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## Relationships Among Dream Content, TAT Stories and Self-Reports and Effects of Pre-Sleep Instructions on Home Dreams

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RELATIONSHIPS AMONG DREAM CONTENT, TAT STORIES  
AND SELF-REPORTS  
AND  
EFFECTS OF PRE-SLEEP INSTRUCTIONS ON HOME DREAMS

by  
ROSS E. KEISER

A Dissertation Submitted to the Faculty of the Graduate School  
of Loyola University of Chicago in Partial Fulfillment  
of the Requirements for the Degree of  
DOCTOR OF PHILOSOPHY

MAY  
1982

Ross Edward Keiser

Loyola University of Chicago

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The TAT is often described as measuring fantasy. Excepting Freud's and Jung's opinion that fantasy and dreams are similar, fantasy is undefined. There has also been controversy over dream content's susceptibility to conscious commands.

This study investigated whether TATs and dreams reflect conscious concerns similarly to infer whether TATs measure fantasy. Assessment of dream reflection of conscious concerns and amenability of dream content to conscious commands was needed to determine relationships between TATs and dreams.

Forty-seven undergraduate volunteers reported their greatest assets and problems, were administered group TATs, and recorded dreams for four weeks. All received instructions to repeat to themselves before retiring, half to remember dreams, the other half to remember dreams about solving problems.

Neither dream nor TAT content systematically reflected self-reports, nor did dreams reflect TAT content. The interpretation was dreams and TAT stories are not results of similar unconscious processes. This cast doubts on the definition of TATs as measuring fantasy.

Effects of pre-sleep commands were paradoxical. Instructions to dream of solving problems resulted in significant decrease in number of dreams incorporating self-reported problem content. This also decreased number of dreams recalled, without decreasing incidence of self-reported asset content. Subjects uniformly reported about half the dreams they anticipated remembering. This may have been due to instructions to remember dreams, but needs further investigation.

In all, dreams showed a contrary, unanticipated reflection of pre-sleep instructions, rather than either compensatory or direct effects. Dream content was different between groups, but not as anticipated.

Results show dreams and TAT stories dissimilar in content to each other and self-reports. This leaves the definition of the TAT as measuring fantasy in doubt. Effects of pre-sleep wishes on dreams were paradoxical, but neither direct or compensatory. This indicates need for further study.

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## VITA

The author, Ross Edward Keiser, is a son of the late George Edward Keiser and Mrs. June (Riesenberg) Ulman. He was born 21 April 1951 in rural Northwestern Ohio.

His elementary and secondary schooling was obtained in Seneca and Sandusky Counties in the Lakota Local Schools, from which he graduated in 1969.

In September 1969 he entered Bowling Green State University in Ohio. He received degrees, Bachelor of Music, Magna cum Laude, and Master of Music with majors in Music History and Literature in June 1973 and June 1974, respectively. While attending Bowling Green State University he held academic scholarships and a graduate teaching assistantship. He was elected a member of Phi Mu Alpha Sinfonia, national professional music fraternity, in 1970, and Phi Kappa Phi, national academic honorary fraternity, in 1972.

After having worked as toolmaker, tooling designer, and union business agent, he was granted a Rehabilitation Services Administration stipend to reenter Bowling Green State University in March 1977. He received his Master of Rehabilitation Counseling in June, 1978.

He served as Executive Director of the Epilepsy Center of Northwestern Ohio from March 1978 to August 1979. During that time he also served as member and chairman of the Dis-

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He has completed a clinical clerkship at Hines Veterans Administration Hospital in August 1980, a clinical clerkship at Ridgeway Hospital with the Associates for Adolescent Psychiatry in February 1982, and a clinical internship at West Side Veterans Administration Medical Center in August 1981. This included a one-fifth time off-station rotation in the Sleep Disorders Clinic at Rush Presbyterian St. Luke's Medical Center. He held post of Acting Dean of Social Sciences at Chicago Conservatory College in academic years 1979-1980 and 1980-1981. He has also held posts of Instructor of Psychology at Mundelein College Chicago in academic years 1980-1981 and 1981-1982 and Lecturer in Psychology at Loyola University of Chicago in academic year 1981-1982.

He has performed on Baroque flute and recorder at the Aston Magna Foundation's concert series, and as soloist with the Heidelberg College (Ohio) Chamber Orchestra. He presented a paper, Archetypal Images of Poseidon, at the Lakeside Archetypal Conference in July 1981.



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## CHAPTER I

### INTRODUCTION

Telling stories and relating dreams are probably among the first activities with which verbal man occupied himself not essential to his physical survival. Even in cultures so primitive as to have no agriculture beyond slash and burn or hunting and gathering, people tell stories and relate dreams (Noone & Holman, 1972). Considering the length of human experience with these narratives, it is not surprising many people take an interest in them. In reviewing the literature, however, the apparent lack of understanding and consensus is striking.

Dreams have long been of interest to both primitive and modern man. While most works dealing with dreams, both popular and scholarly, attempt to give meanings of dreams, there is some scholarly work which attempts to understand dreams in terms of their origins and processes. One area of this research is concerned with investigation of factors affecting dream content.

Some of these studies have been restricted to investigating influences and nature of factors affecting dream content. Others have attempted to manipulate those variables. Among these, some were conducted with the experimental vari-

able being conscious instructions to subjects to attempt altering their dreams (Jones, 1970; Witkin & Lewis, 1967). Findings of these studies have been contradictory and shed little definitive light on functions and origins of dreams and dream content.

Just as there are studies on dream form and content (Hall & Van de Castle, 1966; Winget & Kramer, 1979), a large body of work is devoted to study of stories. There are extensive literatures in which stories are studied for content, structure, and origins and variants of themes.

Commentary on stories is an ancient tradition. Aristotle in his Poetics wrote criticisms of drama. Psychological exploration using stories is a much more recent phenomenon, however. One pioneer was van Lennep (1948, 1951) who developed his Four Pictures Test in 1930. This test, not widely used in the United States, employs four ambiguous colored pictures. Subjects arrange the pictures in a sequence and then tell stories incorporating the four scenes.

Schwartz (1932) developed a test for use in interviewing adolescent delinquents. This test, also not popular today, consists of eight pictures considered representative of scenes in lives of delinquents. The examiner used the cards primarily to structure an interview, asking subjects to describe the pictures and to tell what the boy in the picture was thinking. On bases of subjects' responses, the examiner then asked clarifying questions.

In 1935 Murray introduced his Thematic Apperception Test (TAT). This technique has been widely used clinically, and in over two thousand research studies, which speaks for its wide influence.

Many studies on the TAT are so relatively unrelated their results are difficult to generalize. Because of this lack of consistency in research on the TAT, there are serious questions as to reliability and validity of the TAT. The result is the TAT has never itself been thoroughly investigated (Holt, 1978). It has rather been assumed to reveal to the examiner "what amounts to an x-ray picture" of the subject (Murray, 1943). There have been disagreements as to both the meaning and accuracy of this statement. This has generally been taken to mean TAT stories are narratives which originate in the unconscious. However, at what level, or to what degree this is true, and the amount of unconscious mediation involved has not been examined. Instead, the nature of the TAT has been assumed, a priori, to be consistent with one or another psychological theory. These presumptions have seldom been validated empirically, and are often not consistent with each other.

Given the lack of concurrence as to the psychological nature of both dreams and stories, especially TAT stories, and the probable lack of agreement in the near future, it would seem useful to examine similarities and differences in content between dreams and TAT stories. To add perspective, and to explore relationships among conscious perceptions,

TATs and dreams, self-reports of subjects' assets and problems were also obtained. That is, subjects were asked to name what they felt were their three greatest problems, and the three things which they felt were most helpful to them.

Jung originally felt dreams and other fantasies were products of the unconscious and based his beliefs on Freud's theory of wish fulfillment (Frey-Rohn, 1969/1974) in which fantasy images compensated for what was unfulfilled in a person's life (Freud, 1901/1955). Jung later came to view fantasy formation first as a compromise (1908/1960) and later as part of a symbolic process, not necessarily compensatory, in which various aspects of a person's life, especially the conscious and the multiple aspects of the unconscious, are unified (1912/1952/1956). Given this, if TAT stories are fantasy, their content should be similar to that of dreams.

The purpose of this study was to examine interrelationships of content in subjects' dreams, TAT stories, and subjective self-reports of their greatest assets and problems, and to investigate the possibility of a conscious wish influencing their dream content. This was done to help understand the depth of unconscious processes involved in formation of dreams, and thus aid understanding the nature of dreams and the TAT.

If TAT content is dissimilar to dreams this does not presume the TAT not a product of unconscious processes. Rather, it is assumed the level of unconscious involvement

is not the same as with dreams. This presumes the unconscious to be of more than one level, not all of which is compensatory.

There are three main hypotheses in this study. First, subjects' subjective appraisals of their assets and problems would be directly reflected in content of their TAT stories, showing lack of unconscious compensatory involvement. This would tend to cast doubt on the validity of the TAT as a measure of fantasy, at least as described by Freud as resulting from the same unconscious processes as dreams.

The second hypothesis is content of subjects' dreams would reflect compensatory representations of their subjective self-reports of assets and problems. However, personal associations of each subject might cloud this sufficiently to prevent effective analysis (Mattoon, 1978). Also, if dreams are symbolic rather than compensatory then dreams would not compensatorily represent problems. Regardless, one would expect a minimum of direct representation if dream reports are narrative arising from an unconscious process. Logically, dreams and TAT's should represent content differently if dreams are compensatory and TAT's are not.

The third hypothesis is a conscious pre-sleep wish to dream about solving a problem would heighten effects of the second hypothesis. Specifically, the conscious pre-sleep wish would cause an increase in number of dreams in which problems mentioned in the self-reports appear.

In sum, if TAT content expresses subjects' self-re-



ports similarly to content of dream reports, the notion TAT's reflect an unconscious process similar to that in dreams, a fantasy, would be supported. If both were compensatory Freud's theory would be supported. If both were not compensatory, then Freud's theory (1901/1955) would be cast in doubt. If, on the other hand, content of dreams and TAT's reflect self-reports in a different manner, the hypothesis TAT's stem from the same unconscious processes as dreams would be cast in doubt. Also, pre-sleep instructions to dream about solving problems should heighten number of dreams incorporating problem content.

The underlying purpose behind this study, therefore, was to contribute to understanding of the TAT and dreams, and their relationships to circumstances of dreamer and/or storyteller. This was to determine whether dreams are compensatory, whether the TAT is fantasy based on dream-like unconscious processes, to determine susceptibility of dream content to conscious pre-sleep instructions, and therefore help to understand the nature of mental processes involved in formation of TAT stories and dreams. Whenever possible this is approached from a clinical aspect to aid in interpretation of the TAT in clinical, rather than experimental, settings.

## CHAPTER II

### REVIEW OF THE LITERATURE

#### INTRODUCTION

This literature review covers three basic content areas: literature on the nature of the TAT; relevant studies on dreams, especially dream content and factors affecting dream content; and studies incorporating both dreams and the TAT. The purpose of this literature review is to examine questions as to the nature of the TAT, especially unconscious processes underlying it, and to show how dreams and self-reports may be used to help explain the nature of the TAT. While there are many differing theories about dreams and dream content, Sigmund Freud's (1901/1955) and C. G. Jung's (1912/1952/1956) understanding dreams and other fantasies are based on the same unconscious processes, and the differences between these two viewpoints will be used as unifying constructs in reviewing that literature.

Because of the divergence and breadth of this literature review, and its chronological organization by subject, it may at times seem reminiscent of history books of the Middle Ages, in which events are serially related without connection (Guggenbuhl-Craig, 1980). To help avoid this

aggregation, an overview and rationale for its structure is provided.

The TAT is reviewed first, as it seemingly has the most problematic and inconsistent literature, and is the subject to which this study is primarily directed. For purposes of perspective, a brief history and description the TAT and its uses are provided. Then the TAT and its administration are discussed to show methods by which the TAT is given are not major factors in inconsistency of literature on the TAT.

Following description of the TAT and its administration, its reliability is discussed. This brings up the questionable validity of the TAT, as defined by traditional theorists. The point is not to denigrate the previous work on the TAT, but to substantiate the need to investigate the nature of processes involved in creating TAT stories.

The section on the TAT and dreams chronologically cites the few studies incorporating both dreams and the TAT. It was placed before the section on dreams because these are primarily studies in which the TAT is used to understand dreams and dreaming, and considered a known quantity. Thus the previous section on the TAT must be considered when reviewing these studies.

The section on dreams and dreaming begins by giving a brief historical perspective of studies on dreams. Some philosophical assumptions, especially of Jung and Freud, follow. These are important as they influence much empiri-

cal work on dreams, both overtly and covertly. More recent, laboratory, work on dreams is then scanned as it has altered our conceptions of dreams and dreaming.

Dream content and attempts to investigate it are then surveyed, as this is the area of dreams addressed in this study. Influences on dream content are then discussed, from an anthropological, cultural, then experimental view. This is followed by a review of methods and results of attempts to change and control dream content.

THEMATIC APPERCEPTION TEST

The oldest extant written directory in Western Civilization for interpreting man's thoughts using dreams goes back to 200 A.D. (Artemidorus, ca. 200 A.D./1975) and mention of dream interpretation is at least as old as the Book of Genesis. Psychological interpretation using stories has a much more clearly delineated and recent beginning. The TAT was first introduced to the psychological community in 1935 as a method for investigating fantasy by Christiana Morgan and Henry Murray. The TAT quickly became very popular, as evidenced by over two thousand research publications on the TAT. However, use of the TAT as a research tool is waning. Swartz (1976) reports by 1971 the TAT had slipped from third to eleventh most cited test, and Varble (1971) reported TAT use in experimental studies was declining. On the other hand, Klopfer and Taulbee (1976) found clinical popularity of the TAT had increased over the ten years prior to their study, despite its decline in use as a research tool.

One example of decline in TAT use in research is in 1980 there were only twelve references to the TAT in the index of Psychology Abstracts, while in 1970 the TAT was not listed separately in the index, but TAT was in titles of 64 articles. Similarly, in Buros' Seventh Mental Measurements Yearbook (1972) 63 citations for the TAT are listed as appearing in 1969, but in Buros' Eighth Mental Measurements

Yearbook (1978) there are only 61 citations for the TAT in 1975 and 1976 combined.

The TAT was introduced as a standardized method for elicitation of stories considered fantasy and a theoretical framework by which to interpret them. However, a clear definition of fantasy was not supplied. In fact, this seemingly fundamental point has indeed been systematically neglected, for the most part, throughout the history of the TAT (Holt, 1978). As Holt (1978) points out, the TAT was originally supposed to investigate an undefined phenomenon called fantasy, but came to define that same phenomenon. This is an example of intellectual inbreeding, operationalism and circularity in definition.

The purpose of this section has been to show the importance of the TAT, especially from a clinical viewpoint. It has also attempted to show decline in experimental use of the TAT justifies its study in order to remove some obstacles from its continued use.

## ADMINISTRATION OF THE TAT

This section shows differences in administration of the TAT does not significantly affect results. Therefore, inconsistency in the literature is not due to differing administration.

As generally used, the TAT has remained substantially unchanged since first publication in final form by Murray (1943). A revision for minorities by Thompson (1949) in which persons in the cards were given negroid features was generally found of limited application or practical effect (Turner & Coleman, 1962).

There are thirty-one cards in the TAT, eleven of which, including one blank card, were considered suitable for all subjects. Fourteen cards were for males or females only, three cards were for adults (one for males, one for females, one for both), and three cards were for children (one for boys, one for girls, and one for both). Originally, Murray (1943) envisioned twenty cards being given to each subject. Ten were to be shown at each of two one-hour sessions held at least one day apart. However, even Murray (1951) acknowledged the TAT was not being administered this way.

Attempting to discern how the TAT was actually being administered, Hartman (1970) found many proposals for a standard set of about ten cards had been forwarded, but little consensus had been reached. By contacting 170 experi-

enced psychologists, Hartman (1970) rank-ordered and gave percentages of clinical use of each card, found high agreement in use of eight cards (over 47%), and moderately high agreement (over 30%) on three others. On this basis, he postulated a standard set of eight cards for use with adults: 1, 2, 3BM, 4, 6BM, 7BM, 13MF, and 8BM. He felt this a minimum set to be given to all subjects, with cards added if desired. Regardless, he felt this basic TAT set should always be used as consistency would aid research and teaching. Subsequent studies have shown Hartman's TAT set is most productive with both a clinical population (Newark & Flouranzana, 1974) and normal subjects (Irwin & Waude, 1971).

Instructions as given by Murray (1943, pp. 3,4) are standardized for his administration procedure, including use of strict time limits. In actual practice, content of instructions remains relatively stable, but form varies greatly from situation to situation. Generally, only one story per card is accepted, and stories are transcribed by examiner. However, for research and group work, Harrison (1965) suggests subjects write their own responses. Clark (1944) and subsequent investigators (Eron & Ritter, 1951; Lindzey & Heinemann, 1955; Bernstein, 1956; and Lindzey & Silverman, 1959) have all found either insignificant or no differences between TAT stories for which subjects write their own stories and those transcribed by examiner. As a final, definitive study, Baty and Dreger (1975) found no



differences among stories which were tape recorded, written by subjects, or transcribed by examiner, except examiners tended to abbreviate stories they transcribed, omitting superfluous verbiage and detail, when compared to tape recordings of same stories. In a similarly encouraging study for researchers, Lindzey and Silverman (1959) found no practical differences between stories elicited when subjects were given TAT cards and stories given in response to slides of TAT cards projected on a screen.

Bernstein (1956) found absence of examiner resulted in TAT stories showing more sadness and less subject involvement. Turner and Coleman (1962), studying effects of examiner differences on a variety of variables, found only slight differences in stories, while Sumerwald, Campbell, & Sarason (1958) and Garfield, Blek, & Melker (1952) found no differences. More recently, Milner (1975) found more sexual content given when examiners and subjects were same sex.

It appears the TAT is highly resistant to differences in administration. It seems subjects will give whatever TAT stories they will give, regardless what the examiners do. Otherwise, there seems little agreement in what the TAT measures. Nor is there agreement as to accuracy or consistency of measurement, although content of TAT stories is generally considered fantasy, an unconscious product of an underlying process or trait. However, differing administration of the TAT does not likely cause these differences of opinion.

## RELIABILITY AND VALIDITY

This section shows the TAT may be appropriately viewed as a state measure. Also, this section points up the need to examine content of TAT stories.

One main problem of the TAT which has led to decline in use is lack of reliability and validity. These faults have seriously compromised many writers' faith in the TAT as an effective tool to study unconscious processes.

Klopfer and Taulbee (1976) stated, "tests of a thematic sort often reveal much more about a person's conscious preoccupations and goals than they do about the unconscious" (p. 562). This is in context of their previous statement pointing out the unscored, intuitive uses the TAT generally receives in clinical settings, "We seem to be approaching the conclusion that the TAT is not a psychometric instrument at all, but rather a multidimensional method for studying complex personality characteristics and for evaluating needs, values, motivations, and attitudes" (p. 554). In light of these and other disagreements as to nature of the TAT, arguments as to validity and reliability become both more useful and less confusing, at least initially.

Swartz (1976) interprets much of the decline in number of studies on the TAT as a reaction to the TAT's lack of data on reliability, validity, and standardization. For example, one construct often associated with measurement by the TAT is achievement motivation. Entwistle (1972), in her

then comprehensive review article summed up both published and unpublished literature on achievement motivation. She found this data characterized by low reliability, in the .30 to .40 range, and correspondingly low validity. In generalizing this to other constructs, she stated, "It is very likely that other fantasy-based measures (affiliation, aggression, curiosity, power, and the like) suffer from many of the same drawbacks that afflict measures of achievement motivation" (p. 390). Similarly, Swartz (1976) found the typical TAT study is a validation study, and as a result "the results are equivocal" (1129).

Obviously, the TAT is problematic when it comes to the most accurate and theoretically sound methods of determining test reliability, that of testing a subject and then retesting again, or test-retest reliability (Anastasi, 1968). This is due in part to possible contamination caused by subject memory of earlier responses, especially when inter-test interval is short. Although Winter and Stewart (1977) have developed instructions to subjects to help with this, subject memory may still be a factor, as the readministration may become a memory test. When inter-test interval is longer, possibility of subject circumstances having changed is great, so response will presumably, if valid, change to reflect those changed circumstances. Certainly, on more long-term bases, the TAT is suspect. "Evidence from long range longitudinal studies is mounting, that the assumption of continuity in human development is too simplistic, and

that behavior is subject to greater change than current studies lead one to believe" (Klopfer & Taulbee, 1976, p. 555). Given this, measurement of trait or long-term behavioral style becomes difficult using any static model of personality. As the TAT is often used or interpreted in this context, it is often blamed for what may be problems in the constructs being tested. Coupled with uncertainty about what the TAT does and does not measure, however, this raises doubts as to what are appropriate uses of the TAT. Essentially, then, problems may be in use and interpretation of the TAT, rather than in the TAT itself.

As there is no equivalent form of the TAT the method of equivalent forms reliability does not lend itself as a solution. As for split-half reliability, when one is concerned with sequence of responses, viewing each as, in part, dependent on the former, the requisite of dividing the test into comparable halves becomes impossible, as one must deal with the TAT as a single indivisible unit. Also, one would need a method by which to equate the different cards.

Coupled with these problems of determining reliability of the TAT, from a practical sense, there is a general lack of agreement as to what is being measured. Therefore, the qualities of "yardstick" are especially hard to determine when a seeming variety of "yardsticks" are used. Holt (1978) lists ten generic classes of determinants of the TAT story: situational context, directing sets, perceptual impact, arousal of motives and affects, identification and

identity, defensive circuitry, associative elaboration, limiting and facilitating effects of abilities, internal milieu, and personal style. Any of these areas or parts thereof could be assumed the focus of investigations using the TAT. Partly because the wide variety of foci, Arnold (1976) found literature viewing calculation of internal consistency inappropriate for the TAT.

In a similar vein, Atkinson (1981) feels reliability measures are neither appropriate nor needed for uses of the TAT as a measure of motivation. This concept will be discussed later, but is briefly mentioned here to add perspective to these arguments. Regardless the relative importance of reliability in context of motivation, the TAT is not always used in motivation studies, and reliability is an important consideration when using measures clinically.

There is at least one appropriate method for determination of reliability on the TAT. Feld and Smith (1958) reviewed the literature to that date and found scoring, or interjudge, reliabilities ranging from .66 to .96, depending on method used, with an encouraging median of .89.

One example of reliable scoring system is Magda Arnold's Story Sequence Analysis (1962). This system, primarily developed for clinical measurement of subjects' methods of viewing life situations, has shown consistently high inter-scorer reliabilities in a variety of situations (Arnold, 1976). Two studies cited were by Arnold's students, specifically Burkhart (1958), who found 97% and 94%

agreement between herself and two other scores, and Petrauskas (1958), who had 80% and 82% in a similar situation. Arnold (1974) did not do so well, but achieved 74% agreement with one other scorer. Arnold (1962) did not mention specific figures, but listed interscorer reliability as 'high.' Other studies showed similar results, with Arnold (1976) concluding specific scoring systems have relatively high inter-scorer reliability, while non-specific interpretations do not fare so well. Therefore, even though the TAT can be reliably scored, it may not be reliably interpreted. Scoring may only be an intellectual exercise. Also, scoring methods for the TAT are generally short-lived and seldom used clinically (Dave', 1972; Klopfer & Taulbee, 1976). Arnold's Story Sequence Analysis is no exception to this rule, being currently out of print.

Given general lack of proven reliability of the TAT and the traditional clinical uses to which it is often put, if we accept traditional testing theory generally which considers validity non-existent without reliability except in volatile state measures in which reliability is considered antithetical to validity (Anastasi, 1968), we must consider the TAT an experimental or subjective clinical tool best used in determination of current state of the subject. Therefore, this study will treat the TAT as a state measure.

In reviewing literature on construct validity of the TAT, one finds it voluminous, but not particularly helpful. As more recent studies are for the most part more atomistic

investigations based on older, more general literature, older studies are more useful. The bulk of these studies are for classification of various needs, motives, and drives. Zubin, Eron, and Schumer (1965) conclude their review of these studies on motivation by stating "there is an uncomfortably large number of classifications based on observational and clinical generalizations without empirical data" (p. 409). They feel the roots of this are in the definition of the TAT as a measure of fantasy, coupled with lack of an adequate definition of fantasy. That is, since fantasy is not defined except as unconscious compensatory process (Freud, 1901/1955; Jung, 1908/1960) or unconscious symbolic process (Jung, 1912/1952/ 1956), a more cogent question would seem one which attempts to ascertain from what level of personality TAT stories originate. The proper answer is probably inconclusive, in that a variety of levels are no doubt involved. A variety of substitutive, symbolic, and defensive mechanisms as well as differing amounts of conscious mediation are invoked in responding to a TAT card. This concept would qualify a large amount of current data, and aid in interpretation of seemingly conflicting results of a variety of studies.

At present, despite being a popular tool in both clinical work and experimental studies, there is little consistency of opinion regarding the TAT. Arnold (1962) neatly summarized literature on the TAT to that date, being able to explain the results as an inverted U-shaped curve in which

primary process material was evidenced in mild states, but in more intense states such representation is repressed, and replaced with conscious conflicts. This conveniently explains away any discrepancies from the more generally accepted and used linear models of TAT interpretation, but, unfortunately, does not aid in interpretation of data with any certainty. In a similarly noncommittal style, Klinger (1973) reviewed studies using achievement, affection and neutral activity, context, and achievement fantasy. Despite his optimistic assessment the TAT is a useful measure, he sees studies as fitting into three categories. These attempt to validate models which either: a) elicit; b) suppress; or c) both elicit and suppress similar fantasy in subjects. Certainly this covers all possibilities but does little to aid interpretation of the TAT.

No literature review of the TAT would be complete without at least mentioning the considerable body of research using the TAT centered at Harvard University. Because it is not relevant to this study, for reasons to be described later, this is not intended as a review of that literature, but only to acknowledge its existence and considerable influence.

First summarized in 1953 (McClelland, Atkinson, Clark & Lovell) motivation research has systematically studied the concept of achievement by means of the TAT. Currently led by McClelland (1971) and Atkinson (1979), these studies have been concerned with assessment of motivation, and seem rela-



tively consistent. These works were designed specifically to test theories of motivation, theories of underlying traits, spawned by studies from the same theoretical school.

Against Swartz's (1976) and Entwistle's (1972) arguments, Atkinson (1981) ably defends his use of the TAT to measure motivation by negating need for reliability. Atkinson (1981) disagrees with Entwistle's (1972) summary of literature on the TAT as showing low validity by pointing to predictive validity of his uses. This is also in opposition to Klopfer and Taulbee (1976) who asserted longitudinal studies do not show long term validity or reliability for the TAT.

Regardless its validity or lack thereof, this body of literature is of different scope than would be relevant to this study, as it is more concerned with actions and underlying personality constructs of subjects than with specific content areas addressed in this study. It presumes the nature of the TAT as a measure of underlying traits. Specific content categories are not examined, nor are relationships of content to content in other phenomenon, notably dreams. Essentially, these studies have taken the nature of the TAT as a given, and used the TAT to study hypothesized constructs. That is, in this body of research the TAT records are analyzed for certain constructs, especially concerning motivation and need. While this use may be accurate, little work has been done to determine how or why, or what unconscious processes are involved. Also, the TAT is

often used in ways not addressed by this literature, especially clinically.

Given more traditional clinical uses, however, if one is to accept conventional theories on tests and testing standardly accepted by clinicians, it seems hard to believe validity could be measured accurately without reliability except when using a volatile state measure (Anastasi, 1968). Certainly viewing the TAT as a state measure is a more practical bent, and much more clinically oriented. Therefore, as the present study is primarily interested in specific content from a clinical perspective, results of TAT research on motivation need not be considered further.

Murray (1943), in the final revision of the TAT, felt the TAT could reveal the "dominant drives, emotions, sentiments, complexes, and conflicts of a personality" (p. 1). The "Subject leaves the test happily unaware that he has presented the psychologist with what amounts to an X-ray picture of his inner self" (Murray, 1943, p. 1). Such a positive statement should not be viewed with too much optimism, however, as it neglects the problem, regardless their clinical usefulness, x-rays are not always lucid, and even when they are, are often interpreted differently from one specialist to the next. In sum, it seems the TAT is not as definitive an instrument as many would wish to believe, needing more interpretation and intuition than more objective, unambiguous instruments.

Given arguments set forth above, it would appear the

TAT may be legitimately considered a state measure. This does not preclude use in any other manner, but does imply investigation into the nature of the TAT is an appropriate endeavor.

TAT AND DREAMS

This section reviews the few published or otherwise accessible studies incorporating dreams and the TAT. The inconsistency and lack of agreement are obvious, and underscore need for further investigation.

Fantasy and dreams are often viewed as being similar. No less a theorist than Freud (1900/1955), when speaking of unconscious roots of our thoughts, felt, "Our nocturnal dreams are nothing but such fantasies" (p. 67). Most literature on relationship of the TAT to dreams attempts to study veracity of this statement. In attempting to review literature on relationships of the TAT and dreams, it is necessary to bear in mind one common assumption: the TAT measures fantasy. Most studies employing the TAT and dreams were not intent upon examining the TAT, but assumed it, a priori, an accurate measure of fantasy. Rather, they were attempting to examine dreams.

The earliest available study in which dreams and the TAT were compared was by Tomkins (1942). Using a content analysis of dreams, he found major themes of the TAT related to dreams of his subject. This study used only one subject, and interpreted content representative of themes. Specific content was not always duplicated even when themes were considered replicated.

Sarason (1944) used a similar paradigm with 34 'mentally defective' subjects. He concluded dream content and

TAT stories are similar because dream content was often, although not always, represented in TAT story themes. Shulman (1955) used nearly the same paradigm, and also had results similar to the above two studies. This seems consistent with other similar research at Western Reserve University being conducted at that time (Blume, 1979).

Gordon (1953) conducted a more thorough study in which he used a need-press analysis to compare ratings of 42 variables in dream reports and TAT stories. He used 29 psychiatric patients, and content variables consisted of traits considered of clinical interest, such as aggression, dependency, affiliation, etc. Eleven correlations were significant, although not high. On this basis he concluded dreams and the TAT were related. However, this was on examination of traits rather than specific content. Therefore, he was interpreting content as representing presupposed traits. He scored traits as appearing in dreams and the TAT when identical content did not.

Foulkes and Rechtschaffen (1964) found TAT stories showed structural similarities to reports collected from rapid eye movement (REM) sleep in two of twelve variables, but not to non rapid eye movement (NREM) sleep mentation collections. Foulkes studied children in a similar manner using the Childrens Apperception Test, but did not find any relationship (Foulkes, Pivik, Steadman, Spear, & Symonds, 1967). In both studies specific content was not the major topic of consideration.

Fiss, Klein, and Bokert (1966) awakened subjects from REM sleep, asked for responses to TAT cards, and found resulting stories very much like dreams. Fiss, Ellman, and Klein (1969) reported a similar study, but this time subjects were awakened either during or after a REM period. Little difference was found in TAT stories, but both were found dreamlike. Starker and Goodenough (1970) on the other hand, found TAT stories were not dreamlike when subjects were awakened from REM sleep, although more emotional than stories elicited from NREM sleep. While these three studies used TATs of their subjects, they did not use subject's dreams. They were included in this review because in their assessment the TAT is dreamlike under certain conditions. It is doubtful these conditions would be encountered in clinical evaluation.

Two studies show a connection between dreams and TATs when interpreted using Murray's needs. Brender and Kramer (1967) found dream reports collected from REM sleep showed similarities to TAT stories scored by Murray's needs, although agreement was not conclusive. Similarly, Palmiere (1972) found non-significant positive correlations between aggression in dreams and need/aggression in TAT stories.

Zepelin (1972) worked from a different, ego-analytic theoretical perspective. He found no parallels between dreams, both home and laboratory, and TAT stories in areas of 'ego energy' or dysphoria.

Blume (1979) found judges could identify dreams, fan-

tasies, and TAT's as belonging to same person at a greater than chance level. However, materials were not purged of identifying content, idioms, and so forth. Judges were unable to accurately sort materials on the basis of anxiety, showing dreams, fantasies, and TAT stories did not equally reflect anxiety as measured by that study.

In sum, there is little agreement among the few studies which have compared dreams and TAT stories. It seems relationships between the TAT and dreams are neither well defined nor well understood. Also, these studies have all attempted to understand dreams using the TAT. They have presumed the nature of the TAT and attempted to describe sleep mentation in terms of their respective conceptions of the TAT.

Studies on the TAT and on the TAT and dreams are inconsistent. Little literature is concerned with investigating the nature of the TAT or explaining unconscious processes underlying it. The need for such studies is apparent. One manner research on the nature of the TAT could be carried out is by using dreams. By comparing content of TAT's to dreams similarities and contrasts may become apparent.

DREAMS

Studies on dreams and dreaming are many and varied. It would be virtually impossible to cover the literature in any comprehensive manner, and this review does not pretend to do so. The purpose of this portion is to briefly discuss works most specifically concerned with this study, or the works essential to its understanding. That is, only literature showing how dream content may or may not be compared to TAT content are reviewed.



## A PHILOSOPHICAL PERSPECTIVE

Studies involving dreams and dreaming are inevitably influenced by often unstated philosophical assumptions. This is because a great deal of 'conventional wisdom' and traditional notions about dreams are incorporated into the design and execution of experiments. However, these assumptions are not always consistent. To help alleviate this problem and better explain and clarify this study, some theoretical biases and philosophical attitudes toward dreams, and their background, accepted by this author are briefly set forth.

In the second century A.D., Artemidorus (ca. 200/1975) became first known author of a work attempting to give explanations or meanings of dreams. While dreams had long been of interest in religion, if not elsewhere, Artemidorus became first of many authors of books primarily concerned with dreams. Artemidorus became popular, and, like the bulk of the plethora of dream books which followed, was based more on opinion than on empirical data. This tendency has continued to present day, with much being written for mass market, while other works, based on scholarly research, are less spectacular, and go relatively unheeded.

In medieval times, dreams were largely disregarded by the church, and therefore, by the academic community in Europe. This at least in part reflected relative lack of attention and importance dreams were given in the New

Testament, as opposed to the Old Testament (Hillman, 1979a).

Dreams have been studied from a variety of theoretical perspectives and contributions, or lack thereof, to the therapeutic process. Of long-standing theories of psychotherapy concerned with dreams, two most well known and often mentioned are of Carl Jung (1912/1952/1966) and Sigmund Freud (1901/1955). While both Freud and Jung felt dreams of their respective analysands were important in the analytic process, there are basic differences in their respective views of dreams. These differences often appear in a variety of studies.

Freud felt dreams are unconscious, primary process activity, the result of day residues, portions of waking life, interacting with subconscious desires. In this manner, dreams serve to relieve tension through wish fulfillment and express unacceptable thoughts and wishes. This is accomplished through compensation. Freud's contributions to dream theory are seen in much subsequent work on dreams in which dreams are generally considered compensatory. Many works are colored by Freud's other theories, quite possibly to the detriment of validity of results. This bias can easily affect design and execution of studies, and possibly taint results in a manner which would otherwise not have occurred.

At the heart of differences between Jung's and Freud's dream theories was Freud's contention sexual issues were at the root of human behavior, motivation, and psychopathology.

Freud viewed dreams as agents by which unacceptable, often sexual, material could be introduced to the conscious and otherwise dealt with in order to relieve anxiety. Jung viewed this view of dreams as simplistic and not entirely correct (Frey-Rohn, 1969/1974).

Jung's (1912/1952/1956) basic postulates included the consideration dreams expressed of current psychic states of individuals, a point also more recently adapted by Hall (1955). In addition, Jung felt dreams aid maintenance and restoration of health (Weitz, 1976) and are symbolic communication of unconscious to conscious (Hillman, 1979b), not necessarily compensatory.

Freud's contention dreams are primary process material leads one to assume dreams are not amenable to change through cognitive processes. Although, he felt dreams would express long standing unconscious wishes by using available day residue, he felt dreams would not reflect many conscious wishes as this material might be unconsciously undesirable, or not wish fulfilling.

In contrast, since Jung thought dreams could express undesirable material he felt one could consciously influence dreams, although this did not imply control (Mattoon, 1970). Jung felt the unconscious was rather autonomous, not under conscious control. Given the unconscious as the source of dreams, it follows dreams could not be consciously controlled. Although Jung felt conscious activity could produce changes in dreams, he was unsure changes could be pre-

dicted. Jung apparently never investigated this possibility directly. This may have been due to lack of necessary psychophysical instruments and techniques, but more likely reflected lack of interest on his part in doing so.

An explanation of this lack of interest may be found in work of one of Jung's students who has since added many valuable insights into the field of dream work Jung began. Hillman (1979b) suggests one must accept the dream and move toward it, rather than attempting to move the dream toward the conscious level. By this, he means one must attempt to conform to the dream and to accept it, without attempting to understand it, or to explain it in terms of one's preconceived notions of self. This view is an outgrowth of Jung's contention the unconscious mind has been neglected by modern man, and this neglect must be rectified if one is to expect mental health (Frey-Rohn, 1969/1974). A similar perspective is offered by Guggenbuhl-Craig (1980) who states we may "regard dreams as a sort of group psychotherapy for archetypes which takes place and has importance whether our humble egos participate or not" (p. 79).

With the work of Sigmund Freud, The Interpretation of Dreams (1900/1955), fields of dreams and dream content were again opened to more widespread and scholarly interest and investigation. This was in keeping with increasing activity in studies of brain and mind in the late Nineteenth Century.

A large body of literature on dreams and dreaming was compiled following publication of Freud's (1900/1955) work,

and much was concerned with its refutation. Jung's Symbols of Transformation (1912/1956/1956) was a leading influence in the break away from Freud's theories. Jung postulated dreams represent the present state of dreamers' minds, and are not necessarily attempts to deceive dreamers by concealing unacceptable desires or feelings. By this, it is meant dreams themselves have meaning, rather than being representations of other meanings under other circumstances not accessible to conscious mind. For similar reasons, many other works on dreams which dispute Freud's notions have been published. Among most notable and influential today are The Meaning of Dreams (Hall, 1953), and The Content Analysis of Dreams (Hall & Van de Castle, 1966), which recant Freud's supposition dreams are intended to reduce accuracy of dreamers' cognitions.

Regardless of theoretical notions which have influenced or inspired subsequent works on dreams, basic differences between Freud's and Jung's theories of dreams are often topics of investigation. One unresolved issue is whether changes in dream content are merely reflections of changing circumstances of dreamer, and reflect reworking of different day residue, or whether dream content can be changed through conscious influence. Nevertheless, some investigations shed light on this controversy, and analysis of these provides some indications of means by which questions might be better answered. This analysis will be provided after review of other requisite literature.

As may be seen, this study is influenced by a Jungian perspective. It is felt dreams may be influenced by conscious effort, but not precisely controlled. Also, dreams are felt to represent the present state of the dreamer's mind, not must unacceptable unconscious desires in compensatory fashion. They are meaningful state measures, just as are TAT stories, but in a more symbolic manner. That is, the dreamer's situation is not only accurately reflected, but dreams also show how it might be understood or changed.

## SOME RECENT EMPIRICAL STUDIES ON DREAMS

Having discussed a philosophical perspective for study of dreams; scientific, empirical aspects of dreams and dreaming need be covered. While this work is slowly changing our notions of dreams and dreaming, it still seems to have less influence than deserved. Results of modern psychophysical research on dreams are inevitably related to our philosophical notions, and seem almost adjunct to more phenomenological perspectives.

Attempt is made to relate this modern area of research to more traditional clinical views of dreams. Indeed, this is necessary in order to generalize results to study of the TAT, especially in clinical assessment.

During the past three decades it has become generally accepted the dream state does, in fact, exist, although at this time evidence for this is still considered inferential (Winget & Kramer, 1979). In general, however, laboratory researchers have concluded dreaming does occur during rapid eye movement (REM) sleep (Arkin, Antrobus, & Ellman, 1978). It has also been shown dreaming can occur, although with apparently lower frequency, during other, non-rapid eye movement (NREM) sleep stages (Herman, Ellman, & Roffwarg, 1978). If the dreamer is awakened during an REM period a dream can usually be reported (Snyder, 1978). This greatly increases accuracy and efficiency of dream research, as it reduces effects of individuals' problems of dream recall and

dream recall frequency. The former involves "mechanics of the situation," the latter is concerned with individual differences (Cohen, 1974, p. 138). Thus, by awakening subjects in the laboratory during REM sleep periods, dreams are reported for nearly every subject for every night of the study spent in the laboratory. Because of this, factors such as repression are probably not so influential as in home dream reports. Also, this apparently would reduce any systematic differences which could alter outcome between those who remember home dreams and those who do not.

Arkin (1978) credits the article by Aserinsky and Kleitman, "Regularly occurring periods of eye motility and concomitant phenomena during sleep" (1953, p. 273) as starting point for the large majority of recent and present scholarly research on dreams and sleep. It outlined methods by which dreams during REM state can be readily recalled in the laboratory, and spurred an interest in sleep, dreams, and dreaming which led to founding the Association for the Psychophysiological Study of Sleep (APSS) in 1960 (Arkin, 1978). Since then a large quantity of research on dreams and dreaming has been conducted, and has yielded a substantial pool of data and literature on sleep and dreams.

Laboratory dreams are unlike dreams of patients with which psychotherapists work. Dreams of patients in psychotherapy are home dreams, both retrospective and highly subjective, and contain anything the therapy patient brings to the therapist and calls a dream. Laboratory dreams, by con-



trast, are more carefully defined. The total report of the dreamer is referred to as sleep mentation, a term including other cognitive processes, which, along with dreaming, make up home dream reports. These cognitive processes can include conscious thinking from waking periods during the night which are subjectively remembered as dreaming, sleep onset mentation, unelaborated imagery, emotions, sense perceptions, and so forth. Therefore, content of home dream reports may be more diverse and florid than content of laboratory dreams.

While laboratory studies have done much to improve our understanding of dreams and other sleep mentation, dreams as defined and limited by laboratory studies are not of direct application to psychotherapists who use patients' dreams in therapy. This is not dream material psychotherapists are usually presented. Patients can only report subjective recall of sleep mentation, which they call dreams, and may well include non-dream material, especially sleep onset mentation and unelaborated imagery. However, psychotherapists usually have neither access to nor interest in sleep laboratories. They consider patients' subjective dream reports with which they work dreams. Because this study hopes to be relevant to therapeutic uses of dreams and validity of those uses, dreams will be defined as all reported sleep mentation, and dream content will be defined as composite parts of dreams.

Because of differences in definitions of home and lab-

oratory dreams briefly discussed above, the following material should be viewed somewhat cautiously. Some studies examined used home dreams, in which dreams were recorded after subjects' awakenings and reported later. Others used laboratory dreams, in which subjects were awakened after certain periods of REM sleep had elapsed and dream immediately reported and recorded. Therefore, conclusions and inferences drawn from one study may not be directly applicable to another.

Cartwright and Kozniak (1978) found dreams reported in laboratories significantly different than those reported from subjects' homes. Part of these differences may be accounted for by relatively obvious differences in sleep (and hence dreaming) setting, including relatively public nature of the laboratory, effects of wires and machinery used to monitor and record sleep stages, subject/experimenter interactions, and interruptions in sleep and interruptions in dreams. Interference, generally considered problematic in dream recall (Cohen, 1978) is reduced, and salience, also considered to affect probability of dream recall (Cohen, 1978) probably does not have as great an effect. Cohen (1978) found the concept of repression as a factor inhibiting dream recall not been well substantiated in the literature, regardless general anecdotal and theoretical acceptance (Freud, 1900/1955). None-the-less, in laboratory studies any effect repression might have would also probably be diminished.

It has been shown the last dream of the night in the laboratory is most similar to home dreams. It is usually longest, most emotional, and most complex (Snyder, 1970). This is probably because the last dream of the night is the home dream most likely to be recalled and reported. Even so, home dreams contain more aggressive content than do laboratory dreams (Weisz & Foulkes, 1970). Home dreams are also more imaginative and realistic than laboratory dreams (Hauri, Sawyer, & Rechtschaffen, 1967).

For these as well as other reasons, settings of studies cited will be noted, so findings for both may be reviewed and results considered in reference thereto, as there are apparent similarities between home and laboratory dreams in spite of inherent differences.

## DREAM CONTENT

Dreams are studied from many perspectives. As this study examines content of dreams, problems and conventions in study of dream content are reviewed.

Kramer (1969) complained study of dream content and scoring systems for dream content are problematic. He postulated one great difficulty is the scoring systems' tendency to neglect subjective experiences of dreamers (Kramer, 1969, p. 378). However, much of current difficulty with and reasons for the plethora of scoring systems is the tendency to attempt to either incorporate subjective experience (Hall & Van de Castle, 1966) or feelings of dreamer (Corriere, 1978; Corriere, Hart, Karle, Binder, Gold, & Woldenberg, 1977) in the dream content scoring system rather than attempting to score content in an accurate and efficient manner without adding any additional material. Even when provisions for content alone to be scored are incorporated a theoretical bias can color the scoring system, reducing applicability, and probably accuracy and validity.

Winget and Kramer (1978) list 132 different dream rating scales and rating systems published previous to 1972. Scales listed include systems for rating or measuring, among other things, affect, emotion, hedonic tone (or lack thereof), ego functioning and strength, cognitive aspects of both the content structure, dream dimensions, sexuality, orality, anality, aggression, and interpersonal relations.

All these scales are in some way concerned with understanding or interpreting dreams, but all take differing viewpoints, finding others inadequate for stated purposes of content scoring supposedly accomplished by that particular scale or system.

In addition to Winget and Kramer's (1978) listing, two more recently published scales bear mention. This is partially because of their recency, and partially due to their strong theoretical biases, which, although not uncommon, are seldom seen so vividly, and well used here to point out some of the problems inherent in having strong theoretical biases when studying dreams.

Foulkes (1978) employs a system which presupposes veracity of Freud's (1900/1955, 1901/1955) theories of dreaming advocating primacy of sexuality and parental influences on the subconscious (Frey-Rohn, 1969/1974). Foulkes (1978) scores many otherwise superficially and apparently innocuous items as representing latent content of phallic, maternal, or paternal nature, and so forth. This ultimately leads to assurance all dreams analyzed using his system will comply with Freud's theories which postulate dreams represent sexual material. This very possibly does violence to meanings of dreams. Preoccupation with theories of Freud is by no means uncommon when reviewing literature on dream content. For this reason, it is necessary to be familiar with this viewpoint in order to evaluate this literature.

On the other hand, Corriere et al (1977) base their

system of scoring dream content on Karle et al's Feeling Therapy and its major premise was in turn partially supported by Corriere's (1974) dissertation, designed to enhance acquiescent response sets. While it is beyond the scope of this paper to discuss these works at length, it should suffice to say they are based more upon anecdote and opinion than solid data. This is especially true when one considers Corriere's (1974) work. Empirical underpinning of this theory, Corriere seems more concerned with criticism of other, well-established and accepted theories, than with collection and interpretation of unbiased data by means of sound experimental design. For these reasons, results from these sources must be viewed askanse.

Speaking to, among others, above cited problems, Antrobus (1978) listed criteria for reviewing or constructing rating scales for dream content which bear consideration in this study. He states,

the criteria for describing the relationship between waking experience and sleep-mentation reports in terms of their common features and relations might include:

1. all features common to persons, objects, relationships, and actions of both waking- and sleeping-report sets;
2. the features organized according to relations and actions common to the waking and sleeping sets;
3. when common features are redundant, retaining only the most specific, particular features in preference to more abstract features (to facilitate efficient description) (Antrobus, 1978, p. 572).

Antrobus also cautions problems are inherent in transformation of visual or other non-verbal aspects of dreams into verbal dream reports, and, while an obvious source of problems and inaccuracy in study of dreams, there is little research on this topic.

In conclusion, it seems there is no single rating scale or system for dream content on which one might rely or find universally, or even commonly, accepted. The most commonly cited system is of Hall and Van de Castle (1966), although by no means used in the majority of reports on dream content analysis. This is despite, or perhaps because it is relatively free of theoretical bias.

## EFFECTS ON DREAM CONTENT

Having seen problems inherent in investigating dream content, sources of dream content become of interest. Understanding causes or reasons for a dream containing certain content is not only essential for dream interpretation, but also for comprehending unconscious processes involved in dreaming. This section will give anthropological and popular works explaining the great interest in changing dream content. Then a historical survey of studies on changing dream content will be presented, followed by a review of recent scholarly work.

At about the same time Hall's (1953) and Aserinsky and Kleitman's (1953) publications were instigating more precise methods for research on dreams, some important anthropological studies on views or uses of dreams in so-called primitive societies began to appear. In these studies Stewart (1951, 1953-1954) and Holman (1958) described a novel and apparently successful use of dreams by the Temiar tribe of the Senoi, who are aborigines living on the Malay Peninsula. These views appear to have captured imaginations of a number of psychological researchers, and are summarized in Noone and Holman's In search of the dream people (1972), and Stewart's Dream theory in Malaya (1969), often cited elsewhere.

The portion of the above works relevant to this study is Senoi are a group of aborigines indigenous to the Malay



Peninsula living in a culture which, to our knowledge, is marked by a lack of violence, jails, courts, or other manifestations of behavioral problems. This even includes a lack of psychosomatic illnesses (Wollmering, 1978). Stewart (1969) concluded this lack of problems was due to the Senoi's beliefs about dreams and resultant uses of dreams.

In brief, the Senoi's belief about dreams of prime concern in this study is one's actions during dreams affect one's waking life. Actions which a person takes in dreams have repercussions in their waking life. This is especially important in regards dreams in which there is interaction with others. It seems the Senoi conceive of little, if any, boundary between dream and waking reality (Noone & Holman, 1972). Senoi are taught from childhood to discuss their dreams, and are taught they must control their actions in dreams, or, more correctly, must control their dreamed selves. They report ability to do so. Their culture places a great emphasis on having actions in dreams consistent with their cultural values, including heroism and courtesy. By pursuing these goals in dreams, Senoi believe they can and do change their waking lives (Garfield, 1974).

Popular interest, although often inaccurate and poorly based, can lead to increased scholarly interest and study in a topic. With Fritz Perl's (1969) popularization of psychotherapy incorporating use of dreams of those undergoing therapy, a renewed popular interest in and fascination with dreams arose. This was in part a response not only to Perls

(1969), but also to Stewart (1969) and Noone and Holman (1972). Writers and works capitalizing on this revived popular interest in dreams and changing dreams include Faraday Dream power (1972) and The dream game (1974), Garfield Creative dreaming (1974), Progoff At a journal workshop (1975), and Corriere and Hart The dream makers: Discovering your breakthrough dreams (1977). While these works, written for the popular press, lack scientific rigor or an established empirical base, they have attracted a great deal of interest, attention, and speculation.

While most of these authors advocated the efficacy of changing dream content, Corriere and Hart unequivocally warn "One of the most dangerous and misleading things anyone can do with their dreams is to try to control them" (1977, p. 171). In Corriere's (1974) dissertation however, he advised the opposite, feeling dreams can and should be changed. Perhaps he was aware of problems in his experimental method, and did not trust his own work. He had instructed his subjects to change their dreams and emotional content thereof. Subjects, reporting home dreams, were aware of his hypothesis and predicted direction of results. In addition, he neglected to use a control group.

In a more carefully executed study, Wollmering (1978) followed a recent tradition of scholarly work on changing dream content. However, he also allowed the subjects to know the hypotheses being tested, their respective dream content could be changed by conscious wish. In as much as

he used self-report of home dreams, his positive results may well have been caused by conscious or unconscious attempts of subjects to please experimenter.

Regardless of methodological flaws of Wollmering (1978), and Corriere's theoretical fervor and resultant methodological biases, possibility of controlling one's dreams remains a legitimate and intriguing area for research. In attempting to understand problems involved in this area of research, some questions raised are better defined, and sometimes answered by examining older literature on altering dream content.

Since the end of the last century there has been evidence dream content could be altered by pre-sleep stimuli or activities. Monroe (1897, 1898) found reported content of (home) dreams could be altered by using a visual stimulus (1897) or taste or smell (1898). Andrews (1900), however, failed to see incorporation of pre-sleep stimuli in content of subsequent dream reports.

This topic seems to have been largely ignored for some time thereafter, regardless of this seeming discrepancy. The next study published was in 1933, with Middleton supporting Monroe's (1897) position, as he found 51% of laboratory dreams (but not with subjects being awakened from REM sleep) which were recorded could be considered as credible accounts of mundane daily events. It does seem content of reported dreams does incorporate pre-sleep material on the basis of these early studies.

Poetzl (1915/1947) found subliminal perceptions influence dreams, a view supporting Jung's (1912/1966) contention. These findings, however, have more recently been disputed by George and Jennings (1972). To date, this topic has yet to be definitely resolved.

In the area of supraliminal perceptions, Hartmann (1968) studied effect of time of day during which a pre-sleep stimulus was given to subjects. He found stimuli presented after 6:00 p.m. the day before the laboratory dream were more often incorporated than material presented earlier. However, stimuli presented immediately before sleep onset were never incorporated in dreams. Hauri (1968) found laboratory dreams occurring later in the night tend to reflect less day residue than do dreams from earlier periods.

Setting of dreamer also seems to effect dream content. Baekeland (1970) found laboratory dreams of females are characterized by more threatening content than are their home dreams, whereas males have laboratory dreams which incorporate more annoying and exhibitionistic themes than their home dreams. This is consistent with findings reported by Domhoff (1969) and Hall and Van de Castle (1966). It has also been found dreams in the laboratory incorporate the laboratory setting, which confirms the above (Dement & Wolpert, 1958; Snyder, 1970).

Baekeland, Resch, and Katz (1968) showed a pre-sleep association period did affect dream content in the labora-

tory. This replicated Baekeland's (1966) findings. Eleven of 50 laboratory dreams incorporated material from a pre-sleep association period. Thirty-four of 50 laboratory dreams showed a primary transformation of the pre-sleep association period, and 38 of 50 of the dreams showed a secondary transformation. In a similar experiment. Destrooper and Duhau (1969) found pre-sleep exposure of Rorschach Plate III to subjects correlated with a higher incidence of references to body parts and aggressive relationships in laboratory dreams. In exposing subjects to pre-sleep erotic films, Karacan (1965) failed to find significant correlation between subjects' exposure to the film and penile erection during sleep in the laboratory. In contrast to this, however, Cartwright, Berniak, Borowitz, and Kling (1969) did find elements of a pre-sleep erotic movie incorporated into young men's laboratory dreams. Similarly, Foulkes (1967) reported aggressive pre-sleep films reduced intensity and unpleasantness of laboratory dreams.

In reviewing literature to that date on changing dream content, both home and laboratory, Witkin and Lewis (1967) suggested the following relationships. These have been best summarized by Jones (1970):

1. Dreams following emotionally charged pre-sleep stimuli tend to highlight the more prominent elements of such stimuli, while dreams following neutral pre-sleep stimuli tend to highlight the more peripheral elements of such stimuli.

2. Subjects' attitudes and conflicts in respect to the experimenter and the laboratory situation tend to be worked over in dreams much as are the more charged elements of the experimental stimuli.
3. Although the specific contents of an individual's symbolic handling of conflict material in his dreams varies almost limitlessly, consistencies of patterns or style are sometimes discernable. For example, one person may consistently represent upsetting pre-sleep stimuli by way of reversing them in his dreams, while another person may consistently represent upsetting pre-sleep stimuli by way of placing the most noxious items in stories or dreams within dreams, while still another may favor the strategem of being in the dream in spirit but not in person - and so on.
4. Dreams which tend to be forgotten are more likely to follow threatening pre-sleep stimuli, as measured by simultaneous autonomic reactions, than to follow non-threatening stimuli.
5. Symbolic equations which are among the most transparent to the observer are frequently those which the dreamer himself denies.
6. Dreams following neutral stimuli are more likely to reflect the person's present life experiences, while dreams following emotionally charged stimuli are more likely to tap memories of early childhood experiences (Jones, 1970, p. 222).

Little has been added to the literature to alter this summary. There is evidence indicating pre-sleep determinants influence dream content, especially in laboratory dreams. Most literature, however, shows a correlation between pre-sleep stimuli and dream content, which does not imply direct causal factor. Also, there is question of control. While one can point out conditions which may affect dreams, results are often unpredictable. To attempt to

clarify these issues, literature on deliberate pre-sleep control of dreams will be examined.

## DELIBERATE PRE-SLEEP CONTROL OF DREAMS

Resolution of the question of dream control is essential to understanding processes involved in constructing dreams. This understanding is a prerequisite to comparing dreams with any other phenomenon, such as the TAT, in terms of unconscious involvement.

Deliberate pre-sleep control of dreams has been investigated recently in a variety of ways. In addition to the aforementioned studies in which subjects were instructed to attempt to change their home dreams and to report changes (Wollmering, 1978) or changed emotions (Corriere, 1974) in home dreams, Dave' (1979) claims to have aided problem solving in subjects. This was done by hypnotically inducing subjects to have dream-like images during the experimental period. While subjects were not asleep, Dave' contends this study was analogous to dreams. Whether hypnotic images are applicable to studies on dreams, there seems to be consistency with lack of control for demand characteristics shown in the two above-mentioned studies. As subjects were aware of experimental hypotheses, and used retrospective self-report, it is hardly surprising positive results were achieved in these studies.

In reviewing sounder data, Stoyva (1965) and Tart (1964) and Tart and Dick (1970) found post-hypnotic pre-sleep suggestions, intended to alter dream content, did significantly alter content in laboratory dreams. No obvious



Freudian distortions of material occurred, either with Stoyva's (1965) relatively simple suggestions or Tart's (1964) more complex instructions. Consequently, Tart and Dick (1970) suggested hypnosis might not be necessary to achieve similar results.

Using non-hypnotic methods, two recent studies (Foulkes & Griffin, 1976; and Griffin & Foulkes, 1977) found laboratory dreams not directly influenced by pre-sleep suggestions. To the contrary, Cartwright (1974) found subjects with pre-sleep instructions to wish to change discrepancies between self traits and ideal traits did report a change in resulting laboratory dream content. However, in the dream the trait was generally given a value differing in direction from pre-sleep wish. That is, subjects' dreams were concerned with traits mentioned in pre-sleep instructions, but dreams did not conform with instructions.

In a recent experiment in which both laboratory and home dreams were collected and analyzed, Stern, Saayman, and Touyz (1978) found in both settings dream content was influenced by experimenters' instructions to pay particular attention to either outdoor or urban setting of dreams. While subjects did not consciously perceive instructions as an attempt to change their dreams, a difference in dream content was noted between the two groups. The group instructed to pay particular attention to urban settings in their dreams reported more urban settings than did subjects instructed to pay attention to country settings in their

dreams. As expected, the latter group reported more country settings. This study points up both similarities in effect of pre-sleep instructions on laboratory dreams and on home dreams, and the great influence of experimenter demands on dreams. It would appear even subtle or unintentional demand characteristics of which subjects may not be aware influence dream content and studies of dream content.

Demand characteristics are a major problem in most studies reviewed. Demand has not been controlled in those studies showing unambiguous positive outcome, excepting work of Stern, Saayman, and Touyz (1978). On the other hand, it could also be the basis for experimental design of studies in order to determine possibility of conscious dream control. Subjects could be told under certain conditions they could control their dreams, whether control was achieved under those conditions would be the dependent variable.

This portion of the literature review is concerned with alteration and control of dreams and dream content, and is not definitive. That literature is neither consistent nor conclusive. However, in sifting through this material, it is possible to make several conclusions.

First, theoretical viewpoints should be held in relative unimportance when studying pre-sleep control of dreams. When theory has taken precedence it has affected design of the study, if not interpretation, and so the study suffers. Results which might not agree with theory are virtually assured not to occur.

Second, experimenter demand characteristics are a persistent confounding variable. Hypotheses must be kept from subjects if the study is to be credible, especially when using home dreams, because there is greater possibility for contamination there. Influences of incorporating a theoretical stance can be especially pernicious in regards this point, as they are difficult to detect by the experimenter.

Third, pre-sleep mentation does alter, or at least affect, dream content in most instances, especially if accomplished with optimal timing. This is usually in the evening before the dreaming reported. However, this is not in a predictable or determinable direction. Succinctly, to date it seems dreams can be altered, but not necessarily controlled.

Fourth, home dreams and laboratory dreams differ. The former are best examined for therapeutic implications, the latter for internal validity and consistency. Hypotheses should be tested both at home and in the laboratory before absolute acceptance.

Finally, a great deal of research remains to be done on control of dreams. While there is a lack of consensus in the literature on this subject, there are indications for directions in which research would be useful, most immediately by performing studies in which demand characteristics would not be a confounding variable.

In conclusion, it may be seen a variety of theories of dreams and dreaming exist. The purpose of this section has

been to review those which seem to have had the greatest impact on studies altering content of dreams.

## CONCLUSION

From the preceding discussion it can be seen the study of both dreams and the TAT can be problematic. This literature review has shown there is little consensus as to nature of the TAT. The question of altering or controlling dream content has also been raised. By study of ability to control dream content, inferences as to level of the unconscious involved in dreaming may be made. When comparing dreams with the TAT, nature of the TAT and amount of unconscious involvement in creating TAT stories was addressed.

Given the literature to date, three hypotheses seem in order, and are tested in this study. First, subjects' subjective appraisals of their respective assets and problems are expected to be directly reflected in the content of their TAT stories. This would show a lack of unconscious compensatory involvement. Therefore, doubt would be cast on the validity of the TAT as a measure of fantasy, at least when fantasy is viewed as an unconscious process coming from the same, presumably compensatory level of the unconscious as dreams. Second, content of subjects' dreams are expected to reflect compensatory representations of their subjective self-reports of assets and problems. However, subjects' personal associations might be expected to cloud this sufficiently to prevent effective analysis. Certainly, however, a minimum of direct representation is expected in dream reports. Finally, the conscious pre-sleep wish to dream

about solving a problem is expected to cause an increase in number of dreams in which the problem content is encountered.

## CHAPTER III

### EXPERIMENTAL METHOD

The subjects were undergraduates studying either general psychology or theories of personality. Ninety-seven subjects were each given in random distribution one of two packets of three sheets of paper (see Appendices A and B for examples) in one of two classroom settings. The first page was the same in both packets, and was an information and consent form. The second page was instructions for reporting dreams. It was the same in both packets except for the third item. On one form (Form A) it stated, "Upon retiring repeat to yourself, 'I will have a dream about solving my problem tonight. I will remember it.'" On the alternate form (Form B) the third instruction read, "Upon retiring repeat to yourself, 'I will have a dream tonight. I will remember it.'" The third sheet was a data sheet, in which the subjects were instructed to enter their respective codes, their sex, age, marital status, educational level, course number, frequency of recalling dreams, and their three biggest problems and three biggest assets in descending order of magnitude. They were instructed to enter any comments they wished, in addition. Packet A had a continuous underline on the first line, and Packet B had a broken

underline. Otherwise, pages three were identical in each packet.

The study was then briefly explained to subjects as a study on relationships among dreams, TAT stories, and subjects' life situations. It was explained if an explanation or description of greater detail was desired the examiner would be available to answer any questions after collection of data.

Subjects were then instructed to complete their Subject Code and Data Sheet if they chose to participate. This sheet identified covertly which form of instructions the subject was given. It also asked for the following subject information: age, sex, marital status, school class, which class was being taken, and number of dreams usually remembered.

After completion of the Subject Code and Data Sheet, the TAT was briefly explained. Subjects were instructed they were required to write stories to the TAT cards as part of their classroom experience. They were told they were not required to turn in their demographic data nor were they required to hand in their TAT stories. Further, they were instructed, if they chose to participate, to identify their materials only with an easily remembered pseudonym or a word or number code known only to themselves, such as their mother's maiden name, their boyfriend's telephone number, etc. There was no master list by which subjects could be identified from their data.



The subjects were then shown nine slides of TAT cards projected on a screen, in the following order: 1, 2, 3BM, 4, 6BM, 7BM, 13MF, 8BM, 16. These were chosen on the basis of Hartman's (1970) study of frequency of use. The TAT was introduced with instructions,

I am going to show you some pictures one at a time. Make up a story about each one. Tell what happened before, what is happening now, and what happens in the end. Also, tell what the persons in your story are thinking or feeling. Take just five minutes for each picture. There are no right or wrong answers, just say what you think.

The cards were then presented in form of slides projected on a screen. The experimenter was present during the presentation.

The consent forms, code and data sheets, and TAT stories were then handed in, separately, by subjects who consented to participate. They were then reminded to reread instructions before retiring each night for the next four weeks. They were again reminded to identify their materials only by their codes, and they were free to withdraw their participation at any time at no jeopardy to themselves by determining not to hand in written copies of their dreams. The subjects were reminded of the study weekly, and, four weeks later, 49 subjects handed in written copies of their dreams.

The American Psychological Association ethical standards for research with human participants were considered in the experimental design. They were adhered to throughout this study.

## CHAPTER IV

### METHOD OF ANALYSIS

#### CODING AND SCORING

After all data was collected it was transcribed and checked for accuracy. The demographic data was coded, and the number of dreams which the subjects reported remembering was computed to yield an expected number of dreams for the reporting period. This was then compared to the number of dreams actually reported. The demographic characteristics of the subjects were then analyzed to determine whether the subjects sampled in this study were representative of the population from which they were drawn, and to assure they were homogeneous between the two groups.

In an effort to avoid intrusion of unnecessary theoretical bias in the scoring, this study used a content checklist. The content categories were determined by examining the protocols for commonly cited content. This was hoped to aid in scoring of content without need to resort to interpretation from a theoretical stance. By looking only at data, without transformation, it was hoped analysis would be only of data, and not an analysis of theoretical interpretations. This was to decrease possibility of invalid infer-

ence caused by compounding of an initial error of judgement or interpretation.

The subjective self-reports of problems and assets, TAT stories, and dream reports were each rated by the author for inclusion of the following content: father, mother, parents/family/home, siblings, friends or relatives other than the above, boyfriend/girlfriend/ fiancé, boys/girls/dating, roommate, spouse, school, hobbies/athletics, job/work/career, religion, marriage, personal attitudes or attributes, time, money/finances, car, housing, other possessions, health, and death. These categories were chosen as the majority of self-reports and TAT stories incorporated this content, and seemed consistent with concerns and predominant issues of undergraduates.

These content areas were each rated as to qualitative aspects, positive, negative, or neutral which are essentially situational appraisals of pleasantness. Criteria for rating qualities of content and examples follow:

1. Rate a single content item only once per dream or TAT story. Example: I went to the store with my mother. On the way she wrecked the car. Score one negative item each for mother and car.
2. Content in a negative situation. Example: Mother hit me and broke my arm. Score negative for mother and for health.
3. Content in a positive situation. Example: When I graduated with honors, Father gave me a new car.

Score positive for father, school, and car.

4. Score content as neutral only if the entire situation and all other content is neutral. Example: I dreamed about driving home. Score neutral for home and for car.
5. Neutral content is negative in a negative situation. Example: I drove to school after Mother threw me out of the house. Score negative for car, school, housing, and Mother.
6. Neutral content in a positive situation is positive. Example: I was happy after my boyfriend proposed. Then I saw my friend. Score positive for friend, boyfriend, marriage, fiance.
7. Negative content in a positive situation is negative. Example: After my friend and I had a good time, I drove home and wrecked the car. Score positive friend, negative car.
8. Positive content in a negative situation is positive. Example: Although I was having trouble with school, I still had a nice place to live and good roommates. Score negative school, positive housing and roommates.
9. If a situation is generally negative, but incorporates a "Pollyanna" ending, the situation is still considered to be negative. Example: Even though they had lost everything, and their parents had died, they realized it was for the best. Score

negative for parents, death.

10. If content appears as both positive and negative in a situation, it is scored as if it were neutral. It would be scored negative in a negative situation, or positive in a positive situation.
11. It is permissible to score more than one content category per dream or story.
12. When content is plainly implied although not mentioned, score it. But do not interpret or read in content which is not clearly implied. Examples: I was driving. Score neutral car. The people were unhappy because their daughter was no longer with them. Score negative parents, but do not score death.

Two sets of five protocols were randomly selected. Each set was rerated by one of two independent raters. Thus, each independent rater rerated more than 10% of the protocols. Instructions and examples above were provided to raters. Ratings of each content category were compared, and percentages of agreement were calculated as a reliability check. Percentages of agreement were high. One rater had 81% agreement with the author, the other had 77% agreement with the author.

Agreement percentages were calculated by comparing ratings in each content category. Each individual rating for each category was examined. When a rating was duplicated in experimenter's and rerater's protocol, both for

existence and quality, it was considered a match. For each rating which was not duplicated a miss was scored. The number of matches was divided by the sum of the matches and misses for each subject to give a percentage of agreement. The five percentages for each rater were then averaged to yield an average percentage of agreement. This method was used as it yields the most conservative inter-rater agreement figures for this type of data, as may be seen below.

In addition to agreement percentages, a more traditional mode of determining inter-rater reliability quotients was felt to be needed. Cohen's Kappa (Cohen, 1960) was used to check ratings between each rater and the investigator.

In finding Kappa, each content category, Father, Mother, and so forth, for each measure, dreams, TAT stories, and self-reports, was considered as cell. This yielded 66 cells per protocol. Four types of ratings were considered: positive, neutral, negative, and no content. If an entire cell matched the experimenter's in all ratings it was considered a hit. This included all cells for which both the rater and experimenter considered content not to be represented. The Kappas between each rater and the experimenter were .81 and .87, respectively.

When number of ratings was computed for the six self-reports per cell, nine TAT stories per cell, and individual number of dreams per cell per rating, the Kappas both exceeded .99. This was because most ratings were for nonexistence of content category, which was easily determined.

This excessively large number of ratings in one content category, no content, seriously inflated Kappa. Regardless the method of determination, inter-rater reliability was acceptably high for this study.

## STATISTICAL ANALYSIS

Following rating of content and import, the data received a variety of statistical analyses. First the ratings of each content category for each subject were summed, giving negative import a score of minus one, ambivalent import a score of zero, and positive import a score of plus one. These totals gave the total import of each content category for each subject.

In order to examine relationships of content representation among TAT stories, dreams, and self-reports Pearson Product-Moment Correlations were then found between all demographic and content categories. Following this a modified McQuitty Cluster Analysis (McQuitty, 1959) was conducted in search of patterns of relationships among content categories.

To further examine possibility of relationships among TAT stories, dreams, and self-reports of problems and assets three sign tests were conducted. These were between import of content in TAT stories and dreams, self-reports and dreams, and self-reports and TAT stories.

To examine effects of the pre-sleep instructions to dream about solving a problem, an analysis of variance using unweighted means solutions for repeated measures with unequal group sizes (Winer, 1971, pp. 600-603) was conducted. This analysis was on factors of dream content reflecting assets or problems in self-reports, on the two



groups, experimental and control. Sources of variance examined were of dream content between subjects by groups and within groups, and by values, or numbers of dreams of problems, assets, and both, by group, within group, and interaction of subjects by values by groups.

To insure comparability between the two groups, this procedure was repeated for content in TAT stories. This was to assure differences between the two groups were due to the independent variable, which was introduced after TAT stories were collected, rather than due to inherent differences between groups.

Following analyses of variances, differences in means were examined using t-tests. Four t-tests were conducted between the two groups. These were of TAT problems, TAT assets, dream problems, and dream assets.

The demographic data of subjects completing the study did not seem to differ significantly from those who did not. Thus there would appear to be no demographic differences between the groups.

Given random distribution of subjects between the two groups, t-tests are valid considering the subjects to be one population. The analyses of variances are valid if one considers one of the two groups to have been changed by the independent variable. The results were then compared to examine both possibilities.

To help determine sources of differences between the two groups, three more t-tests were conducted. First, a

t-test on number of dreams per group was conducted. Then t-tests of number of content appearances per self-report were conducted for both dreams and TAT stories.

To determine if the content categories were too numerous for patterns to be definitive, the most frequently encountered content categories, Father, Mother, and Parents/Home/Close Family, were collapsed. Pearson Product-Moment Correlations were then derived for this data for all dyadic relationships between self-reports, TAT stories, and dream content, both within and between groups.

The results of the various analyses of the data follow in the next chapter. The chapter following the next will discuss those results.

## CHAPTER V

### RESULTS

Results of this study will be presented in six parts. The first will describe characteristics of subjects, their demographic data and number of dreams they reported and predicted. The second and third sections will cover the first and second hypotheses, respectively. That is, expectations content of self-reports of problems and assets will be directly reflected in TAT stories and compensatorily reflected in dreams are examined.

The fourth section is an outgrowth of the second and third. The relationships between dreams and TAT story content are described. The fifth section covers the third hypotheses, a conscious pre-sleep wish to do so will cause an increase in number of dreams incorporating reported problems. The sixth section presents results uncovered by the analyses of data not addressed in the hypotheses or otherwise not anticipated.

## SUBJECTS

Forty-nine subjects chose to complete the study by handing in transcriptions of their dreams from the 28 day period of the study. Of these sets of dreams, two could not be used. One subject had not identified their dreams, and one subject had not turned in subjective self-reports of problems and assets.

The remaining 47 subjects ranged in age from 17 to 27, with 43 being between 18 and 22. The mean age was 19.96 years. Forty-four were single. There were 18 males and 29 females. Of the 47 subjects, 25 were freshmen, 11 sophomores, five juniors, and five seniors. Thirty-two subjects were in an Introduction to Psychology class. The other 15 were in a Personality class. The subjects seemed representative of undergraduates in an urban university.

Dreams were recorded for 28 days. The subjects reported from none to 41 dreams, with a mean of 9.4 dreams per subject, and a standard deviation of 7.7. The subjects had predicted they would remember from zero to 84 dreams during the experimental period, with a mean of 20, standard deviation of 21.2, and a mode of 28, or one dream per night. The correlation of number of dreams predicted to number of dreams reported is .220, which is not significant.

TAT REPRESENTATION OF SELF-REPORTS

The original hypothesis was subjects' subjective appraisals of assets and problems would be directly reflected in content of TAT stories. The results were somewhat disappointing.

After scoring protocols for appearance and import of content, as per directions set forth in the Methods section of this paper, correlations for TAT content and self-reported problems and assets were obtained. Only 14 significant correlations appeared between any subjective self-report categories and TAT content categories. This is only slightly more than the thirteen which would be expected by chance using the number of content categories in this study (see Appendix C). Also, eight correlations were negative, while six of the 14 were positive. Using a modified McQuitty Cluster Analysis (McQuitty, 1959) it was determined none of these were part of a larger pattern. There were no significant correlations between same or similar content categories, and most correlations did not involve a large proportion of the subjects. Thus the correlations are considered to have occurred by chance.

From the above it was determined content areas studied of subjective self-reports of problems and assets were not systematically reflected in content of TAT stories, directly or otherwise. Recoding the most popular content areas, Father, Mother, and Parents/Home/Close Family, and col-

lapsing them into one category showed a positive correlation of .239 between TAT story content and subjective self-reports, but this was not statistically significant. A trend toward direct representation of subjective self-reports and TAT stories may be inferred, but this is neither definitive nor trustworthy from this study.

DREAM CONTENT REPRESENTATION OF SELF-REPORTS

The hypothesis predicted subjects' subjective self-reports of problems and assets would be compensatorily represented in dream content. To support this hypothesis, reported assets would be expected to be seen as problems in dreams, and reported problems were expected to be shown positively in dreams. Like the previous section on TAT stories and self-reports, the results did not support this hypothesis. Little relationship between self-reports and dream content was detected.

After scoring protocols for presence of the content categories and quality of the content as described in the Methods section, only 10 significant correlations were found between subjective self-reports and dreams. This was slightly fewer than would be expected by chance (see Appendix D). Five correlations were positive and five negative, which does not show a definitive trend. Of these, none were of same content categories, and no logical patterns were found, again using a modified McQuitty Cluster Analysis (McQuitty, 1959).

As before, the most popular content categories were collapsed, but a correlation of .009 was obtained, which is neither statistically significant nor showing meaningful linear relationships. Thus, there are no linear relationships between content of subjective self-report categories and dreams shown in this study.

RELATIONSHIPS OF CONTENT BETWEEN TAT STORIES AND DREAMS

It was anticipated dreams and TAT stories would represent content differently, and this would be in a meaningful pattern. Considering the lack of relationships between dream content and self-reports and TAT stories and self-reports it was not surprising this anticipation was not fulfilled.

Only 16 significant correlations occurred between dream and TAT story content, slightly more than expected by chance (see Appendix E). Six were negative and 10 positive. Only one was in the same content category, death. Eighteen subjects mentioned death in both their TAT stories and dreams. Considering it was usually mentioned negatively in both instances, correlation  $r(14) = .64$ ,  $p < .01$ , is neither surprising nor of great importance. Also, sign tests between dreams and TAT stories, dreams and self-reports, and TAT stories and self-reports did not show significant differences in approach to content.

Again, no significant relationship was found when the most popular content categories were combined, and no patterns of correlation were detected. Generally, little or no relationship between dream content and TAT story content appears to exist beyond which would be expected by chance. Certainly there seem to be no differences in manner of representation of content between TAT stories and dreams.



EFFECTS OF CONSCIOUS INSTRUCTIONS ON DREAM CONTENT

The third and final hypotheses in this study was a conscious pre-sleep wish to dream about solving a problem would cause an increase in number of dreams in which self-reported problems would appear. This was not found to occur. To the contrary, the number of dreams mentioning subjectively reported problems decreased by 47% in the experimental group, a significant  $t = 4.29$ ,  $p < .05$ , difference. This was with no difference in number of appearances of assets between control and experimental groups. Regardless, number of dreams from control to experimental group decreased significantly  $t = 14.69$ ,  $p < .01$ . There was no difference in number of dreams predicted between the two groups.

There were also no differences in number of assets in dreams in each group. Also, an additional check showed no significant differences in TAT story content per self-reports. Therefore, it appears pre-sleep instructions to dream about solving problems inhibit problem content in dreams, and even inhibit number of dreams reported.

### OTHER RESULTS

The most striking unanticipated result of analyzing the data was TAT stories incorporate more self-reported problem content than asset content. There was no significant difference in asset or content between the two groups.

The lack of difference between the two groups in dream asset content was also surprising. Considering the large discrepancy between groups in number of dreams and problem content, this apparent immunity to conscious pre-sleep instructions about problems shows a higher degree of selectivity of effect than anticipated.

One confounding result was also found. The experimental group had a significantly higher  $t(45) = 4.06$ ,  $p < .05$ , proportion of TAT stories showing problem content than the control group. This was not reflected in other aspects of the data, and seemed unrelated to any differences between the groups. Also, since this was not an expected effect, it was more properly tested by post hoc procedures, and found not significant.

The affect of the independent variable, the pre-sleep command, in reducing number of dreams and in reducing dream content about problems certainly was not anticipated. This difference in number of dreams gave a  $t$  value of 14.69,  $p < .01$ . Certainly this effect is not only statistically significant but also of considerable practical effect.

The analyses of variance of unweighted means with

repeated measures showed only two effects. The first was the preponderance of content identified by the subjects as problems over content identified as assets TAT stories,  $p < .05$ . The second was the reduction in dream content identified as problematic in the experimental group  $p < .10$ .

When the data was recoded to form larger groups with the most popular content categories, Father, Mother, and Parents/Home/Close Family, into one category, slight trends in direction of the original hypotheses were observed in the control group. The correlation between self-reports and TAT stories was .301. The correlation between self-reports and dreams was  $-.112$ , and between dreams and TAT stories it was  $-.177$ . The correlation between self-reports and TAT stories in all cases was .239.

In the experimental group, however, correlations of collapsed data between dreams and TAT stories and self-reports and dreams were positive, rather than negative, so correlations in these categories of both groups together were virtually nil,  $r = .069$ ,  $p$  ns, and  $r = .009$ ,  $p$  ns, respectively.

Although the correlations in the control group are not significant, they do point to trends confirming the original hypotheses. Given the unanticipated effects of the independent variable on dream content, subsequent disruption of this trend is consistent, so there is some inferential support of original hypotheses TAT stories and dreams reflect

content differently, dreams reflect self-reports compensatorily, and TAT stories reflect self-reports directly.

CONCLUSION

The analyses of data did not support hypotheses that significant relationships between dream content, TAT stories, and subjective self-reports would be seen. However, pre-sleep instructions to dream about solving a problem did have a large, although unanticipated, effect by reducing problem content in dreams, and even reducing number of dreams in the experimental group. Also, it was seen problem content is much more common in TAT stories than is asset content.

Finally, some small trends in direction of original hypotheses were seen in the control group with collapsed data. However, if these trends are real rather than random variation, the conscious pre-sleep command to influence dream content also interfered with these trends.

## CHAPTER VI

### DISCUSSION

From the previous chapter it was seen subjects were a relatively homogeneous group, and randomization of assignment to treatment versus control group was apparently successful in as much as systematic differences between groups were not seen prior to introduction of the independent variable. Therefore, differences between the two groups may be legitimately considered treatment effects.

This chapter will be organized similarly to the previous chapter. The first two sections will deal with comparisons of self-reports and TAT stories and self-reports and dreams, respectively. The third section compares TAT stories and dreams, and the fourth section discusses effects of the pre-sleep instructions. The final section discusses unexpected or other results.

SELF-REPORTS AND TAT STORIES

The systematic representations of self-reported assets and problems in subjects' TAT stories is tenuous at best. The first hypothesis, subjects' self-reports of their greatest assets and problems would be directly reflected in TAT story content was not supported. In fact, little systematic relationship between TAT content and self-reports was found. By collapsing data into larger content categories a slight relationship was found, but this was not large enough to be convincing.

On basis of this study then, it may be concluded TAT stories do not systematically reflect conscious appraisals of subjects' situations. This may support the notion the TAT taps unconscious processes. This notion would assume the unconscious is not directly accessible to the conscious mind. However, this is only assumed, and remains to be tested.

The lack of a systematic representation or neglect of self-report content in the TAT, direct or otherwise, does raise further questions as to the nature of the TAT. In sum, this aspect of this study is disappointing as fewer questions are answered than are raised.

From a clinical view, this study shows the TAT does not retrieve material apparently amenable to self-reports. This would either support its continued clinical use or show it to be irrelevant. Given its wide use and general accep-

tance, the former is most likely. Means of interpretation, however, are not suggested, and this is probably at the root of most difficulties in understanding and using the TAT. Perhaps free association to the themes and content in TAT stories would be helpful. Also, comparison of TAT story content with other projective, associative, or actuarial techniques would be helpful. Unfortunately, this study leaves the issue of interpretation of the TAT as subjective and cloudy as it was found.



SELF-REPORTS AND DREAMS

The second hypothesis, subjects' self-reports of problems and assets would be reflected compensatorily in dreams, was also not supported in this study. On the whole, there was no systematic representation, direct or compensatory, of self-reports of assets or problems in dream content.

Overall, little systematic relationship was seen between self-reports and dream content even after recoding data into larger categories. However, when viewing the control group alone, a slight relationship was found, similar to between TAT stories and self-reports, but in the opposite direction. Given this, very slight compensatory representation may be inferred, albeit with little confidence. This should certainly be investigated further in subsequent studies.

It seems dream content not systematically representing self-reports would support the theory dreams represent unconscious processes. The notion of compensation in dreams is not strongly supported in this study, as the process seems more complex. This does not contradict Jung's (1912/1952/1956) theory dreams are symbolic, so would not represent conscious content in such a predictable and consistent manner. But as Mattoon (1974) pointed out, the complexities involved are beyond strict comparison of content. This view is certainly supported in this study. Therefore, direct testing of this hypothesis would appear a complex and

difficult task. Regardless, this study suggests such a test would be productive.

As with self-reports and TAT stories, these findings are not conclusive, and few clear statements may be made, save dreams are difficult to study. However, dreams do not appear to be compensatory in this study.

COMPARISONS OF TAT STORIES AND DREAMS

As could be predicted by the previous sections on self-reports and dreams and self-reports and TAT stories, little consistent relationship, positive or negative, was seen between TAT stories and dream content. As before, when content categories were collapsed a small negative relationship was seen in the control group. This would tend to support the hypothesis dreams and TAT stories do not represent unconscious material in the same manner. It provides little support for a systematic difference, however. The difference between the two groups will be discussed later, and only the control group will be discussed in this section.

In general, comparison of dream content and TAT stories does little to recommend or clarify the TAT. The lack of similarity between dream and TAT story content does not support viewing the TAT as fantasy, at least as fantasy was defined by Freud (1901/1955) or Jung (1912/1952/1956), product of the unconscious processes as dreams.

Unfortunately, this comparison of dream and TAT content does not suggest what the TAT does, except in some manner represent content dissimilarly to both dreams and self-reports. This would lead to the conclusion the TAT is not replaceable by dreams or self-reports, but specific reasons why are not forthcoming. Certainly need for more research into the source of TAT content is indicated, as this study has served to say what it is not, not what it is. Regard-

less, the definition of the TAT as fantasy is suspect. However, continued use of the TAT, especially clinically, is not questioned, although some means of interpretation presuming the TAT measures fantasy, with fantasy defined as an unconscious process similar to dreams, should perhaps be reexamined.

EFFECTS OF A PRE-SLEEP COMMAND ON DREAM CONTENT

This section deals with the original hypothesis a conscious pre-sleep wish to dream about solving problems would increase problem content. Although this was not supported, results of this independent variable are fascinating.

First, marked reduction in dream content about problems shows susceptibility of dreams to conscious influence, but not control. This finding is consistent with results of Cartwright (1974). When one considers the work of Stern, Saayman, and Touyz (1978), it appears attempting to change dream content brings out this contradictory effect. That is, dreams are easily influenced, but if the dreamer attempts to influence dreams, effects will be contrary to wish. This also helps explain the discrepancies between the bulk of laboratory dream work and Corriere and Hart (1977), Corriere et al. (1977), or Wollmering (1978). This study allows their work to be explained as biased, and reflecting acquiescence set, as was anticipated in the forgoing literature review.

Additionally, the pre-sleep wish also inhibited number of dreams. Two possible explanations present themselves. Most likely the problem content was uncomfortable enough to be repressed, probably inhibiting dream recall, even though repression of dream content has not been given a great deal of study (Chen, 1978). Otherwise, the contrary effects of dreams may be blamed. That is, dreams tend to do the oppo-

site of conscious wish, in whatever way possible. In either instance, this could help provide validation for the concept dreams are unconscious processes, as the dream reports do not match the conscious subjective self-reports.

The compensatory aspect of dreams is not seen in this study. However, the contrary which is seen seems to be a somewhat similar process. This may account for some of the continued acceptance of the concept of compensation.

The pre-sleep instructions also negated the trends toward relationships between dreams and TAT stories shown in the control group. Apparently introduction of a pre-sleep wish about dream content changes the processes involved in inclusion of dream content in dreams or dream reports.

As validation to the theory pre-sleep instructions inhibit dreams or dream recall, perhaps pre-sleep instructions to remember a dream, given to all subjects, was responsible for the subjects reporting less than half as many dreams as they predicted they would remember. Considering only about half the original subjects chose to complete the study, and were not coerced to do so, one might expect the subjects who completed the study to have been fairly well motivated to report their dreams. This effect may have been higher with less motivated subjects.

This possible effect of attempting to remember dreams should be examined. This could be done in a future study by asking subjects to record their dreams, and giving some the instructions to remember their dreams.

OTHER RESULTS

The larger number of TAT problem content appearances in the experimental group should be discussed. On the basis of the other analyses of the data this does not seem to indicate a basic difference between the two groups. Although the difference has some statistical significance it seems to have no practical effect, most likely being due to chance. That is, it is a very small difference compared to differences in dream content between the two groups, and need not be addressed further.

## CONCLUSION

In sum, the data showed little significant relationships between self-reports of assets and problems and dream content or TAT story content. From this it would seem likely dreams and TAT stories are related to unconscious processes, but either the respective processes are dissimilar or are dissimilarly represented. At any rate if one accepts the notion of fantasy as similar to dreams the TAT is not fantasy. What the TAT is should be topic of further research.

The other part of this discussion has shown the continued effect of a pre-sleep wish to dream of problems on subsequent dreams has inhibited dreams and dream content about problems. This shows the unpredictability and independent nature of dreams. This does not show dreams to be compensatory, but rather shows them to be contrary. This points up difficulties in studying dreams, especially outside the laboratory. However, it was essential to attempt this in order to generalize Cartwright's (1974) findings on representation of pre-sleep instructions to home dreams.

In terms of clinical applications, it would certainly seem inadvisable to advise psychotherapy patients to attempt to alter their dreams. One would expect frustrating, negative results. Also, the TAT seems to tap material on which dreams and self-reports do not touch. This would recommend its continued use, and continued study as to its nature.



Closing, TAT stories, dreams, and subjective reports do not appear to have strong systematic relationships, making all difficult to study. The effects of a conscious pre-sleep wish are apparently contrary and point up difficulties in studying dreams, especially outside the laboratory. However, it was essential to attempt this in order to generalize Cartwright's (1974) findings to home dreams.

## CHAPTER VII

### SUMMARY

This study set out to examine three hypotheses. The first predicted subjects' subjective appraisals of their assets and problems would be directly reflected in content of their TAT stories. The second hypothesis predicted those subjective appraisals would be compensatorily reflected in dream content. Neither of these events occurred, nor did dreams show content similarly or compensatorily to TAT stories. This negated the concept TAT stories are fantasy, but supports the notion they are the product of an interaction of conscious and unconscious processes, dissimilar to both dreams and conscious perceptions.

The third hypothesis, a pre-sleep wish to dream about solving problems would increase problem content in dreams, was not supported. However, the pre-sleep instructions did inhibit dream content concerning problems and also reduced number of dreams reported. This supports the notion dreams are influenced by waking actions but are not amenable to controlled direction. In fact, dreams seem to be contrary, doing the opposite of directions. In conjunction with the disparity between number of dreams subjects predicted and reported, it also supports a hypothesis pre-sleep instruc-

tions will inhibit home dream recall.

In sum, this study did not support its hypotheses. It did not define the relationships of TAT stories to dream content and conscious perceptions, but showed a lack of such relationships. The lack of relationship could be due to having a normal rather than clinical population, but Jung (1912/1952/1956) postulates an active unconscious in both normal and pathological subjects. Altogether, this contradicts the notion of the TAT as a fantasy, but helps confirm its nature as a result of unconscious processes. Similarly, dreams were shown to be resistant to conscious control but reactive to conscious actions. Both these results are exclusive in their clarification rather than expansive, as conclusions as to the nature of TAT stories and dreams are only what they are not, and not what they are. Ultimately, this points up need for more research in this area, especially on the nature of the TAT.

## BIBLIOGRAPHY

- Abramson, H. Reassociation of dreams. II. An LSD study of sexual conflicts in eczema & asthma. Journal of Asthma Research, 1976, 13(4), 193-233.
- Amanat, E. Contents of day and night dreams of emotionally disturbed adolescents. Child Psychiatry & Human Development, 1974, 4(3), 157-167.
- Anastasi, A. Principals of psychological testing. New York: Macmillan, 1968.
- Anders, T. An overview of recent sleep and dream research. In L. Goldberger & L. Rosen, (Eds.), Psychoanalysis and contemporary science, Vol. 3, New York: International University, 1974.
- Andrews, G. Studies of the dream consciousness. American Journal of Psychology, 1900, 12, 131-134.
- Antrobus, J. Dreaming for cognition. In A. Arkin, J. Antrobus, & S. Ellman (Eds.), The mind in sleep: Psychology and psychophysiology. Hillsdale, N.J.: Lawrence Erlbaum, 1978.
- Antrobus, J., Fein, G., Jordan, L., Ellman, S., & Arkin, A. Measurement and design in research on sleep reports. In A. Arkin, J. Antrobus, & S. Ellman, (Eds.), The mind in sleep: Psychology and psychophysiology. Hillsdale, N.J.: Lawrence Erlbaum, 1978.
- Aristotle. Parva naturalia. in W. Hett, (Trans.), Aristotle: On the soul. Cambridge, Mass: Harvard University, 1957.
- Arkin, A. Contemporary sleep research and clinical practice. In A. Arkin, J. Antrobus, & S. Ellman (Eds.), The mind in sleep: Psychology and psychophysiology. Hillsdale, N.J.: Lawrence Erlbaum, 1978.
- Arkin, A. Introduction. In A. Arkin, J. Antrobus, & S. Ellman (Eds.), The mind in sleep: Psychology and psychophysiology. Hillsdale, N.J.: Lawrence Erlbaum, 1978.

- Arkin, A., & Antrobus, J. The effects of external stimuli applied prior to and during sleep on sleep experience. In A. Arkin, J. Antrobus, & S. Ellman (Eds.), The mind in sleep: Psychology and psychophysiology. Hillsdale, N.J.: Lawrence Erlbaum, 1978.
- Arnold, M. Story sequence analysis. New York: Columbia University, 1962.
- Arnold, R. "Faking good" on the Thematic Apperception Test. Unpublished M.A. thesis, Loyola University of Chicago, 1974.
- Arnold, R. The effect of male-female stimulus variable on the reliability of the Thematic Apperception Test. Unpublished doctoral dissertation, Loyola University of Chicago, 1976.
- Artemidorus, D. Oneirocritica. R. White (Trans.), Park Ridge, N.J.: Noyes, 1975. (Originally ca. 200 A.D.).
- Aserinsky, E., & Kleitman, N. Regularly Occurring periods of eye motility and concomitant phenomena during sleep. Science, 1953, 118, 273-274.
- Atkinson, J. An introduction to motivation. (2nd. ed.). Princeton, N.J.: Van Nostrand, 1979.
- Atkinson, J. Studying personality in the contenxt of an advanced motivational psychology. American Psychologist, 1981, 36(2), 117-128.
- Austin, M. Dream recall and the basis of intellectual ability. Nature, 1971, 231, 59-60.
- Babcock, C. The manifest content of the dream. Journal of the American Psychoanalytic Association, 1966, 14, 159-160.
- Baekeland, F. Effect of pre-sleep procedures and cognitive style on dream content. Perceptual and Motor Skills, 1971, 19, 300-311.
- Baekeland, F. Effects of the day's activities on sleep. In E. Hartmann (Ed.), Sleep and dreaming. Boston: Little, Brown & Co., 1970.

- Baekeland, F. The incorporation and transformation of elements of a pre-sleep free association period into the subsequent REM dreams of the night. (1966) Paper present to APSS, cited in Winget, C., & Kramer, M. Dimensions of dreams. Gainesville, Fl.: University of Florida, 1979.
- Baekland, F., Resch, R., & Katz, D. Pre-sleep mentation and dream reports: 1. Cognitive style, contiguity to sleep, and time of night. Archives of General Psychiatry, 1968, 19, 300-311.
- Baker, S. Relation of locus of control to escapism. Psychology Report, 1971, 29(1), 313-314.
- Barber, B. Factors underlying individual differences in rate of dream reporting. Psychophysiology, 1969, 6, 247-248.
- Baty, M., & Dreger, R. A comparison of three methods to record TAT protocols. Journal of Clinical Psychology, 1975, 31(2), 348.
- Ben-Horin, P. The manifestation of some basic personality dimensions in wakefulness, fantasy, and dreams. Unpublished doctoral dissertaion: University of Chicago, 1967.
- Berger, R. Experimental modification of dream content by meaningful verbal stimuli. British Journal of Psychology, 1963, 109, 722-740.
- Berger, R. Oculomotor control: A possible function of REM sleep. Psychology Review, 1969, 76(2), 144-164.
- Bernstein, L. The examiner as an inhibiting factor in clinical testing. Journal of Consulting Psychology, 1956, 20, 287-290.
- Blum, H., & Green, M. The effects of mood upon imaginal thought. Journal of Personality Assessment, 1978, 42(3), 277-282.
- Blume, G. A comparative study of dreams and related fantasies. Unpublished doctoral dissertation: University of Florida, 1979.
- Bone, R., & Corbett, F. Brief report: Frequency of dream recall, creativity, and a control for anxiety. Psychology Report, 1968, 22(3), 1355-1356.
- Breger, L., Hunter, I., & Lane, R. The effect of stress on dreams. New York: International University, 1971.

- Brender, W., & Kramer, E. A comparative need analysis of immediately-recalled dreams and TAT responses. Journal of Projective Techniques, 1967, 74-77.
- Brenneis, B. Male and female modalities in manifest dream content. Journal of Abnormal Psychology, 1971, 29, 811-818.
- Burkard, M. Character differences, determined by TAT sequential analysis, between teachers rated by their pupils at the extremes in teaching efficiency. Unpublished doctoral dissertation: Loyola University of Chicago, 1958.
- Cartwright, R. Dreams as compared to other forms of fantasy. In M. Kramer (Ed.), Dream psychology and the new biology of dreaming. Springfield, Il.: Charles C. Thomas, 1969.
- Cartwright, R. Problem solving in REM, NREM, and waking. Psychophysiology, 1972, 9(1), 108.
- Cartwright, R. Problem solving: Waking and dreaming. Journal of Abnormal Psychology, 1974, 83(4), 451-455.
- Cartwright, R. The influence of a conscious wish on dreams: A methodological study of dream meaning and function. Journal of Abnormal Psychology, 1974, 83(4), 387-393.
- Cartwright, R., Tipton, L., and Wicklund, J. Focusing on dreams. A preparation program for psychotherapy. Archives of General Psychiatry, 1980, 37(3), 275-277.
- Cartwright, R., & Kaszniak, A. The social psychology of dream reporting. In A. Arkin, J. Antorbus, & S. Ellman (Eds.), The mind in sleep: Psychology and psychophysiology. Hillsdale, N.J.: Lawrence Erlbaum, 1978.
- Cartwright, R., Berniek, N., Borowitz, G., & Kling, A. The effects of an erotic movie on the sleep and dreams of young men. Archives of General Psychiatry, 1969, 20, 262.
- Cartwright, R., Kaszniak, A., Borowitz, G., & Kling, A. The dreams of homosexual and heterosexual subjects to the same erotic movie. Psychophysiology, 1972, 9, 117.
- Castaldo, V., & Holzman, P. The effects of hearing one's own voice on dreaming content: A replication. Journal of Nervous and Mental Disease, 1979, 148, 74-82.

- Clark, R. A method of administering and evaluating the Thematic Apperception Test. Genetic Psychology Monographs, 1944, 30, 3-55.
- Cohen, D. Changes in REM dream content during the night: Implications for a hypothesis about changes in cerebral dominance across REM periods. Perceptual and Motor Skills, 1977, 44(3 pt. 2), 1267-1277.
- Cohen, D. Presleep experience and home dream reporting: An exploratory study. Journal of Consulting and Clinical Psychology. 1972, 38, 122-128.
- Cohen, D. Toward a theory of dream recall. Psychological Bulletin, 1974, 81(2), 138-154.
- Cohen, J. A coefficient of agreement for nominal data. Educational and Psychological Measurement, 1960, 20, 37-46.
- Collins, G. Dreaming and adaptation to stress. Unpublished doctoral dissertation, University of Oregon, 1966.
- Corman, H. Escalona, S., & Reiser, M. Visual imagery and preconscious thought processes. Bulletin of the Association of Psychoanalytic Medicine. 1964, 3 (4), 54-57.
- Corriere, R. Application of the process scoring system to waking, dream, and therapy reports. Journal of Clinical Psychology, 1978, 34(3), 700-706.
- Corriere, R. The transformation of dreams. Unpublished doctoral dissertation: University of California, Irvine, 1974.
- Corriere, R., & Hart, J. The dream makers: Discovering your breakthrough dreams. New York: Funk & Wagnalls, 1977.
- Corriere, R., Hart, J., Karle, W., Binder, J., Gold, S., & Woldenberg, L. Toward a new theory of dreaming. Journal of Clinical Psychology, 1977, 33(3), 807-820.
- Dave', R. Effects of hypnotically induced dreams on creative problem solving. Journal of Abnormal Psychology, 1979, 88(3), 293-302.
- DeCharms, R., & Muir, M. Motivation: Social approaches. in M. Rosenzweig & L. Porter, (Eds.), Annual Review of Psychology, 1978, 29, 91-113.



- DeKoninck, J., & Koulack, D. Dream content and adaptation to a stressful situation. Journal of Abnormal Psychology, 1975, 84, 250-260.
- Dement, W., & Wolpert, E. the relation of eye movements, body motility, and external stimuli to dream content. Journal of Experimental Psychology, 1958, 58, 543-553.
- Despert, J. The inner voices of children. New York: Simon & Schuster, 1975.
- Destrooper, J., & Duhau, A. The effect of pre-sleep viewing of a Rorschach plate upon the structure and content of the dreams of the night. Psychophysiology, 1969, 6, 253-254.
- Diamond, S. (Ed.). The roots of psychology. New York: Basic Books, 1974.
- Domhoff, B. A quantitative study of dream content using an objective indicator of dreaming. Unpublished doctoral dissertation, University of Miami, 1962.
- Domhoff, B. Home dreams versus laboratory dreams. In M. Kramer (Ed.), Dream psychology and the new biology of dreaming. Springfield, Il.: Charles C. Thomas, 1969.
- Domino, G. Compensatory aspects of dreams: An empirical test of Jung's theory. Journal of Personality and Social Psychology. 1976, 34(2), 658-662.
- Domino, G. Primary process thinking in dream reports as related to creative achievement. Journal of Consulting and Clinical Psychology, 1976, 44(6), 929-932.
- Dussik, K. Schizophrenia, as a disorder of neuropsychological control mechanisms. Diseases of the Nervous System, 1968, 29(5), P supplement, 68-77.
- Eagle, C. An investigation of individual consistencies in the manifestations of primary process. Unpublished doctoral dissertation, New York University, 1964.
- Eigen, M. The differentiation of an androgynous Imago. Psychoanalytic Review, Winter 1975-76, 62(4), 601-603.
- Entwisle, D. To dispel fantasies about fantasy-based measures of achievement motivation. Psychological Bulletin, 1972, 77, 377-391.

- Eron, L., & Ritter, A. A comparison of two methods of administration of the Thematic Apperception Test. Journal of Consulting Psychology, 1951, 15, 55-61.
- Evans, F. Hypnosis and sleep: The control of altered states of awareness. Annals of the New York Academy of Science, 1977, 296, 162-174.
- Evans, F. Subjective characteristics of sleep efficiency. Journal of Abnormal Psychology, 1977, 86(5), 561-564.
- Exner, J. The Thematic Apperception Test. In I. Weiner (Ed.), Clinical Methods in Psychology. New York: Wiley, 1976, 93-101.
- Faber, P., Saayman, G., & Touyz, S. Meditation and archetypal content of nocturnal dreams. Journal of Analytic Psychology, 1978, 23(1), 1-22.
- Faraday, A. Dream power. New York: Coward, McManh and Groghegan, 1972.
- Faraday, A. The dream game. New York: Harper and Row, 1974.
- Fisher, C., & Paul, J. The effect of subliminal visual stimulation on images and dreams: A validation study. Journal of the American Psychoanalytic Association, 1959, 7, 35-83.
- Fiss, H. Discussion of E. Sheppard, Dream content analysis. In M. Kramer (Ed.), Dream Psychology and the new biology of dreaming. Springfield, Il.: Charles C. Thomas, 1969.
- Fiss, H., Ellman, S., & Klein, G. Waking fantasies following interrupted and completed REM periods. Archives of General Psychiatry, 1969, 21(2), 230-239.
- Fiss, H., Klein, G., & Bokert, E. Waking fantasies following interruption of two types of sleep. Archives of General Psychiatry, 1966, 14, 543-551.
- Foulkes, D. A grammar of dreams. New York: Basic Books, 1978.
- Foulkes, D. Home and laboratory dreams: Four empirical studies and a conceptual reevaluation. Sleep, 1979, 2(2), 233-251.
- Foulkes, D., Long-distance "Sensory-Bombardment" ESP in dreams: A failure to replicate. Perceptual and Motor Skills, 1972, 35(3), 731-734.

- Foulkes, D., Pivik, T., Steadman, H., Spear, P., & Symonds, J. Dreams of the male child: An EEG study. Journal of Abnormal Psychology, 1967, 72, 457-467.
- Foulkes, D., & Rechtschaffen, A. Pre-sleep determinants of dream content: Effects of two films. Perceptual and Motor Skills, 1964, 19, 983-1005.
- Frank, A. Conscious dream synthesis as a method of learning about dreaming: A pedagogic experiment. Psychoanalytic Quarterly, 1978, 47(1), 103-112.
- Freud, S. The interpretation of dreams. (I). (J. Strachey, Ed. and trans.). London: The Hogarth Press, 1955. (Originally published, 1900).
- Freud, S. On dreams. (J. Strachey, Ed. and trans.). London: The Hogarth Press, 1955. (Originally published, 1901).
- Frey-Rohn, L. From Freud to Jung. (F. Engreen & E. Engreen, trans.). New York: Delta, 1974. (Originally published, 1969).
- Garfield, P. Creative dreaming. New York: Simon & Schuster, 1974.
- Garfield, S., Blek, L., & Melker, F. The influence of method of administration on selected aspects of TAT stories. Journal of Consulting Psychology, 1952, 16, 140-144.
- Garvin, J. A Thematic Apperception Test study of non-intellecual factors related to academic success on the college level. Unpublished doctoral dissertation, Loyola University of Chicago, 1960.
- Garwood, D. The significance and dynamics of sensitivity training programs. International Journal of Group Psychotherapy, 1967, 17(4), 457-472.
- George, S., & Jennings, L. Effects of subliminal stimuli on dreams: Further evidence against the Spence-Holland Theory. Perceptual and Motor Skills, 1972, 35(1), 251-257.
- Goldstein, M., & Bartol, R. Fantasy responses to subliminal stimuli. Journal of Abnormal and Social Psychology, 1960, 60, 22-26.

- Goodenough, D. Dream recall: History and current status of the field. In A. Arkin, J. Antrobus, & S. Ellman (Eds.), The mind in sleep: Psychology and Psychophysiology. Hillsdale, N.J.: Lawrence Erlbaum, 1978.
- Goodenough, D. Some recent studies of dream recall: effects of two films. In H. Witkin & H. Lewis (Eds.), Experimental studies of dreaming. New York: Random House, 1967.
- Gordon, H. A comparative study of dreams and responses to the TAT: A needpress analysis. Journal of Personality, 1953-4, 22, 244-253.
- Griffin, M., & Foulkes, D. Deliberate presleep control of dream content: An experimental study. Perceptual and Motor Skills, 1977, 45(2), 660-662.
- Grotz, R. A comparison of Thematic Apperception Test stories and manifest dream narratives. Unpublished masters thesis, Western Reserve University, 1950.
- Hall, C. The meaning of dreams. New York: Harper, 1953.
- Hall, C., & Domhoff, B. A Ubiquitous sex difference in dreams. Journal of Abnormal and Social Psychology, 1963, 66, 278-280.
- Hall, C., & Van de Castle, R. Studies of dreams reported in the laboratory and at home. Monograph Series #1, Santa Cruz, Ca.: Institute of Dream Research, 1966.
- Hall, C., & Van de Castle, R. The content analysis of dreams. New York: Appleton-Century-Crofts, 1966.
- Harris, M., & Ray, W. Dream content and its relation to self-reported interpersonal behavior. Psychiatry, 1977, 40(4), 363-368.
- Harrison, R. Thematic apperceptive methods. In B. Wolman (Ed.), Handbook of clinical psychology. New York: McGraw-Hill, 1965. 562-620.
- Hartman, A. A basic TAT set. Journal of Projective Techniques and Personality Assessment, 1970, 34(5), 391-396.

- Hartman, E. The day residue: Time distribution of waking events. Paper presented to APSS, Denver, 1968, cited in Winget, C., & Kramer, M. Dimensions of dreams. Gainesville, Fl.: University of Florida, 1979.
- Hartshorn, K., Corriere, R., Karle, W., Switzer, A., Hart, J., & Gold, S. A reapplication of the process scoring system for dreams. Journal of Clinical Psychology, 1977, 33(3), 844-848.
- Hauri, P. Dreams in patients remitted from reactive depression. Journal of Abnormal Psychology, 1976, 85, 1-10.
- Hauri, P. Effect of evening activities on subsequent sleep and dreams. Psychophysiology, 1968, 4, 267.
- Hauri, P., Sawyer, J., & Rechtschaffen, A. Dimensions of dreaming. A factored scale for rating dream reports. Journal of Abnormal Psychology, 1967, 72, 16-22.
- Haymes, M. Explanatory styles in REM reports: Relation to problem solving. Psychophysiology, 1972, 9(1), 116-117.
- Hendin, H. Black suicide. New York: Basic Books, 1969.
- Herman, J., Ellman, S., & Roffwarg, H. The problem of NREM dream recall re-examined. In A. Arkin, J. Antrobus, & S. Ellman (Eds.), The mind in sleep: Psychology and psychophysiology. Hillsdale, N.J.: Lawrence Erlbaum, 1978.
- Hillman, J. Peaks and vales: The soul/spirit distinction as basis for the differences between psychotherapy and spiritual discipline. In C. Giles (Ed.), Puer Papers, Dallas, Spring, 1979. (a)
- Hillman, J. The dream and the underworld. New York: Harper and Row, 1979. (b)
- Hobson, J. Dreaming sleep attacks and desynchronized sleep enhancement. Report of a case of brain stem signs. Archives of General Psychiatry, 1975, 32(11), 1421-1424.
- Holman, D. Noone of the Ulu. London: Heinemann, 1958.
- Holt, R. Methods in clinical psychology. New York: Plenum Press, 1978.

- Holt, R. The nature of TAT stories as cognitive products: A psychoanalytic approach. In J. Kagan & G. Lesser (Eds.), Contemporary issues in thematic apperceptive methods. Springfield, Il.: Charles C. Thomas, 1961.
- Horne, J. Dreaming sleep in man: A reappraisal. Perspectives of Biological Medicine, 1978, 21(4), 591-601.
- Howarth, E. Extroversion and dream symbolism: An empirical study. Psychological Reports, 1962, 10, 211-214.
- Hunt, W. Human behavior and its control. Science, 1970, 169 948, 901-901.
- Ingram, D. Psychoanalytic treatment of the obese person. Part III. American Journal of Psychoanalysis, 1976, 36(3), 227-235.
- Irwin, F., & Woude, K. Empirical support for a basic TAT set. Journal of Clinical Psychology, 1971, 27, 514-516.
- Jones, R. An epigenic analysis of dreams. In M. Kramer (Ed.), Dream psychology and the new biology of dreaming. Springfield, Il.: Charles C. Thomas, 1969.
- Jones, R. The new psychology of dreaming. New York: Grune and Stratton, 1970.
- Jones R. The transformation of the stuff dreams are made of. In E. Hartmann (Ed.) Sleep and dreaming. Boston: Little, Brown & Co., 1970.
- Jung, C. Symbols of transformation. (R.C.F. Hull, Ed. and trans.). Volume 5, Collected Works of C. G. Jung. Princeton, N.J.: Princeton University, 1956. (Originally published 1912/1952).
- Jung, C. The content of psychoses. (R.C.F. Hull, Ed. and trans.). Volume 3, Collected Works of C. G. Jung. Princeton, N.J.: Princeton University, 1960. (Originally published 1908).
- Kafka, H. The use of color in projective tests and dreams in relation to the theory of ego autonomy. Unpublished doctoral dissertation, New York University, 1963.

- Kafka, H., Eagle, C., & Holt, R. Studies in the consistency of expressiveness (use of color and primary process) in dreams and projective tests. Unpublished abstract, Research Center for Mental Health, New York University.
- Kahn, E., Fisher, C., & Edwards, A. Night terrors and anxiety dreams. In A. Arkin, J. Antrobus, & S. Ellman (Eds.), The mind in sleep: Psychology and psychophysiology. Hillsdale, N.J.: Lawrence Erlbaum, 1978.
- Kales, J., Kales, A., Bixler, E., & Soldatos, C. Resource for managing sleep disorders. Journal of the American Medical Association, 1979, 241(22), 2413-2416.
- Karacan, I. The effect of exciting pre-sleep events on dream reporting and penile erections during sleep. Unpublished doctoral dissertation, State University of New York College of Medicine, 1965.
- Karle, W., Woldenberg, L., & Hart, J. Feeling therapy: Transformation in psychotherapy. In V. Binder, A. Binder, & B. Rimland (Eds.), Modern Therapies. New York: Prentice-Hall, 1976.
- Karle, W., Hopper, M., Corriere, R., Hart, J., & Switzer, A. Two preliminary studies on sleep and psychotherapy. Physiological Behavior, 1977, 19(3), 419-423.
- Kirsch, T. The relationship of the REM state to analytic psychology. American Journal of Psychiatry, 1968, 124(10), 1459-1463.
- Klinger, E. Models, context, and achievement fantasy: Parametric studies and theoretical propositions. Journal of Personality Assessment, 1973, 37, 25-47.
- Klopfer, W., & Taulbee, E. Thematic Apperception Test. Annual Review of Psychology, 1976, 27, 554-558.
- Kluger, H. Y. Archetypal dreams and everyday dreams: A statistical investigation into Jung's theory of the collective unconscious. The Israeli Annals of Psychiatry and Related Disciplines, 1975, B(1), 6-47.
- Kramer, M. Manifest dream content in normal and pathologic states. Archives of General Psychiatry, 1970, 22(2), 149-159.
- Kramer, M. Manifest dream content in psychopathologic states. In M. Kramer (Ed.), Dream psychology and the new biology of dreaming. Springfield, Il.: Charles C. Thomas, 1969.

- Kramer, M., Roth, T., Clark, J., & Trinder, J. The use of dreams in drawing clinical inferences. Psychophysiology, 1972, 9(1), 117-118.
- Kuper, A. A structural approach to dreams. MAN, 1979, 14, 645-662.
- Lefkowitz, J., & Fraser, A. Assessment of achievement and power motivation of Blacks and Whites using a Black and White TAT with Black and White administrators. Journal of Applied Psychology, 1980, 65(6), 685-696.
- Levin, L., & Harrison, R. Hypnosis and regression in the service of the ego. International Journal of Clinical and Experimental Hypnosis, 1976, 24(4), 400-418.
- Levitt, E., Persky, H., & Brady, J. Methods of measurement. In E. Levitt (Ed.), Hypnotic induction of anxiety. Springfield, Il.: Charles C. Thomas, 1964.
- Lewis, H., Goodenough, D., Shapiro, A., & Sleser, J. Individual differences in dream recall. Journal of Abnormal Psychology, 1966, 71, 52-59.
- Lindzey, G., & Heinemann, S. Thematic Apperception Test: Individual and group administration. Journal of Personality, 1955, 24, 34-55.
- Lindzey, G., & Silverman, M. Thematic Apperception Test: Techniques of group administration, sex differences, and the role of verbal productivity. Journal of Personality, 1959, 27, 311-323.
- Mack, J. Nightmares and human conflict. Boston: Little, Brown, & Co., 1970.
- Marks, I. Rehearsal relief of a nightmare. British Journal of Psychiatry, 1978, 133, 461-465.
- Mattoon, M. Applied dream analysis: A Jungian approach. Washington: V. H. Winston & Sons, 1978.
- McClelland, D. Assessing human motivation. Princeton, N.J.: Van Nostrand, 1971.
- McClelland, D., Atkinson, J., Clark, R., & Lowell, E. The achievement motive. New York: Appleton-Century-Crofts, 1953.
- McQuitty, L. Elementary linkage analysis for isolating orthogonal and oblique types of typed relevancies. Educational and Psychological Measurement, 1959, 17, 207-229.



- Middleton, W. Nocturnal dreams.  
Science Monthly, 1933, 37, 460-464.
- Milner, J. Administrators gender and sexual content in projective test protocols. Journal of Clinical Psychology, 1975, 31(3), 540-541.
- Monroe, W. A study of taste dreams.  
American Journal of Psychology, 1898, 10, 326.
- Monroe, W. Note on dreams.  
American Journal of Psychology, 1897, 9, 413-414.
- Morgan, C., & Murray, H. A method for investigating fantasy. The Thematic Apperception Test. Archives of neurological Psychiatry, 1935, 34, 289-306.
- Murray, H. Psychoanalytic theory and the dilemma of precision. (letter) American Journal of Psychiatry, 1979, 136(6), 865.
- Murray, H. Thematic Apperception Test.  
Cambridge, Mass.: Harvard College, 1943.
- Murray, H. Uses of the Thematic Apperception Test.  
The American Journal of Psychiatry, 1950-51, 107, 577-581.
- Nerney, J., Zimmerman, J., & Ekstrand, B. Distortion in post hypnotic dreams. Psychophysiology, 1972, 9(1), 117.
- Newman, E., & Evans, C. Human dream processes as analogous to computer programme clearance. Nature, 1965, 206, 534.
- Noone, R., & Holman, D. In search of the dream people.  
New York: Morrow, 1972.
- Newmark, C., & Flouranzano, R. Replication of an empirically derived TAT set with hospitalized psychiatric patients. Journal of Personality Assessment, 1973, 37(4), 340-341.
- Newmark, C., Hetzel, W., & Frerking, R. The effects of personality tests on state and trait anxiety. Journal of Personality Assessment, 1974, 38(1), 17-20.
- O'Brien, R. A failure to hypnotically produce nocturnal emissions. Americal Journal of Clinical Hypnosis, 1977, 19(3), 182-184.

- Osterberg, M. A comparison of aggression in dreams and TAT stories. Unpublished M.A. thesis, Western Reserve U., 1951.
- Palmiere, L. Intro-extra-version as an organizing principle in fantasy production. Journal of Analytic Psychology, 1972, 17(2), 116-131.
- Palombo, S. The cognitive act in dream construction. Journal of the American Academy of Psychoanalysis, 1980, 8(2), 185-201.
- Perkins, K., & Reyher, J. Repression, psychopathology and drive representation: An experimental hypnotic investigation of impulse inhibition. American Journal of Clinical Hypnosis, 1971, 13(4), 249-258.
- Perlberg, M. Trauma at Tenerife: The psychic aftershocks of a jet disaster. Human Behavior, 1979, 8(4), 49-50.
- Perls, F. Gestalt therapy verbatim. Lafayette, Ca.: Real People, 1969.
- Petrauskas, F. A TAT and picture-frustration study of naval offenders and non-offenders. Unpublished doctoral dissertation, Loyola University of Chicago, 1958.
- Piotrowski, Z. The perceptanalytic dream interpretation device. A rational exploration of the irrational: Freud's and Jung's own dreams reinterpreted. Journal of Personality Assessment, 1971, 35(6), 505-518.
- Pivik, T., & Foulkes, D. NREM mentation: Relation to personality, orientation time, and time of night. Psychophysiology, 1968, 4(3), 372.
- Plato. The Republic. P. Shorey (trans.). Cambridge, Mass: Harvard University, 1930-35. (Originally ca. 400 B.C.)
- Progoff, K. At a journal workshop. New York: Dialogue House Library, 1975.
- Pung, L.J. The effects of a stressful transition experience on dreams: An analysis of dreams of women undergoing release from prison. (Unpublished doctoral dissertation, California School of Professional Psychology, 1977), Dissertation Abstracts International, 1978, 38, 5040B-5041B.

- Rechtschaffen, A., & Verdone, P. Amount of dreaming: Effects of incentive, adaptation to laboratory, and individual differences. Perceptual and Motor Skills, 1964, 19, 947-958.
- Rodin, E. The reality of death experiences. A personal perspective. Journal of nervous and Mental Disorders, 1980, 168(5), 259-263.
- Rychlak, J. Recalled dream themes and personality. Journal of Abnormal and Social Psychology, 1960, 60, 140-143.
- Sarason, S. Dreams and Thematic Apperception Test stories. Journal of Abnormal and Social Psychology, 1944, 39, 486-492.
- Schachter, D. The hypnogogic state: A critical review of its literature. Psychological Bulletin, 1976, 83, 452-481.
- Schmidt, H., Clark, R., & Hyman, P. Protriptyline: An effective agent in the treatment of the narcolepsy-catalepsy syndrome and hypersomnia. American Journal of Psychiatry, 1977, 134(2), 183-185.
- Schneider, S. Attitudes toward death in adolescent offspring of holocaust survivors. Adolescence, 1978, 13(52), 575-584.
- Schonbar, R. Temporal and emotional factors in the selective recall of dreams. Journal of Consulting Psychology, 1961, 25, 67-73.
- Schwartz, B., & Fontaine, G. Symposium: Sleep and clinical pathological states. Psychophysiology, 1972, 9(1), 151.
- Schwartz, D., Weinstein, L., & Arkin, A. Qualitative aspects of sleep mentation. In A. Arkin, J. Antrobus, & S. Ellman (Eds.), The mind in sleep: Psychology and psychophysiology. Hillsdale, N.J.: Lawrence Erlbaum, 1978.
- Schwartz, L. Social-situation pictures in the psychiatric interview. American Journal of Orthopsychiatry, 1932, 2, 124-133.
- Shainberg, D. Telepath in psychoanalysis: An instance. American Journal of Psychotherapy, 1976, 30(3), 463-472.

- Sheldrake, P., & Cormack, M. Dream recall and the contraceptive pill. Journal of Nervous and Mental Disorders, 1976, 163(1), 59-60.
- Sheppard, E. Dream content analysis.  
In M. Kramer (Ed.), Dream psychology and the new biology of dreaming. Springfield, Il.: Charles C. Thomas, 1969.
- Shulman, H. Congruences of personality expression, the Thematic Apperception Test and dreams. Unpublished doctoral dissertation, Western Reserve University, 1955.
- Singer, D., & Lenahan, M. Imagination content in dreams of deaf children. American Annals of the Deaf, 1976, 121(1), 44-48.
- Skolnick, A. Motivational imagery and behavior over twenty years. Journal of Consulting Psychology, 1966, 30(6), 463-475.
- Smith, G., Spence, D., & Klein, G. Subliminal effects of verbal stimuli. Journal of Abnormal and Social Psychology, 1959, 59(2), 167-176.
- Snyder, F. In quest of dreaming.  
In H. Witkin & H. Lewis (Eds.), Experimental studies of dreaming. New York: Random House, 1967.
- Snyder, F. The phenomenology of dreaming.  
In H. Madow & L. Snow (Eds.), The psychodynamic implications of the physiological studies on dreams. Springfield, Il.: Charles C. Thomas, 1970.
- Snyder, F. The physiology of dreaming.  
In M. Kramer (Ed.), Dream psychology and the new biology of dreaming. Springfield, Il.: Charles C. Thomas, 1979.
- Snyder, F., Karacan, I., Thorp, V., & Scott, J. Phenomenology of REMS dreaming. Psychophysiology, 1968, 4, 375.
- Starker, S., & Goodenough, D. Effects of sleep state and method of awakening upon Thematic Apperception Test productions at arousal. Journal of Nervous and Mental Disease, 1970, 150(3), 188-194. Stewart, K. Dream theory in Malaya. Complex, 1951, 6, 21-33.
- Stewart, K. Culture and personality in two primitive groups. Complex, 1953-54, 9, 3-30.

- Stewart, K. Dream theory in Malaya.  
In C. Tart (Ed.), Altered states of consciousness. New York: John Wiley and Sons, 1969.
- Stewart, K. The dream comes of age.  
Mental Hygiene, 1962, 46, 230-237.
- Stone, M. Dreams, free association, and the non-dominant hemisphere: An integration of psychoanalytical, neurophysiological, and historical data. Journal of American Academy of Psychoanalysis, 1977, 5(2), 255-284.
- Stoyva, J. Posthypnotically suggested dreams and the sleep cycle. Archives of General Psychiatry, 1965, 12, 287-294.
- Strauss, F. Comment on a study of intro-extra-version in fantasy production. Journal of Analytic Psychology, 1972, 17(2), 132-136.
- Sumerwald, H., Campbell, M., & Sarason, I. The effect of differential motivating instructions on the emotional tone and outcome of TAT stories. Journal of Consulting Psychology, 1958, 22, 385-388.
- Swartz, J. Thematic Apperception Test.  
In O. Buros (Ed.), The eighth mental measurements yearbook. (Vol. 1). Highland Park, N.J.: Gryphon, 1978. 1127-1130.
- Tart, C. Effects of posthypnotic suggestion of the process of dreaming. Unpublished doctoral dissertation, University of North Carolina at Chapel Hill, 1963.
- Tart, C. Frequency of dream recall and some personality measures. Journal of Consulting Psychology, 1962. 26, 467-470.
- Tart, C. Toward the experimental control of dreaming: A review of the literature. Psychological Bulletin, 1965, 64, 81-92.
- Tart, C., & Dick, L. Conscious control of dreaming. I. The posthypnotic dream. Journal of Abnormal Psychology, 1970, 76(2), 304-315.
- Taub, J., Kramer, M., Arand, D., & Jacobs, G. Nightmare dreams and nightmare confabulations. Comprehensive Psychiatry, 1978, 19(3), 285-291.
- Tebecis, A., & Provins, K. Hypnosis and eye movements. Biology, 1975, 3(1), 31-47.

- Thompson, C. The Thompson modification of the Thematic Apperception Test. Journal of Projective Techniques, 1949, 13, 469-478.
- Tremonti, J. Hypnosis in the educative process. Hypnosis Quarterly, 1969, 14(3), 11-22.
- Turner, G., & Coleman, J. Examiner influence on Thematic Apperception Test responses. Journal of Projective Techniques, 1962, 26, 478-486.
- Ullman, M. The adaptive significance of the dream. Journal of Nervous and Mental Disease, 1959, 129, 144-149.
- Ullman, M. The social roots of the dream. American Journal of Psychoanalysis, 1960, 20, 180-196.
- Van de Castle, R. Problems in applying methodology of content analysis. In M. Kramer (Ed.), Dream Psychology and the new biology of dreaming. Springfield, Il.: Charles C. Thomas, 1969.
- Van Lennep, D. The four picture test. The Hague: Nartinus Nijhoff, 1948.
- Van Lennep, D. The four-picture test. In H. Anderson & G. Anderson (Eds.), An introduction to projective techniques. Englewood Cliffs, N.J.: Prentice Hall, 1951.
- Varble, D. Current status of the Thematic Apperception Test. In P. McReynolds (Ed.), Advances in psychological assessment (vol.2). Palo Alto, Ca.: Science & Behavior Books, 1971.
- Vogel, G. Sleep onset mentation. In A. Arkin, J. Antrobus, & S. Ellman (Eds.), The mind in sleep: Psychology and psychophysiology. Hillsdale, N.J.: Lawrence Erlbaum, 1978.
- Weitz, L. Jung's and Freud's contributions to dream interpretation: A comparison. American Journal of Psychotherapy, 1976, 30(2), 289-293.
- Weisz, R., & Foulkes, D. Home and laboratory dreams collected under uniform sampling conditions. Psychophysiology, 1970, 6, 588-597.

- Wildman, R., & Wildman, R. An investigation into the comparative validity of several diagnostic tests and test batteries. Journal of Clinical Psychology, 1975, 31(3), 455-458.
- Winer B. Statistical principals in experimental design (2nd ed.). New York: McGraw-Hill, 1971.
- Winget, C., & Kramer, M. Dimensions of dreams. Gainesville, Fl.: University of Florida, 1979.
- Winter, D., & Stewart, A. Power motive reliability as a function of retest instructions. Journal of Consulting and Clinical Psychology, 1977, 45(3), 436-440.
- Witkin, H. Experimental manipulation of the cognitive and emotional control of dreams. In M. Kramer (Ed.), Dream psychology and the new biology of dreaming. Springfield, Il.: Charles C. Thomas, 1969.
- Witkin, H. Presleep experience and dreams. In J. Fisher & L. Breger, (Eds.), The meaning of dreams: Some insights from the laboratory. State of California, Dept. of Mental Hygiene, Bureau of Research, 1969. (Reprinted from Winget, C., & Kramer, M., Dimensions of dreams. Gainesville, Fl.: University of Florida, 1979).
- Witkin, H., & Lewis, H. Experimental studies of dreaming. New York: Random House, 1967.
- Wollmering, B. Dream control for behavior change. (Unpublished doctoral disseration, University of Arizona, 1978), Dissertation Abstracts International, 1978, 39, 2766A-2767A.
- Zepelin, H. Two tests of the relationship between dream content and self-report measures of personality. In M. Chase, W. Stern, & P. Walter (Eds.), Sleep Research (vol. 1). Los Angeles: Brain Information Service, 1972.
- Zepelin, H. An investigation of age differences in men's dreams. In M. Chase, W. Stern, & P. Walter (Eds.), Sleep Research (vol. 1). Los Angeles: Brain Information Service, 1972.
- Zubin, J., Eron, L., & Schumer, F. An experimental approach to projective techniques. New York: Wiley, 1965.

## APPENDIX A



PACKET A: CONTROL GROUP

## DREAM STUDY

## Information and Consent Form

1. The purpose of this study is to examine the relationships among concerns, TAT stories, and dreams.
2. Participation in this study is strictly voluntary, and any subject may withdraw at any time for any reason with no ill will or risk from me or to themselves.
3. All information obtained will be identified only by code, so that subject anonymity is assured. Personal names and references in the materials will be altered or deleted so that subjects will not be identifiable therefrom.
4. All participants will have access to the full results at the conclusion of the study.
5. Submission of all materials will be interpreted as an indication that the subject has participated willingly and freely.

I have read and understand the above conditions,  
and agree to participate in this study.

x \_\_\_\_\_ Date \_\_\_\_\_

## DREAM STUDY

## Reporting Dreams\*

1. Have recording materials at hand. Use either paper and pencil or tape recorder.
2. Date paper or tape before retiring.
3. Upon retiring repeat to yourself, "I will have a dream tonight. I will remember it."
4. Record or write the dream immediately upon awakening. Report everything you can remember, as fully as possible, but do not neglect to report short segments or images if that is all you can remember.
5. Try to arrange to have a few minutes to reflect on and remember your dreams upon awakening. Set your alarm fifteen minutes early.
6. If a dream or part of a dream is remembered at any time, write it down immediately, so it is not forgotten.
7. Treat your dreams as the important, fascinating phenomena they are.

\*From Faraday (1972), and Wollmering (1978).

DREAM STUDY  
Subject Code and Data Sheet

Code \_\_\_\_\_ Form \_\_\_\_\_

Sex \_\_\_\_\_ Age: \_\_\_\_\_ years \_\_\_\_\_ months \_\_\_\_\_

Marital Status \_\_\_\_\_ Educational Status \_\_\_\_\_

Course Number \_\_\_\_\_

Concerns:

Problems (in descending order of magnitude)

1.

2.

3.

Assets (in descending order of magnitude)

1.

2.

3.

Comments:

## APPENDIX B

PACKET B: EXPERIMENTAL GROUP

## DREAM STUDY

## Information and Consent Form

1. The purpose of this study is to examine the relationships among concerns, TAT stories, and dreams.
2. Participation in this study is strictly voluntary, and any subject may withdraw at any time for any reason with no ill will or risk from me or to themself.
3. All information obtained will be identified only by code, so that subject anonymity is assured. Personal names and references in the materials will be altered or deleted so that subjects will not be identifiable therefrom.
4. All participants will have access to the full results at the conclusion of the study.
5. Submission of all materials will be interpreted as an indication that the subject has participated willingly and freely.

I have read and understand the above conditions,  
and agree to participate in this study.

x \_\_\_\_\_ Date \_\_\_\_\_

## DREAM STUDY

## Reporting Dreams\*

1. Have recording materials at hand. Use either paper and pencil or tape recorder.
2. Date paper or tape before retiring.
3. Upon retiring repeat to yourself, "I will have a dream about solving my problem tonight. I will remember it."
4. Record or write the dream immediately upon awakening. Report everything you can remember, as fully as possible, but do not neglect to report short segments or images if that is all you can remember.
5. Try to arrange to have a few minutes to reflect on and remember your dreams upon awakening. Set your alarm fifteen minutes early.
6. If a dream or part of a dream is remembered at any time, write it down immediately, so it is not forgotten.
7. Treat your dreams as the important, fascinating phenomena they are.

\*From Faraday (1972), and Wollmering (1978).



DREAM STUDY  
Subject Code and Data Sheet

Code \_\_\_\_\_ Form \_\_\_\_\_

Sex \_\_\_\_\_ Age: \_\_\_\_\_ years \_\_\_\_\_ months \_\_\_\_\_

Marital Status \_\_\_\_\_ Educational Status \_\_\_\_\_

Course Number \_\_\_\_\_

Concerns:

Problems (in descending order of magnitude)

1.

2.

3.

Assets (in descending order of magnitude)

1.

2.

3.

Comments:

## APPENDIX C

## SIGNIFICANT CORRELATIONS: TAT AND SELF-REPORTS

TAT	Self-Report	Pearson	P	N*
Boy/Girlfriend	Friend/Relative	.6404	.025	12
Religion	Friend	1.0	.000	3
Friend	Housing	-1.0	.000	4
Mother	Boy/Girlfriend	-.5111	.015	22
Mother	Attitude	-.4613	.020	25
Father	Time	.9548	.011	5
Boy/Girlfriend	Roommate	1.0	.000	3
Spouse	Housing	-.9186	.028	5
Attitude	Money	-1.0	.000	3
Health	Time	1.0	.000	3
Marriage	Possessions	-1.0	.000	3
Death	Possessions	.9683	.032	18
Boy/Girl/Dates	Parents/Home	-.842	.012	8

\*Number of co-occurrences of each pair

## APPENDIX D

## SIGNIFICANT CORRELATIONS: DREAMS AND SELF-REPORTS

Dream	Self-Report	Pearson	P	N*
Friend	Money	.4847	.026	21
Father	Parents/Home	.6225	.031	12
Hobby/Athletics	Parents/Home	-.7952	.033	7
Time	Parents/Home	1.0	.000	3
Money	Parents/Home	-.4082	.495	5
Marriage	Boy/Girlfriend	-.8677	.025	6
Money	Boy/Girlfriend	.8807	.049	5
Money	Housing	-1.0	.000	3
Hobby/Athletics	School	.8763	.021	6
Job/Career	School	.6078	.047	11

\*Number of co-occurrences of each pair

## APPENDIX E

## SIGNIFICANT CORRELATIONS: DREAMS AND TAT

Dream	TAT	Pearson	P	N*
Job/Career	Father	-.5488	.034	15
Time	Parents/Home	-1.0	.000	3
Parents/Home	Car	.9045	.013	6
Father	Death	.6987	.002	17
Mother	Sibling	1.0	.000	4
Car	Friend	-.7259	.011	11
Friend	Housing	.6763	.000	21
Death	Friend	-.5751	.011	11
Roommate	Spouse	1.0	.000	21
Death	Death	.6396	.004	18
Marriage	Job/Career	.7214	.043	8
Job/Career	Death	-.5886	.027	14
Marriage	Religion	1.0	.000	2
Death	Car	.800	.031	7

\*Number of co-occurrences of each pair

APPROVAL SHEET

The dissertation submitted by Ross Edward Keiser  
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The final copies have been examined by the director  
of the dissertation and the signature which appears  
below verifies the fact that any necessary changes  
have been incorporated and that the dissertation is  
now given final approval by the Committee with  
reference to content and form.

The dissertation is therefore accepted in partial  
fulfillment of the requirements for the degree of  
Doctor of Philosophy.

6 April 1982

Date

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Director's Signature