

Utah State University

DigitalCommons@USU

---

All Graduate Theses and Dissertations

Graduate Studies

---

5-1980

## Conscious Anxiety, Conscious Repression and Ego-strength as Related to Dream Recall, Content and Vividness

David Newbold  
*Utah State University*

Follow this and additional works at: <https://digitalcommons.usu.edu/etd>



Part of the [Psychology Commons](#)

---

### Recommended Citation

Newbold, David, "Conscious Anxiety, Conscious Repression and Ego-strength as Related to Dream Recall, Content and Vividness" (1980). *All Graduate Theses and Dissertations*. 5834.  
<https://digitalcommons.usu.edu/etd/5834>

This Dissertation is brought to you for free and open access by the Graduate Studies at DigitalCommons@USU. It has been accepted for inclusion in All Graduate Theses and Dissertations by an authorized administrator of DigitalCommons@USU. For more information, please contact [digitalcommons@usu.edu](mailto:digitalcommons@usu.edu).



CONSCIOUS ANXIETY, CONSCIOUS REPRESSION AND  
EGO-STRENGTH AS RELATED TO DREAM RECALL,  
CONTENT AND VIVIDNESS

by

David Newbold

A dissertation submitted in partial fulfillment  
of the requirements for the degree

of

DOCTOR OF PHILOSOPHY

in

Psychology

Approved:

UTAH STATE UNIVERSITY  
Logan, Utah

1980

## ACKNOWLEDGEMENTS

I would like to thank all those who have helped in the completion of both this study and the requirements for this degree.

To my committee chairmen, Dr. William R. Dobson, I would like to express appreciation for his assistance in planning, executing and editing this research as well as during my graduate training, providing an excellent professional model.

Sincere thanks to committee members, Dr. Michael R. Bertoch, Dr. Elwin C. Nielson, Dr. E. Wayne Wright and Dr. C. Jay Skidmore for their support, advice and suggestions.

My thanks to both my own parents, Mr. and Mrs. Floyd L. Newbold, and also my wife's parents, Mr. and Mrs. George J. Allen, for their support during the difficult period of moving.

Special thanks and appreciation, too, to my wife, Lorene, for her continued support and encouragement, as well as her professional assistance in completing this study and the requirements for this degree. Additional and special thanks to my daughters, Kimberly and Amy, for adding a special spark of happiness to our home.

David Newbold

## TABLE OF CONTENTS

	Page
ACKNOWLEDGMENTS . . . . .	ii
LIST OF TABLES . . . . .	v
LIST OF FIGURES . . . . .	vi
ABSTRACT . . . . .	vii
Chapter	
I. INTRODUCTION . . . . .	1
Statement of the Problem . . . . .	3
Purpose . . . . .	4
Objectives . . . . .	4
Hypotheses . . . . .	5
Definitions . . . . .	6
II. REVIEW OF LITERATURE . . . . .	8
Theoretical Basis of Dream Research and Analysis . . . . .	8
Need for and Functions of Dream Sleep . . . . .	14
Research Concerning Dream Recall Frequency . . . . .	17
Personality and Dream Behavior . . . . .	23
Summary . . . . .	26
III. METHODOLOGY . . . . .	28
Sample . . . . .	29
Procedure . . . . .	30
Instruments . . . . .	32
Minnesota Multiphasic Personality Inventory . . . . .	32
Rationale for the use of selected MMPI subscales . . . . .	36
Treatment of the Data . . . . .	38

IV. RESULTS . . . . . 41

    Hypothesis 1 . . . . . 43

    Hypothesis 2 . . . . . 45

    Hypothesis 3 . . . . . 46

    Hypothesis 4 . . . . . 47

    Additional Results . . . . . 49

        Results of dream content-process subcategories . . . . . 49

        "Contentless" or not-rated dreams. . . . . 61

V. DISCUSSION AND CONCLUSIONS. . . . . 64

    Discussion of Results Related to the Hypotheses . . . . . 64

        Hypothesis 1 . . . . . 64

        Hypothesis 2 . . . . . 64

        Hypothesis 3 . . . . . 65

        Hypothesis 4 . . . . . 65

    Additional Results . . . . . 69

        Dream content-process subcategories. . . . . 69

        No content dreams. . . . . 78

    Conclusions. . . . . 79

    Limitations. . . . . 80

    Recommendations. . . . . 81

BIBLIOGRAPHY . . . . . 82

APPENDICES . . . . . 90

    Appendix A: Consent and Release of Information Form. . . . . 91

    Appendix B: Dream Log Response Form . . . . . 92

    Appendix C: Intercorrelation Matrix for Variables Measured. . . . . 94

VITA . . . . . 95

## LIST OF TABLES

Table	Page
1. Means and Standard Deviations of Sample Tested on the MMPI and Dream Log Variables . . . . .	42
2. Summary of Analysis of Variance Results for Conscious Anxiety and Dream Variables . . . . .	44
3. Summary of Analysis of Variance Results for Conscious Repression and Dream Variables. . . . .	45
4. Summary of Analysis of Variance Results for Ego-strength and Dream Variables. . . . .	47
5. Summary of Analysis of Variance Results for Ego-strength, Vivid/Vague Dreams, Sex and Dream Recall. . . . .	48
6. Results of Multiple Regression Analysis for Dream Process Subcategories and MMPI Scales . . . .	51
7. Analysis of Variance Results for Male Subjects' Dream Content-Process Subcategories . . . . .	53
8. Analysis of Variance Results for Female Subjects on Dream Content-Process Subcategories . . . . .	57
9. Analyses of Variance Results for Percentage of Working and Disorganized Dreams Recalled for High-low Repression and High-low Anxiety Male Subjects . . . . .	59
10. Analysis of Variance Results for Content-Process Subcategories, and Higher-lower MMPI Subscale Scores for Female Subjects. . . . .	62
11. Comparison of Percentage of "Contentless" Dreams" for Male and Female, High-lower Conscious Repression Subjects . . . . .	63

## LIST OF FIGURES

Figure	Page
1. Schematic Representation of Analysis of Variance Design - Hypotheses 1 Through 3 . . . . .	39
2. Schematic Representation of Analysis of Dream Content-Process Subcategories. . . . .	52
3. Comparison of Percentage of Pleasurable Dreams for High-Low Conscious Repression and High-Low Dream Recall for Male Subjects. . . . .	55
4. Comparison of Percentage of Female Subjects' Disorganized/Frightening Dreams for High-Low Ego-strength and High-Low Recall . . . . .	56
5. Comparison of Percentage of Male Subjects' Working Dreams for Higher-Lower Conscious Repression and Higher-Lower Conscious Anxiety. . . . .	60

## ABSTRACT

Conscious Anxiety, Conscious Repression and  
Ego-strength as Related to Dream Recall,  
Content and Vividness

by

David Newbold

Utah State University, 1980

Major Professor: Dr. William R. Dobson  
Department: Psychology

Subjects' reported dream recall frequency, dream content and vividness or recall were discussed and examined in relation to sex of the subject and MMPI Conscious Anxiety, Conscious Repression and Ego-strength scores.

Fifty-three Utah State University students, who volunteered to participate in a study of dreaming behavior, were administered the MMPI and asked to complete a dream log diary. The dream log required a daily recording of total number of dreams recalled, the number of vividly and vaguely recalled dreams and a rating of each dream in one of four dream content-process categories. Content-process categories included pleasurable, working, conflict and disorganized/frightening dreams. Relationships and possible interaction effects for the variables measured were tested for significance.



No significant relationship was found between Conscious Anxiety, Conscious Repression or Ego-strength and dream recall frequency, sex of the subject, percentage of vivid dreams recalled, or percent of dreams recalled in the positive (pleasurable and working dreams) versus negative (conflict and disorganized/frightening) categories.

Several significant differences were found, however, between the percentage of dreams reported in dream content-process categories for male subjects when analyzed according to higher-lower MMPI scale score categories and higher-lower dream recall level. Results of subcategory analysis tended to support an interaction between anxiety, repression and dream process consistent with the continuity and adaptive theories of dreaming. Male subjects with higher Conscious Anxiety reported a significantly greater percent of disorganized/frightening dreams. Higher anxiety tended to produce a higher percentage of working dreams as long as repression of threatening material was low enough to permit the recall of more emotion-laden dream processes. There was also a significant interaction between reported percent of pleasurable dreams, recall level and repression, which was explained as possibly indicating that pleasurable dreams may serve as an escape of integrating process for high repression male subjects.

Results of analysis for female subjects indicated that higher recall subjects reported a significantly higher percent of disorganized dreams, which is consistent with the salience theory of recall. Recalled dream processes seemed to be not as strongly tied to personality variables for female subjects.

Contentless dreams have been proposed in previous research to reflect repression by the subject. Results showed no significant difference between higher and lower repression subjects on the number of contentless dreams reported.

(105 pages)

## CHAPTER I

### INTRODUCTION

Since the beginning of recorded history, man has been fascinated with his dreams and has attempted to understand himself through an understanding of those dreams. Aristotle, in a time predominated by the belief that dreams were visitations from the gods, explained that dreams were produced by waking sensory impressions that continued into sleep, but were more intense because they were not modified by intellect. Aristotle also devoted considerable time to speculation concerning the value of exploring the content of ones' dreams (Webb, 1975). As additional evidence of the significance placed on the dream phenomenon, one of the earliest writings in book form, an Egyptian papyrus, is devoted to dream interpretation (Webb, 1975).

In more modern annals, many psychological theories, from Freudian psychoanalysis to Gestalt Therapy, have emphasized the usefulness of dream exploration. Freud (1900), Jung (1968), Boss (1958), Hall (1966), Breger (1967), Perls (1969) and Erickson (1963) to name a few, have all discussed dream exploration as a means of understanding psychological process. Perls, for example, in the Handbook of Gestalt Therapy (Hatcher & Himelstein, 1976), states that "dreams are statements of the here and now existence of the dreamer". Theorists, as a result,

emphasize the importance of remembering dreams, and conclude that persons who do not remember their dreams are refusing to deal with some aspect of their psychological lives. Representing Gestalt theory, Perls states that persons who don't remember dreams only "think they have come to terms with life" (Perls, 1969, p. 120).

The belief that those who don't remember dreams are psychologically unhealthy is a commonly held attitude among therapists and psychologists. Illustrating this belief, Cohen and Wolfe (1973) asked fifteen psychologists representing clinical, personality, social, cognitive and developmental areas to read a hypothetical personality sketch that described a controlled, conservative, overly rule-conscious, intellectualizing person of conventional and practical as opposed to creative intelligence. Cohen and Wolfe then asked each psychologist to fill out a dream recall frequency questionnaire as they predicted such a person would. All fifteen persons predicted that the person would be below the average usually obtained on such a questionnaire.

In spite of the widely-held belief that persons with infrequent dream recall are psychologically unhealthy, restricted persons, research presently available has yielded contradictory results. Small correlations have resulted from attempts to demonstrate a relationship between dream recall and several personality variables and

failures to replicate findings have frequently been reported (Hill, 1974).

It is reasonable to hypothesize from these inconsistent results that dream behavior may be, in actuality, the result of interactions between several factors which may react differently for men and women and/or for persons differing in personality type or characteristics.

Cohen (1977) summarized research on neuroticism and dreaming and found neurotics to differ from normal individuals in several areas; use of dream sleep, response to dream deprivation, dream content and emotional reaction to dream content. He reports that evidence on differences in dream recall frequency is inconclusive and concludes by stressing a need for research which would study the interrelationships between personality traits and various facets of dreaming.

#### Statement of the Problem

If dreams, indeed, provide valuable keys to the understanding of individual psychological processes, as theorists propose, it is important that individual differences in dreaming behavior be better understood. Therapeutic procedures are presently being promoted and utilized based on assumptions which have not been validated by research.

Much of dream recall research has yielded inconclusive or unreplicable results. Cohen has suggested that this

may be because dream behavior is, in reality, dependent upon an interaction of personality variables, situational variables and possibly characteristics of the dreams, themselves. Therefore, it is the purpose of this research to study some of these possible interactions.

### Purpose

Specifically, this study was designed to investigate the interactions and relationships between ego-strength, anxiety and repression (three subscales measured by the MMPI), sex of the subject, reported vividness or vagueness of dreams and content-process categorization of dreams by the subject.

### Objectives

1. To determine to what extent a relationship exists between Conscious Anxiety as measured by the MMPI, sex of the subject, high or low dream recall and percent of positive or negative dream content-process categorization.

2. To determine to what extent a relationship exists between Conscious Repression as measured by the MMPI, sex of the subject, high or low dream recall and percent of positive or negative dream content-process categorization.

3. To determine to what extent a relationship exists between Ego-strength as measured by the MMPI, sex of the subject, high or low dream recall and percent of positive or negative dream content-process categorization.

4. To determine to what extent a relationship exists between Ego-strength as measured by the MMPI, percentage of dreams classified as vivid, sex of the subject, and high or low dream recall level.

### Hypotheses

Relative to the above stated objectives, the following null hypotheses were formulated:

1. There is no difference on scores of the MMPI Conscious Anxiety scale between male and female subjects, persons reporting high or low dream recall levels and/or subjects reporting predominantly positive versus predominantly negative dream content-process categories.

2. There is no difference on scores of the MMPI Conscious Repression scale between male and female subjects, persons reporting high or low dream recall level, and/or subjects reporting predominantly positive versus predominantly negative dream content-process categories.

3. There is no difference on scores of the MMPI Ego-strength scale between male and female subjects, persons reporting high or low dream recall levels, and/or subjects reporting predominantly positive versus predominantly negative dream content-process categories.

4. There is no difference on scores of the MMPI Ego-strength scale between individuals reporting a higher versus lower percentage of dreams classified as vivid,

male and female subjects, and subjects reporting high or low dream recall levels.

### Definitions

Subject. A Utah State University student who volunteered to participate in a study investigating dreaming.

Dream recall frequency. The total number of dreams reported by a subject for a four week period.

Dream content-process. The subject's categorization of each dream recalled into one of six dream categories: pleasurable, working, other positive dreams, conflict, disorganized/frightening and other negative dreams.

Contentless dreams. Dreams not remembered well enough to categorize in any dream content-process category.

Positive dreams. Dreams which were described as being those of a pleasurable or fantasy nature, as well as dreams in which the subject encountered a conflict or problem and was able to resolve or work toward a solution.

Negative dreams. Dreams described as being those in which the subject experienced a conflict or difficult situation and was unable to work toward a solution, or was overwhelmed by the problem; also those considered to be disorganized or frightening.

Vivid dreams. Dreams that the dreamer remembered in some detail, either a portion of, or the entire dream.



Vague dreams. Dreams in which a person awakened with an impression that he had dreamed, but was unable to remember details of the dream.

Repression. A construct measured by the MMPI Conscious Repression subscale and defined as: a lack of willingness to be open and self-disclosing or the use of suppression as a defense.

Ego-strength. A construct measured by the MMPI Ego-strength subscale and defined as: the ability to cope with problems and to bounce back without becoming debilitated by them.

Anxiety. A construct measured by the Conscious Anxiety subscale of the MMPI and defined as: the amount of overt anxiety that the subject was experiencing at the time the MMPI was taken.

Pleasurable dreams. Dreams of enjoyment that left the dreamer with a good, light, happy feeling.

Working dreams. Dreams involving problem-solving where the dreamer met a difficult situation but resolved the situation or worked toward a solution.

Conflict dreams. Dreams in which the dreamer met a conflict-producing or difficult situation but the conflict was overwhelming and was left unresolved.

Disorganized/frightening dreams. Dreams which did not follow any sequence or have any apparent meaning, or dreams of a nightmare quality.

## CHAPTER II

## REVIEW OF LITERATURE

Literature reviewed will consider the theoretical basis of present dream research and analysis, the need for and functions of dream sleep, research investigating dream recall frequency, and also research investigating personality correlates of dream behavior.

Theoretical Basis of Dream Research and Analysis

Two major hypotheses about the psychological function of dreaming have been presented by personality theorists. These positions are the Freudian drive discharge model, and the adaptive model based on an ego psychology viewpoint.

Psychoanalytic theory was the first psychological theory to emphasize the importance of the dream. Freud suggested that certain waking phenomena, such as jokes, are affected by factors similar to those which influence the content of dreams, and that these factors may in both cases be understood as products of unconscious motivation. He also theorized that dreams were produced by intrapsychic mechanisms designed to preserve sleep by assimilating external and internal stimuli which otherwise might awaken the sleeper. Freud thought that many of the internal stimuli were unconscious memories, highly charged with affect, and that the assimilation of threatening memories

into dreams involved a process of sleep-preserving disguise, which would isolate the unconscious memory from experienced awareness.

Modern psychoanalytic theory discusses dreams as being the result of a compromise between two opposing forces - a wish to express a desire and a tendency to reject a desire (Patterson, 1973).

The psychoanalytic viewpoint has been questioned by the theoretical work of Breger (1967), Hall and Nordby (1972) and Greenberg (1970), and the experimental work of researchers such as Clems and Dement (1967), Collins (1967), Greenberg, Pearlman, Brooks, Mayer and Hartman (1968), Greenberg, Pearlman, Finger, Kantrowitz and Kaliche (1970), Greenberg, Pearlman and Gampel (1972), Greenberg, Pillard and Pearlman (1972), Witkin (1969) and Griser, et. al. (1972). These individuals have argued that dreams serve an adaptive, and not merely exclusionary, function that may be related to the integration of affect-arousing stimuli into conscious experience.

The adaptive theory of dreaming is presently being emphasized and incorporated into therapeutic practices. Several recent authors (Cartwright, 1978; Wallin, 1977; Walker & Johnson, 1974) have reported positive therapeutic results of changing dream content and process by presleep suggestion.

Jones has attempted to reconcile the Freudian and adaptive points of view by explaining:

(My) revision permits us to view dreaming as an adaptive process from two complementary points of view: from the point of view of reintegrating the maladapted past (psychoanalytic perspective), and from the point of view of integrating the unadapted present (adaptational perspective) (Jones, 1970, p. 126).

If dream behavior is adequately explained by Jones' synthesis, differences in dreaming behavior should be observable among persons differing in various aspects of mental health.

Three prominent theories explaining dream behavior seem to be paramount in guiding research presently being completed which are attempting to explain individual variance in dream behavior and the functions of dreaming. These theories include the repression theory, the continuity theory and the salience theory.

The repression theory of dreaming derives its basis in psychoanalytic theory and also statements from other personality theorists such as Perls. The basic tenet of this theory is that repression of unacceptable psychological data is responsible for difference in dream recall and other aspects of dream behavior. Repression is defined in a dream context as "massive psychological expulsion of dream content at the moment of wakening" (Goodenough, et. al., 1974, p. 32).

Cohen (1973) illustrated the prevalence of the repression theory among psychologists and then tested the

validity of the low recaller-repressor stereotype. A personality sketch of a controlled, conservative, rule conscious, "repressing" person was read to a large group of undergraduates who were then asked to try to locate a person who fit the description as closely as possible and then ask that person to fill out a dream recall frequency questionnaire. Of 25 questionnaires returned, 16% of respondents were frequent recallers (recalled dreams every other day or more, 32% were average recallers (recalled dreams once or twice a week), and 52% were infrequent recallers (recalled dreams once a month or less).

In results of statistical analysis of the repression theory, small but significant correlations have sometimes been found between personality test measures of repression and classification as an infrequent dream reporter (Robbins & Tanck, 1970; Tart, 1962; Singer & Schonbar, 1961). There have also been studies which have reported contrary findings (Cohen, 1973, 1974). The repression theory has been studied primarily in a home setting and has frequently been correlated with whether or not a person is "field-dependent" or "field-independent" (Bone, Thomas & Kinsolving, 1972; Witkin, 1970). Witkin, et. al. (1962) found that field-dependent persons tend to be infrequent dream reporters and that they are also likely to use repression as a predominant defense mechanism.

Some dream laboratory work has also been accomplished relative to the repression issue. Foukles and Rechtschaffen (1964) and Larson (1970) found no relationship between frequency of dream recall after being awakened in the laboratory and personality test measures of repression. Cartwright, Bernick, Borowitz and Kling (1969) attribute an increase in failure to recall dream content upon awakening following the viewing of a sexually exciting film to repression. Foulkes, et. al., (1967) obtained similar results, but Foulkes and Rechtschaffen (1964) and Karacan, et. al. (1966) did not.

One area presently being proposed to provide evidence for the repression hypothesis is the frequency of "no-content" dreams or dreams reported upon awakening in which the subject knows he has been dreaming but cannot recall any of the dream's content. Studies have suggested that pre-sleep stress increases the frequency of "no-content" dream reports (Cohen, 1972; Goodenough, et. al., 1974).

In summary, evidence presently available does not provide convincing evidence for the repression hypothesis of dream behavior.

The "continuity hypothesis", which is presently being used as a basis for much dream research, is constructed on the assumption that there is a direct and continuous relationship between dreaming and life-style or that waking style affects dreams and dreaming affects

subsequent waking behavior (Shulman, 1969; Hall, 1966). This theory has been investigated by research studying the incorporation of salient presleep events into dream content (Baekeland, 1971; Cohen, 1972; Tart & Dick, 1970), and by studies correlating waking and dream content measures of personality (Breger, Hunter & Lane, 1971; Hersen, 1971; Baekeland, 1971).

One illustrative study was completed by Starker (1977) in which daydreaming and nocturnal dreaming process and affect were compared for 48 male students. Daydreaming styles were found to correspond significantly with night dreaming style. Dreams were categorized into positive, negative and anxious dreaming styles. In an additional study, Harris and Ray (1977) found similarities between dreams and conscious experience in that an individual's general approach to life situations in terms of activity and passivity is the same whether in awake behavior or dream behavior and content.

The continuity theory suggests also that masculine or feminine attitudes and behavior or coping styles, in addition to other characteristic personality traits, should be reflected in the dreams of males and females and should differentiate between the dreams of each.

The third prevalently used theory is based on the operation of "classical laws" of memory. Recall of dreams has been correlated with serial position, primacy, recency

and length of list as related to dreams (Trinder & Kramer, 1971; Baekeland & Lasky, 1968). A subtheory of the memory hypothesis which has received special attention is the "salience hypothesis" of dream recall in which the longest, most intense and most affectful dreams are proposed to be recalled more frequently because of the subjective impact of the dreams.

In a study by Cohen and MacNeilage (1974), dream recall data was collected from eight male, frequent dream recallers and eight male, infrequent dream recallers. Subjective impact in terms of dream vividness, bizarreness, emotionality, and activity were used to differentiate between dreams of the frequent and infrequent recallers. Vividness and emotionality were found to significantly differentiate between these dreams.

The salience theory purports that as the subjective impact of dreams intensifies, dreams will be recalled more frequently, dreams will be recalled with more vividness and the affective processes involved in the dreaming may become more intense.

#### Need For and Functions of Dream Sleep

The functions of sleep and especially dream sleep have been a strong focus in recent years. Research has indicated that dream sleep may play a more crucial role than previously suspected in maintaining psychological health and affective adaptability.



Research has established that man has a need to dream through studies of dream deprivation. When deprived of four to seven nights of dreaming by being awakened at the beginning of REM (or dream sleep) periods of sleep, subjects became irritable and hostile; they experienced problems with motor coordination, memory, concentration, startle reaction and sense of time (summarized by Fisher, 1967).

Several studies lend support to the hypothesis that low neuroticism subjects, especially, use dreaming as an aid to integration. Studies in REM-sleep deprivation (Takazawa, et. al., 1975; Cohen, 1975; Cartwright & Monroe, 1968; Pivik & Foukles, 1966) have shown that low neuroticism subjects show a motivation to restore lost dream time by a more rapid onset of REM sleep, more eye movement and more dream recall caused by higher dream intensity following REM-sleep deprivation.

Cohen (1977) reported results of a study investigating block design performance of high neuroticism subjects compared with low neuroticism subjects before and after REM deprivation. REM deprivation had a very marked depressing effect on low neuroticism subjects' performance, an effect which was not observed in high neuroticism subjects.

Clemes and Dement (1967) reported that subjects deprived of REM or dream sleep for six consecutive nights experienced higher intensity of feeling and need, and an

increase in deviant or autistic thinking on Rorschach responses.

DeKloninck (1973) studied the effect of sleep and dreams on anxiety produced by a stressful film. Subjects who saw the film twice with an intervening eight-hour waking interval tended to be more anxious at the second presentation than subjects who slept during the interval.

There are indications that cognitive functioning seems to remain intact under dream deprivation. A study reported by Chernik (1970) found that dream deprivation did not significantly effect results of tests measuring learning, retention or performance on cognitive tasks.

Hartmann, et. al. (1971) compared two groups of "psychologically healthy" men varying in sleep need. One group slept more than nine hours per day and the other group habitually slept less than six hours per day. Even after elimination of persons who showed any deviance on any of several psychological tests administered, some strong personality differences between the two groups remained. The short sleepers were efficient, hardworking and hypomanic, while the long sleepers tended to be anxious, depressed and withdrawn. Both groups had similar slow-wave-sleep time, but the long sleepers had twice as much dream (REM) sleep. The authors suggested that there may be two separate requirements for sleep - a relatively constant requirement for slow-wave-sleep and a

requirement for dream sleep that is related to the individual's personality and life style.

That dream sleep serves an adaptive function was supported by a study completed by Grieser, Greenberg and Harrison (1972). The study examined the effects of sleep and dreaming compared with dream deprivation on the recall of threatening or nonthreatening material by forty college students. The subjects who slept recalled neutral tasks better than subjects who didn't sleep, and subjects who had REM sleep recalled threatening material better than those who had no opportunity to dream. Grieser, et. al. state that results indicate that non-REM sleep facilitates retention of non-emotional material, while REM or dream sleep deals with material containing affective components.

In short, research has validated the importance of investigating the dream as a particularly important element, functioning to maintain adaptive emotional functioning.

#### Research Concerning Dream Recall Frequency

Dream Research has indicated that the average person only remembers about ten percent of their dreams (Paupst & Robinson, 1975). Dreaming has been associated with REM sleep through the work of Aserinsky and Kleitman (1953, 1955), Dement and Kleitman (1957) and others. Subjects who were awakened from REM sleep recalled dreams more often (about 80% of the time) than when awakened

from non-REM sleep. Studies since that time have established that dreaming also occurs, especially in the later part of the night, in non-REM sleep (Goodenough, Lewis, et. al., 1965; Kales & Jacobson, 1967; Foukles, 1967). As a result of this and other dream frequency research, Webb (1975) speculates that dreams provide a vast untouched reservoir of understanding. He states that even from the conservative assumption of three REM periods per night and two dream stories within those periods, there would be a resultant 150,000 dreams by each person over a life span of 70 years. Subjects who claim to have few dreams have been found to have as many REM periods as those who report a high dream rate (Antrobus, et. al., 1964). Also when awakened during a REM period, low dream-recallers report a dream at least half of the time (Goodenough, 1967).

Differences among individuals in their ability to recall dreams when awakened in a sleep laboratory are surprizingly small (Meier, Ruff & Ziegler, 1968). Variance in ability to recall dreams occurs, therefore, in the ability to recall dreams when the subject arises in the morning. Therefore, that variance would seem to be the logical target of explanatory personality research.

Personality correlates of frequent versus infrequent dream reporting has been a fairly frequent topic of research. Cohen (1970) reviewed dream recall research previously completed and found inconsistency in results.

Donelson (1973) and Cohen (1970) reviewed research concerning high versus low dream recallers and concluded that evidence indicated that high recallers showed more overt, manifest anxiety and relative underuse of repressive types of defense mechanisms. Nonrecallers seem to be relatively nonanxious and use repression and other defense mechanisms to avoid anxiety. Antrobus, et. al. (1964) inferred that because nonrecallers have more rapid eye movements during a shorter period of time, they are attempting to avoid dreaming. Low dream recall, he concluded, may indicate a fear of knowing oneself.

Several other studies have reported a positive relation between anxiety and dream recall frequency (Connor & Boblitt, 1970; Domhoff & Gerson, 1967). Schonbar (1965) found a high recaller to be aware of his inner world of fantasy and anxiety, to be a person who can use his inner world in the sense of independency and who has self-control and self-determination. However, failures to confirm the frequency-anxiety relationship have been reported (Farley, Schmullar & Fischbach, 1971; Robbins & Tanch, 1970). Farley, Schmullar and Fischbach (1971) compared introversion-extroversion and neuroticism as measured by the Eysenck Personality Inventory with dream recall, measured by the subjects' own estimation of recall on a seven point scale. No relationship of differences on these variables with dream recall was found.

Other studies have found ego-strength and repression to be negatively related to dream recall (Connor & Boblitt, 1970; Domhoff & Gerson, 1967). Additional research has, however, failed also to confirm these results (Robbins & Tanck, 1970; Cohen & Wolfe, 1973). Bone (1968) found a modest relationship between frequency of recall and extroversion for a sample of women but no correlation for men. Farley, et. al. (1971) found no correlation for the same variables for either sex. Wallach (1963), using MMPI scales, concluded that subjects showing a high frequency of dream recall tended to be introspective, more sensitive to their inner feelings and states and more expressive. Fulkles (1966), however, found a negative relationship between recall frequency and psychological-mindedness or interest in the subjective world of thoughts and feelings.

Early (1977) compared dream recall frequency as measured by a questionnaire with MMPI subscales and the Meyers-Briggs Type Indicator. Early particularly studied results of the Masculinity-Femininity scale, the repression-sensitization scale and the ego-strength scale and found none of these variables to differ significantly between high and low dream recall groups. Early attributed this failure to inappropriateness of the questionnaire for dream recall measurement.

Paupst and Robinson (1975) report a study which concluded that recallers have an image of themselves as

possessing more control over their lives, show more introspection and interest in the workings of their own minds.

Hill (1974) investigated the capacity of subscale scores of the 16 Personality Factor Questionnaire to discriminate between twenty-five high recallers and twenty-five low recallers. Six primary traits were found to contribute most to the discrimination between groups; ego-strength, superego-strength, parmia, premsia, guilt proneness and radicalism.

Several studies have investigated the effects of pre-sleep stress or mood on recall. Cohen (1974) reported that infrequent recallers recalled more dreams when their presleep self-confidence was low for a sample of eighty-one college women. Low self-confidence was associated with unpleasant dream affect and high with pleasant dream affect.

Goodenough, et. al. (1974) studied the effects of presleep stress on field-dependent and independent subjects' dream recall for twenty-eight male college students. Stress was reported to increase recall for field-dependent subjects only. The most affectful dreams were best recalled. No content dreams increased significantly with presleep stress and are discussed as being the best evidence of repression.

Cohen (1972) studied the effects of presleep stress on home dream recall for fifty-seven male college students

and found more contentless and vague dream recall in the stress condition, especially, for infrequent dream recallers.

Cohen (1974) studied the effects of presleep mood on dream recall for sixty-seven college women and found dream recall to be more frequent following negative mood, especially for infrequent recallers, and that negative mood was associated with more unpleasant dreams, especially for subjects reporting lower self-confidence.

Research indicates that dream recall has been studied in three contexts: ordinary home, dream laboratory primarily with a sleep interruption technique and subsequent time recall. It would seem that a method involving monitored home reporting would provide the most valid indication of natural dream recall.

There have also been three primarily used methods for measuring frequency of dream recall. Frequency of report of a dream when aroused from sleep in the laboratory has been studied; questionnaires have been used in which subjects were asked to describe or rate the frequency with which they considered themselves to have dreamed; and subjects have been asked to keep a diary in which the daily incidence of remembered dreams has been logged. Cohen (1969) found a strong association between the distribution of recall frequency as measured by the diary and sleep-interruption methods and considered the diary



method to be a valid indicator of dream recall frequency and other dream variables.

Cohen (1970) summarized research on dream recall and concluded that there is much yet to be accomplished in understanding the causes of dream recall differences. He stated: "At present, dream recall can best be thought of as the outcome of as yet barely understood factors from the domains of physiology, experimental methodology and personality" (Cohen, 1970, p. 488). Since this time, little has been accomplished which would illuminate dream behavior, especially any interactions of variables affecting dreaming.

#### Personality and Dream Behavior

Several studies have investigated the relationship between personality, especially neuroticism, and dream behavior.

Cohen (1977) reviewed research completed linking personality and dreaming and stated that measures of neuroticism account for variations in psychological (dream content) characteristics.

Cohen and Cox (1975) found that for neurotic subjects, dream unpleasantness is associated with excitement, bizarreness and personal significance. For normals dream pleasantness, rather than unpleasantness, tends to be associated with excitement, bizarreness and personal significance. Cohen and Cox also found that more high

neuroticism subjects reported dreams in past or future, while more low neuroticism subjects reported dreams taking place in the present.

Several studies have indicated that dream behavior may be associated with specific personality variables. Astrachen (1978) devised a rating scale for dreams, using analysis of manifest content, which effectively differentiated between schizophrenics and normals and between neurotics and schizophrenics on the basis of degree of dream distortion.

Jones (1978) analyzed the dreams of pregnant women and found more aggression and environmental threat and more past references than for a group of non-pregnant women. Cartwright (1972) investigated dream and dream-like fantasy of persons scoring high versus low on the Schizophrenia scale of the MMPI and found that high Sc persons showed less differentiation between dreams and dream-like fantasy.

The results of a Cohen (1974) study suggest that individuals who cope effectively during wakefulness will, during dream sleep, tend to resolve negative presleep mood in the form of successful or pleasant dreams. Individuals who typically do not cope effectively during wakefulness will not cope effectively during dreaming sleep, but will respond to negative presleep mood with negative dreams.

Hauri (1976) studied dreams of depressive personalities

and indicated that dream content of persons remitted from reactive depression still differed significantly from normals. Remitted patients' dreams still showed more masochism, hostility in the environment and more inanimate objects possessing the ability to move.

Cohen and Cox (1975) found a significant correlation between stressful-nonstressful presleep condition and dream affect for neurotic subjects. There was no relationship found for normal subjects.

Cohen (1977) concluded his review of personality differences in dreaming by stating that low neuroticism subjects tend to make more exclusive use of REM sleep. Cohen states that two fundamental hypotheses need to be investigated: 1) there is continuity in the psychology of wakefulness and sleep and 2) that dreaming serves an adaptive function.

The work of Goodenough, Lewis and Shapiro (Goodenough, 1967) indicated that subjects who report vague dreams (dream recall without details), vivid dreams, and no dreams may differ in personality variables. Therefore, vividness of recalled dreams may be an important variable to consider in studies of dream behavior.

Research on personality variables has also indicated a need to analyze dream data differences between male and female subjects. Differences between male and female subjects in terms of dream content have been found. Two

studies (Van de Castle, 1970; Hall & Van de Castle, 1966) reported that women dream more about people and make more esthetic and moral judgments than men, who tend to identify objects in terms of size, speed and intensity. Men have more dreams of physical activities, overt sex, aggression, failure or success. Women dream more of verbal activity and emotional reactions. It would follow logically, that there may also be differences in other areas of dream behavior. Cohen (1973) compared dream content of male and female subjects scoring high versus low on the femininity scale of the CPI. High masculinity subjects reported aggressive dreams more often. Persons with contrary sex-role orientation reported more unpleasant dreams.

### Summary

In summary, sex of the dreamer, dream recall, dream content, dream affect and vividness as well as personality characteristics may be important variables to consider in an analysis of dream behavior as indicated by results presently available in the literature. Personality variables presently emphasized in theory and in research are repression, anxiety and ego-strength (included as an indication of general psychological health or adaptability).

The inconsistency of results obtained in past research could be a product of the presence of interaction effects among any or all of the variables mentioned above. There

is, at present, in the literature a dearth of research dealing with the interaction effects of dream variables. This research was developed to further the investigation of the variables mentioned and any interaction effects present.

## CHAPTER III

## METHODOLOGY

The literature has shown an emphasis on the understanding of dream behavior to be prevalent in theoretical writings. Some studies have found personality variables such as anxiety and control to differentiate between high and low dream recallers, while other research has failed to substantiate such personality differences. Neurotics and normals have been found to differ on several dream variables, i.e., dream affect, temporal reference, dream-like fantasy and response to REM or dream sleep deprivation.

Males and females have also been found to differ significantly in reported specific dream content. Vividness of dream recall has been indicated as a possible differentiating factor between people of different personality types.

In reviewing literature presently available, little explanatory research has been completed in the investigation of dream sleep characteristics of persons with specific personality characteristics such as high ego-strength versus low ego-strength. There seems, especially, to be little research investigating interactions between specific characteristics of dream subjects and their dream behavior.

Cronbach (1975) discussed the need in psychology for more research which would be open to the investigation of individual differences and to interaction effects. He stated that the central focus of the study of human behavior should be the specific principles that apply to unique individuals as well as the general principles that apply to bodies of individuals. Cronbach also emphasized the need for nonmanipulatory research by stating "Correlational research is distinguished from manipulative research in that it accepts the natural range of variables, instead of shaping conditions to represent a hypothesis" (Cronbach, 1975, p. 124).

Webb (1975) speculated that dreams could provide a vast untouched reservoir of personality information and he estimated a possible 150,000 dreams per person over a life span of 70 years.

It was the purpose of the presented research to investigate differences in dreaming behavior, interactions of variables involved, as well as personality factors affecting dream behavior.

### Sample

The population considered for this study was Utah State University students who volunteered for the study. Posters were placed in campus dorms asking for volunteers to participate in a research project dealing with dreams. Volunteers were asked to contact the researcher at the

West High Rise dormitory and were told that they would be contacted further concerning research procedures. The first 60 students who volunteered were considered as subjects. During the course of the project, seven subjects withdrew, leaving 22 males and 31 females. Upon agreeing to help with the study, subjects were informed that their involvement would require that they take a personality inventory and keep a dream log or diary for a four week period. They were asked to sign a release of information form (Appendix A).

### Procedure

Research reviewed revealed that dream research has been conducted in three contexts: ordinary home, dream laboratory with a sleep interruption technique and in subsequent time recall. It was decided to monitor dream behavior in the home because it was concluded that home reporting would provide the most valid indication of natural dream recall.

Dream research reviewed also revealed three primarily used methods of measuring dream recall frequency. Report of dreams recalled when aroused from sleep has been studied; questionnaires have been used in which subjects describe or estimate their recall, and subjects have been asked to keep a diary describing dreams and answering questions rating their dreams and frequency of dreaming. Because of difficulties in providing facilities for laboratory



dreaming and because the diary method has been found to be a valid method of dream collection (Cohen, 1969), it was decided to ask subjects to report and rate their own dreams in this study.

Subjects were administered the Minnesota Multiphasic Personality Inventory (MMPI). At the time of testing each subject was given a dream log (Appendix B) and instructed concerning its' contents and use. The dream log was completed by each subject and consisted of areas to record the following: 1) number of recalled dreams each morning upon awakening, 2) whether the dream was vividly or vaguely recalled, and 3) if the dream fit into a described positive or negative content-process category.

Positive dreams were described as being those of a pleasurable or fantasy nature, as well as dreams in which the subject encountered a conflict or problem and was able to resolve the problem or work toward a solution.

Negative dreams were described as being those in which the subject experienced a conflict or difficult situation and was unable to work toward a solution, or was overwhelmed by the problem. Negative dreams were also those considered to be disorganized, frightening or of a nightmare quality.

Vague dreams were described as those in which a person awakes with an impression that he has dreamed, but does not remember details of the dream. Vivid dreams were

described as those which the dreamer can remember in some detail, either a portion of or in its' entirety.

Subjects were contacted several times during the four week recording period to discuss any problems with the procedures and to assure completeness and accuracy of the dream log.

Dream logs were collected at the end of the four week period.

### Instruments

#### Minnesota Multiphasic Personality Inventory (MMPI).

The 556-item MMPI was developed as a complex psychological instrument designed to diagnose mental patients into different categories of neurosis and psychosis. Since the time of its development, the MMPI's use has extended to diverse types of clinical and non-clinical psychological settings.

The MMPI consists of 556 statements which the examinee classifies as "true" or "false". In its regular scoring, the MMPI provides scores on ten "clinical" scales and three "validity" scales.

In addition, the MMPI's diagnostic origins have been expanded through the development of a number of research scales to include a person's behavior, attitudes, thought patterns and strengths. Three of the research scales, Conscious Anxiety, Conscious Repression and Ego-strength were used for the present study.

The Conscious Anxiety, or A scale is a quantitative measure of overt anxiety present at the actual time of testing. In Welsh's (1956) factor analysis of the MMPI, the A scale was determined to be one of two main factors of the test (the R scale being the other major factor).

Duckworth and Duckworth (1975) report that a high Conscious Anxiety scale score (T=60 or higher) is usually an indication that the person is overly anxious about something. A low Anxiety scale score (T=45 or below) indicates that the person is relatively free from conscious anxiety.

The Anxiety scale consists of 39 items which measure anxiety by asking about thinking and thought processes, energy level, pessimism, sensitivity and negative affective tone.

In a test-retest study by Jurjevich (1966) of the A scale, it was noted that the scale seemed to be quite unstable. This instability was assumed to imply that the scale is quite sensitive in relation to fluctuating levels of experienced anxiety. Parsons, et. al. (1968) instructed a group taking the MMPI to "take this test trying to look as good as possible". Results showed that the A scale shifted more than any other MMPI scale and became significantly lower.

The Conscious Repression (R) subscale of the MMPI was developed as a measure of the second factor of Welsh's

1956 factor analysis of the MMPI. The Conscious Repression scale consists of 40 items measuring health and physical symptoms, emotionality, violence and activity, social dominance, feelings of personal adequacy and personal appearance and also personal and vocational interests. The R scale seems to measure the use of denial and rationalization as coping behaviors and a lack of effective self-insight (Duckworth & Duckworth, 1975). The low R score (T=45 or below) indicates a lack of conscious repression and a willingness to be open and self-disclosing to others. A high R score (T=60 or above) indicates that there are areas of an individual's life which he does not want to share with others. One study (Block & Bailey, 1955) found that high R males were seen as being people who readily made concessions and sidestepped trouble or disagreeable situations rather than face unpleasantness of any sort.

A test-retest correlation was obtained on a sample of 71 college sophomores and was reported to be .74. Scores on the R scale have been compared for many different groups. Groups have been found to differ in predicted directions (Welsh & Dahlstrom, 1956, p. 279).

The Ego-strength (Es) scale is described as being one of the best indicators of psychological health on the MMPI.

It seems to be a measure of ego-resilience (Duckworth & Duckworth, 1975).

The Ego-strength scale consists of 68 items measuring physiological stability and good health, a strong sense of reality, feelings of personal adequacy and vitality and spontaneity and intelligence (Barron, 1953). Barron produced the Es scale to differentiate between individuals who showed a greater degree of improvement after psychotherapy from individuals with similar problems who did not improve.

Kleinmutz (1960) reports that in a study involving college students, the Es scale was significantly higher for adjusted college students when compared with maladjusted college students. Arnold (1970) found that marital conflict was more likely to occur if the ego-strength scores were below 50 or if there were a difference of more than 15 points between the two Es scores. Also, in a study of vocational interest and personality, Crites (1960) found that persons with higher Es tended to have more highly developed interest patterns on the Strong Vocational Interest Blank.

The odd-even reliability of the scale in a clinic population was .76. Test-retest reliability over a three month period was .72 (Barron, 1953).

Ego-strength T-scores for college students average between 55 and 65 (Duckworth & Duckworth, 1975). Persons

scoring high (T=60 or above) on the Es scale are described as being more able to deal with problems effectively, not becoming debilitated by them. Persons scoring low (T=45 or below) on the Es scale are experiencing feelings of worthlessness. The lower the score, the less the person is able to cope effectively with difficulties. Duckworth and Duckworth (1975) describe the Es scale as a measure of ego-resiliency, or the ability to recover from environmental pressures and problems.

Rationale for the use of selected MMPI subscales.

The prominent theories explaining dream behavior indicate that dreaming is used by the individual to integrate both present and past psychologically-difficult material. Research reviewed by Cohen (1977) adds support to these theories. Therefore, subscales of the MMPI which correspond to the hypothesized relationships proposed by these theories were selected for study.

The Conscious Anxiety scale was selected for investigation in this study in view of recent theoretical proposals which suggest that dreaming serves an incorporating and adaptive function relative to the person's mood or emotional level. If a person is experiencing a higher level of anxiety, and thus a higher A scale score, dream recall and vividness could increase to help the individual cope with the anxiety. Continuity theory states that content or process of dreaming should be consistent with

the person's need to resolve difficulties. In this view, a person with a high A scale score should have a higher frequency of dreams while attempting to work with the anxiety.

The Conscious Repression scale has been found to measure repression, denial and rationalization as coping behaviors. This subscale was selected for investigation because repression, used as a waking behavior pattern could strongly affect dreaming behavior. Dreaming could intensify in an increased attempt to deal with material which is denied in waking processes. This could be consistent with results of studies concerning sleep deprivation in a normal population in which dreaming intensified to compensate for lost REM sleep. Another possibility could be that the psychological defense pattern could be consistent both in sleeping and in waking styles. Therefore, persons higher in conscious repression would also repress dreaming behavior and especially memory.

The Ego-strength subscale of the MMPI was selected for investigation because it has been found to be a valid indicator of psychological health and adjustment, especially in college students. It seems to be a measure of ego-resiliency or the ability to recover from environmental pressures and problems. If the adaptive theory is substantiated by research, persons utilizing their dreams effectively to integrate waking material should score

higher on ego-strength. Therefore, persons scoring high on Ego-strength should recall more dreams, more vividly and show more functional and positive dream processes.

In keeping with the need expressed by Cronbach and others for research which would investigate all areas available through the data collected, other patterns observed in looking at dream data and MMPI variables measured were analyzed and will be discussed in this study.

#### Treatment of the Data

Total number of dreams recalled for the four week period were computed for each subject. Subjects were listed in order from the highest number of recalled dreams to the lowest. These subjects were divided into two groups, high recall and low recall.

Proportions of positive to negative content-process dreams were computed for each subject. The higher half of subjects with the highest proportion of positive dreams checked for the four week period were considered to be the positive group. The lower 50% of subjects were considered to be the negative group. The percentages of total dreams recalled, reported in each content-process subcategory (Pleasurable, Working, Conflict and Disorganized/Frightening) were also computed.

Hypothesis 1 stated that there is no difference on scores of the MMPI Conscious Anxiety scale between male and female subjects, high-low dream recall or positive



versus negative dream content-process. A 2 x 2 x 2, 3-way analysis of variance was computed to test this null hypothesis. Significance level was established at .05. A schematic representation of analyses of variance for hypotheses 1 through 3 is presented in Figure 1.

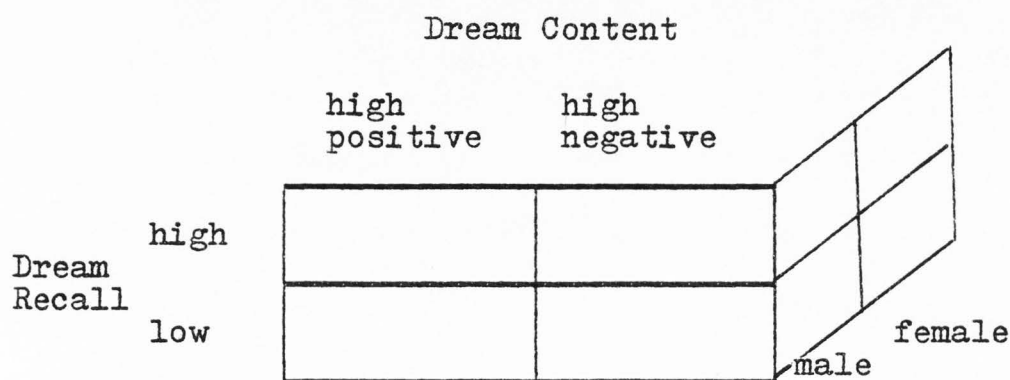


Figure 1. Schematic representation of analysis of variance design for hypotheses 1 through 3.

Hypothesis 2 stated that there is no difference on scores of the MMPI Conscious Repression scale between male and female subjects, high-low dream recall groups or positive versus negative dream content-process groups. A 2 x 2 x 2, 3-way analysis of variance was computed to test this null hypothesis. Analyses were analyzed for significance at the .05 level.

Hypothesis 3 stated that there is no difference on scores of the MMPI Ego-strength scale between male and female subjects, high-low dream recall groups or positive versus negative dream content-process groups. A 2 x 2 x 2,

3-way analysis of variance was computed to test this null hypothesis, also. Analyses were analyzed for significance at the .05 level.

A percentage of total dreams classified as being vivid in nature was computed for each subject. The top 50 percent of subjects reporting the highest percentage of their dreams in the "vivid" category comprised the "vivid" group and the lower 50 percent reporting the lowest percentage of their dreams classified as "vivid" comprised the "vague" dream recall group.

Hypothesis 4 stated that there is no difference on scores of the MMPI Ego-strength scale between individuals reporting a high percentage of their dreams classified as vivid versus those reporting a higher percentage of their dreams classified as vague, male versus female subjects and subjects reporting high or low dream recall level.

A 2 x 2 x 2, 3-way analysis of variance was computed to test this hypothesis. Data was analyzed for significance at the .05 level.

Other trends noted between MMPI profiles and dream behavior upon observation of data were analyzed and will be discussed in the Results and Discussion sections.

## CHAPTER IV

## RESULTS

Data was collected from completion of a four-week dream log and an MMPI test by fifty-three subjects. The relationship of scores from MMPI subscales, Conscious Anxiety, Conscious Repression and Ego-strength, and dream log variables of frequency of dream recall, vividness of dreams recalled and positive versus negative dream content or process were analyzed. Analysis was conducted to determine what main effects and/or interactions, if any, were present in the data.

Table 1 lists means and standard deviations of MMPI subscale scores as well as data collected from dream log variables for male and female subjects and for the total sample group. Means reported for the Conscious Anxiety, Conscious Repression and Ego-strength subscales are representative of a well-functioning college population.

Anderson and Duckworth (1969) reported that average Ego-strength scale scores for a college student population range between 55 and 65. The mean score for the subjects in the present study of approximately 56 is, therefore, within this average range, indicating that Ego-strength scores are comparable for this sample with typical college

Table 1

Means and Standard Deviations of Sample Tested  
on the MMPI and Dream Log Variables (n=53)

Variables	Total		Male		Female	
	Mean	SD	Mean	SD	Mean	SD
MMPI						
A	44.88	10.61	45.86	8.06	44.19	12.18
R	46.49	9.37	49.41	8.97	44.74	9.03
Es	55.87	10.16	55.77	9.66	55.97	12.10
Dream Log*						
Tot. Dr.	29.42	13.72	25.50	12.61	32.19	13.99
% Viv	50.94	19.85	46.40	20.77	56.35	18.57
% Vag	48.38	20.65	53.50	20.75	42.65	19.71
% +	69.51	15.19	70.23	14.08	69.64	15.96
% -	28.68	15.31	29.32	15.20	28.22	15.62
% Plea.	26.17	17.55	31.92	15.49	22.74	18.03
% Wor.	24.64	17.02	22.09	15.53	26.45	18.03
% Con.	13.30	10.13	15.05	9.17	12.06	10.73
% Dis.	8.15	8.47	7.86	7.45	8.35	9.25

\*Percentages within the subcategories may not add up to 100% because Total Dreams included some dreams that were remembered too vaguely to rate.

student scores and are in the high average range of Es scores for the population as a whole.

The means reported for the Conscious Anxiety scores are approximately on the cut off point (T=45 or below) used to delineate persons with low anxiety. The mean reported for female subjects on the Conscious Repression subscale is also approximately on the cutoff point (T=45 or below) used to delineate persons with low levels of repression. The mean reported for male subjects is very close to the average reported for persons usually taking the test.

The results of this study will be reported relative to each of the hypotheses stated in Chapter 3. As a result of reviewing the data, additional trends were noted and therefore analyzed. Results of additional analyses will be presented in a separate section within the Results chapter, subtitled "Additional Results".

### Hypothesis I

Hypothesis 1 stated that there would be no difference between male and female subjects, persons reporting high or low dream recall levels or subjects reporting predominately positive versus predominantly negative dream content-process categories of dreams, on Conscious Anxiety as measured by the MMPI.

A 2 x 2 x 2, 3-way analysis of variance for unequal number of subjects was computed to test this null

hypothesis. Results of this analysis are reported in Table 2. None of the results of this analysis were found to be significant at the .05 level.

The hypothesis of no significant difference on Conscious Anxiety scores between male and female subjects, high and low dream recallers and subjects reporting positive versus negative content-process categories was supported by the analysis.

Table 2

Summary of Analysis of Variance Results for  
Conscious Anxiety and Dream Variables (n=53)

Source of Variation	SS	DF	MS	F
Main Effects	352.93	3	117.64	.99 NS
Dream Recall	216.96	1	216.96	1.83 NS
Dream Content	83.61	1	83.61	.71 NS
Sex	34.81	1	34.81	.29 NS
2-way Interactions	144.79	3	48.26	.41 NS
DR DC	97.49	1	97.49	.82 NS
DR Sex	41.56	1	41.56	.35 NS
DC Sex	2.56	1	2.56	.02 NS
3-way Interactions	39.23	1	39.23	.33 NS
DR DC Sex	39.23	1	39.23	.33 NS
Explained	536.95	7	76.71	.65 NS
Residual	5320.37	45	118.23	
Total	5857.32	52	112.64	

## Hypothesis 2

Hypothesis 2 stated that there would be no difference between male and female subjects, persons reporting high or low dream recall levels or subjects reporting higher positive versus higher negative dream content-process categories on Conscious Repression as measured by the MMPI.

A 2 x 2 x 2, 3-way analysis of variance for unequal number of subjects was computed to test this null hypothesis. Results of this analysis are reported in Table 3.

Table 3

Summary of Analysis of Variance Results for  
Conscious Repression and Dream Variables (N=53)

Source of Variation	SS	DF	MS	F
Main Effects	526.48	3	175.49	2.24 NS
Dream Recall	115.31	1	115.31	1.47 NS
Dream Content	144.86	1	144.86	1.85 NS
Sex	292.41	1	292.41	3.73 NS
2-way				
Interactions	366.59	3	122.19	1.56 NS
DR DC	7.01	1	7.01	.09 NS
DR Sex	217.74	1	217.74	2.78 NS
DC Sex	118.26	1	118.26	1.51 NS
3-way				
Interactions	.00	1	.00	.00 NS
DR DC Sex	.00	1	.00	.00 NS
Explained	893.07	7	127.58	1.63 NS
Residual	3524.48	45	78.32	
Total	4417.55	52	84.95	

None of the results of this analysis of variance were found to be significant at the .05 level of significance.

The hypothesis of no significant difference on Conscious Repression between male and female subjects, high and low dream recallers, and subjects reporting positive versus negative content-process dream categories was supported by the analysis.

### Hypothesis 3

Hypothesis 3 stated that there would be no difference between male and female subjects, persons reporting high or low dream recall level or subjects reporting higher positive versus higher negative dream content-process categories, on Ego-strength as measured by the MMPI.

A 2 x 2 x 2, 3-way analysis of variance for unequal number of subjects was also computed to test this null hypothesis. Results of this analysis are reported in Table 4. None of the results of this analysis of variance were found to be significant at the .05 level of significance.

The hypothesis of no significant difference on Ego-strength between male and female subjects, high and low dream recallers, and subjects reporting a higher versus lower percent of positive content-process dream categories was supported by the analysis.



Table 4  
 Summary of Analysis of Variance Results for  
 Ego-strength and Dream Variables (n=53)

Source of Variation	SS	DF	MS	F
Main Effects	148.63	3	49.54	.56 NS
Dream Recall	86.52	1	86.52	.97 NS
Dream Content	29.26	1	29.26	.33 NS
Sex	35.40	1	35.40	.40 NS
2-way Interactions	78.82	3	26.27	.30 NS
DR DC	.45	1	.45	.01 NS
DR Sex	70.47	1	70.47	.79 NS
DC Sex	5.11	1	5.11	.06 NS
3-way Interactions	121.88	1	121.88	1.37 NS
DR DC Sex	121.88	1	121.88	1.37 NS
Explained	349.34	7	49.90	.56 NS
Residual	4010.96	45	89.13	
Total	4360.30	52	83.85	

#### Hypothesis 4

Hypothesis 4 stated that there would be no significant difference on scores of the MMPI Ego-strength scale between individuals reporting a higher versus lower percentage of dreams classified as vivid, male and female subjects and subjects reporting high or low dream recall levels.

A 2 x 2 x 2, 3-way analysis of variance was computed to test this null hypothesis. Results of this analysis are reported in Table 5. None of the results of the analysis of hypothesis 4 were found to be significant at the .05 level of significance.

Table 5

Summary of Analysis of Variance Results for  
Ego-strength, Vivid/Vague Dreams, Sex  
and Dream Recall (n=53)

Source of Variation	SS	DF	MS	F
Main Effects	292.60	3	97.53	1.15 NS
Dream Recall	24.02	1	24.02	.28 NS
Vivid/Vague	173.22	1	173.22	2.05 NS
Sex	39.95	1	39.95	.47 NS
2-way				
Interactions	237.83	3	79.28	.94 NS
DR Vi/Va	164.76	1	164.76	1.95 NS
DR Sex	51.69	1	51.69	.61 NS
Vi/Va Sex	24.58	1	24.58	.29 NS
3-way				
Interactions	23.70	1	23.70	.28 NS
DR Vi/Va Sex	23.70	1	23.70	.28 NS
Explained	554.13	7	79.16	.94 NS
Residual	3806.17	45	84.58	
Total	4360.30	52		

The hypothesis of no significant difference on Ego-strength between subjects reporting a higher versus lower percentage of dreams classified as vivid, male and female

subjects and high or low dream recallers was supported by the analysis.

### Additional Results

Further review of data collected revealed additional possible relationships between measured variables. Results of analyses conducted on these observations will be reported in this subsection of Results. At times results found to be significant at the .10 level are noted because results of dream content-process categories are exploratory in nature. Trends and relationships may provide useful material for further research.

Further examination of data was undertaken to investigate two major areas of inquiry: the dream content-process subcategories were investigated and also the relationship between repression and "no content" dreams.

Results of dream content-process subcategories. The division of dream content-process categorization of subject dreams into positive and negative categories for analysis, upon observation of the data, seemed to obscure the variance reported within the four major subcategories. Therefore, the percentage of each subject's dreams categorized within each separate subcategory (pleasurable, working, conflict or disorganized/frightening) was compared with Conscious Repression, Conscious Anxiety and Ego-strength and also between subjects reporting high versus low dream recall. Analysis was carried out in two ways.

A multiple regression analysis was computed to test the amount of variance on the three MMPI subscale score variables which could be explained by dream variable variance. Variables used for correlation were percentage of recalled dreams classified as pleasurable, working, conflict and disorganized; and sex of the subject. Results of multiple regression analyses are presented in Table 6.

Multiple regression equations obtained did not explain a significant amount of the variance obtained for the Conscious Anxiety and Ego-strength variables.

The multiple regression analysis obtained for Conscious Repression, however, reached a significance level of .10. The dream variables considered explained 20 percent of the variance obtained on Conscious Repression subscores. Variables contributing significantly to the explained variance were: sex of the subject, percent of total dreams reported in the Conflict category and percent of total dreams reported in the Disorganized/Frightening category.

In addition to analysis by multiple regression, results were broken down into results of male and female subjects and the relationships between high and low dream recall, high and low levels of anxiety, repression and ego-strength, and results of the four dream content-process subcategories were compared for each of these classifications. A 2 x 2, two-way analysis of variance was computed for dream variables according to the following design.

Table 6

Results of Multiple Regression Analysis for  
Dream Process Subcategories and MMPI Scales (n=53)

Variables	SS	DF	MS	F
<b>Conscious Anxiety</b>				
Regression	514.19	5	102.84	.90 NS
Residual	5343.13	47	113.68	
Variables in the equation				
Sex				.01 NS
% Pleasurable				2.55 NS
% Working				.03 NS
% Conflict				.08 NS
% Disorganized				1.37 NS
Multiple R = .296				
R square = .088				
<b>Conscious Repression</b>				
Regression	882.14	5	176.43	2.35 *
Residual	3535.51	47	75.22	
Variables in the equation				
Sex				5.35 **
% Pleasurable				.52 NS
% Working				.12 NS
% Conflict				3.67 **
% Disorganized				2.64 **
Multiple R = .447				
R square = .200				
<b>Ego-strength</b>				
Regression	692.87	5	138.57	1.77 NS
Residual	3667.44	47	78.03	
Variables in the equation				
Sex				.01 NS
% Pleasurable				4.42 **
% Working				2.26 NS
% Conflict				1.77 NS
% Disorganized				5.46 **
Multiple R = .400				
R square = .160				

\* significant at the .10 level  
\*\* significant at the .05 level

	MMPI subscale variable	
	higher scores	lower scores
higher dream recall	% of dreams in each category	
lower dream recall		

Figure 2

Schematic Representation of Analysis of  
Dream Content-Process Subcategories

If means computed for the cells were approximately equal, no analysis was performed because analysis of variance results would obviously be insignificant.

Table 7 presents analysis of variance results for male subjects' dream content-process subcategories when compared for subjects showing high or low dream recall and high or low scores on MMPI subscales measured. Several F-ratios were found to be significant at the .10 level and are indicated as possible areas of interest for further research because of the small sample size for male subjects.

One variable showing significant analysis of variance results at the .05 level or above is the interaction of repression and dream recall level for male subjects' reported percentage of pleasurable dreams. High recall-high Conscious Repression subjects demonstrated a higher

Table 7

Analysis of Variance Results for Male Subjects'  
 Dream Content-Process Subcategories (n=22)

Source of Variation	SS	DF	MS	F
<b>Disorganized Dreams</b>				
Hi-Low Recall	150	1	150	3.21 *
Hi-Low Anxiety	96	1	96	2.05 NS
Interaction	6	1	6	.13 NS
Within Cell	935.3	20	46.8	
<b>Working Dreams</b>				
Hi-Low Recall	96	1	96	.42 NS
Hi-Low Ego-strength	112.7	1	112.7	.49 NS
Interaction	280.6	1	280.6	1.22 NS
Within Cell	4605	20	230.2	
Hi-Low Recall	13.5	1	13.5	.05 NS
Hi-Low Anxiety	80.7	1	80.7	.31 NS
Interaction	886.5	1	886.5	3.41 *
<b>Pleasurable Dreams</b>				
Hi-Low Recall	586.1	1	586.1	1.84 NS
Hi-Low Repression	16.3	1	16.3	.05 NS
Interaction	1676.7	1	1676.7	5.26 **
Within Cell	6376.2	20	318.8	

\* Significant at the .10 level

\*\* Significant at the .05 level

percentage of pleasurable dreams than high recall-low Conscious Repression subjects. Also, low recall-low Conscious Repression subjects reported a higher percentage of pleasurable dreams than those with high recall-low Conscious Repression. Results are graphed in Figure 3.

Other dream content-process categories not listed showed similar means for high-low recallers and persons scoring high versus low on MMPI subscales measured and were, therefore, not statistically compared.

Table 8 presents results of analysis of variance for female subjects in which results of dream content-process categories were compared for females reporting high versus low dream recall and for those with high versus low levels of Conscious Anxiety, Conscious Repression and Ego-strength. Percentage of reported dreams classified as Disorganized/Frightening produced a significant interaction effect when percentage of Disorganized dreams were compared for high versus low dream recallers and persons with high versus low Ego-strength ( $\text{sig}=.01$ ). Results are graphed in Figure 4.

For subjects reporting high dream recall; subjects with lower Ego-strength scores demonstrated a higher percentage of Disorganized/Frightening dreams than subjects with higher Ego-strength scores. Also, for subjects with lower Ego-strength scores; subjects with high dream recall



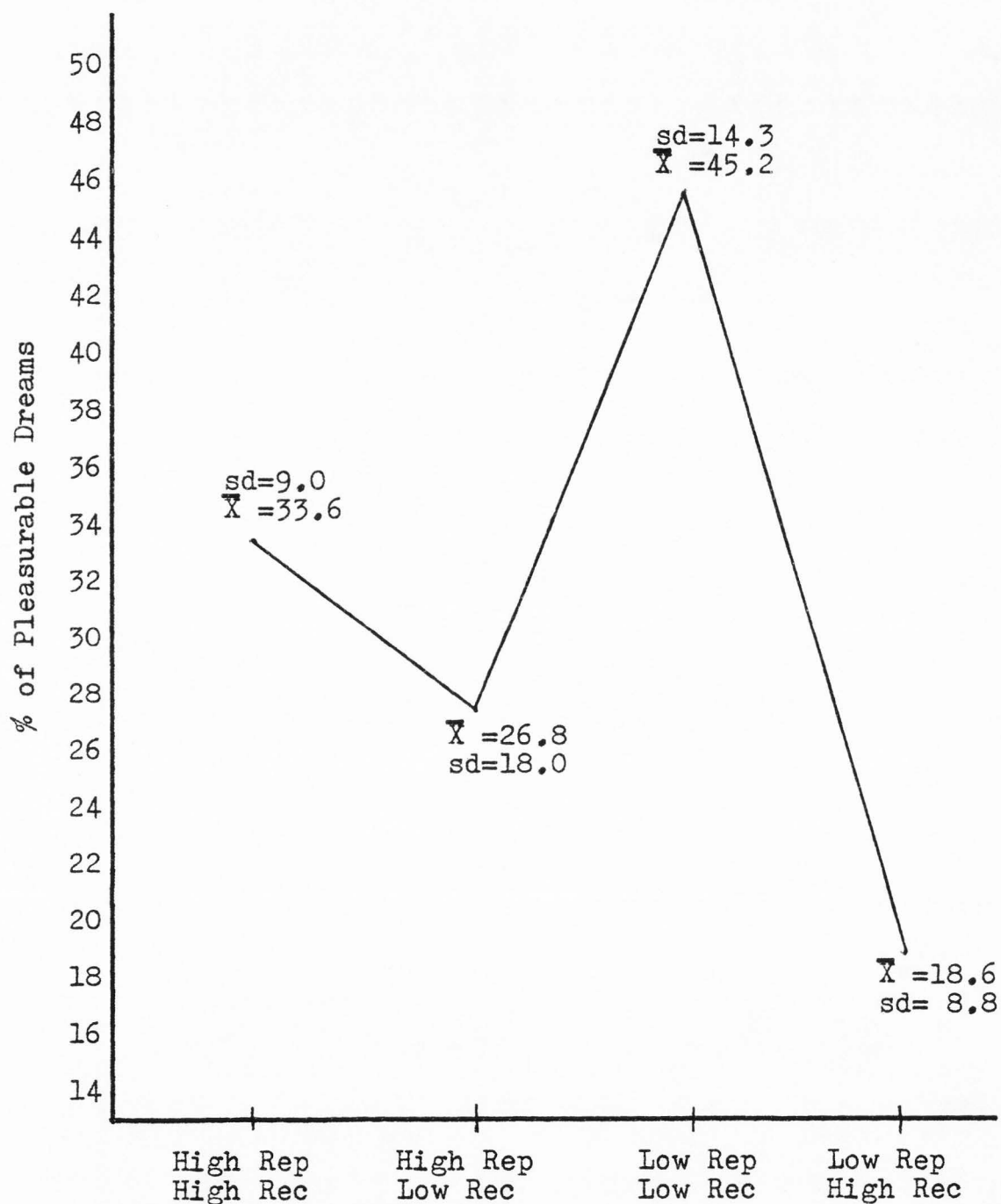


Figure 3. Comparison of Percentage of Pleasurable Dreams for High-Low Conscious Repression and High-Low Dream Recall for Male Subjects (n=22)

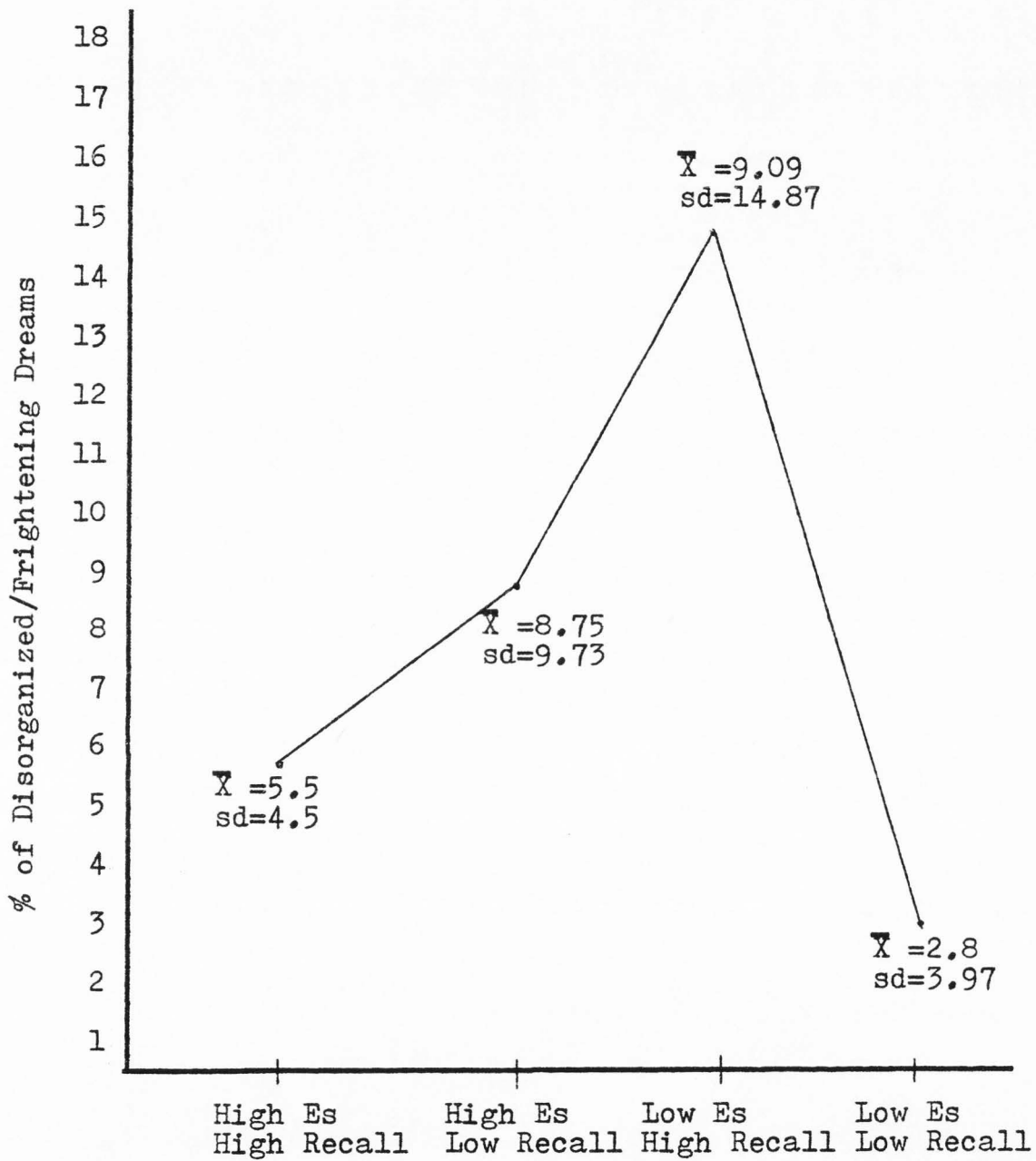


Figure 4. Comparison of Percentage of Female Subjects' Disorganized/Frightening Dreams for High-Low Ego-strength and High-Low Dream Recall (n=31)

levels reported a higher percentage of Disorganized/  
Frightening dreams than low recall subjects.

Table 8

Analysis of Variance Results for Female Subjects  
on Dream Content-Process Subcategories (n=31)

Source of Variation	SS	DF	MS	F
Disorganized Dreams				
Hi-Low Recall	153.1	1	153.1	2.86 NS
Hi-Low Ego-strength	24.5	1	24.5	.46 NS
Interaction	465.1	1	465.1	8.70***
Within Cell	1497.3	28	53.5	

\*\*\*Significant at the .01 level

There were no significant differences between means observed on the other variables of Conscious Anxiety and Conscious Repression or for other dream categories for female subjects.

It was noticed, however, that the variance found among female subjects' percentage of reported Working dreams was much greater for low dream recall-high Conscious Repression subjects ( $sd=29.02$ ) than for other categories (high repression-high recall,  $sd=13.43$ ; low repression-low recall,  $sd=13.34$ ; low repression-high recall,  $sd=11.34$ ). Using a test of significance of difference in variance, the observed variance difference

was found to be significant ( $F=6.53$ ,  $df=7/6$ ) at the .05 level. Persons in the high Conscious Repression-low recall group report either a very high percentage or a very low percentage of working dreams, contrasted to a more uniform (approximately 25% of total dreams reported in the working category) percentage for persons in the other three classifications.

Duckworth and Duckworth (1975) discuss the advisability of considering the interaction of the Conscious Repression and the Conscious Anxiety MMPI subscales, especially, with some subjects. Therefore, the interactions between Conscious Repression and Conscious Anxiety with dream content-process category percentages and also between Conscious Repression and Ego-strength for these percentages were investigated.

The half of subjects with the highest scores were considered to be the "high" group for the MMPI subscales, and the half with the lowest scores were considered to be the "low" group for these subscales.

Table 9 lists results of analyses of variance computed between those mean differences which showed possible significance. Both analyses proved to be significant. In analyzing the percentage of reported working dreams, a significant interaction effect was found between subjects classified as high-lower Conscious Anxiety and higher-lower Conscious Repression ( $sig. = .01$ ).

Table 9

Analyses of Variance Results for Percentage  
of Working and Disorganized Dreams Recalled  
for High-Low Repression and High-Low Anxiety  
Male Subjects (n=22)

Source of Variation	SS	DF	MS	F
Working dreams				
High-Low Anxiety	222	1	222	1.35 NS
Hi-Low Repression	51	1	51	.31 NS
Interaction	1617	1	1617	9.85***
Within Cell	3283.8	20	164.2	
Disorganized dreams				
Hi-Low Anxiety	315.4	1	315.4	7.93 **
Hi-Low Repression	1.0	1	1.0	.02 NS
Interaction	93.1	1	93.1	2.34 NS
Within Cell	795.5	20	39.8	

\*\* Significant at the .05 level

\*\*\*Significant at the .01 level

Among higher repression subjects, high anxiety males reported a significantly lower percentage of working dreams than lower anxiety males (illustrated in Figure 5). Also, among lower anxiety males, lower repressors showed a lower percentage of working dreams than higher repressors.

An analysis of percentage of Disorganized/Frightening dreams reported by male subjects substantiated a significant difference between higher Conscious Anxiety and lower Conscious Anxiety subjects (Sig. = .05). Higher anxiety

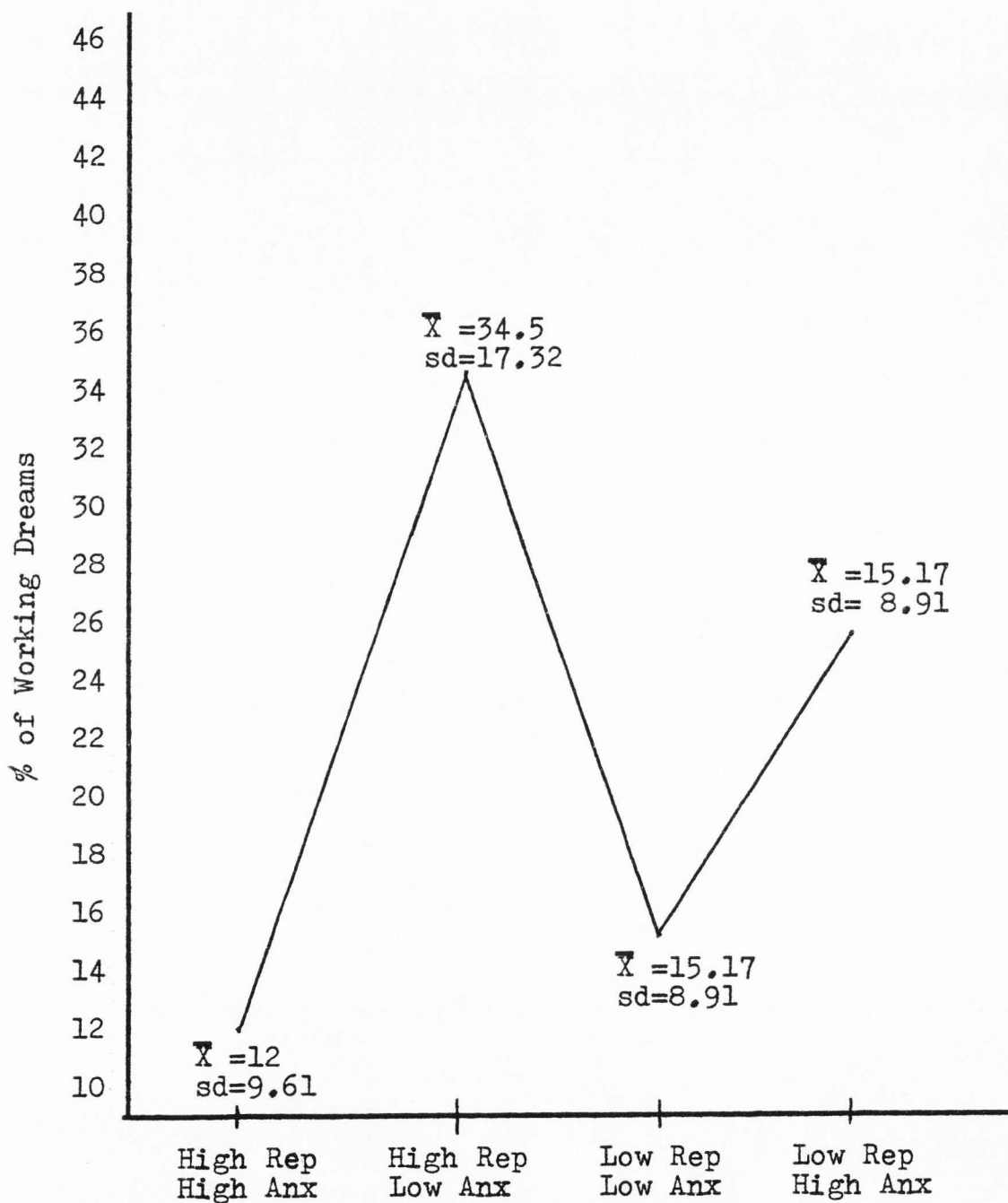


Figure 5. Comparison of Percentage of Male Subjects' Working Dreams for Higher-Lower Conscious Repression and Higher-Lower Conscious Anxiety (n=22)

males reported a significantly greater percentage of Disorganized/Frightening dreams ( $\bar{X}=11.83$ ,  $sd=7.51$ ) than lower anxiety males ( $\bar{X}=4.58$ ,  $sd=4.94$ ).

Several analyses of variance were computed between groups showing possible significant differences for female subjects. Results of these analyses are presented in Table 10. None of the differences analyzed proved to be significant.

"Contentless" or not-rated dreams. Contentless dreams have, in recent literature, been hypothesized to be the best indicators of the effects of repression on dream variables. Subjects were asked to classify any dreams which "involved totally unremembered content, but a positive or negative feeling regarding a dream remembered merely as an impression upon waking" in the categories entitled "other" within dream content-process categories. These dreams are "contentless dreams" as they have been previously defined in the literature. Therefore, an analysis of variance was computed to analyze any possible differences between higher or lower repression subjects divided into men and women on the percentage of total dreams reported as contentless dreams.

In addition the percentage of vague dreams was analyzed utilizing the same subgroups as a further elaboration of differences in dreams recalled with minimal detail.

Table 10  
 Analysis of Variance Results  
 for Content-Process Subcategories, and Higher-Lower  
 MMPI Subscale Scores for Female Subjects (n=31)

Source of Variation	SS	DF	MS	F
<hr/>				
Pleasurable dreams				
Hi-Low Anxiety	52.5	1	52.5	.17 NS
Hi-Low Repression	830.3	1	830.3	2.62 NS
Interaction	26.3	1	26.3	.05 NS
Within Cell	8871.6	28	316.8	
<hr/>				
Working dreams				
Hi-Low Anxiety	153	1	153	.50 NS
Hi-Low Repression	741.1	1	741.1	2.44 NS
Interaction	392	1	392	1.29 NS
Within Cell	8504	28	303.7	
<hr/>				
Pleasurable dreams				
Hi-Low Ego-strength	810.0	1	810.0	2.83 NS
Hi-Low Repression	750.8	1	750.8	2.63 NS
Interaction	195.0	1	195.0	.68 NS
Within Cell	8005.4	28	285.9	
<hr/>				



Results of these analyses are found in Table 11. Differences were not found to be significant in either analysis.

Table 11

Comparison of Percentage of "Contentless Dreams" for Male and Female, Higher-Lower Conscious Repression Subjects (n=53)

Source of Variation	SS	DF	MS	F
Contentless dreams				
Sex	406.1	1	406.1	1.29 NS
Hi-Low Repression	36.1	1	36.1	.11 NS
Interaction	287.9	1	287.9	.91 NS
Within Cell	8835.7	28	315.5	
Vague dreams				
Sex	561.1	1	561.1	1.45 NS
Hi-Low Repression	351.1	1	351.1	.91 NS
Interaction	153.5	1	153.5	.40 NS
Within Cell	10813.5	28	386.2	

## CHAPTER V

## DISCUSSION AND CONCLUSIONS

The purpose of this study was to investigate the interactions and relationships between ego-strength, anxiety and repression (three subscales measured by the MMPI), sex of the subject, reported vividness or vagueness of dreams and content-process categorization of dreams by the subject.

This section is devoted to discussing and drawing implications and conclusions concerning the data reported in the preceding chapter. To facilitate reading, the conclusions chapter will be divided into a discussion of the four hypotheses and a discussion of additional results.

Discussion of Results Related to the Hypotheses

Hypothesis 1. Hypothesis 1 investigated the inter-relationship between MMPI Conscious Anxiety scale scores, sex of the subject, high or low dream recall level and percentage of dreams reported in the positive or negative dream content-process category. The hypothesis of no significant differences between groups was supported by the analysis.

Hypothesis 2. Hypothesis 2 investigated the inter-relationship between MMPI Conscious Repression scale scores, sex of the subject, high or low dream recall level and

percentage of dreams reported in the positive or negative dream content-process category. The hypothesis of no significant differences between groups was supported by the analysis.

Hypothesis 3. Hypothesis 3 investigated the inter-relationship between MMPI Ego-strength scale scores, sex of the subject, high or low dream recall level and percentage of dreams reported in the positive or negative dream content-process category. The hypothesis of no significant differences between groups was also supported by the analysis for this variable.

Hypothesis 4. Hypothesis 4 investigated the inter-relationship between MMPI Ego-strength scale scores, sex of the subject, high or low dream recall level and percentage of reported dreams classified as being vividly recalled. The hypothesis of no significant differences between groups was supported by the analysis.

There seemed to be, for this sample, no major differences between groups (positive-negative dream content, high-low dream recall or male-female) on Conscious Anxiety, Conscious Repression or Ego-strength, as well as, no significant interactions between dream variables measured or sex and MMPI subscale scores.

Examination of variable intercorrelations which were computed for multiple regression analysis (listed in Appendix C), shows that the division of dream content-

process categories into positive and negative for analysis may have been in error and may have functioned to obscure variance existing within the individual subcategories. Intercorrelations show that working and pleasurable dreams, both considered to be "positive" dreams, correlate in fact,  $-.44$  with each other. Also, there was no correlation between Conflict and Disorganized dreams, both in the negative category (correlation =  $.05$ ), indicating that they may be mutually exclusive categories. To examine results of dream content-process subcategories, additional analyses were performed and showed some interesting significant differences which were before unrecognized when results were compared within the positive and negative categories. Results of these analyses will be discussed later in the Discussion Chapter.

One observation should possibly be mentioned and considered in interpreting results for the sample presently studied. Means on MMPI subscales for the sample, with the exception of Conscious Repression for male subjects, indicate the presence of a very "healthy" sample group. Means for Conscious Anxiety and Conscious Repression subscores cluster around T-scores of 45 (with the exception of the mean for male subjects on Conscious Repression). Duckworth and Duckworth describe persons with T-scores of 45 or below on these two subscales as being persons who are neither consciously anxious or consciously repressing

feelings, persons who are willing to discuss recognized problems and who are active, verbally fluent and achievement oriented (Duckworth & Duckworth, 1975, pp. 154-160). Also, mean scores for both male and female subjects indicate a positive trend in Ego-strength ( $\bar{X}$ =approximately 56), although Duckworth and Duckworth indicate that T-scores of 55 to 65 are average for college students.

Examination of results should be considered in light of the fact that this sample for the most part is an average to healthy one with few persons showing extreme problems. This does not allow examination of any differences which may exist between deviant and healthy individuals. This study is, in reality, comparing differences for the most part, between moderately healthy and clearly healthy individuals.

Results of hypothesized analyses generally indicate that male or female subjects of high compared with low dream recall do not differ significantly on anxiety, repression or ego-strength scores. These findings are not in support of trait theories of dream recall, especially repression theory, and indicate that for this sample group other factors must be influencing dream recall levels. There is no evidence to support the idea that high dream recallers and low dream recallers can be differentiated, for this sample, based on psychological health as measured

by either MMPI Conscious Anxiety, Conscious Repression or Ego-strength subscale scores.

Results of the Conscious Anxiety scale were selected for investigation to test a hypothesis related to the adaptive theory of dreaming. The adaptive theory states that the function of dreaming is the incorporation of affective material. According to this hypothesis, as anxiety increases dream recall should increase to help the individual cope with anxiety. This anxiety-dream recall relationship was not found to exist for the tested sample in this study.

Results of the Conscious Repression scale were selected for investigation to test a hypothesized relationship between repression and dream behavior proposed by the repression theory and continuity theory of dreaming. Continuity theory discusses dreaming as being a continuation of psychological processes used in waking life. Therefore, persons using repression as a defense during waking behavior should also tend to repress dreaming and show lowered dream recall. This relationship between repression and dream recall was not found in the sample tested for this study.

Results of the Ego-strength MMPI scale were selected for analysis to further investigate the adaptive theory of dreaming. According to the adaptive theory, persons utilizing dreaming to integrate waking material should

have higher ego-resiliency and higher ego-strength. Therefore, dreaming should play a more prominent role in maintaining their psychological stability, which should result in higher dream recall. This relationship was also not substantiated for the tested sample.

It would seem logical from these results to conclude that other factors (possibly environmental stress, ease of arousal, etc.) or an interaction of other factors and the ones measured in this study must be responsible for dream recall differences.

Also results indicate no difference between male or female subjects reporting high percentages of vivid dreams on ego-strength or adjustability. Therefore, persons remembering a large percentage of vivid dreams do not seem to differ significantly in psychological adjustability from those who do not.

### Additional Results

Dream content-process subcategories. Additional analyses were carried out to investigate differences within the subcategories of the positive and negative dream content-process categories. Subcategories included Pleasurable, Working, Conflict and Disorganized/Frightening dreams. Subjects, as part of dream log data collection, were asked to mark each dream remembered in the category it best represented, according to their opinion.

Pleasurable dreams were described as dreams of enjoyment that leave the dreamer with a good, light, happy feeling. Working dreams were described as dreams involving problem-solving where the dreamer meets a difficult situation but resolves the situation or works toward a solution. Conflict dreams were described as dreams in which the dreamer meets a conflict-producing or difficult situation but the conflict is overwhelming and is left unresolved. Disorganized/frightening dreams were described as dreams which do not follow any sequence or have any apparent meaning, or dreams of a nightmare quality.

Four theories of dream behavior would lend themselves to analysis of dream content and especially analysis of the psychological processes manifest in dream content. Continuity theory proposes that processes occurring in dreaming reflect or match processes occurring in waking life. Repression theory hypothesizes that threatening dream material will not be remembered or will be repressed. The salience theory states that psychologically significant or emotion-laden dreams will be recalled more than less emotional dream material. The adaptive theory states that dreaming serves to integrate affective material from waking life and therefore dream processes should reflect differential ability to process or work through affective material. Results of dream categories will be discussed in terms of these theories.



The first additional analysis conducted consisted of a multiple regression analysis to predict MMPI subscale scores based on sex of the subject and percent of pleasurable, working, conflict and disorganized dreams reported. Only one of the three analyses achieved significance (at a rather low significance level, .10). The significant regression obtained was for the Conscious Repression variable. Results indicated that the dream variables and sex of the subject shared about 20% of their variance; and that sex of the subject, percent of conflict dreams and percent of disorganized dreams were all negatively correlated with Conscious Repression and contributed significantly to the regression equation. The variance shared by dream variables and Conscious Repression is quite small, but the author does not intend to suggest that dreaming is the sole factor contributing to the psychological health of the subject; rather that dreaming contributes significantly to healthy functioning, an assumption that would seem to be indicated by the results of multiple regression, at least for the variable of Conscious Repression. Conflict and disorganized dreams are both emotion-laden dream categories which would tend to be repressed, theoretically, by high-repression personalities, a relationship which was substantiated for the present sample.

Interactions between dream recall level and MMPI subscale scores with dream content-process categories and also interactions between MMPI categories, Repression-Anxiety and Repression-Ego-strength, with dream subcategories were investigated using analysis of variance.

Several statistically significant relationships or interactions were obtained between personality variables and dream content-process subcategories.

Male subjects were found to differ significantly on three of the four dream content-process categories as they were related to personality variables and/or dream recall.

Two major differences were found for subjects reporting high percentages of disorganized/frightening dreams. Male subjects with higher Conscious Anxiety reported a significantly greater ( $\alpha=.05$ ) percentage of disorganized/frightening dreams and also males manifesting a higher level of dream recall reported a larger percentage of disorganized/frightening dreams ( $\alpha=.10$ ). The adaptive theory proposes that anxious subjects tend to produce more anxiety in their dreams in an effort to integrate waking feelings of anxiety. In the psychology of waking behavior, disorganized thought-processes seem to occur more frequently as anxiety increases. The higher percentage of disorganized dreams would seem to be congruent with adaptive dream theory in that anxiety

appeared to be more manifest in the disorganized or anxious dreams of the higher anxiety male subjects. Saliency theory proposes that the more often recalled dreams should be those with higher emotionality. Results are also consistent with this theory in that male subjects with higher dream recall showed a higher percentage of disorganized dreams. Disorganized dreams, of all the content-process subcategories, would seem to reflect the highest level of emotionality since they are also of a nightmare quality.

There were no significant relationships found between percentage of dreams in the conflict area and personality variables measured or dream recall level, although conflict dreams were found in the multiple regression to have a significant negative correlation with Conscious Repression.

Two interaction effects were found to be present for the percentage of working dreams reported for male subjects. There was a highly significant ( $\alpha=.01$ ) interaction between Conscious Repression and Conscious Anxiety for percentage of working dreams and also a significant interaction ( $\alpha=.10$ ) between total dream recall level and Conscious Anxiety for percentage of reported working dreams. Higher anxiety-higher repression subjects were found to report a significantly lower percentage of working dreams than lower anxiety-higher repression

subjects. Raised or higher anxiety levels in subjects would tend to activate defense patterns normally used, for these subjects-repression (persons with higher Conscious Repression scores). Therefore, congruent with expectations higher anxiety subjects with higher Conscious Repression showed a lower percentage of working dreams, which could serve to work through affect laden problems, than lower anxiety subjects with higher Conscious Repression. Repression as a defense would not tend to be activated by anxiety for lower anxiety subjects. In keeping with this train of thought, lower repression-lower anxiety subjects were found to report significantly lower percentages of working dreams than higher repression-lower anxiety subjects, and also lower repression-higher anxiety subjects reported a higher percentage of working dreams, although not significantly higher. Higher anxiety should produce a greater need to work through affective material, hence more working dreams, when low levels of repression allow the subject to be aware of the dream process. Low levels of anxiety produce little need to work through affective material even though low levels of repression would allow the subject to be cognizant of dreams which would serve to work through anxiety. The proposal that low anxiety levels produce lowered need to work through affective material is further indicated by the fact that low anxiety-low repression male subjects

reported a mean of 35% of total dreams which were recalled too vaguely to rate compared with a mean of 16.6% for low repression-high anxiety subjects.

There was also an interaction between Conscious Anxiety and total recall level for percent of working dreams (although at a lower significance level, .10) which further substantiates the interpretation discussed, if persons who show low levels of dream recall are interpreted as tending to repress dreams or having little desire to remember them. Low recall-lower anxiety subjects reported higher percentages of working dreams than high recall-lower anxiety subjects, and low recall-higher anxiety subjects reported lower percentages of working dreams than subjects with higher recall-higher anxiety. This interaction is congruent with the fact that high anxiety levels tend to produce higher percentages of working dream processes remembered by the subjects. These results are in concordance with the continuity theory which would indicate that personality patterns and defenses operating to cope with anxiety in waking behavior also affect dream behavior. Repression was found to affect working dreams in a manner similar to waking behavior. Also, facets of adaptive theory, which proposes that dreams tend to integrate affect or anxiety, and salience theory, which hypothesizes that more

emotion-laden or personally significant material is recalled in dreaming, seems to be applicable to the discussed results.

Percentage of dreams reported in the pleasurable subcategory produced a significant interaction between dream recall level and level of Conscious Repression. Both lower repression-lower recall subjects and higher repression-higher recall subjects reported higher percentages of pleasurable dreams than lower recall-higher repression and higher recall-lower repression subjects.

There are indications that lower repression-higher recall subjects use dreaming processes to work through difficult psychological material. They show higher percentages of working and conflict dreams, which tend to attempt to deal with difficulties encountered in a dreaming context, and lower percentages of pleasurable dreams, which do not evidence working processes. Low recall-low repression subjects repress dream recall as a whole, and not merely threatening dreams. Lower repression-lower recall subjects possibly reflect little dream press or need to work through dream material because few dreams are impactful enough to be recalled. The high percentage of pleasurable dreams reflected for the high repression-high recall group may be a result of the effects of repression on working, conflict and disorganized dreams (more emotionally threatening).

Repression of these processing dreams would also raise the percentage of pleasurable dreams. It could be proposed that this group uses pleasurable dreaming to escape working through affective material.

Results of analysis of dream content-process subcategories for women revealed only two significant observations.

Results of percentages of reported dreams in the disorganized/frightening subcategory revealed a highly significant interaction ( $\alpha=.01$ ) between dream recall level and ego-strength for disorganized dreams. Lower ego-strength-higher recall subjects report significantly higher percentages of disorganized dreams than lower ego-strength-lower recall subjects. This would seem to be consistent with dream salience theory which proposes that the most easily recallable dreams are those with higher emotionality and more distortion. Also higher recall-higher ego-strength subjects report a lower percentage of disorganized/frightening dreams than higher recall-lower ego-strength subjects. Ego-strength, as measured by the MMPI, is described by Duckworth and Duckworth (1975) as being the ability to cope with difficult emotions without becoming debilitated by them. therefore, higher ego-strength subjects are those who are able to more effectively cope with and integrate difficult emotions. The higher percentage of disorganized/

frightening dreams reported by the lower ego-strength female subject possibly reflects the inability to integrate or work with emotional stimuli. This explanation would tend to comply with the proposals of the adaptive theory which indicate that healthy persons should better utilize dreaming to integrate affective stimuli.

The only additional observation for female subjects was that low dream recall-higher Conscious Repression subjects showed significantly greater variance in percentage of working dreams than lower recall-lower repression subjects. Lower recall-higher repression subjects either reported a very high percentage of working dreams or a very low percentage of working dreams. The difference in variance may indicate the presence of another variable interacting with working dream recall and repression, possibly situational stress.

No content dreams. The other area investigated under Additional Results was the possibility that "contentless dreams", defined as dreams which were not recalled well enough to be classified within a content-process category and also dreams "vaguely" remembered, differentiate between high and low Conscious Repression subjects. Cohen and others have proposed that the incidence of contentless dreams provides the purest evidence of repression. This hypothesis was not supported for this sample in that male and female, higher and lower Conscious



Repression subjects did not differ significantly on percent of contentless or vague dreams reported. Tendency to use repression as a defense, as indicated by MMPI Conscious Repression scores, was not found to differentiate between persons reporting higher and lower contentless dream frequency.

### Conclusions

Comparison of MMPI Conscious Anxiety, Conscious Repression and Ego-strength scale scores with higher or lower dream recall level, sex of the subject and a higher or lower percentage of dreams reported in the positive content-process category produced no significant differences or interaction effects between variables. These results do not support theories which hypothesize dream recall differences based on differences solely in anxiety level, repression as a defense, or ego-strength used as a measure of adaptability, without considering the interaction of these variables.

Several significant differences between persons differing on dream recall level, or level of Conscious Anxiety, Conscious Repression and Ego-strength were found on percentage of reported pleasurable, working, conflict or disorganized/frightening dreams. Results of subcategory analysis would tend to support an interaction between anxiety, repression and dream process consistent with the continuity theory of dreaming.

Increased anxiety tends to produce a higher percentage of recalled dreams in working process categories, as long as tendency to repress threatening material is low enough to permit the recall of more emotion-laden dream processes in male subjects. Female subjects did not tend to significantly reflect this process. There was also some indication in results that pleasurable dreams may serve as an escape for high repression male subjects.

Results suggested that recalled dream process may be more strongly effected by personality variables for male subjects than for female subjects. Female subjects' dream behavior, therefore, may be more strongly affected by situational variables such as presleep mood.

Results of both male and female subjects' dream reports showed some evidence that the most affectful dreams were the most easily recalled.

Results did not support the hypothesis that the percent of contentless dreams could be a result of the level of repression used by the subject, for this sample.

### Limitations

1. Only students at Utah State University were included in the sample.
2. The sample consisted primarily of psychologically healthy, volunteer participants.

3. This study, as originally proposed, dealt with dream content-process categories divided into positive and negative dream content, a division which proved to be invalid.

4. Only fifty-three of sixty original participants completed the study.

5. The sample size was rather small to look at extensive interactions between variables.

6. The study dealt with dream behavior only as reported and categorized by the subject.

#### Recommendations

For further study of the relationship of personality, dream recall and dream content, it is recommended that:

1. A measure of presleep mood be included as a variable possibly affecting studied dream variables.

2. The variables investigated in this study be analyzed using a larger sample size so that more interactions and more complex interactions of variables may be studied.

3. A similar study be completed using complete diary recordings of dreams and independent raters to investigate, more thoroughly, dream content-process categorization.

4. A similar study be completed using samples of more psychologically deviant populations to test trends noted in the present study.

## BIBLIOGRAPHY

- Antrobus, J., Dement, W. & Fisher, C. Patterns of dreaming and dream recall: an EEG study. Journal of Abnormal and Social Psychology, 1964, 69, 341-344.
- Arnold, P. Marriage counselee MMPI profile characteristics with objective signs that discriminate them from married couples in general. Dissertation. University of Minnesota, 1970.
- Aserinsky, E. & Kleitman, N. Regularly occurring periods of eye movement and concomitant phenomena during sleep. Science, 1953, 118, 273.
- Aserinsky, E. & Kleitman, N. Two types of ocular motility occurring in sleep. Journal of Applied Physiology, 1955, 8, 1-10.
- Astrachan, G. D. The structure of dreams in schizophrenia. Dissertation. New York University, 1978.
- Baekeland, F. Effects of presleep procedures and cognitive style on dream content. Perceptual and Motor Skills, 1971, 32, 63-69.
- Baekeland, F. & Lasky, R. The morning recall of REM-period reports given earlier in the night. Journal of Nervous and Mental Disease, 1968, 147, 570-579.
- Barron, F. An ego-strength scale which predicts response to psychotherapy. Journal of Consulting Psychology, 1953, 17, 327-333.
- Block, J. & Bailey, D. Q-sort item analysis of a number of MMPI scales. Officer Education Research Laboratory, Technical Memorandum, OERL-TM-55-7, May 1955.
- Bone, R. N. Extraversion, neuroticism and dream recall. Psychological Reports, 1968, 23, 922.
- Bone, R.N., Thomas, T.A. & Kinsolving, D. L. Relationship of rod-and-frame scores to dream recall. Psychological Reports, 1972, 30, 58.
- Boss, M. The Analysis of Dreams. New York: Philosophical Library, 1958.

- Bregar, L. Functions of dreams. Journal of Abnormal Psychology Monograph, 1967, 72(5), Part 2 (whole No. 641), 1-28.
- Berger, L., Hunter, J. & Lane, R. W. The effect of stress on dreams. Psychological Issues, 1971, 27 (7, Pt. 2).
- Cartwright, R. D. Sleep fantasy in normal and schizophrenic persons. Journal of Abnormal Psychology, 1972, 80, 275-279.
- Cartwright, R. D. Creative dreaming: writing one's own scripts. Psychology Today, Dec. 1978, 12(7), 66-76.
- Cartwright, R. D., Bernick, N., Borowitz, G. & Kling, A. Effect of an erotic movie on the sleep and dreams of young men. Archives of General Psychiatry, 1969, 20, 262-271.
- Cartwright, R. D. & Monroe, L. J. Relation of dreaming and REM sleep: the effects of REM deprivation under two conditions. Journal of Personal and Social Psychology, 1968, 10, 69-74.
- Chernik, A. W. The effect of REM sleep deprivation on learning and memory. Dissertation. University of Texas at Austin, 1970.
- Cronbach, L. J. Beyond two disciplines of scientific psychology. American Psychologist, February 1975, 116-127.
- Clemes, S. R. & Dement, W. C. Effect of REM sleep deprivation on psychological functioning. Journal of Nervous and Mental Disease, 1967, 144(6), 485-491.
- Cohen, D. B. Frequency of dream recall estimated by three methods and related to defense preference and anxiety. Journal of Consulting and Clinical Psychology, 1969,
- Cohen, D. B. Current research on the frequency of dream recall. Psychological Bulletin, 1970, 73(6), 433-440.
- Cohen, D. B. Presleep experience and home dream reporting an exploratory study. Journal of Consulting and Clinical Psychology, 1972, 38(1), 122-128.
- Cohen, D. B. Sex role orientation and dream recall. Journal of Abnormal Psychology, 1973, 82(2), 246-252.

- Cohen, D. B. Effect of personality and presleep mood on dream recall. Journal of Abnormal Psychology, 1974a, 83(2), 151-156.
- Cohen, D. B. Presleep mood and dream recall. Journal of Abnormal Psychology, 1974b, 83(1), 45-51.
- Cohen, D. B. Toward a theory of dream recall. Psychology Bulletin, 1974c, 81, 138-154.
- Cohen, D. B. Neuroticism and dreaming sleep: a case for interactionism in personality research. British Journal of Social Psychology, 1977, 16, 153-164.
- Cohen, D. B. & Cox, C. Neuroticism in the sleep laboratory: implications for representational and adaptive properties of dreaming. Journal of Abnormal Psychology, 1975, 84, 91-108.
- Cohen, D. B. & MacNeilage, P. F. A test of the salience hypothesis of dream recall. Journal of Consulting and Clinical Psychology, 1974, 42(5), 699-703.
- Cohen, D. B. & Wolfe, G. Dream recall and repression: evidence for an alternative hypothesis. Journal of Consulting and Clinical Psychology, 1973, 41(3), 349-355.
- Collins, G. W. Dreaming and adaptation in stress. Dissertation. University of Oregon, 1967.
- Connor, G. H. & Boblitt, W. E. Reported frequency of dream recall as a function of intelligence and various personality test factors. Journal of Clinical Psychology, 1970, 26, 438-439.
- Crites, J. O. Ego-strength in relation to vocational interest development. Journal of Counseling Psychology, 1960, 7, 137-143.
- DeKloninck, J. M. Dreams and the mastery of stress. Dissertation. University of Manitoba, 1973.
- Dement, W. & Kleitman, N. The relation of eye movements during sleep activity: an objective method for the study of dreaming. Journal of Experimental Psychology, 1957, 53, 339-346.
- Domhoff, B. & Gerson, A. Replication and critique of three studies in personality correlates of dream recall. Journal of Consulting Psychology, 1967, 31, 431.

- Donelson, R. Personality: A Scientific Approach. Pacific Palsades, Calif.: Goodyear Publishing Co., 1973.
- Duckworth, J. & Duckworth, E. MMPI Interpretation Manual for Counselors and Clinicians. Muncie, In.: Accelerated Development Inc., 1975.
- Early, E. M. Dream recall: frequency and variation. Dissertation. Washington State University, 1977.
- Erickson, E. A. Childhood and Society, (2nd Ed.). New York: W. W. Norton, 1963.
- Farley, R. H., Schmuller, J. & Fischbach, D. Dream recall and individual differences. Perceptual and Motor Skills, 1971, 33, 379-384.
- Fisher, C. Psychological significance of the dream-sleep cycle. in Witkin, H. A. & Lewis, H. B. (Eds.) Experimental Studies of Dreaming. New York: Random House, 1967.
- Foulkes, D. The Psychology of Sleep. New York: Scribnes, 1966.
- Foulkes, D. Personality and dreams. International Psychiatry Clinics, 1970, 7, 147-153.
- Foulkes, D., Pivik, T., Steadman, H. S., Spear, P. S. & Symonds, J. D. Dreams of the male child: an EEG study. Journal of Abnormal Psychology, 1967, 72, 457-467.
- Foulkes, D. & Rechtschaffen, A. Presleep determinants of dream content: effects of two films. Perceptual and Motor Skills, 1964 (Monograph Supplement 5-VI9), 983-1005.
- Freud, S. The Interpretation of Dreams. Standard Ed. Complete Psychological Works, Vols. 4 & 5, 1900.
- Goodenough, D. R. Some recent studies in dream recall. in Witkin, H. A. & Lewis, H. B. (Eds.) Experimental Studies of Dreaming. New York: Random House, 1976.
- Goodenough, D. R., Lewis, H. B., Shapiro, S. & Sleser, I. Some correlates of dream reporting following laboratory awakenings. Journal of Nervous and Mental Disease, 1965, 140, 365-373.

- Goodenough, D. R. & Witkin, H. A. Repression, interference and field dependence as factors in dream forgetting. Journal of Abnormal Psychology, 1974, 83(1), 32-44.
- Greenberg, R. Dreaming and memory. in Hartmann, E. (Ed.) International Psychiatry Clinics. Vol. 7. Sleeping and Dreaming. Boston: Little, Brown, 1970.
- Greenberg, R., Pearlman, C., Brooks, R., Mayer, R. & Hartmann, E. Dreaming and Korsakoff's psychosis. Archives of General Psychiatry, 1968, 18, 203-209.
- Greenberg, R., Pearlman, C., Fingar, F., Kantrowitz, J. & Kawliche, S. The effects of dream deprivation: implications for a theory of the psychological function of dreaming. British Journal of Medical Psychology, 1970, 43, 1-11.
- Greenberg, R., Pearlman, C. & Gampel, D. War neuroses and the adaptive function of REM sleep. British Journal of Medical Psychology, 1972, 45, 27-35.
- Greenberg, R., Pillard, R. & Pearlman, C. The effect of dream deprivation on adaptation to stress. Psychosomatic Medicine, 1972, 34, 257-262.
- Grieser, C., Greenberg, R. & Harrison, D. The adaptive function of sleep: the differential effects of sleep and dreaming on recall. Journal of Abnormal Psychology, 1972, 80, 280-286.
- Hall, C. The Meaning of Dreams. New York: McGraw-Hill, 1966.
- Hall, C. & Nordby, V. The Individual and His Dreams. New York: Signet, 1972.
- Hall, C. S. & Van de Castle, R. L. The Content Analysis of Dreams. New York: Appleton-Century-Crofts, 1966.
- Harris, M. E. & Ray, W. J. Dream content and its relation to self-reported interpersonal behavior. Psychiatry, Nov. 1977, 40, 363-368.
- Hartmann, E., Baekeland, F., Zwilling, G. & Hoy, P. Sleep need: how much sleep and what kind? American Journal of Psychiatry, 1977, 127(8), 1001-1008.
- Hatcher, C. & Himelstein, P. (Ed.) The Handbook of Gestalt Therapy. New York: Jason Aronson, Inc., 1976.



- Hauri, P. Dreams in patients remitted from reactive depression. Journal of Abnormal Psychology, 1976, 85(1), 1-10.
- Hersen, M. Personality characteristics of nightmare sufferers. Journal of Nervous and Mental Diseases, 1971, 153, 27-31.
- Hill, A. B. Personality Correlates of dream recall. Journal of Consulting and Clinical Psychology, 1974, 42(6), 766-773.
- Jones, C. An exploratory study of women's manifest dreams during first pregnancy. Dissertation. Columbia University, 1978.
- Jones, R. M. The New Psychology of Dreaming. New York: Viking, 1970.
- Jung, C. The Archetypes of Collective Unconscious. Princeton, N. J.: Bollingen Series 20, 1968.
- Jurjevich, R. M. Short interval test-retest stability of the MMPI, CPI, Cornell Index and Symptom Check List. Journal of General Psychology, 1966, 74, 201-206.
- Kales, A. & Jacobson, A. Mental activity during sleep: recall studies, somnambulism, and effect of rapid eye movement deprivation and drugs. Experimental Neurology, 1967 (Supplement 4), 81-91.
- Karacan, I., Goodenough, D. R., Shapiro, A. & Staker, S. Erection cycle during sleep in relation to dream anxiety. Archives of General Psychiatry, 1966, 15, 183-189.
- Kleinmütz, B. An extension of the construct validity of the ego-strength scale. Journal of Consulting Psychology, 1960, 24, 463-464.
- Larson, J. D. Hypnagogic mentation of repressors and sensitizers as influenced by hostile and friendly presleep-conditions. Journal of Psycho-physiology, 1970, 7, 327.
- Meier, C. A., Ruff, H. & Ziegler, A. Forgetting of dreams in the laboratory. Perceptual and Motor Skills, 1968, 26, 551-557.

- Nakazawa, Y., Notorii, M., Kotorii, T., Tachibana, H. & Nakano, T. Individual differences in compensatory rebound of REM sleep, with particular reference to their relationship to personality and behavioral characteristics. Journal of Nervous and Mental Disorders, 1975, 161, 18-25.
- Parsons, O. A., Yourshaw, S. & Borstelmann, L. Self-ideal-self-discrepancies on the MMPI: consistencies over time and geographic region. Journal of Counseling Psychology, 1968, 15, 160-166.
- Patterson, C. H. Theories of Counseling and Psychotherapy. New York: Harper and Row, 1973.
- Paupst, J. C. & Robinson, T. The Sleep Book. Toronto: Macmillan of Canada, 1975.
- Perls, F. Gestalt Therapy Verbatim. Lafayette, Calif.: Real People Press, 1969.
- Pivick, T. & Foulkes, D. Dream deprivation: effects of dream content. Science, 1966, 153, 1282-1284.
- Robbins, P. R. & Tanck, R. H. The repression-sensitization scale, dreams, and dream associations. Journal of Clinical Psychology, 1970, 26, 219-221.
- Schonbar, R. A. Differential dream recall frequency as a component of life style. Journal of Consulting Psychology, 1965, 29, 468-474.
- Shulman, B. An Adlerian view. in Dramer, M. (Ed.) Dream Psychology and the New Biology of Dreaming. Springfield, Ill.: Charles C. Thomas, 1969.
- Singer, J. L. & Schonbar, R. Correlates of day-dreaming: a dimension of self-awareness. Journal of Consulting Psychology, 1961, 25, 1-7.
- Starker, S. Daydreaming styles and nocturnal dreaming: further observations. Perceptual and Motor Skills, 45, 411-418.
- Tart, C. T. Frequency of dream recall and some personality measures. Journal of Consulting Psychology, 1962, 26, 467-470.
- Tart, C. T. & Dick, L. Conscious control of dreaming: I the posthypnotic dream. Journal of Abnormal Psychology, 1970, 76, 304-315.

- Trinder, J. & Kramer, M. Dream recall. American Journal of Psychiatry, 1971, 128, 296-301.
- Van de Castle, R. L. His, hers and the children's. Psychology Today, 1970, 4(1), 37-39.
- Walker, P. C. & Johnson, R. F. Q. The influence of presleep suggestions on dream content. Psychological Bulletin, 1974, 81, 362-370.
- Wallach, M. S. Dream report and some psychological correlates. Journal of Consulting Psychology, 1963, 27, 549.
- Wallin, J. P. Intentional dreaming: an active approach to the imagery of sleep. Dissertation. The Wright Institute, 1977.
- Webb, W. B. Sleep: The Gentle Tyrant. Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1975.
- Welsh, G. S. Factor dimensions A and R. in Welsh, G. S. and Dahlstrom, W. G. (Eds.) Basic Readings on the MMPI in Psychology and Medicine. Minnesota: University of Minnesota Press, 1956, pp. 264-281.
- Welsh, G. S. & Dahlstrom, W. G. (Eds.) Basic Readings on the MMPI in Psychology and Medicine. Minnesota: University of Minnesota Press, 1956.
- Wiggins, J. S. & Rumrill, C. Social desirability in the MMPI and Welsh's factor scales A and R. Journal of Consulting Psychology, 1959, 23, 100-106.
- Witkin, H. A. Influencing dream content. in Kramer, M. (Ed.) Dream Psychology and the New Biology of Dreaming. Springfield, Ill.: Charles C. Thomas, 1969.
- Witkin, H. A. Individual differences in dreaming. International Psychiatric Clinic, 1970, 7, 154-164.
- Witkin, H. A., Dyk, R. B., Paterson, H. F., Goodenough, D. R. & Karp, S. A. Psychological Differentiation: Studies of Development. New York: Wiley, 1962.

APPENDICES

## Appendix A

## Consent and Release of Information Form

I, \_\_\_\_\_, hereby consent to take part  
(please print name)

in a research project conducted by David Newbold, in connection with the Department of Psychology, Utah State University. The research project has been explained to me and I understand the procedure. I agree to release testing results and results of other data collection to be used in connection with this research.

I understand that my name as well as other identifying information concerning me will in no way be used in any part of said research, and that anything I may say or do, including test results will be used for research purposes only and held in strictest confidence. I understand that I may withdraw at any time from this study.

\_\_\_\_\_  
(please sign)

\_\_\_\_\_  
(date)

\_\_\_\_\_  
(witness)

APPENDIX B

Dream Log Response Form

DREAM LOG

Name \_\_\_\_\_

Date \_\_\_\_\_

	example	Week 1							Week 2							Week 3					Week 4						
		1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	3	4	5	6	7		
Total number of dreams recalled	4																										
Number of dreams vividly recalled	3																										
Number of dreams vaguely recalled	1																										

Indicate which of the following categories each dream recalled best fits into.

POSITIVE DREAMS

1. Pleasureable-dreams of enjoyment, that leave the dreamer with a good, light, happy feeling.
2. Working-dreams involving problem-solving where the dreamer meets a difficult situation but resolves the situation or works toward a solution.
3. Other-dreams that do not fit into the preceding categories.

NEGATIVE DREAMS

1. Conflict-dreams in which the dreamer meets a conflict-producing or difficult situation but the conflict is overwhelming and is left unresolved.
2. Disorganized/frightening-dreams which do not follow any sequence or have any apparent meaning, also dreams of a nightmare quality.
3. Other-dreams that do not fit into the preceding categories.

Appendix C

Intercorrelation Matrix for Variables Measured

	Anx	Rep	E-S	Sex	Ple	Wor	Con	Dis	Tot D
Anx	1.000								
Rep	-0.459	1.000							
E-S	-0.666	0.258	1.000						
Sex	-0.078	-0.252	0.094	1.000					
Ple	0.240	0.021	-0.164	-0.234	1.000				
Wor	-0.148	0.151	0.016	0.102	-0.447	1.000			
Con	-0.016	-0.207	-0.115	-0.146	-0.239	-0.043	1.000		
Dis	0.138	-0.254	-0.240	0.029	-0.112	-0.287	0.049	1.000	
Tot D	0.174	-0.176	-0.051	0.242	-0.094	-0.107	-0.169	0.127	1.000



## VITA

David Newbold

Candidate for the Degree of

Doctor of Philosophy

Dissertation: Conscious Anxiety, Conscious Repression and Ego-Strength as Related to Dream Recall, Content and Vividness.

Major Field: Professional-Scientific Psychology

Biographical Information:

Personal Data: Born at Logan, Utah, March 3, 1951, son of Floyd L. Newbold and Thella Gilbert Newbold; married Lorene Allen, August 13, 1974; two children - Kimberly and Amy.

Education: Attended elementary school in Providence, Utah; graduated from Sky View High School in 1969; received Bachelor of Science degree from Weber State College, with a major in psychology and a minor in family relations in 1976; received Master of Science degree from Utah State University, with a major in professional-scientific psychology in 1978.

Professional Experience: 1974-1976, administrative assistant, Department of Psychology, Weber State College; Summer 1975, remedial reading assistant, Ogden Job Corp; Fall 1975, taught basic psychology and parenting skills, Program for Unwed Mothers, Weber School District; Winter and Spring 1976, staff assistant, Infant Education Project, Department of Family Life, Weber State College; 1976-1978, Head Resident and Counselor, Women's dormitory, Housing Department, Utah State University; 1978, Training Specialist (grade 17-01), State of Utah, Department of Social Services, Division of Alcoholism and Drugs, group treatment facilitator;

1976-1970, Utah State University practicum, individual, marital and family therapy; Spring and Summer 1977, Exceptional Child Center, Utah State University, testing, evaluation, behavioral treatment of child problems, family therapy; 1979, Bear River Mental Health Center, therapist, individual, marital and family cases, also projective and objective testing and evaluation; 1979, Bear River Mental Health Center, needs assessment for senior citizens; May 1979, commissioned United States Air Force, clinical internship, Wright-Patterson Medical Center, Ohio, 1979-1980.

Professional Organizations: Association of Mormon Counselors and Psychotherapists (AMCAP), American Psychological Association (APA), associate member.