends upon how nice a person you are.
- 21.
 - a. In the long run the bad things that happen to us are balanced by the good ones.

- b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.
22. a. With enough effort we can wipe out political corruption.
b. It is difficult for people to have much control over things politicians do in office.
23. a. Sometimes I can't understand how teachers arrive at the grades they give.
b. There is a direct connection between how hard I study and the grades I get.
24. a. A good leader expects people to decide for themselves what they should do.
b. A good leader makes it clear to everybody what their jobs are.
25. a. Many times I feel that I have little influence over the things that happen to me.
b. It is impossible for me to believe that chance or luck plays an important role in my life.
26. a. People are lonely because they don't try to be friendly.
b. There's not much use in trying too hard to please people, if they like you, they like you.
27. a. There is too much emphasis on athletics in high school.
b. Team sports are an excellent way to build character.
28. a. What happens to me is my own doing.
b. Sometimes I feel that I don't have enough control over the direction my life is taking.
29. a. Most of the time I can't understand why politicians behave the way they do.
b. In the long run the people are responsible for bad government on a national as

well as on a local level.

Scoring key: items # 1, 8, 14, 19, 24, 27 do not get a score. For items # 2, 6, 7, 9, 16, 17, 18, 20, 21, 23, score 1 for answer (b) and score 0 for answer (a). For items #3, 4, 5, 10, 11, 12, 15, 22 26, 28, score 1 for answer (a) and score 0 for answer (b). Add all scores.

Appendix F

Daily Dream Diary

MORNING LOG

ID# _____

Day of the week: _____ Date: _____

Time I fell asleep last night: _____ Time I woke up this morning: _____

I am satisfied with my sleep. Yes__ No __; If "No" please comment _____

I had (how many) _____ dreams last night.

I had (how many) _____ nightmares last night.

Dream contents or themes:

My dreams were :

	not at all intense	slightly intense	moderately intense	very intense	extremely intense
First dream	0	1	2	3	4
Second dream	0	1	2	3	4
Third dream	0	1	2	3	4

EVENING LOG

Date: _____

I spent most of my day at: Work ☐ School ☐ Home ☐

Other _____

Happy event(s) happened today (i.e., I received an A+ on my exam):

Stressful event(s) happened today (i.e., I argued with my boss):

From the events that happened today, I feel:

	not at all	slightly	moderately	very	extremely
	anxious	anxious	anxious	anxious	anxious
Happy events	0	1	2	3	4
Stressful events	0	1	2	3	4