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The Relationship Among Self-Reported Aggression, Locus of Control, Expectancy for Success, and Dream Content

Stephen James McCullough
Old Dominion University

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THE RELATIONSHIP AMONG SELF-REPORTED AGGRESSION,

LOCUS OF CONTROL, EXPECTANCY FOR SUCCESS,

AND DREAM CONTENT

by

Stephen James McCullough

A.B., May, 1979, Hope College

M.A., May, 1990, Fairleigh Dickinson University

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Approved by:

Robin J. Lewis, ODU (Chair)   W. Larry Ventis, W&M

Ellen F. Rosen, W&M   Louis H. Janda, ODU

John David Ball, EVMS

ABSTRACT

THE RELATIONSHIP AMONG SELF-REPORTED AGGRESSION,

LOCUS OF CONTROL, EXPECTANCY FOR SUCCESS,

AND DREAM CONTENT

Stephen James McCullough

Virginia Consortium for Professional Psychology

Chair: Dr. Robin J. Lewis

This study examined the relationship between elements of two dream content analysis systems, and between dream content variables and self-report measures. One hundred and five college students from two universities in Virginia completed the following self-report measures: Generalized Expectancy for Success Scale (Fibel & Hale, 1978), Internal Control Index (Duttweiler, 1984), Conflict Tactics Scale (Straus, 1979), Verbal Aggressiveness Scale (Infante & Wigley, 1986), and Brief Symptom Inventory (Derogatis & Spencer, 1982). They recorded any dreams they could remember over the subsequent three weeks in a dream journal. Only the data of participants who reported five or more dreams were included (n=83). Dream content was analyzed using Hall and Van de Castle's (1966) and Gaillard and Phelippeau's (1977) dream content analysis systems. Hall and Van de Castle's Successful Dream Outcome was significantly correlated with Gaillard and Phelippeau's Active Control. Hall and Van de Castle's Verbal Aggressive

Interactions was significantly correlated with Gaillard and Phelippeau's Verbal Aggressiveness and Physical Aggressiveness. Hall and Van de Castle's Physical Aggressive Interactions was significantly correlated with Gaillard and Phelippeau's Physical Aggressiveness. The Verbal Aggressiveness Scale was significantly correlated with Gaillard and Phelippeau's Physical Aggressiveness. Contrary to expectation, other dream content was unrelated to personality measures. Several unanticipated correlations were obtained. There appears to be considerable overlap between some aspects of Hall and Van de Castle's and Gaillard and Phelippeau's systems. The results fail to identify a direct relationship between specific dream content categories and specific personality variables. This relationship may not exist, or may be less direct, involving combinations of dream content variables.

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Introduction

The scientific study of dreams began with Freud's work at the turn of the century (Freud, 1900/1965), and received empirical respectability following physiological observations made 50 years later (Aserinsky & Kleitman, 1953). Research on dreams continues today, attracting the attention of professionals from many disciplines, including anthropology, education, the arts, literature, psychology, medicine, and religion. There is a wide range of views on the nature and importance of dreaming, even after nearly a century of theoretical and empirical work in the area. Consider the following passage from Sigmund Freud.

> Dreams are not to be likened to the unregulated sounds that rise from a musical instrument struck by the blow of some external force instead of by a player's hand; they are not meaningless, they are not absurd; they do not imply that one portion of our store of ideas is asleep while another portion is beginning to wake. On the contrary, they are psychical phenomena of complete validity...they are constructed by a highly complicated activity of the mind. (Freud, 1900/1965, p. 155)

Freud's view is not universally shared, however. In contrast is the following passage by Nathaniel Kleitman (1963), one of the pioneers of the study of sleep physiology: "Dreaming is nothing more than the consequence of repetitive cortical activation or 'paradoxical phase' of the periodic

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variation in sleep EEG patterns" (p. 107). Any behavior that can give rise to such dramatically opposing opinions must indeed be very complex. In fact, Jung (1945) called the dream the "problem child" of medical psychology. The dream is an utterly personal and private experience, in the sense that it is not open to direct observation by anyone other than the dreamer. This makes the empirical investigation of dreams very difficult.

The discovery of regularly occurring periods in the night during which dreaming is believed to take place (Aserinsky & Kleitman, 1953) was once viewed as the key to unlocking the secrets of the dream. Although this knowledge has made the collection of dream data more systematic, it has contributed little to the understanding of what, if anything, dreams mean. (Later studies, furthermore, have raised doubts about the exclusiveness of dreaming to certain periods of sleep. See Foulkes, 1985.) As a result, researchers still seek a method that sufficiently "objectifies" what is an inherently subjective event, so that it can be submitted to scientific scrutiny.

The current study was an attempt to clarify the relationship between dreams and waking life. Specifically, it was designed to investigate whether specific dream elements are correlated with specific personality characteristics. Much of the previous research in this area has focused on clinical rather than normal populations (Beck & Hurvich, 1959;

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Beck, 1961; Beck & Ward, 1961; Kramer & Roth, 1973); these studies have generally used questionable or unspecified means of classifying personality and/or dream variables. The same can be said of the studies of the dreams of "normal" participants (e.g., Barrett & Loeffler, 1992; Rychlak, 1960).

This study also attempted to improve our understanding of two instruments that are often employed in dream research (Hall & Van de Castle, 1966; Gaillard & Phelippeau, 1977). The use of these instruments involves content analysis to quantify dream reports, so that they can be statistically analyzed. These are empirical instruments, not derived from a particular theoretical framework. The authors therefore cannot definitively state the meaning of the resultant data. The current study attempted to clarify this issue by identifying correlates of certain dream elements. It also examined content areas in the two instruments that may overlap with one another. In order to put the study in context, however, several approaches to dreams and dream interpretation will be reviewed, followed by an explanation of content analysis, and finally, a discussion of the dream rating instruments.

Psychodynamic Approaches

For the first half of this century, the predominant view of dreaming and dream analysis was the psychodynamic approach. Beginning with the publication of Freud's (1900/1965) influential work, The Interpretation of Dreams, the belief

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that dreams are the product of internal psychic forces, rather than messages from a divine being or the result of some internal or external physical stimulation, gained in popularity. Even following the advances in the study of sleep and dream physiology (e.g., Aserinsky & Kleitman, 1953; Dement & Kleitman, 1957), new psychodynamic explanations of dreaming were being advanced (Hall, 1966). The psychodynamic view remains one of the leading schools of thought regarding dreams and their meaning. The significant proponents of this school include Freud, Jung (1909/1974, 1948a/1974, 1948b/1974), and Hall (1966).

Sigmund Freud is arguably the most significant single figure in the development of modern psychological thought. His theory of dreams is undoubtedly the most influential. In her annotated bibliography of dream literature, Charles (1986) writes that "[e]very serious professional book on the dream after 1910...contains, modifies, expands on, or argues against the doctrines of Freud" (p. 162). Freud (1900/1965) openly acknowledged that many of the ideas contained in The Interpretation of Dreams did not originate with him. This book is the pre-eminent work in the field of dream psychology. Thus any consideration of working with dreams must begin with a discussion of Freud's ideas.

In Freud's time the prevailing view was that dreams were physically determined, either by external sensory stimulation (sounds, sensations of cold or warmth) or by internal somatic

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stimulation (e.g. gastric activity). Freud questioned the validity of such a view. He did not deny that certain dream elements could be attributed to the physical determinants. But the proponents of total physical causation could not explain why these elements were woven into complex narrative structures, rather than remaining isolated perceptual experiences (Freud, 1900/1965).

Freud theorized that dreams arose from the individual's mind, or psyche, rather than as a response to some physical stimulation. Dreams are most frequently an expression of wishes or impulses that are difficult for the dreamer to openly espouse, or even to accept, because of their base or otherwise unacceptable nature. According to Freud, these impulses are usually of an erotic or aggressive nature. They are therefore repressed, banished to an area of the psyche that is hidden from attention, the unconscious. The intensity of these impulses remains strong despite this repression. Dreams provide an avenue for the private expression and fulfillment of these wishes (Freud, 1900/1965).

Freud believed that some of these wishes and impulses were so repugnant to the dreamer that even their private expression in dreams, if they were recognized, might be distressing enough to replicate the anxiety that first led to their repression. He hypothesized that the psyche distorted the original impulses so that they would be unrecognizable to the dreamer. This censorship acted as a defense against this

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distress, and to protect the dreamer's sleep (Freud, 1900/1965).

Freud postulated two main mechanisms of dream distortion: displacement and condensation. The dream censor used seemingly insignificant memories, often from the day before the dream ('day residue'), to represent the various elements of the impulses as visual images. This 'displacement' of important psychic material on mundane, 'forgettable' memories served to distract the dreamer from the true nature of the impulse. Freud likened this to the kind of displacement that occurs in waking life, as when a rejected lover displaces affection onto a pet (Freud, 1900/1965).

By condensation, Freud meant that a single element of a dream might stand for, or symbolize, several important aspects of psychic material. The man one meets on the street in a dream may at once represent the dreamer's friend and rival, his father, and a respected teacher from his childhood. These characters in turn may represent different parts of the dreamer's personality, which may be similar or quite different in nature. Such complexity of meaning within a single symbol enhances the 'disguise' the censor wishes to place between the dreamer and the impulse. In this way the impulses simultaneously gain expression and fulfillment, and remain hidden from the dreamer. Freud believed that this use of symbolism represents a regression to a more primitive form of thought, typified by the prominence of imagery over verbal

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mentation. This type of expression, according to Freud, is common in very young children, as well as in people of primitive cultures. He presented it as evidence of a return to our phylogenetic roots (Freud, 1900/1965).

Freud distinguished between two types of dream content: the manifest content and the latent content. The manifest content comprises the elements of the dream as experienced by the dreamer. This is the disguised form of the impulse or wish. The latent content, also known as the "dream-thought", is the repressed wish in its undisguised, uncensored, 'true' form. Freud viewed the manifest and latent contents as being "like two versions of the same subject-matter in two different languages" (Freud, 1900/1965, p. 311). He saw all attempts to understand dreams directly through their manifest content as fruitless, since the 'true' significance of a dream was to be found in the dream-thought. It is in this sense, according to Freud, that his ideas represent a new direction in the understanding of dreams (Freud, 1900/1965).

To discover the meaning of a dream, Freud proposed that the dreamer should, when considering elements of the manifest content, allow ideas to come freely to mind, without critically filtering out anything that might seem absurd, inappropriate, meaningless or otherwise irrelevant. Freud believed that this method of "free association" circumvents the mind's defenses, and allows the dreamer to retrace the processes by which the manifest content was formed, and arrive

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eventually at the latent content. If an uncritical attitude is not achieved, the psychic defenses might prevent remembering, or might alter the memory in a way that would throw the dreamer off course (Freud, 1900/1965).

Freud believed that some dream symbols are used in a rather standard, predictable way. He paid considerable attention to the various symbols that commonly represent the genitals and their sexual and eliminatory functions. For this reason, Freud recommended that dream interpretation be undertaken with the assistance of an expert interpreter, who is knowledgeable in the areas of primitive and mythological symbolism, and may thereby recognize its appearance in a dream. Freud nonetheless emphasized that it is the dreamer's associations, and not those of the expert, that are important. It is only by following the dreamer's associations that the dream-thought will be reliably uncovered (Freud, 1900/1965).

. C. G. Jung, a contemporary of Freud, agreed with Freud in the psychic source of dreams. Like Freud, Jung believed that dreams are the product of unconscious processes, and that the visual, nonverbal nature of dreams was a phylogenetically more primitive form of expression; "There is nothing surprising about the possibility that the figurative language of dreams is a survival from an archaic mode of thought" (Jung, 1948a/1974, p. 33).

Jung took issue, however, with Freud's proposition that all dreams serve the goal of wish fulfillment. It was Jung's

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belief that the purpose of dreams is to compensate for conscious attitudes and behaviors that are unbalanced. Jung saw this balance as essential to taking effective action (Jung, 1948a/1974). Dreams bring to our awareness issues we refuse or fail to recognize as important in our waking life. "Those thoughts, inclinations, and tendencies which in conscious life are too little valued come spontaneously into action during the sleeping state, when the conscious process is to a large extent eliminated" (Jung, 1948a/1974, p. 30). The dream can thus be viewed as a form of intrapsychic communication from the unconscious mind to the conscious mind, "so as to produce an adjustment or rectification" (p. 74). Not only dreams, but all unconscious processes can be seen as serving this purpose.

Jung suggested three ways in which this compensatory function might be performed in dreams.

> If the conscious attitude to the life situation is in large degree one-sided, then the dream takes the opposite side. If the conscious has a position fairly near the "middle," the dream is satisfied with variations. If the conscious attitude is "correct" (adequate), then the dream coincides with and emphasizes this tendency. (Jung, 1948b/1974, p. 74)

Jung believed the process of compensation was concerned with all aspects of a person's life, and disagreed with Freud's nearly exclusive focus on erotic and aggressive

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impulses (Jung, 1948a/1974).

The interpretation of dreams as infantile wish-fulfillments or as finalistic "arrangements" subserving an infantile striving for power is much too narrow and fails to do justice to the essential nature of dreams. A dream, like every element in the psychic structure, is a product of the total psyche. Hence we may expect to find in dreams everything that has ever been of significance in the life of humanity. Just as human life is not limited to this or that fundamental instinct, but builds itself up from a multiplicity of instincts, needs, desires, and physical and psychic conditions, etc., so the dream cannot be explained by this or that element in it, however beguilingly simple such an explanation may appear to be. (p. 63)

In interpreting dreams Jung, like Freud, made ample use of the technique of free association. The goal, however, was not to trace an aspect of the manifest content of a dream to its latent roots, but to divine the purpose of the dream, rather than its cause. To what end is this dream presented? For what psychic imbalance is it compensating? (Jung, 1948a/1974).

Jung hypothesized two ways in which the exploration of the dreamer's associations help to achieve this goal. First, these associations allow the dreamer and therapist to identify the important aspects of the dreamer's conscious life, to

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which the dream might be speaking. According to Jung, each dream addresses a particular human situation, and must be considered in that context. He considered accurate interpretations without the assistance of the dreamer's associations as extremely unlikely (Jung, 1948a/1974).

Jung also recognized that the state of our knowledge concerning unconscious processes was (and still is) quite limited. "We do not possess a general theory of dreams that would enable us to use a deductive method with impunity" (Jung, 1944/1974, p. 117). By referring to the dreamer's associations, however, and gaining a fuller understanding of the conscious situations, the purpose of a dream may be approached. This understanding may be enhanced by the consideration of a series of dreams, which form an interlacing "web" of communications. Thus, viewing a dream in context provides us with support for the tentative assertions we make regarding its meaning (Jung, 1944/1974).

Although it is commonly known that Jung was very interested in mythology, folklore, and ancient symbols, he, like Freud, cautioned against the application of standard interpretations to dream symbols. In fact, he believed that Freud engaged excessively in this type of interpretation (Jung, 1948a/1974). To Jung, most of the elements of the dream referred to aspects of the dreamer's own personality, and were used very specifically and intentionally for that purpose. Premature decisions about the meaning of this or

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that symbol was therefore discouraged.

So difficult is it to understand a dream that for a long
time I have made it a rule, when someone tells me a dream
and asks for my opinion, to say first of all to myself:
"I have no idea what this dream means." After that I can
begin to examine the dream. (Jung, 1948b/1974, p. 69)

There are some dreams to which different rules of
interpretation apply. Jung refers to these as "big" dreams,
as opposed to ordinary, or "little" dreams. One recognizes
a "big" dream by an intuitive sense of its significance. This
is the dream that stays with the dreamer for weeks, months,
or years; the dream that the dreamer feels compelled to
relate to others; the dream that has a great impact on the
dreamer. Personal associations are insufficient for
understanding these dreams (Jung, 1934/1959).

These dreams have their source not in the "personal
unconscious," the repository of material that has been
repressed or forgotten, but in the "collective unconscious."
This is a deeper level of the unconscious, which has its roots
not in personal experience, "but in the inherited possibility
of psychic functioning in general" (Jung, 1921/1959, p. 284).
That is, the contents of the collective unconscious are, Jung
believed, passed down throughout the history of humanity.

I have chosen the term "collective" because this part of
the unconscious is not individual but universal; in
contrast to the personal psyche, it has contents and

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modes of behavior that are more or less the same everywhere and in all individuals. It is, in other words, identical in all men and thus constitutes a common psychic substrate of a suprapersonal nature which is present in every one of us." (Jung, 1954/1959, p. 287)

Dreams arising from the collective unconscious contain symbolism that refers to these universal "contents and modes of behavior," known as archetypes. The understanding of this symbolism requires a knowledge of mythology and other primitive sources from which these symbols derive. In attempting to understand "big" dreams, these symbols are taken to represent the archetypal ideas in their universal, rather than personal, sense (Jung, 1948b/1974).

These dreams typically occur during critical phases of life, "when the universal laws of human fate break in upon the purposes, expectations, and opinions of the personal consciousness" (Jung, 1948b/1974, p. 78). They are signposts along the road to achieving psychic balance, a process Jung called "individuation."

> The ego-conscious personality is only a part of the whole man, and its life does not yet represent his total life....Since everything living strives for wholeness, the inevitable one-sidedness of our conscious life is continually being corrected and compensated by the universal human being in us, whose goal is the ultimate integration of conscious and unconscious, or better, the

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assimilation of the ego to a wider personality." (Jung, 1948b/1974, p. 78, emphasis added)

Calvin S. Hall devised what he called a "cognitive theory" of dreams, in which he viewed the act of dreaming as a cognitive process during which the mind transforms the dreamer's conceptions into pictorial representations (Hall, 1953a). Despite the cognitive designation, Hall agreed in many significant ways with Freud and Jung, and his writing reflects the integration of these and other approaches. He is most accurately described as a psychodynamic theorist.

In many ways Hall was in substantial agreement with Freud. He believed that the unconscious was the source of dreams. He also conceived of dreams as expressions of our view of self and others, our world, our impulses and how we attempt to satisfy them, and most importantly, our inner conflicts. Hall, like Freud, believed that these conflicts are usually sexual and aggressive in nature (Hall, 1966).

Hall's views diverged from Freud's, and were more consonant with Jung's, on the issue of the purpose of dreams. While Freud proposed that dreams are constructed, in part, to disguise repugnant wishes and impulses, Hall believed that the primary function of dreams is to reveal the contents of the unconscious to the dreamer. To support his argument Hall pointed out that, if dreams are meant to conceal, we should not be able to interpret them. He also argued that the use of recognizable symbolism in dreams, which is often similar

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to the language we use in slang conversation, argues against Freud's theory (Hall, 1953b, 1966).

Hall believed in the importance of symbolism in dreams. He saw evidence of the use of symbols to express both personal and universal concepts. While suggesting that symbols act as a sort of "shorthand" for the expression of unconscious ideas (Hall, 1953b, 1966), he also admitted that their appearance in dreams frequently makes them difficult to interpret (Hall, 1966).

Hall established interpretive guidelines that allow for both personal and universal understanding of symbols. If a dream did not make sense at face value, he would consider dream elements as symbolic referents of unconscious conceptions. He would attempt to corroborate this use of symbolism in other dreams. He would also encourage the dreamer to use free association. Where these methods resulted in a convergence of interpretive ideas, the symbolic view was validated (Hall, 1953b, 1966).

Hall also collaborated with Robert Van de Castle (1966) in the collection and analysis of thousands of dreams, focusing on specific content categories. Their work will be discussed later in this paper.

Gestalt Therapy

Gestalt Therapy comprises techniques designed to help clients become more aware of themselves and their world. The exercises emphasize three principal goals: owning

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projections, increased awareness, and emotional involvement and interaction (Shepard, 1975). Founded in the early 1950's, this approach is most often associated with Friedrich "Fritz" Perls (1969, 1970a, 1970b).

Perls was trained as a psychoanalyst, and although some of his ideas resemble those espoused by the psychodynamic writers above, he broke with that tradition in significant ways. Gestalt Therapy is experiential rather than analytical. Instead of getting at the root of thoughts and behaviors, which often involves an exploration of the personal (e.g., Freud) or universal (e.g., Jung) past, Perls attempted to get clients to experience life "here and now" (Perls, 1970a).

Although markedly dissimilar in technique, Perls's ideas about the purpose of dreams are in other ways quite similar to Jung's. Perls believed that the dream is a message from the dreamer to the dreamer, with the goal of calling the dreamer's attention to those aspects of the self that the dreamer has disowned and projected (Perls, 1969). "I believe that in a dream, we have a clear existential message of what's missing in our lives, what we avoid doing and living, and we have plenty of material to re-assimilate and re-own the alienated parts of ourselves" (Perls, 1969, p. 76).

Perls believed that every aspect of a dream, including not only the characters but also natural and inanimate objects, represent a part of the dreamer, which had been disowned and projected. This results in a fragmentation of

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the personality, which inhibits optimal functioning. The goal of dream work was to integrate these disowned parts (Perls, 1970a). Again, this goal is similar to Jung's emphasis on balance.

Perls eschewed the use of the term "interpretation." Like Freud and Jung, Perls warned against the dangers of too much involvement of the therapist in the process of dream work. He suggested that too much input from an "expert" could allow the dreamer to avoid the "real" issues raised in the dream, following instead the threads of interpretation offered by the analyst. This would only contribute to the dreamer's efforts to disown and project unwanted parts of the self (Perls, 1970b). Rather than work with experts, Perls encouraged people to work with a partner. This person is less likely, thought Perls, to be fooled by the dreamer's avoidance tactics (Perls, 1970a).

Rather than analyze or interpret dreams, it was Perls's goal to help the dreamer experience the dream. Several of the exercises he used were designed to enhance this experience. The dreamer relates the dream in the present tense, to heighten the sense that the dream is actually occurring. Other experiential tasks aim at helping the dreamer re-identify with the disowned aspects of the self. The dreamer can select an element of the dream and interact with it, imagining it sitting in an empty chair. The dreamer first plays himself/herself, then plays the part of the dream

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element. According to Perls, if the dreamer does this long enough, that element becomes part of the dreamer again, and can be integrated into the personality (Perls, 1970a).

Perls extended the dream work beyond the actual limits of the original dream report. He believed that what is missing from a dream can be as important as what appears, indicating issues the dreamer is avoiding (Perls, 1970b). At other times the dreamer is encouraged to act out the dream, and expand upon or change the events of the dream and see where this leads. This allows the dreamer to introduce elements from waking life into the dream work. The result is similar to making associations, but in a very experiential way (Perls, 1969). Finally, the physical and emotional manifestations arising during the dream work - muscle tension, tone of voice, facial expressions - are highlighted, and the dreamer expands upon these, exaggerating them, giving them voice, interacting with them. This increases awareness of parts of the experience that the dreamer might not otherwise notice. With awareness, the dreamer can re-own these physical and emotional parts of the self (Perls, 1969). With this work the focus expands from the dream as it occurred in the past to the dream-as-present-experience, which is a vital process continually unfolding.

Biological Approaches

To this point dreaming has been considered primarily or exclusively as a psychological process. It has been shown,

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however, that the act of dreaming coincides with certain physiological events during sleep. This discovery has lead researchers to delineate various biological explanations for dreaming. These explanations largely downplay the psychological importance of dreaming, and attempt to demonstrate the necessity of dreaming for the physical health of the dreamer.

These approaches were made possible by the realization that sleep is divided into various stages, rather than being a unitary state. By studying electrical activity in the brain, first in cats and later in other mammals including humans, researchers discovered the existence of two general sleep stages. The first, called desynchronized sleep (or D-sleep), is characterized by a low-voltage, high-frequency brain EEG pattern, similar to waking EEG. Slow-wave sleep (S-sleep) activity consists of high-voltage, low-frequency brain waves. S-sleep is divided into four stages, with voltage increasing from Stage I to Stage IV. Although there is much individual variability in sleep cycles, a typical sleep cycle begins with a period of Stage I sleep, followed by Stages II, III, and IV. The sleeper then passes back through Stages III and II. At this point Stage I sleep is typically replaced by a period of D-sleep. A complete cycle takes about 90 minutes. As the night progresses, periods of D-sleep become longer, and periods of Stage IV sleep diminish or disappear altogether (Kolb & Whishaw, 1990).

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In a landmark study, Aserinsky and Kleitman (1953) observed that there are regularly occurring periods of rapid eye movement (REM) throughout the night. These REM periods coincide with periods of D-sleep. Kleitman and his colleagues (Aserinsky & Kleitman, 1953; Dement & Kleitman, 1957) proposed a relationship between REM periods (or REM sleep) and dreaming. By awakening participants in sleep laboratories during various stages of sleep, they determined that there is much greater recall of dreams during REM sleep than during other periods. Further, they were able to establish some connection between the frequency and direction of the eye movements and the reported content of the dream.

These discoveries changed the course of dream research. If it is accepted that dreaming occurs largely during REM sleep (some researchers claim that extensive dreaming occurs in other stages of sleep, although this is not universally accepted (Foulkes, 1985)), then it becomes relatively easy to bring participants into a sleep laboratory, awaken them during periods of REM sleep, and obtain their dream reports. This has been shown to increase the number of dream reports obtainable from a participant each night (Urbina, 1981). A large number of dreams reports can be collected in a relatively short period of time.

These studies also suggested that humans engage in dreaming more frequently, and more regularly, than was previously believed (Dement, 1960). Because it occurs

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regularly in all humans, researchers believed that REM sleep, and by association, dreaming, must serve some function. Dement (1960) provided evidence supporting this notion. For several nights participants in a sleep laboratory were awakened each time they entered REM sleep, thereby depriving them of most of their usual REM sleep. This was followed by several nights of undisturbed sleep in the laboratory. Two major findings were obtained. First, as the study progressed, the number of awakenings required to limit REM sleep increased; that is, the longer REM sleep was deprived, the more often the participant attempted to enter REM sleep. Second, during subsequent nights of undisturbed sleep, participants spent up to 26% of their total sleep time in REM sleep, compared to the average of 19%. The rate of REM sleep returned to baseline after several nights. These findings suggest that there is some physiological need for REM sleep, and possibly for dreaming.

There are several theories about precisely what function dreaming might serve. Some researchers (e.g., Kleitman, 1963; Hobson & McCarley, 1977) have suggested that dreaming is a meaningless artifact of the concomitant physiological processes, and that the dreamer is simply trying to make sense of random psychic activity. There are others, however, who attribute more significance to the process of dreaming.

Crick and Mitchison (1983) proposed that because the cortical system of mammals is so complex and interconnected,

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it is vulnerable to a type of circuitry overload due to the simultaneous storage of too many patterns of associations, and to the overlap of such patterns. This overload might lead to dysfunctional modes of behavior, which they refer to as "parasitic." They believe that REM sleep serves to eliminate these parasitic modes of behavior; the overloaded circuits are bombarded by a specific type of brain activity, called pontine-geniculate-occipital (PGO) spikes, which weaken the synaptic connections in the overloaded areas. They refer to this process as "reverse learning." Dreams represent a running record of the parasitic modes that are being purged, and serve no other purpose.

Winson (1985, 1990) proposed an explanation of dreaming in terms of memory processing. Lower mammals exhibit a type of slow-wave brain activity, called theta rhythm, that is not found in higher mammals. Theta rhythms are evident during REM sleep and during specific waking activities that seem crucial to the survival of the organism. Rats, for example, exhibit theta rhythms when exploring, as they would when looking for food. In cats, theta rhythms coincide with predatory behavior. When theta rhythms are terminated by destruction of brain cells in the rat, spatial memory is destroyed (Winson, 1990). Winson suggests that during REM sleep, these animals may be "re-experiencing" crucial events of the day, in an effort to consolidate what was learned during these crucial events.

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Winson (1990), like Freud and others, believes that dreaming is a process inherited from lower species through evolution. He has proposed that dreaming in humans addresses issues of psychological survival, enabling us to reprocess and incorporate memories of psychic importance. He attributes the absence of theta rhythms in humans to the evolutionary shift from dependence on olfaction to other functions, and hypothesizes that other brain activities have taken over the function of theta rhythms. Of all the physiological explanations of dreaming, Winson's ascribes the greatest importance to its psychological functions.

An Information Processing Approach

Most of the theories of dreaming that suggest that dreams are meaningful posit this meaning in the content of the dream narrative, or in some derivative of this content. Foulkes (1985), on the other hand, takes issue with this idea. There are many different and divergent approaches to dream interpretation and meaning, and it is his view that there is no way to establish empirically the superiority of one approach over the others. It is useless, therefore, to pursue an explanation of dreaming along these lines.

Foulkes prefers to view dreaming as an information processing mechanism, very similar in many ways to waking processing. He proposes that an examination of the cognitive processes involved in the construction of dream imagery will provide more information about the dreamer than any attempt

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to "understand" the meaning of a dream's content (Foulkes, 1985).

Dreaming is a cognitive process during which mnemonic material is culled, integrated, and transformed into the visual imagery of dreaming. Although a cursory inspection of the dream narrative shows it to be "semantically" meaningless, it is constructed in such a way that it is "syntactically" comprehensible. That is, the narrative possesses an organization, enabling us to follow the story line and understand the nature of the relationships within it, even though they appear to be unreal or nonsensical. Foulkes believes that the construction of the dream narrative is a lawful process, though subject to individual variation. Just as we can understand the type of linguistic processing a child uses by examining the rules s/he applies to the use of language, Foulkes believes that we can learn much about an individual's cognitive processing by identifying the way s/he constructs a dream (Foulkes, 1985). The content of the dream is meaningless, according to Foulkes. He views dream content as an artifact, in much the same way that some physiological theorists do. The dream narrative merely provides "a consistent and thematically plausible interpretation of unconscious mnemonic activity" (Foulkes, 1985, p. 179). Foulkes suggests, however, that identifying the dreamer's associations to dream elements - a technique used by Freud and others - might also serve the purpose of

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highlighting the cognitive processes involved in dream formation (Foulkes, 1985).

As the preceding discussion suggests, researchers endorse a variety of views concerning the meaning and significance of dreams. The researchers can, for convenience, be divided into two broad groups. One group holds that dreams, whether they originate in the unconscious or elsewhere, contain information that is meaningful and of potential value for the dreamer. Included in this group are Freud, Jung, Hall, Perls, and Winson. In the other group are those who believe that dreams themselves are meaningless. This group includes Kleitman, Hobson and McCarley, Crick and Mitchison, and Foulkes.

Content Analysis

Foulkes's (1985) criticism of the common approaches to dream interpretation appears to have merit. While these approaches offer general, sometimes vague, guidelines for the exploration of dreams, they seem to rely on the intuition and/or clinical judgment of the interpreter, rather than on specific rules, for determining a dream's meaning. Such methods may be remarkably useful in the hands of a skilled clinician, but are difficult to standardize, leaving them vulnerable to inconsistent and subjective application. The absence of clear guidelines also limits the reliability with which they can be used by others. Meehl (1967/1973) has argued that, with the availability of reliable and valid statistical/actuarial data, actuarial data should be utilized

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instead of clinical judgment for classification of this kind.

Content analysis provides one possible solution to the criticisms cited above. It is a method, or a group of methods, for describing verbal or other communications in quantitative terms, thereby limiting the reliance upon subjective or intuitive interpretation and improving the quality of inferences about the communications (Carney, 1972). By defining research questions in terms of what data can be reliably collected and counted or classified, and creating a method for such collection, content analysis generates objective and replicable results, leading to more reliable and valid inferences.

There is evidence of the use of content analysis as early as the 18th century, but formal methods of application appeared in the 20th century. First used for the analysis of newspapers in schools of journalism, content analysis methods were widely employed during World War II for the analysis of propaganda, and for military intelligence purposes. Since then, the use of content analysis has extended to other disciplines, including anthropology, sociology, political science, and psychology (Carney, 1972).

Although systems of content analysis have been devised to explore a variety of problems, among the most basic goals of any content analysis system are

- to summarize the data, to represent them so that they can be better comprehended, interpreted, or related to

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some decision the user wishes to make

- to discover patterns and relationships within data that the "naked eye" would not easily discern, to test relational hypotheses

- to relate data obtained from content analysis to data obtained from other methods or from other situations so as to either validate the methods involved or to provide missing information. (Krippendorff, 1980, p. 109)

Even "classical" content analysis, which focuses on the first of these goals (description), and differs from many modern approaches in this respect (Carney, 1972), provides a basis for the objective treatment of communications data. This would not be possible without such a framework.

Among the many systems created for the content analysis of dreams, the most comprehensive is that outlined by Hall and Van de Castle (1966) in The Content Analysis of Dreams. The system was validated on 1000 dream reports of 200 college students (100 male and 100 female) aged 19-25, from which normative data were compiled. The individual classes of content to be analyzed were formulated by the authors after studying and becoming familiar with the content of many dream reports. Hall and Van de Castle selected dream content categories based on frequency of occurrence or on the authors' judgment of the psychological importance of the category in understanding personality. The authors also attempted to define classes in ways that would ensure inter-scorer

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reliability (Hall & Van de Castle, 1966).

The system includes 16 scales defined by the authors as empirical and three termed theoretical scales. The empirical scales principally involve the tabulation of specified objective classes of dream content, including settings, objects, characters, social interactions, activities, outcomes, emotions, and the qualities and attributes used to describe characters, objects, and events. The theoretical scales were derived by attempting to identify elements reflecting the presence of certain theoretical constructs, namely, castration, orality, and regression. Rating dream reports involves assigning elements of the report to one of these dimensions, based on criteria specified by the authors, and calculating a total for each category. (Hall & Van de Castle, 1966).

Another dream content analysis system was developed by Hauri, Sawyer, and Rechtschaffen (1967). Dream reports were obtained from 13 male and 11 female volunteers during REM-sleep awakenings. The 127 reports were rated on 20 characteristics, such as imagination, distortion, pleasantness, aggression, and sexuality, which were judged by the authors to be relevant to the psychological experience of dreaming. Nearly all 20 characteristics were rated by two judges, and some characteristics were rated by the dreamers as well, resulting in a total of 43 variables. A factor analysis of these ratings showed the existence of eight

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largely independent dream dimensions that accounted for about 63% of the total variance (Hauri et al., 1967).

Hauri et al.'s system was further refined by Gaillard and Phelippeau (1977). In an effort to improve the questionable reliability, Gaillard and Phelippeau devised a set of anchor statements to guide the rater in assessing the absence (1) or presence (5) of each of Hauri et al.'s dimensions using a 5-point scale.

Gaillard and Phelippeau's system differs methodologically from Hall and Van de Castle's in a number of ways. Using Gaillard and Phelippeau's system, the rater classifies a dream's qualitative content in quantitative terms, rather than a simple frequency tabulation. Although such ratings would seem to threaten interrater reliability, this does not appear to be the case. In addition, while only one numerical rating is assigned to each of Gaillard and Phelippeau's dream dimensions, some categories in Hall and Van de Castle's system require classification along several related dimensions, increasing the possible sources of variance.

Unlike the approaches described in the preceding sections, neither of these dream analysis systems is based explicitly on a particular theory of dreams or dream interpretation. In neither case (with the exception of the three theoretical scales devised by Hall and Van de Castle) have the authors suggested that a certain dream category or dimension is indicative of a particular characteristic in the

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dreamer. Rather, they have been developed to provide a systematic way of describing the contents of dream reports, so that any inferences made about them might be more objective and reliable. They can thus be classified as atheoretical instruments, which might be used in conjunction with any approach to dream interpretation. Hall and Van de Castle wrote of their system: "We wanted it to be empirical and comprehensive so that it could accommodate itself to many different kinds of research on dreams" (Hall & Van de Castle, 1966, p. 28).

Dream Content and Personality

A number of previous studies have attempted to demonstrate relationships between dream content and personality characteristics in clinical populations. Grey and Davies (1981) explored the relationship between clinical ratings of mental health and indications in dream content of "object relations maturity" in female psychoanalysis patients diagnosed with either a neurosis, a character disorder, or a combination of the two. Mental health ratings, by the participants' therapists and their clinical supervisors, were based on the Midtown Mental Health Scale. The Krohn Scale was used to rate dream content of a single dream from each participant. The authors presented no validity data for either instrument, and presented only the interrater reliability for the Krohn Scale obtained in their study. Neither did they present a summary of obtained results. They

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reported a significant positive relationship between mental health and object relations maturity (eta = .83), but the incomplete presentation makes this statistic difficult to interpret.

Other researchers have also explored the relationship between dream content and psychiatric diagnosis. Kramer and Roth (1973) reported a relationship between dream content and psychiatric diagnosis in depressed and schizophrenic patients. Several methods of content analysis were used, including Hall and Van de Castle's. The criteria for clinical diagnosis were not specified, however. The types of characters, social interactions, and emotions found in the dream reports of these two groups differed significantly.

In another series of studies, Beck and his colleagues (Beck & Hurvich, 1959; Beck, 1961; Beck & Ward, 1961) analyzed the dream content of depressed vs. nondepressed patients for evidence of "masochism", as measured by a scale developed by Beck and Hurvich (1959) specifically for that purpose. Dreams were rated positive for masochism if the dreamer reported crying or sobbing, unpleasant affect (e.g., sadness, guilt), or unpleasant action or physical appearance (Beck & Hurvich, 1959). Beck and Ward (1961) used the Beck Depression Inventory (BDI) to assess the severity of depression. On the BDI, unpleasant affect and crying are among the positive indicators of depression. The authors reported a positive relationship between dream hostility and depressive symptoms.

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However, since both instruments were designed by the same research group to assess aspects of the same disorder, and assess the presence of similar phenomena, the relationship between dream content and personality may be exaggerated. This finding, therefore, must be considered cautiously.

Several studies have explored the relationship between dream content and personality in nonclinical samples. Coolidge and Bracken (1981) compared participants who reported recurrent dreams involving the loss of teeth with participants who reported recurrent dreams of flying. Using the MMPI, the 16PF, Rotter's Locus of Control Scale, and a somatic concerns questionnaire, they reported that participants who dreamed of tooth loss were significantly more anxious and depressed, had lower ego strength, lower life satisfaction, felt they had less control over their lives; and felt helpless more often than those who dreamed of flying.

Rychlak (1960) investigated the relationship between dream themes and personality characteristics in a group of 5th grade and 8th grade children. A rating system was developed by the author based on previous research findings; Rychlak reported a 94% interrater agreement rate. Cattell's Junior Personality Quiz was used to identify personality characteristics. No validity or reliability information was reported for this instrument. By the author's admission, the measurement instruments used in this study allowed for only "gross classification" (p. 142). In spite of this, several

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statistically significant correlations were reported. Dreams with affiliative themes were related to the personality characteristics labeled Emotional Sensitivity, Schizothymia, and Socialized Morale. Dreams with reward themes were related to Independent Dominance. Tension dreams were related to Withdrawn Schizothymia and Lowered Intelligence.

Domino (1976) compared the dream content of college students to their responses on the Edwards Personal Preference Scale (EPPS) and the Adjective Checklist (ACL), which contain the same 15 needs scales. Dreams were rated on these needs scales, based on descriptions given by Edwards. With moderate interrater reliability (.53 - .81), Domino reported significant positive correlations between dream ratings and scores on the EPPS (Achievement, Deference, Affiliation, Dominance, Change, and Heterosexuality scales) and the ACL (Achievement, Deference, Order, Succorance, Dominance, Nurturance, Change, Endurance, Heterosexuality, and Aggression).

Brown and Donderi (1986) reported relationships between dream content and personality measures in recurrent versus nonrecurrent dreamers. They used Hall and Van de Castle's system (1966) to analyze dream content for social interactions, achievement outcomes, emotions, and environmental press, as well as a measure of archetypal dream content. A variety of personality measures were employed. Four dream content measures (ratio of friendly to aggressive

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interactions, ratio of success and good fortune to failure and misfortune, ratio of positive to negative affect, and archetypality) were significantly positively correlated with a canonical discriminant function termed "psychological well-being" by the authors. This factor, derived from measures of neuroticism, general psychiatric symptomatology, trait anxiety, depression, life-event stress, and personal adjustment, significantly discriminated recurrent from nonrecurrent dreamers.

Harris and Ray (1977) compared ratings of social interactions in dreams, again using Hall and Van de Castle's system, with personality measures in a sample of college students. Using Rotter's Locus of Control Scale, they reported a significant correlation between internal locus of control and frequency within dream reports of friendly interactions initiated by the dreamer. They also reported a significant correlation between external locus of control and frequency of friendly interactions received by the dreamer from other dream characters. These results support the notion of dream content as continuous with waking personality.

Barrett and Loeffler (1992) analyzed dream content in a sample of female college students who scored in the mildly to severely depressed range on the BDI. They used elements of both Hall and Van de Castle's (1966) and Gaillard and Phelippeau's (1977) systems, and found a negative correlation between anger expressed in dreams and depressive symptoms.

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That is, the more severely depressed a person was, the less likely she/he was to express anger in dreams. The authors interpret this result as indicating that depressed individuals repress their anger, presumably in their dreams and in waking life.

Taken together, these studies suggest a relationship between dream content and waking life. Differences in dream content predict mental health ratings by clinicians, and participants' responses on self-report measures of personality characteristics. They also distinguish between diagnostic categories, and between clinical and nonclinical participants. These data tend to support the conception of dreams as a source of meaningful information, rather than random mental activity. Where there was a prediction about the correlation between specific dream content characteristics and personality variables, furthermore, the results tend to support the theory that dream content is continuous with personality, rather than compensatory.

Purpose of the Study and Hypotheses

There were three general goals of the current study. The first was to determine if dream content is meaningfully related to aspects of waking personality in college students. The current study also attempted to improve methodologically on previous studies investigating this issue. Psychometrically sound instruments were used to assess focal aspects of personality, rather than elements of

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psychopathology. This kept the investigation within the realm of the "normal" personality. Dreams were rated using generally accepted and reliable measures, after establishing a reasonably high standard of interrater reliability. Finally, although conceptually related, the personality measures and the dream rating systems were developed by different researchers, increasing their conceptual independence from one another.

As mentioned previously, Hall and Van de Castle (1966) and Gaillard and Phelippeau (1977) devised their respective systems from empirical, rather than theoretical, perspectives. A second purpose of the current study was to try to define more specifically some of the correlates of different types of dream content. This would be possible if a relationship were demonstrated between dream content and personality measures. The aspects of dream content and personality to be assessed were chosen for the apparent similarity or conceptual relationship to each other.

Finally, the two dream analysis systems appear in some instances to be measuring similar or conceptually related elements of dream content. The third purpose of this study was to explore certain elements of this overlap. Hall and Van de Castle's "Aggressive Interactions" category is similar to the dimensions of "Verbal Aggression" and "Physical Aggression" used by Gaillard and Phelippeau. Hall and Van de Castle see verbal and physical aggression as part of a

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continuum, while Gaillard and Phelippeau consider each separately. Whether this is a meaningful distinction remains to be seen. A more subtle relationship may exist between Hall and Van de Castle's "Achievement Outcome" category and Gaillard and Phelippeau's "Active Control" dimension. The former assesses the degree to which goal-directed efforts within the dream result in success or failure (Hall & Van de Castle, 1966), while the latter rates the extent of control the dream characters appear to have over events in the dream (Gaillard & Phelippeau, 1977). Despite the perceived similarity among these scales, there is evidence to suggest that they may be substantially independent of one another. In an investigation of various dream content scales, Hauri (1975) reported that many scales grouped in the same factor using factor analysis correlated only in the mid-.50's, suggesting that only about 25% of the variance in one scale can be predicted from the other. Hauri summarized his conclusions as follows:

> Our analysis suggests that although there is a fair amount of overlap between different scoring systems, each system is unique enough to prevent results obtained with one system from being directly compared with results from another scale. (p. 275)

The following specific hypotheses for the current study were proposed:

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1. There will be a significant relationship between Hall and Van de Castle's Achievement Outcome category and the personality measures of expectancy for success and internal locus of control.

2. There will be a significant relationship between Gaillard and Phelippeau's Active Control category and the personality measures of expectancy for success and internal locus of control.

3. There will be a significant relationship between Hall and Van de Castle's Aggressive Interactions category and a measure of the use of verbal and physical aggression in waking life.

4. There will be a significant relationship between Gaillard and Phelippeau's Verbal Aggression category and a measure of the use of verbal aggression. There will be a significant relationship between Gaillard and Phelippeau's Physical Aggression category and a measure of the use of physical aggression in waking life.

5. There will be a moderate, positive relationship between Hall and Van de Castle's Achievement Outcome category and Gaillard and Phelippeau's Active Control category.

6. There will be a moderate, positive relationship between Hall and Van de Castle's Aggressive Interactions category and Gaillard and Phelippeau's Verbal and Physical Aggression categories.

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Method

Participants

Thirty male and 76 female undergraduate college students, from two colleges in Southeastern Virginia, served as volunteer participants in this study. They participated to receive extra credit, or as partial fulfillment of course requirements, in psychology classes.

Measures

In addition to a brief demographics questionnaire (Appendix A), participants were asked to complete the following pencil-and-paper personality measures.

Generalized Expectancy for Success Scale (GESS). The GESS (Fibel & Hale, 1978) is a 30-item scale designed to measure generalized expectancy for success (See Appendix B). Participants indicate the degree to which each item would apply to them, on a scale ranging from highly improbably (1) to highly probably (5). Higher scores indicate the tendency for the individual to expect to be successful in most situations. The GESS has been shown to be reliable, with a test-retest reliability at a 6-week interval of .83. with a sample of college students. Split-half reliability was also high (.90 for odd-even, .82 for first half-second half, using the Spearman-Brown correction formula). Adequate validity for the GESS was demonstrated by correlations with measures of depression, suicidality, and hopelessness that were significant and in the expected direction. A low but

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significant correlation between GESS scores and social desirability (.26) was found for females, but not for males (Fibel & Hale, 1978). Similarly, GESS scores for females, but not for males, correlated negatively with a measure of internal locus of control (-.27).

Internal Control Index (ICI). The ICI (Duttweiler, 1984) is a 28-item scale designed to measure locus of control (See Appendix C). Participants are asked to indicate how frequently they engage in various behaviors on a scale ranging from rarely (1) to usually (5). Higher scores suggest that the individual believes s/he has control over event outcomes (internal locus of control). Those who score low tend to attribute control to external agents or causes (external locus of control). Based on sample of college students, Duttweiler (1984) reported a coefficient alpha of .84. There was a moderate correlation in the predicted direction between ICI scores and a factor of Rotter's Internal-External scale that concerns the perception of mastery over the course of one's life (see Mirels, 1970, for further discussion of his factor analysis).

Verbal Aggressiveness Scale (VAS). The VAS (Infante & Wigley, 1986) is a 20-item scale designed to assess the predisposition to verbal aggressiveness (See Appendix D). The authors define verbal aggressiveness as "attacking the self-concept of another person instead of, or in addition to, the person's position on a topic of communication (p. 61)."

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Participants indicate how applicable each item is to them personally ranging from almost never true (1) to almost always true (5). Infante and Wigley (1986) reported a coefficient alpha of .82 with two separate samples of college students, suggesting good internal consistency. Test-retest reliability over a four-week interval was .82. VAS scores were significantly positively correlated with a measure of verbal hostility, and with the tendency to use verbally aggressive messages in other situations (Infante & Wigley, 1986).

Conflict Tactics Scale - Form A (CTS). The CTS (Straus, 1979) is a 14-item scale designed to assess the use of three tactics (Reasoning, Verbal Aggression, and Violence) to handle intrafamilial conflict (See Appendix E). For each item, participants first rate how often they have used the tactic in conflicts with some significant other (parent, sibling, spouse, friend), then rate how often that person has used the tactic with them, ranging from never (0) to more than once a month (5). Although developed for use with families, the CTS is based on a theory of conflict that is not family-specific, and has been used to assess extra-familial conflict tactics (e.g., Bethke & De Joy, 1993, Gondolf, 1992). Straus (1990) cites several studies reporting internal consistencies for the three tactics. Coefficient alphas for the Reasoning (CTSR) items are low (.43 to .76), which reflects the small number of items. For Verbal Aggression (CTSVA) and Violence (CTSVI) coefficient alphas ranged from .62 to .96, with one instance

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in which the alpha for CTSVI was .42. In the current study, participants rated only how frequently they themselves have used each tactic.

Evidence of validity comes from a variety of sources. Straus (1979) presents data from a previous study showing moderate agreement between college students' responses about their parents' conflict tactics and their parents' responses about interspousal conflict. Straus (1979, 1990) also cites evidence of construct validity, with CTS scores predicting expected patterns of violent tendencies from one generation to the next, CTS scores correlated with hypothesized risk factors for family violence, and CTS scores predicting the probability of physical and mental health patterns among victims versus non-victims of domestic violence.

Brief Symptom Inventory (BSI). The BSI (Derogatis & Spencer, 1982) is a 53-item self report measure used to identify psychiatric symptoms in clinical and nonclinical populations. The participant is asked to indicate the degree to which a variety of symptoms have bothered her/him during the past week, ranging from not at all (1) to extremely (5). The items include symptoms characteristic of somatization, depression, anxiety, psychoticism, and other dimensions of psychopathology. Derogatis and Spencer (1982) reported that internal consistency for the nine dimensions, using Cronbach's coefficient alpha, range from .71 to .85. Test-retest reliability over a 2-week interval range from .68 to .91.

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Derogatis and Spencer also reported convergent validity between the BSI and the clinical scales of the MMPI, the Wiggins content scales, and the Tryon cluster scores, with correlation coefficients ranging from .30 to .72. (For more extensive discussion of the validity of the BSI, see Derogatis & Spencer, 1982). In the current study, this questionnaire was used to disguise the nature of the investigation. Since this measure is copyrighted, it is not reproduced in this paper.

Internal consistency was assessed for the self-report measures with the current sample by calculating coefficient alpha. The results are presented in Table 1. In each case internal consistency is acceptable, ranging from a low of .69 to a high of .96.

Hall and Van de Castle Dream Analysis Measures.
In the current study, three of Hall and Van de Castle's (1966) categories were used: Aggressive Interactions, Achievement Outcomes, and Size. The Aggressive Interactions category includes a range of activities engaged in by dream characters. The category is divided into eight subclasses. Those numbered from 1 to 4 involve nonphysical (verbal or expressive) acts. They range from covert feeling of hostility or anger without any overt expression of aggression (1) to an aggressive act in which a serious accusation or verbal threat of harm is made against a character (4). Subclasses 5 through 8 involve physical acts, ranging from an aggressive act which involves the theft or destruction of

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Table 1

Coefficient Alpha for Self-Report Measures

Measure	Coefficient Alpha
GESS	.91
ICI	.87
CTSR	.69
CTSV	.70
CTSVI	.88
CTST	.81
VAS	.86
BSI	.96

Note. GESS = Generalized Expectancy for Success Scale; ICI = Internal Control Index; CTSR = Conflict Tactics Scale - Rational; CTSV = Conflict Tactics Scale - Verbal; CTSVI = Conflict Tactics Scale - Violent; CTST = Conflict Tactics Scale - Total; VAS = Verbal Aggressiveness Scale; BSI = Brief Symptom Inventory

possessions belonging to a character (5) to an aggressive act which results in the death of a character (8). Aggressive interactions can also be classified according to who is the aggressor, the victim, if the aggression is reciprocal or mutual, witnessed or self-inflicted. Based on 50 dreams scored independently by two judges, Hall and Van de Castle (1966) reported a correlation of .97 for the number of aggressive interactions scored. When all elements of scoring (number, subclass, aggressor, victim, etc.) were considered, the judges had a 54% rate of perfect agreement; when the judges disagreed on only a single element, the agreement rate rose to 72%. These numbers indicate an acceptable level of interrater reliability. In the current study, the class of aggressive interactions was divided into separate categories, Verbal Aggressive Interactions (VAI) and Physical Aggressive Interactions (PAI), and rated only for severity.

The Achievement Outcomes category comprises the subclasses of Success (SU) and Failure (FL) (Hall & Van de Castle, 1966). In order to be scored for success or failure, an activity must involve a clear effort to achieve some goal or to deal with a problem, great or small. Included in the scoring of SU and FL are the character(s) engaging in the activity, and if relevant, consequences that occur to change the outcome. Hall and Van de Castle (1966) report a perfect agreement rate of 56% over 50 dreams. The relatively low level of agreement may be due in part to the relative low

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frequency of successes and failures scored. In the current study dreams were rated only for the presence of SU or FL.

The scoring class Size is used to record all references to the largeness or smallness of things in dreams. Descriptions indicating largeness (big, huge, thick, tall, high, deep) are scored S+; descriptions indicating smallness (small, tiny, thin, short, low, narrow, shallow) are scored S-. This category was not of primary importance to the investigation, but is included to assess divergent validity. Size was selected because there is no theoretical reason to suspect that it will be correlated with any of the personality measures being used, and because references to size appear relatively frequently in the dreams of both male and female college students (Hall & Van de Castle, 1966).

Gaillard and Phelippeau Dream Analysis Measures. The dimensions of Gaillard and Phelippeau's (1977) system to be assessed in the current study, using Hauri et al.'s (1967) nomenclature, were Verbal Aggression (VA), Physical Aggression (PA) and Active Control (AC). On the dimension of VA, dream content can range from no verbal aggression (1) to violent anger, intense dispute, verbal aggression expressed brutally (5). With two judges rating 153 dreams, Gaillard and Phelippeau (1977) obtained a perfect agreement rate of 81%. When a one-point difference in rating was allowed, the agreement rate was 96%.

The dimension of PA can range from no physical aggression

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(1) to <u>attacks, scuffles, fights, characters struggling, use of weapons, etc.</u> (5). Gaillard and Phelippeau (1977) reported a perfect agreement rate for two judges of 90%. With a one-point difference, the agreement rate was 97%.

In the dimension of AC (Gaillard and Phelippeau called this dimension "participation of the dreamer") the dreamer may be <u>absent, unmentioned, or inactive</u> (1), or may be <u>very active, and dominate the scene</u> (5). The perfect interrater agreement rate was 57%. The agreement with a one-point difference was 96% (Gaillard & Phelippeau, 1977).

<u>Procedure</u>

Each participant was given a packet containing the following materials:

1. <u>Consent form</u> (Appendix F).

2. <u>Demographics questionnaire</u> (Appendix A). Data requested included sex, age, race/ethnicity, marital status, and school affiliation.

3. <u>Personality questionnaire</u>. This comprised the personality measures discussed above (Appendices B-E, H), with items numbered consecutively.

4. <u>Computer-scoring answer sheet</u>. Responses to the questionnaires were entered on this sheet.

5. <u>Dream log book</u> (a "blue" or examination booklet).

6. <u>Instruction sheet</u> (Appendix G). This included a brief description of the study, instructions for responding to the questionnaires, instructions for recording dreams, and

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guidelines to help people remember their dreams.

Each participant was instructed to sign the consent form and complete the questionnaires at home. She/he was asked to write in the blue books any dreams she/he had over a period of three weeks. The dreams were to be recorded upon awakening (either at night or in the morning), or, if necessary, at some point during the day following the night in which she/he had the dream. The participant was instructed to return the packet and its contents after three weeks. When this was done, the participant received a written explanation of the study (Appendix I).

When the packets were received, the blue books were removed. From this point on the dream reports and other data, having been coded, were handled separately. The responses from the questionnaires were scanned directly into a computer.

The author served as the principal dream rater. He and another doctoral student in clinical psychology, after practicing rating the dreams of several participants who had reported fewer than five dreams, rated 20 dream reports from four randomly selected participants who had reported five dreams or more, using both instruments, and their level of accuracy and agreement were assessed. The results of this process were unacceptably low. Following further practice and discussion to improve agreement, the raters rated 20 dream reports from 4 different participants, with better results. After interrater reliability of at least 90% agreement within

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1 point was established, the author rated the remainder of the dreams using both methods. The dream ratings for each participant were then entered into the computer manually. Two sample dreams and their scoring using both Hall and Van de Castle's and Gaillard and Phelippeau's systems is included in Appendix J.

Results

To ensure that an adequate sample of each participant's dream activity was being examined, only participants who reported five or more dreams were included in the analysis. Those participants whose dreams were used to establish interrater reliability were removed from this group, resulting in a final participant pool of 24 males and 59 females. For those subjects who reported more than five dreams, five were selected randomly for analysis. Table 2 summarizes their demographic characteristics.

<u>Interrater Reliability</u>

As a measure of interrater reliability for dream content variables, percentage agreement on the ratings of 20 dream reports was calculated using the following formula:

$$A\% = \frac{\text{Number of scoring agreements}}{\text{Number of scoring agreements} + \text{number of scoring disagreements}}$$

The results are presented in Table 3. Percentages were calculated for perfect agreement and for agreement within one rating point. The categories of Achievement Outcome and Size are rated for presence or absence; agreement within one point

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Table 2

Participant Description

Variable	$\underline{n}$
Age	
18-21	54
22-25	20
Over 25	9
Gender	
Male	24
Female	59
Marital Status	
Single	74
Married	6
Divorced	2
Other	1
Race	
Caucasian	52
African American	17
Hispanic	2
Asian American	9
Other	3
University	
Old Dominion	67
William & Mary	16

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Table 3

Inter-rater Agreement Percentages for Dream Content Ratings

| | Ratings | |
Dream Variable	Perfect Agreement	Agreement Within 1
VAI/PAI	83	92
SU/FL	95	NA
Size	91	NA
AC	35	100
VA	85	100
PA	65	95

Note. VAI = Verbal Aggressive Interactions; PAI = Physical Aggressive Interactions; SU = Success; FL = Failure; AC = Active Control; VA = Verbal Aggression; PA = Physical Aggression.

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was not applicable to these categories. Perfect agreement ranged from a low of .35 for the category of Active Control (AC), to a high of .95 for Achievement Outcome. Agreement within one point improved for all measures, and ranged from .92 for Aggressive Interactions to 1.00 for AC and Verbal Aggression (VA). These agreement percentages were judged to be acceptably high.

Gender Differences

T-tests were performed to determine if there were significant gender differences on dream content variables or self-report measures. The results are presented in Tables 4 and 5. Gender differences were significant only for the dream content variables Verbal Aggressive Interactions (VAI) and VA, and for the self-report measures Verbal Aggressiveness Scale (VAS) and Conflict Tactics Scale - Verbal (CTSV). The pattern of correlations between VAI and other variables was the same for both men and women. VA was significantly positively correlated with Large Size (S+; r = .31) and Small Size (S-; r = .35) for women, but not for men. The VAS was significantly positively correlated with Physical Aggression (PA) for men (r = .45), but not for women. These correlations were not involved in tests of the central hypotheses of this study. The decision was made, therefore, to present results for all participants together.

Dream Content Variables

Table 6 contains a summary of dream characteristics,

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Table 4

T-tests for Independent Samples of Gender on Dream Variables

Variable	Men Mean	SD	Women Mean	SD	t
Dreams	14.13	4.98	14.46	5.25	.27
WPD	66.74	31.37	98.42	69.30	2.86*
SU	.17	.38	.27	.59	.95
FL	.29	.55	.33	.61	.25
AC	14.50	1.82	13.81	2.21	1.35
VAI	1.21	1.91	3.49	3.88	3.50*
PAI	8.96	9.63	7.67	10.40	.52
VA	6.13	1.51	7.71	2.28	3.14*
PA	8.13	2.00	7.90	3.00	.31
S+	1.08	1.50	1.37	1.48	.80
S-	.33	.70	.73	1.06	1.68

Note. df = 77 - 81. Dreams = Number of dreams; WPD = Words per dream; SU = Success; FL = Failure; AC = Active Control; VAI = Verbal Aggressive Interactions; PAI = Physical Aggressive Interactions; VA = Verbal Aggression; PA = Physical Aggression; S+ = Large Size; S- = Small Size

* p < .05

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Table 5

T-tests for Independent Samples of Gender on Self-Report Measures

	Men		Women		
Measure	Mean	SD	Mean	SD	t
CTSR	11.17	4.86	11.88	4.27	.577
CTSV	7.17	3.36	9.24	5.37	.039*
CTSVI	1.09	2.54	2.38	4.57	.111
CTST	19.38	7.42	23.50	10.73	.121
VAS	52.52	8.93	44.64	10.39	.001*
GESS	119.38	13.45	118.85	17.06	.577
ICI	106.87	13.91	106.25	12.96	.914
BSI	44.96	25.85	46.45	32.68	.845

Note. df = 78 - 80. CTSR = Conflict Tactics Scale - Rational; CTSV = Conflict Tactics Scale - Verbal; CTSVI = Conflict Tactics Scale - Violent; CTST = Conflict Tactics Scale - Total; VAS = Verbal Aggressiveness Scale; GESS = General Expectancy for Success Scale; ICI = Internal Control Index; BSI = Brief Symptom Inventory.
* p < .05

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Table 6

Means and Standard Deviations for Dream Content Variables

Dream Variable	M	SD
SU	.24	.54
FL	.32	.59
VAI	2.80	3.55
PAI	8.06	10.13
Size	1.90	1.97
S+	1.29	1.49
S-	.61	.99
AC	14.01	2.12
VA	7.25	2.20
PA	7.96	2.99

Note: $\underline{N}$ = 79 - 83; SU = Success; FL = Failure; VAI = Verbal Aggressive Interaction; PAI = Physical Aggressive Interaction; AC = Active Control; VA = Verbal Aggression; PA = Physical Aggression

including the mean total across five dreams, and the standard deviation, for each dream content variable. For all dream content categories, the range of obtained values was restricted. Participants reported Success (SU) and Failure (FL) very infrequently; 63 of the 79 participants reported no SU in any of the five dreams rated, and 59 participants reported no FL. The incidence of Verbal Aggressive Interactions (VAI) and Physical Aggressive Interactions (PAI) was about three across five dreams. (PAI ratings begin at 5; that is, a score of 5 represents one occurrence.)

Self Report Variables

A summary of the data obtained from the five self-report measures is presented in Table 7. The participants generally expect to be successful in their endeavors, report a fairly high degree of internal control, have a moderately low aggressive verbal style, use rational conflict resolution tactics more often than verbally aggressive tactics, and rarely resort to physical violence. They report very low levels of psychiatric symptoms.

Correlational Analyses for Dream Content and Personality Measures

The correlations obtained among dream content categories are presented in Table 8. As predicted, positive relationships were observed between Hall and Van de Castle's VAI and Gaillard and Phelippeau's VA (r = .74, p < .01), and between Hall and Van de Castle's PAI and Gaillard and Phelippeau's PA

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Table 7

Mean Total Scores and Standard Deviations for Self-Report
Variables

Measure	$\underline{M}$	$\underline{SD}$
GESS	119.43	15.33
ICI	106.62	13.12
VAS	46.70	10.51
CTSR	11.80	4.29
CTSV	8.63	4.94
CTSVI	2.01	4.12
CTST	22.59	9.95
BSI	46.03	30.75

Note: $\underline{N}$ = 80.- 82; GESS = Generalized Expectancy for Success
Scale; ICI = Internal Control Index; VAS = Verbal
Aggressiveness Scale; CTSR = Conflict Tactics Scale -
Rational; CTSV = Conflict Tactics Scale - Verbal; CTSVI =
Conflict Tactics Scale - Violent; CTST = Conflict Tactics
Scale - Total; BSI = Brief Symptom Inventory

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Table 8

Correlations Among Dream Content Variables

Dream Scale	AC	VA	PA	SU	FL	VAI	PAI	S+	S-
AC	--								
VA	.14	--							
PA	.26*	.35**	--						
SU	.33**	.11	.11	--					
FL	-.18	.04	-.06	-.02	--				
VAI	.09	.74**	.35**	.00	-.03	--			
PAI	.36**	.29**	.89**	.08	-.08	.29**	--		
S+	.09	.22*	.14	.33**	.07	.12	.15	--	
S-	.15	.31**	.02	.13	-.07	.11	.06	.32**	--

Note. N = 79-83. AC = Active Control; VA = Verbal

Aggression; PA = Physical Aggression; SU = Success; FL =

Failure; VAI = Verbal Aggressive Interaction; PAI = Physical

Aggressive Interaction; S+ = Size-Plus; S- = Size-Minus.

* p < .05   ** p < .01

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($\underline{r}$ = .89, $\underline{p}$ < .01). A significant correlation was obtained between Hall and Van de Castle's SU and Gaillard and Phelippeau's AC ($\underline{r}$ = .33, $\underline{p}$ < .01).

There were significant positive correlations between VAI and PA ($\underline{r}$ = .35), and between PAI and VA ($\underline{r}$ = .29, $\underline{p}$ < .01). These correlations, though not predicted, are not surprising, since all of these categories deal with aggressiveness. Using a $\underline{t}$-test for difference between dependent correlations, these correlations were shown to be significantly weaker than those outlined above. The results are presented in Table 9. Several unexpected significant correlations were observed. AC was positively correlated with both PAI ($\underline{r}$ = .36, $\underline{p}$ < .01) and PA ($\underline{r}$ = .26, $\underline{p}$ < .05). S+ was positively correlated with SU ($\underline{r}$ = .33, $\underline{p}$ < .01) and VA ($\underline{r}$ = .22, $\underline{p}$ < .01). S- was positively correlated with VA ($\underline{r}$ = .31, $\underline{p}$ < .05).

Most dream content categories were significantly correlated with Words Per Dream (WPD). When this variable was controlled for using a partial correlation, the pattern of correlations remained unchanged, suggesting that WPD did not significantly influence the correlations.

Intercorrelations among self-report measures are presented in Table 10. Several of the significant correlations were expected, although none were specified in the hypotheses. For example, there was a significant positive correlation between the Conflict Tactics Scale - Rational (CTSR) and Conflict Tactics Scale - Verbal Aggression (CTSVA)

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Table 9

Differences Between Correlations Among Aggressive Dream
Content Variables

Correlations	t
VA x VAI (.74) / PA x VAI (.35)	4.54*
PA x PAI (.89) / PA x VAI (.35)	9.42*
VA x VAI (.74) / VA x PAI (.29)	6.56*
PA x PAI (.89) / VA x PAI (.29)	10.68*

Note. N = 79; VA = Verbal Aggression; PA = Physical
Aggression; VAI = Verbal Aggressive Interaction; PAI =
Physical Aggressive Interaction

*p > .01

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Table 10

Correlations Among Self-Report Measures

Dream Scale	1	2	3	4	5	6	7	8
1. GESS	--							
2. ICI	.50**	--						
3. CTSR	.007	.03	--					
4. CTSV	-.14	-.08	.31**	--				
5. CTSVI	-.13	-.03	.13	.58**	--			
6. CTST	-.15	-.09	.65**	.84**	.64**	--		
7. VAS	-.36**	-.15	.12	.25*	.30**	.30**	--	
8. BSI	-.56**	-.29**	.26*	.31**	.18	.37**	.33**	--

Note. N=78-81. GESS = Generalized Expectancy for Success Scale; ICI = Internal Control Index; CTSR = Conflict Tactics Scale - Rational; CTSV = Conflict Tactics Scale - Verbal; CTSVI = Conflict Tactics Scale - Violent; CTST = Conflict Tactics Scale - Total; VAS = Verbal Aggressiveness Scale; BSI = Brief Symptom Inventory

* p < .05   ** p < .01

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($\underline{r}$ = .31, $\underline{p}$ < .01) and between CTSVA and Conflict Tactics Scale - Violent (CTSVI) ($\underline{r}$ = .58, $\underline{p}$ < .01). There was a positive correlation between Internal Control Index (ICI) and Generalized Expectancy for Success Scale (GESS) ($\underline{r}$ = .50, $\underline{p}$ < .01), instruments purportedly measuring theoretically similar attributes. There were significant positive correlations between VAS and both CTSVA ($\underline{r}$ = .25, $\underline{p}$ < .05) and CTSVI ($\underline{r}$ = .30, $\underline{p}$ < .01). These are all measures of self-reported use of aggression.

Some of the significant correlations obtained were unexpected. There was a moderate negative correlation between VAS and GESS ($\underline{r}$ = -.36, $\underline{p}$ < .01). Finally, Brief Symptom Inventory (BSI) scores were significantly correlated with all other self-report measures except CTSVI. Two of these correlations, BSI x GESS and BSI x ICI, are negative; the rest are positive.

The correlations between dream content and self-report measures are presented in Tables 11 and 12. Contrary to expectations, correlations between the dream variables SU and FL and the self-report measures GESS and ICI, were not significant, with coefficients ranging from -.03 to .18 (Table 11). Similarly, the correlations between the dream content variable AC and scores on the ICI and GESS were not significant. Correlation coefficients were .11 and -.02, respectively (Table 11). Finally, correlations between aggressive dream content and self-report measures of

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Table 11

Correlations Among Dream Outcome and Control Variables and Self-Report Measures

Dream	Self-Report Measure		
Scale	GESS	ICI	BSI
SU	.01	.17	-.01
FL	.02	-.04	.05
AC	-.04	.12	.15

Note. N = 77 - 81. GESS = General Expectancy for Success Scale; ICI = Internal Control Index; BSI = Brief Symptom Inventory; SU = Success; FL = Failure; AC = Active Control.

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Table 12

Correlations Among Aggressive Dream Content and Self-Report
Measures

Dream	Self-Report Measure					
Sale	CTSR	CTSV	CTSVI	CTST	VAS	BSI
VAI	-.07	-.02	.09	-.002	.008	.11
PAI	.17	.02	-.04	.13	.18	.14
VA	-.004	-.07	-.08	-.06	-.12	.09
PA	.16	-.06	.01	.13	.23*	.16

Note. N = 76 - 82. CTSR = Conflict Tactics Scale - Rational;
CTSV = Conflict Tactics Scale - Verbal; CTSVI = Conflict
Tactics Scale - Violent; CTST = Conflict Tactics Scale -
Total; VAS = Verbal Aggressiveness Scale; BSI = Brief Symptom
Inventory; VAI = Verbal Aggressive Interactions; PAI =
Physical Aggressive Interactions; VA = Verbal Aggression; PA
= Physical Aggression.

*p < .05

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aggression were not significant (Table 12). Correlation coefficients ranged from -.008 to .13. There was one unexpected significant correlation. The dream variable PA was significantly positively correlated with self-report variable VAS (r = .23, p < .05).

Discussion

These results appear to refute the theory that dream content is consistent with waking behavior and personality, as Hall (1953b, 1966) suggested. If this theory were true, positive correlations between dream content and self-report measures would have been observed. The results are also inconsistent with Jung's (1948a/1974) belief that dreams compensate for traits that are either absent or overly dominant. If this were the case, negative correlations would have been expected.

This study found no significant relationship among Hall and Van de Castle's Achievement Outcome scales (SU, FL) and the Generalized Expectancy for Success Scale (GESS) or the Internal Control Index (ICI). No significant relationship was found among Gaillard and Phelippeau's Active Control (AC) and either GESS or ICI. Similarly, no relationship was found between Hall and Van de Castle's Verbal or Physical Aggressive Interactions scales (VAI, PAI) and self-report measures of aggressiveness (Conflict Tactics Scale (CTS), Verbal Aggressiveness Scale (VAS)), nor between these self-report measures and Gaillard and Phelippeau's measures of Verbal

Aggression (VA) or Physical Aggression (PA). An unexpected significant correlation was found between PA and VAS. AC was significantly, and positively, correlated with SU, but not with FL. Significant positive correlations were found between VAI and VA, PAI and PA, VAI and PA, and PAI and VA.

<u>Personality and Dreams</u>

A number of relationships were hypothesized between dream content and self report. None of the hypotheses was supported. Achievement outcome and control in dreams were not shown to be related to reported internal locus of control or expectancy for success. Aggressiveness in dreams was not related to self-reports of aggressive behavior or tendencies.

As previously outlined, however, several researchers, using both clinical and nonclinical samples, found significant relationships between dream variables and personality variables derived from either self-report or clinical ratings. In several of these studies, the methods for evaluating dream content and personality were integrally related. Beck (Beck, 1961; Beck & Ward, 1961) developed a system for quantifying masochistic content in dreams. He used depressed and nondepressed patients as participants. The diagnosis for depression was based on scores on the Beck Depression Inventory, which Beck himself developed. In Domino's (1976) study, personality was assessed using two instruments, the Edwards Personal Preference Scale (EPPS) and the Adjective Checklist,

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which provide scores on 15 personality dimensions. Dream content was evaluated on the same 15 dimensions, using guidelines developed from the EPPS descriptions. Such methods raise questions about the independence of the measures, leaving the issue of the relationship between dream content and personality unresolved.

Some authors explored the relationship between personality variables and a variety of dream content variables, without specifying the nature of the relationship. Rychlak (1960) examined a wide variety of personality variables, as measured by the Junior Personality Quiz, and predicted only that dreams would be related to objective test results. Kramer and Roth (1973) examined a variety of dream content variables in depressive and schizophrenic participants, without specifying the theoretical basis for group differences. Harris and Ray (1977) explored the relationship between "waking conflict" and several diverse dream content areas. In all of these studies, significant relationships between dream content and waking life were identified.

Coolidge and Bracken (1984) hypothesized that people who recurrently dream about tooth loss would be more concerned about aging and death, would report more somatic complaints, and would have a more external locus of control than people with recurrent dreams about flying. Several reputable instruments were used to measure these attributes. Although

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the authors observed distinct personality differences between these two groups, the predicted characteristics were not among them. Similarly, Barrett and Loeffler (1992) predicted that depressed dreamers would report more unpleasant events and negative emotions in dreams than would nondepressed dreamers. This prediction was not upheld, although other content areas, as well as extensiveness of recall, did distinguish these two groups. As in the current study, hypotheses about specific relationship between dream content and personality attributes were unsupported.

In a number of studies (Grey & Davies, 1981; Kramer & Roth, 1973; Rychlak, 1960; Brown & Donderi, 1986; Harris & Ray, 1977), the authors observed relationships between dream content variables and relatively nonspecific personality variables, such as mental health (Grey & Davies, 1981), and psychological well-being (Brown & Donderi, 1986). In the current study, the BSI was used as a nonspecific measure of mental health. In contrast to the studies cited above, none of the dream content variables was significantly correlated with the BSI.

As the preceding discussion highlights, it is difficult to find support for theorized relationships between specific dream content variables and specific personality traits. In the previous studies where this has been attempted, however, other significant relationships have been observed. The current study was designed to identify relationships between

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focal aspects of dream content and personality.

Given the relative frequency with which correlations between dream content and personality are observed, why is it difficult to find support for hypotheses predicting specific relationships? Several explanations are plausible. Freud (1900/1965) believed that the essential meaning of a dream is not to be found in the manifest dream content, but in the latent content, or dream-thought. The latent content is the repressed wish, which by definition is outside the dreamer's conscious awareness. Similarly, Perls (1969) believed that elements of a dream represent those aspects of personality that the dreamer has disowned. In either case, the dreamer is theoretically unable to identify the impulse that gives rise to the dream. Such a person would be unlikely to endorse items on self-report instruments that are consonant with that impulse. In the current study, for example, a person whose dreams were high in aggressive content would be unlikely to admit to aggressive tendencies on pencil-and-paper tests. The results of the current study and previous studies, however, also support Foulkes's (1985) contention that it is impossible to establish empirically the superiority of any of the several theories of the significance of dream content.

Relationships Among Dream Content Categories

Another purpose of this study was to explore the relationship between the dream content analysis systems developed by Hall and Van de Castle (1966) and Gaillard and

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Phelippeau (1976). The results suggest some overlap between these two systems. Some aspects of this overlap was predicted, while others were unexpected.

It was expected that Hall and Van de Castle's Achievement Outcome would be related to Gaillard and Phelippeau's Active Control. The dreamer must actively attempt to achieve a goal for the dream to be coded either SU or FL. The results provide partial support for this hypothesis. There is a significant positive correlation between SU and AC. No relationship was found between FL and AC. For the current sample, successful outcomes in dreams are related to active control, but failures in dreams are not inversely related to active control, as was predicted. The effort expended by the dreamer in attempting to achieve a goal, even if the dreamer fails, may have confounded the predicted inverse relationship between FL and control of dream events.

A relationship between the measures of verbal and physical aggression was also expected. The results support this hypothesis. These results indicate that the subscales concerned with aggressiveness are measuring constructs with a significant degree of overlap.

When comparing dream variables with one another, a number of unexpected significant correlations were obtained. These correlations fall into two patterns. In the first pattern, measures of physical aggression in dreams were correlated with active control. In Hauri et al.'s (1967) factor analytic

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study, these two dimensions were shown to be relatively independent, with a correlation coefficient of -.13. However, when a rating system was developed by Gaillard and Phelippeau (1977), interrater reliability for AC was among the lowest for any of the dream dimensions. It is possible that when rated using the definitions supplied by Gaillard and Phelippeau, these two dimensions overlapped to a greater degree.

Gaillard and Phelippeau's definition of Active Control makes reference not only to the degree of control the dreamer exerts over events in the dream, but also to the amount of energy exerted. Dream events involving physical aggressiveness are likely to involve considerable exertion. It is not surprising, therefore, that these two dimensions are shown to be related.

In the second set of unexpected correlations, the dream variable of Size is related to SU and VA. Size was hypothesized to be a neutral variable in relation to the dream content areas under investigation in the current study, and was included to assess divergent validity. No significant correlation was expected between Size and any other variable. The results failed to confirm this expectation. In dreams where success, control, or aggressiveness are reported, participants tend to refer to size. Dreams characterized by low verbal aggressiveness also include references to size. It appears, then, that rather than being neutral in the context of these other dream variables, the use of size in

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dreams may be related to these variables in a consistent manner, which parallels either their presence or absence. It is also possible, however, that size in dreams is merely related to these other dream content variables, but not to actual personality characteristics. Finally, the correlation of Size with other dream content variables may indicate a pattern in which dream data correlates with dream data, but not with other types of data (i.e., self-report).

Relationships Among Self-Report Measures

There were several unanticipated significant correlations among self-report measures. The frequency of significant correlations between the BSI and other self-report measures, while surprising, can be legitimately explained. The GESS and ICI measure an aspect of personality associated with mental health, that is, the ability to control ones successes and positive experiences. On the other hand, the remaining self-report variables quantify aggressiveness, a more negative attribute. This somewhat artificial dichotomy is reflected in the correlations with BSI: the former variables correlated negatively with BSI scores, while the latter correlated positively with BSI scores.

Future Directions

The current study has failed to clarify the relationship between dream content and personality, at least in terms of the dimensions examined here. One might conclude, based on this study, that such a relationship does not exist. However,

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other authors (Grey & Davies, 1981; Kramer & Roth, 1973; Rychlak, 1960; Brown & Donderi, 1986; Harris & Ray, 1977) have obtained significant correlations between dream content and personality measures. A nonclinical sample was used in the current study. Future research should utilize contrasting samples of participants who score at the extreme ends of the self-report measures employed here. Such samples might be found in clinical or other institutional populations. For instance, clinical patients with narcissistic traits might be more appropriate for testing Hypotheses 1 and 2. Violent criminals might be used to test Hypotheses 3 and 4. Such an approach might improve the range of values on dream content scales, thereby increasing the chance of finding significant correlations, if such relationships truly exist.

The self-report measures employed, selected for their face valid relationship with the dream content variables being studied, may have unnecessarily narrowed the scope of the study. The use of other personality measures, such as the Rorschach or the Minnesota Multiphasic Personality Inventory, might lead to significant correlations between dream content and personality, since these and other measures provide data on a wider range of personality characteristics.

This study suggests that there is no direct, one-to-one relationship between the dream content categories and the self-report measures. It is possible that a more complex relationship exists, involving, for instance, multiple dream

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content categories. Such a relationship might be discovered through regression analysis. Other dream content categories may be included in this analysis.

The current study has successfully shown that there is considerable overlap between specific scales in the content analysis systems of Hall and Van de Castle (1966) and Gaillard and Phelippeau (1976). Hall and Van de Castle's system has been used widely, and has earned its place in the dream research literature. Gaillard and Phelippeau's scales are employed considerably less frequently. These results support the use of these scales as comparable measures of dream content, particularly aggressive content. It is hoped that future research will focus on other scales of the Gaillard and Phelippeau system. It should be noted, however, that in the absence of a demonstrated relationship between dream content and personality, the above finding is of limited importance.

If dream content is to be a useful clinical indicator, an individual's dream content must be consistent over time. Without this consistency, it will be difficult to predict any relationship between dream content and waking life reliably. Future research should explore the issue of dream content consistency.

Males were underrepresented in the current study. It is difficult to make any conclusive statements concerning gender differences. Future research should include equal numbers of males and females.

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Appendix A

Using a No. 2 pencil, please blacken the circle <u>on the blue</u> <u>and white computer answer sheet</u> that corresponds to the answers that best apply to you.

1. Age

   A. 18-19 B. 20-21 C. 22-25 D. Over 25

2. Sex

   A. Male   B. Female

3. Marital Status

   A. Single   B. Married   C. Divorced   D. Other

4. Race/Ethnicity

   A. Caucasian   B. African American   C. Hispanic

   D. Asian American   E. Other

5. School

   A. Old Dominion University   B. William & Mary

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Appendix B

This is a questionnaire to find out how people believe they will do in certain situations. Please indicate the degree to which you believe each statement would apply to you personally by blackening the appropriate circle. Give the answer that you truly believe best applies to you and not what you would like to be true or think others would like to hear. Answer the items carefully, but do not spend too much time on any one item. Be sure to find an answer for every item, even if the statement describes a situation you presently do not expect to encounter. Using a No. 2 pencil, completely blacken the circle on the blue and white computer answer sheet corresponding to one of the following numbers.

1	2	3	4	5
highly				highly
improbable				probable

In the future I expect that I will

6. find that people don't seem to understand what I am trying to say.

7. be discouraged about my ability to gain the respect of others.

8. be a good parent.

	1	2	3	4	5
highly					highly
improbable					probable

In the future I expect that I will

9.   be unable to accomplish my goals.

10.   have a successful marital relationship.

11.   deal poorly with emergency situations.

12.   find my efforts to change situations I don't like are ineffective.

13.   not be very good at learning new skills.

14.   carry through my responsibilities successfully.

15.   discover that the good in life outweighs the bad.

16.   handle unexpected problems successfully.

17.   get the promotions I deserve.

18.   succeed in the projects I undertake.

19.   not make any significant contributions to society.

20.   discover that my life is not getting much better.

21.   be listened to when I speak.

22.   discover that my plans don't work out too well.

23.   find that no matter how hard I try, things just don't turn out the way I would like.

24.   handle myself well in whatever situation I'm in.

25.   be able to solve my own problems.

26.   succeed at most things I try.

27.   be successful in my endeavors in the long run.

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	1	2	3	4	5

highly
improbable

highly
probable

In the future I expect that I will

28. be very successful working out my personal life.

29. experience many failures in my life.

30. make a good impression on people I meet for the first time.

31. attain the career goals I have set for myself.

32. have difficulty dealing with my superiors.

33. have problems working with others.

34. be a good judge of what it takes to get ahead.

35. achieve recognition in my profession.

Appendix C

Please read each statement. Where there is a blank _____,
decide what your normal or usual attitude, feeling or behavior
would be:

    1 = Rarely (Less than 10% of the time)

    2 = Occasionally (About 30% of the time)

    3 = Sometimes (About half the time)

    4 = Frequently (About 70% of the time)

    5 = Usually (More than 90% of the time)

36. When faced with a problem I _____ try to forget it.

37. I _____ need frequent encouragement from others for me
to keep working at a difficult task.

38. I _____ like jobs where I can make decisions and be
responsible for my own work.

39. I _____ change my opinion when someone I admire disagrees
with me.

40. If I want something I _____ work hard to get it.

41. I _____ prefer to learn the facts about something from
someone else rather than have to dig them out for myself.

42. I will _____ accept jobs that require me to supervise
others.

43. I _____ have a hard time saying "no" when someone tries
to sell me something I don't want.

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1 = Rarely (Less than 10% of the time)

2 = Occasionally (About 30% of the time)

3 = Sometimes (About half the time)

4 = Frequently (About 70% of the time)

5 = Usually (More than 90% of the time)

44. I _____ like to have a say in any decisions made by any group I'm in.

45. I _____ consider the different sides of an issue before making any decisions.

46. What other people think _____ has a great influence on my behavior.

47. Whenever something good happens to me I _____ feel it is because I've earned it.

48. I _____ enjoy being in a position of leadership.

49. I _____ need someone else to praise my work before I am satisfied with what I've done.

50. I am _____ sure enough of my opinions to try and influence others.

51. When something is going to affect me I _____ learn as much about it as I can.

52. I _____ decide to do things on the spur of the moment.

53. For me, knowing I've done something well is _____ more important than being praised by someone else.

1 = Rarely (Less than 10% of the time)

2 = Occasionally (About 30% of the time)

3 = Sometimes (About half the time)

4 = Frequently (About 70% of the time)

5 = Usually (More than 90% of the time)

54. I _____ let other peoples' demands keep me from doing things I want to do.

55. I _____ stick to my opinions when someone disagrees with me.

56. I _____ do what I feel like doing not what other people think I ought to do.

57. I _____ get discouraged when doing something that takes a long time to achieve results.

58. When part of a group I _____ prefer to let other people make all the decisions.

59. When I have a problem I _____ follow the advice of friends or relatives.

60. I _____ enjoy trying to do difficult tasks more than I enjoy trying to do easy tasks.

61. I _____ prefer situations where I can depend on someone else's ability rather than just my own.

62. Having someone important tell me I did a good job is _____ more important to me than feeling I've done a good job.

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1 = Rarely (Less than 10% of the time)

2 = Occasionally (About 30% of the time)

3 = Sometimes (About half the time)

4 = Frequently (About 70% of the time)

5 = Usually (More than 90% of the time)

63. When I'm involved in something I _____ try to find out all I can about what is going on even when someone else is in charge.

Appendix D

This survey is concerned with how we try to get people to comply with our wishes. Indicate on the answer sheet how often each statement is true for you personally when you try to influence other persons. Use the following scale:

1 = almost never true

2 = rarely true

3 = occasionally true

4 = often true

5 = almost always true

64. I am extremely careful to avoid attacking individuals' intelligence when I attack their ideas.

65. When individuals are very stubborn, I use insults to soften the stubbornness.

66. I try very hard to avoid having other people feel bad about themselves when I try to influence them.

67. When people refuse to do a task I know is important, without good reason, I tell them they are unreasonable.

68. When others do things I regard as stupid, I try to be extremely gentle with them.

69. If individuals I am trying to influence really deserve it, I attack their character.

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1 = almost never true

2 = rarely true

3 = occasionally true

4 = often true

5 = almost always true

70. When people behave in ways that are in very poor taste, I insult them in order to shock them into proper behavior.

71. I try to make people feel good about themselves even when their ideas are stupid.

72. When people simply will not budge on a matter of importance I lose my temper and say rather strong things to them.

73. When people criticize my shortcomings, I take it in good humor and do not try to get back at them.

74. When individuals insult me, I get a lot of pleasure out of really telling them off.

75. When I dislike individuals greatly, I try not to show it in what I say or how I say it.

76. I like poking fun at people who do things which are very stupid in order to stimulate their intelligence.

77. When I attack persons' ideas, I try not to damage their self-concepts.

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1 = almost never true

2 = rarely true

3 = occasionally true

4 = often true

5 = almost always true

78. When I try to influence people, I make a great effort not to offend them.

79. When people do things which are mean or cruel, I attack their character in order to help correct their behavior.

80. I refuse to participate in arguments when they involve personal attacks.

81. When nothing seems to work in trying to influence others, I yell and scream in order to get some movement from them.

82. When I am not able to refute others' positions, I try to make them feel defensive in order to weaken their positions.

83. When an argument shifts to personal attacks, I try very hard to change the subject.

Appendix E

Here is a list of things you might have done when you had a conflict or disagreement with a friend or spouse. <u>On the attached computer scoring sheet</u> please blacken a circle for each of the things listed below to show how often you did it during the past year:

    1 = Never

    2 = Once during the past year

    3 = Two or three times

    4 = Often, but less than once a month

    5 = About once a month

    6 = More than once a month

1. I <u>tried</u> to discuss the issue relatively calmly.

2. <u>Did</u> discuss the issue relatively calmly.

3. Got information to back up my side of things.

4. Brought in someone else to help settle things (or tried to).

5. Argued heatedly but short of yelling.

6. Yelled and/or insulted.

7. Sulked and/or refused to talk about it.

8. Stomped out of the room.

9. Threw something (but not at him/her) or smashed something.

10. Threatened to hit or throw something at him/her.

11. Threw something <u>at him/her</u>.

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1 = Never

2 = Once during the past year

3 = Two or three times

4 = Often, but less than once a month

5 = About once a month

6 = More than once a month

12. Pushed, grabbed, or shoved him/her.

13. Hit (or tried to hit) him/her but <u>not</u> with any   thing.

14. Hit (or tried to hit) him/her with something hard.

OLD DOMINION UNIVERSITY

Department of Psychology

Informed Consent

PROJECT SNOOZE

Investigator: Steve McCullough   (221-3895)

Faculty Advisor: Robin J. Lewis, Ph.D.   (683-4210)

In this study I understand that I will be asked to complete five brief questionnaires and keep a written record of my dreams over the next three weeks. I understand that my responses will be confidential and that no identifying information will be requested on these questionnaires or dream reports, so that no one, not even the investigator, will be able to identify them as mine.

I know that I may refuse to answer any question, and that I may discontinue participation at any time. I understand that credit for participation will not be affected by my responses or by my exercising any of my rights.

I understand that upon completion of my participation I will be given a full and complete explanation of this study, and that I have the right to withdraw the use of my data at that time.

I agree that I will not share any information about the purpose of this study with anyone, so that their potential participation in the study will not be compromised.

I am aware that it is unlikely that there is any risk to my health or well-being as a result of this study. However, I know that, if necessary, I can receive counseling at the ODU Counseling Center.

I understand that I have the right to contact the Psychology Department Committee for the Protection of Human Subjects and/or the University Committee should I wish to express any opinions about the conduct of this study.

I am aware that I must be at least 18 years of age to participate.

My signature below signifies my voluntary participation in this experiment.

Signature: _____

Date of Birth: _____

Telephone Number: _____

Appendix F

COLLEGE OF WILLIAM AND MARY

Department of Psychology

Informed Consent

PROJECT SNOOZE

Investigator: Steve McCullough (221-3895)

Faculty Advisor: Robin J. Lewis, Ph.D. (683-4210)

In this study I understand that I will be asked to complete five brief questionnaires and keep a written record of my dreams over the next three weeks. I understand that my responses will be confidential and that no identifying information will be requested on these questionnaires or dream reports, so that no one, not even the investigator, will be able to identify them as mine.

I know that I may refuse to answer any question, and that I may discontinue participation at any time. I understand that credit for participation will not be affected by my responses or by my exercising any of my rights.

I understand that upon completion of my participation I will be given a full and complete explanation of this study, and that I have the right to withdraw the use of my data at that time.

I agree that I will not share any information about the purpose of this study with anyone, so that their potential participation in the study will not be compromised.

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I am aware that it is unlikely that there is any risk to my health or well-being as a result of this study. However, I know that, if necessary, I can receive counseling at the William & Mary Counseling Center.

I understand that I have the right to contact the Psychology Department Chair should I wish to express any opinions about the conduct of this study.

I am aware that I must be at least 18 years of age to participate.

My signature below signifies my voluntary participation in this experiment.

Signature: _____

Date of Birth: _____

Telephone Number: _____

Instructions

PROJECT SNOOZE

Investigator: Steve McCullough (221-3895)

Faculty Advisor: Robin J. Lewis, Ph.D. (683-4210)

Thank you for agreeing to participate in this study, which I am conducting as part of my doctoral dissertation. I appreciate your willingness to help me.

You can participate in this study in the comfort of your own home, or home-away-from-home. I will ask you to do three things:

1. <u>Today</u>, read and sign the enclosed Informed Consent form, and place it in the envelope marked "Informed Consent."

2. <u>Today</u>, complete the enclosed questionnaires, entering your answers on the computer answer sheet (there are several questionnaires, but as you can see, they are brief).

3. Beginning <u>tonight</u>, write down your dreams for the next three weeks in the enclosed blue book. That's all there is to it. Now, I have a few specific instructions.

Please read the Informed Consent form carefully before you sign it. Your signature verifies that you understand the conditions of your participation, including that you must be at least 18 years of age, and that you will not share with

anyone the explanation for why I am conducting this study (which I will supply after you return the materials). After you sign it, please put it in the enclosed envelope labeled "Informed Consent" and seal the envelope. When your packet is returned, this envelope will be separated from the rest of the materials, ensuring that your responses will remain anonymous.

Please answer the questionnaires <u>before</u> you start to record your dreams. When completing the questionnaires, <u>do not</u> enter your name, birth date, identification number, special codes, sex, or grade to the left of the solid blue line on side one of the computer answer sheet. Please use a No. 2 pencil, be very careful to blacken the appropriate circle completely, and to put your answer on the correct line of the answer sheet. That will help me avoid BIG problems later. Thanks.

Now, a few words about recording your dreams...

I am interested in the dreams you have <u>from now until the time you return these materials</u>. Please do <u>not</u> write down dreams you recall from your past.

Studies have shown that everyone - yes, everyone - dreams several times each night. Most of us forget most of our dreams, but there are ways to help you remember more of them, making it easier for you to participate in this study. Here

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are a few "tried and true tips."

Tried and True Tips

- The best way to remember your dreams is to tell yourself that you want to do it. This is often enough to improve your dream recall dramatically.
- It is often helpful to drink large quantities of water before going to sleep.
- Immediately write down whatever comes to you when you wake up, particularly in the middle of the night. If you don't, you will very likely lose it. To help with this, keep a pen and the blue book near the bed. You may want a flashlight or penlight. I sometimes like to get up and go into another room, where I can turn on the light. But even in that short interval I occasionally lose the dream.
- When you first wake up, lie still and "turn inward" to allow the dream to emerge. Avoid distraction, don't do anything that will disturb the process of trying to remember. Once bits come to you, the rest should follow.
- If a bit of dream comes to you during the day, try to stop what you are doing and let it emerge. Then write it down quickly, before it fades.
- Some people suggest that you may have better luck if you can arrange you schedule so you wake up

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spontaneously.   If you use an alarm clock, use a buzzer instead of music.

Please try to write down your dream as completely as possible. Describe everything you remember - sights, sounds, and anything else you are aware of.   Note what happens, to you and to the other characters in your dream. Are you aware of any feelings or emotions?   Please describe the dream exactly and as fully as you remember it.   Note the date and time (if you know) that you had the dream, and the time you wrote it down.   If the dream takes more than one page, you may continue it on the next page.   Please begin each dream on a new page. And please try to write legibly.   Thanks.

At the end of three weeks, please place the consent form, the questionnaires, the answer sheet, and the blue book in the envelope and return it to the peer advisor (ODU, MGB 134-E) or to my office at William & Mary (128 Millington, at prearranged time).   At that time you will receive a written explanation of what I hoped to accomplish in this study.

Again, thank you very much for your participation.   I hope that you enjoy the process.   Pleasant dreams!

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Appendix H

Please answer these two final questions by blackening the appropriate circle <u>on the blue and white computer answer sheet</u>.

1 = Yes

2 = No

137. Have you ever kept a dream journal prior to your participation in this experiment?

Yes _____   No _____

138. Have you ever engaged in dream analysis prior to your participation in this experiment?

Yes _____   No _____

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Purpose of the Study

PROJECT SNOOZE

Investigator: Steve McCullough (221-3895)

Faculty Advisor: Robin J. Lewis, Ph.D. (683-4210)

People have probably been trying to understand dreams since they first became aware that they were dreaming, and there are many different theories about what dreams are, where they come from, and what they mean. Today, some people believe they are important, cryptic messages sent to us from our unconscious. Others think they are the meaningless results of random brain waves that occur while we sleep.

One method for trying to understand dreams is to analyze their content, to tally the presence or frequency of different types of objects, characters, events, or emotions in dream reports. Several systems of "content analysis" exist today. One purpose of this study is to try to determine exactly what these systems measure. This will be done by comparing a few specific dream content categories to your responses on the questionnaires, which measure specific personality traits or behavioral tendencies.

Some of these systems include content categories that have the same or similar title, or seem to be related. The second purpose of this study is to compare the results of content analysis using two different systems, to see if they really do measure the same things.

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Thanks again for your participation. If you have any questions or concerns about the study, please feel free to call me at 221-3895, or my faculty advisor, Dr. Robin J. Lewis, 683-4210.

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Sample Dreams

Dream 1

It is the year 2400 and all the families have gone underground to escape the executer (sic). I am one of the last few remaining warriors and have gone above ground. A family consisting of a father, daughter, and 2 sons <u>were being hunted by the executioner</u> (AI6). It was dark, with red tint and the smell of death and decay was in the air. I ran towards the family, drawing my weapon, and tould (sic) them to follow me. <u>I fired and hit two of the executioners (sic) soldiers</u> (AI7) and <u>blew up one of there (sic) riding machines</u> (AI5). <u>Giving me an enough time to get the family below the city</u> (SU). I take them to were (sic) live and the <u>little</u> (S-) girl and young son fall asleep on the couch. The older son after eating falls asleep on the floor, leaving the father and I alone to talk. They all were wearing rags with <u>long</u> (S+) brown hair. I am wearing a black uniform with <u>long</u> (S+) red hair. My unit were (sic) I live consists of 2 rooms, a rug, couch, table, chair, kitchen and the bedroom. The father and I begin to talk about what they were doing above ground....

<u>Scoring Summary</u>

Verbal Aggressive Interactions	None
Physical Aggressive Interactions	AI6, AI7, AI5
Achievement Outcomes	SU

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Size	S-, S+, S+
Active Control	AC5
Verbal Aggression	VA1
Physical Aggression	VA5

Dream 2

I stood behind the cash register at my store. <u>I kept trying to ring up an item but it wouldn't work.</u> (FL) The register was beeping at me but it was no use. <u>Everyone at my store was laughing at me.</u> (AI3) The customer finally just left.

<u>Scoring Summary</u>

Verbal Aggressive Interactions	AI3
Achievement Outcomes	FL
Size	none
Active Control	AC3
Verbal Aggression	VA2
Physical Aggression	PA1

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Autobiographical Statement

Stephen James McCullough, the fourth of nine children, was born in Washington, DC, on August 2, 1957, and was raised in Glen Rock, NJ. In 1979 he graduated from Hope College in Holland, MI with a major in Psychology, where he was elected to Phi Beta Kappa. In 1979 he co-authored an article entitled "Physician domination of the health care industry: In pursuit of antitrust redress," with Anne Marie O'Keefe, which appeared in <u>Professional Psychology</u>. He received a Masters degree in Clinical Psychology from Fairleigh Dickinson University in Teaneck, NJ, 1990.

Mr. McCullough is married to the former Ellen Mary Taylor. They have an 8-year-old daughter named Emma, two birds, and a cat.

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