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The Relationship among Dream Content, Dream Attitudes, and Waking Life Characteristics

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Abstract

Study 1 surveyed general dream attitudes and examined their relationship with waking life (health, mood, personality, self-construal) in a sample of 72 university undergraduate students. Participants completed the Medical Outcomes Study 36-Item Short-Form (SF-36) Health Survey, the Profile of Mood States (POMS) Scale, the NEO Five-Factor Inventory Short-Form (NEO-FFI-S), the Self-Construal Scale (SCS), and an original Dream Attitudes Scale (DAS). Study 2 expanded on Study 1 and involved 27 university undergrads who, in addition to completing the above-mentioned surveys, each handed in 4 dream reports which were analyzed using the Hall and Van de Castle (1966) system of content analysis. Although attitudes in both studies indicated a common belief in continuity between dreams and waking life, participants did not believe their dreams reflected their most prominent waking life characteristics. Very few meaningful relationships were observed between dream content and dream attitudes, suggesting a general lack of awareness of dreams. Significant correlations were observed between dream content and the SF-36, the POMS, and the SCS, while none were observed with the NEO-FFI-S. Among the findings, participants with poor physical health had more bodily misfortunes, injuries and illnesses, medical themes, and body parts in their dreams, while a high level of depression was related to more frequent reports of sadness, anger, and aggression. Findings support the continuity hypothesis of dreaming (Hall & Nordby, 1972), and stress the value of dream therapy in clinical settings and of developing a higher awareness of one's own dreamtime.

The Relationship among Dream Content, Dream Attitudes, and Waking Life Characteristics

Although often under appreciated, dreams have played an integral role in the lives of humankind for millennia. Whether inspiring works of art (Cocteau, as cited in Van de Castle, 1994) or forming the basis of primitive medical treatments (MacKenzie, as cited in Van de Castle, 1994) these nocturnal experiences of the mind have affected people in countless ways. The earliest recordings of dreams come from the Mesopotamian city of Nineveh in 7th century B.C.E. (Oppenheim, as cited in Van de Castle, 1994). It is from these recordings that anthropologists are able to infer a multifaceted utility for dreams by the Mesopotamian people, including dream incubation to solve waking day problems (Van de Castle, 1994). Neighbouring to the West, the ancient Egyptians were known for elaborate dream rituals, at times employing surrogate dreamers to dream on behalf of the sick. Yet like the Mesopotamians, the Egyptians believed that dreams came primarily from outside sources, such as gods or demons (Van de Castle, 1994).

It was the Greeks who eventually developed theories of internal dream origin. In the 5th century B.C.E., the Greek physician Hippocrates (known as 'the father of medicine') believed that dreams revealed the onset of organic illness via special messages sent from malfunctioning organs during sleep. In the 2nd century C.E., the Greek physician Galen used dreams to practice medicine, believing they were signs of imbalances in the body (Van de Castle, 1994).

To the East, Asian cultures developed along slightly different paths. The Chinese believed strongly in the dream as the soul's nightly departure from the body (Van de Castle, 1994). The Indian people believed in soul travel as well, and developed a system for prophetic dreams in which those occurring early in the night would take longer to come true (Becker, as

cited in Van de Castle, 1994). In addition, both of these cultures believed in the problem-solving ability of dreams, a seemingly common theme in dream attitudes throughout the ancient world (Van de Castle, 1994).

Christian attitudes in the early part of the first millennium included the belief that one could experience God through dreams (Van de Castle, 1994). The biblical scholar Saint Jerome was asked by Pope Damasus to translate the bible from Greek and Hebrew into Latin. In his translation, however, the meaning of dreams was altered, suggesting an association with Pagan beliefs and witchcraft. This, as well as later writings by scholars Thomas Aquinas and Macrobius, resulted in a negative connotation with dreams among Western Christians which lasted well through the Dark Ages and into the 1800s (Van de Castle, 1994).

The late 19th century saw a revival in dream authors and theorists, including Marie de Manaceine (1897), whose research with alcoholics and hysterics led her to the discovery that different clinical groups had characteristic dream qualities (as cited in Van de Castle, 1994). These and other theorists developed a multitude of ideas surrounding dreams, including repression, dream wish fulfillment, and lucid dreaming, some of which were further developed by Freud and Jung in the 20th century (for a more detailed review see Van de Castle, 1994).

Theories of Dreaming

In his book *The Interpretation of Dreams,* Sigmund Freud (1900) suggested that the thoughts which underlie dreams develop over the course of the waking day. He added that a reference to the waking day could be identified in every single dream (as cited in Domhoff, 2000). As in most cases, Jung disagreed with Freud on this issue, suggesting instead that dreams express aspects of the personality not fully developed in the waking day (Domhoff, 2000). Jung (1964) went on to describe a compensatory role of dreams, stating that “the general function of

dreams is to try to restore our psychological balance by producing dream material that re-establishes, in a subtle way, the total psychic equilibrium" (p. 50). For example, a person with a great deal of grief in her waking life may experience joyous events in her dreams, so as to provide psychological balance.

There has been only minimal support for Jung's (1964) theory in recent years. In an examination of dream content, Gates (1997) found that the dreams of women with a history of sexual and physical abuse were more self-reflective when compared to non-abuse groups, supporting the compensatory theory. Another study by De Koninck and Sirois-Berliss (1978) found that, in spite of a higher level of achievement motivation among English-Canadian students, French-Canadian students actually displayed more achievement-oriented elements in their dreams. In contrast, a study by Domino (1976) found a high concurrence between waking elements of personality and their corresponding dream characteristics. This suggested that dream content is very similar to conscious functioning, contradicting the compensatory theory of dreaming.

In a case study of an incarcerated child molester named Norman, Bell and Hall (1971) set out to determine the relationship between dreams and waking personality. Norman's infantile personality was revealed explicitly in his dreams, allowing Bell and Hall to accurately conclude that he identified with children on a sexual level, had gender confusion, and had an externalized superego, based solely on the man's dream content. Such results led Calvin Hall to adopt the term "continuity hypothesis," which proposes that dreams reflect waking life rather than compensate for it (Hall & Nordby, 1972).

Since this early work by Hall and his colleagues (1971, 1972), a great deal of research has continued to support the continuity hypothesis of dreaming. Waking life conflicts have been

shown to be incorporated into nightmares by a number of studies (Patrick & Durndell, 2004), and a preliminary study on season-related dream content found that winter-related dream themes were more often reported in the winter (Schredl, 2003b). Schredl and Hofmann (2003) found that dream activities such as talking with friends and driving a car were significantly related to the amount of time spent at these activities during waking life. They also found that emotional involvement increases the incorporation rate of daily activities, and that mundane, habitual activities such as using a computer and writing are less likely to be incorporated into dreams.

As suggested by Schredl (2003a), further research is needed to formulate a more accurate and detailed continuity hypothesis of dreaming. The rate of incorporation of daily experiences seems to depend on a number of factors, including emotional involvement, brain state, personality traits, the type of waking life experience, and the time interval between the waking life experience and the dream occurrence (Schredl, 2003a). Nevertheless, there is an assortment of evidence indicating a relationship between dreams and our most prominent waking life characteristics, including physical health, mood, and personality. The majority of this research supports the continuity hypothesis of dreaming, and will be discussed subsequently.

Dreams and Physical Health

While Hippocrates proposed a somatic source of dreams many centuries ago, it was not until the 20th century that science would begin taking such a conception more seriously. In 1923, cases were reported in which dreams appeared to be related to physiological changes resulting from approaching disease. One such case described a forty-year old man who had a recurring dream in which a rat was gnawing in the lower right part of his abdomen. He was soon diagnosed with a duodenal ulcer requiring operation, after which the dream ended. Another case found a woman who was having a recurring dream in which a nurse was holding a candle near

her left leg. As the dreams progressed, the candle got closer to the leg until it seemed to burn it. A medical examination soon found a serious infection in the bone marrow of that same leg (Mitchell, 1923; Van de Castle, 1994).

Smith (1984) investigated a relationship between dreams and clinical outcomes in 49 male and female patients suffering from severe medical diseases. Dreams of patients were collected using a staged interview technique and were rated for references to death and separation. For 6 months following hospital discharge, the clinical outcome of each patient was rated as cured, improved, unchanged, worse without hospitalization, worse with hospitalization, or death. Among males, significant associations were found between death references and poor clinical outcome. Females, on the other hand, displayed significant associations between separation references and poor outcome. Smith (1984) suggested that these findings supported the hypothesis that dreams are reactive to biologic function. Further studies have demonstrated that patients who do not dream at all have an even worse prognosis compared to those who do dream (Smith, 1986).

A two-part study by Levitan and Winkler (1985) looked at the dreams of psychosomatic and psychoneurotic patients. Among female patients, asthmatics reported significantly more dreams in which physical threats to the self were present, compared to rheumatoid arthritics and psychoneurotics. A significantly larger and more variant group of males was utilized in the second part of the study, providing further results. The dreams of male asthmatics contained a larger number of aggressive acts toward the ego compared to patients with colitis and psychoneurosis (Levitan & Winkler, 1985). Males with hypertension, on the other hand, reported more dreams containing aggressive acts compared to those with colitis (Levitan & Winkler, 1985).

Further studies have suggested a relationship between asthma and dream content. Wood, Bootzin, Quan, and Klink (1993) looked at the prevalence of nightmares among patients with obstructive airways disease (OAD), comparing those with asthma to those without asthma. Compared to the control group (nightmare-sufferers without OAD), OAD patients were significantly more likely to claim that their nightmares were a problem. In addition, OAD patients with asthma reported three times as many nightmares than those without asthma, suggesting that nightmares are more frequent among asthmatics (Wood et al., 1993).

A study by Gross and Lavie (1994) investigated the dreams of sleep apnea patients. Dream reports were attained in a lab setting by awakening subjects 10 minutes after entering REM sleep. During untreated nights, dreams included more characters, activities, and social interactions after awakenings that were preceded by sleep apnea. These dreams were also significantly more negative in emotional content compared to those reported during CPAP (continuous positive airway pressure) treatment and those reported after awakenings preceded by regular breathing (without apneas). Breathing references tended to appear in dream reports more often during untreated nights. In addition, a greater rate of dream recall and longer dream reports occurred in untreated patients with preceding apneas. The authors suggested that biological functioning “may exert some general or emotional influence on dreaming” (Gross & Lavie, 1994).

Heather-Greener, Comstock, and Joyce (1996) examined the manifest dream content in migraine sufferers. The primarily female subjects recorded 10 dreams each, 5 which preceded migraines and 5 which did not. Using the Hall and Van de Castle system of content analysis, significant differences were found between the two types of dreams. Premigraine dreams contained a higher frequency of aggressive interactions, misfortune, anger, and apprehension

compared to nonmigraine dreams, suggesting a strong relationship between dreams and waking day health (Heather-Greener et al., 1996).

It is suggested from the research presented that a relationship between dream content and physical health exists. While the exact nature of this relationship requires further investigation, it appears that the state of our physical health may be reflected in our dream content, supporting the continuity hypothesis of dreaming. Some studies also lend support to prodromal dreaming, which is dreaming about an illness prior to the onset of overt symptoms. Although the above research is compelling, it focuses on specific and often more serious illnesses and disorders. Little if any research is available on the relationship between dreams and minor physical health problems, such as aches, pains, and daily physical limitations. The present study explores such a relationship.

Dreams and Mood

In 1961, Beck and Ward examined the manifest content of the dreams of depressed patients. Using the most recent dreams recalled by 218 male and female subjects, Beck and Ward (1961) looked specifically at the masochistic qualities of the dream content. Masochism was identified if the dreamer was “the recipient of a painful experience, such as being disappointed, rejected or injured” (Beck & Ward, 1961), while level of depression was measured using the Beck Depression Inventory. Moderately to severely depressed subjects reported significantly more masochistic dreams than the non-depressed subjects, suggesting that depression is related to a higher level of masochism in dreams (Beck & Ward, 1961). A later study by Hauri (1976), which looked at a smaller group of subjects who had been remitted from serious reactive depression, found similar results. Compared to non-depressive controls, the remitted patients

continued to report more masochistic qualities in their dreams, as well as more hostility in the environment and more inanimate objects exerting physical force (Hauri, 1976).

The suggestion that individuals with past or present depression have more masochistic dreams has been the subject of much debate. Cartwright (1992) examined the issue under more controlled conditions, collecting dreams from four REM periods in a laboratory setting. This study utilized results from 70 men and women undergoing marital separation, who were divided according to the Beck Depression Inventory as depressed and non-depressed. Cartwright (1992) found that masochistic dreaming was not significantly correlated with major depression. In fact, women, whether depressed or not, were found to have more masochistic dreams than men. Among the depressed, masochistic dreams were more likely to occur later in the night, suggesting a possible source of error among previous studies that asked subjects to recall their most recent dreams (Cartwright, 1992). In 2000, Bears, Cartwright, and Mercer reexamined the issue, finding that neither women nor depressed individuals displayed an increase in masochistic dreaming. The men in this study actually showed higher rates of dream masochism than those from Cartwright's 1992 study, and masochistic dreams varied as to whether they occurred early or late in the night (Bears et al., 2000).

An interesting study by Cartwright, Lloyd, Knight, and Trenholme (1984) examined the effects of depression on dream content. Twenty-nine females undergoing divorce were divided into depressed and non-depressed groups. The dreams of the divorcing, non-depressed women were longer than those of the depressed group, and they also dealt more with issues of marital status. A follow-up study found that the depressed individuals did eventually show longer dreams with issues of marital status, suggesting that dreams may take longer to respond adaptively to major life changes when individuals are depressed (Cartwright et al., 1984).

A follow-up study by Cartwright (1991), which also looked at depressed individuals going through divorce, found a higher frequency of unpleasant dreams and higher affect strength among the depressed. Dream incorporation of the former spouse was also followed by a decreased level of depression, suggesting that incorporators “appear to be actively working through the problem of the upcoming divorce while asleep” (Cartwright, 1991).

It has been further demonstrated that if depressed individuals report greater affect in dreams, it is likely more negative. In an investigation of the relationship between dream content and psychopathology, Schredl and Engelhardt (2001) found that individuals scoring high on depressive symptomology reported more dreams which were negatively toned and which contained more depressive themes (sadness, etc.). This was in comparison to a non-depressed group. Furthermore, the severely depressed had a higher occurrence of death and aggression in their dreams. In addition to depressed patients, Schredl and Engelhardt (2001) also examined psychotic patients and found their dreams to contain a higher frequency of bizarreness compared to a control group. These findings support the continuity hypothesis of dreaming.

A longitudinal study by Pesant and Zadra (2006) examined the relationship between dream content and psychological well-being (which was measured using scales of depression, trait anxiety, neuroticism, and general psychopathology). At multiple points in time, more negative affect was significantly related to higher rates of aggression, negative emotions, failures, and misfortunes in dream content. Specifically, trait anxiety and depression were highly correlated with aggressive interactions (Pesant & Zadra, 2006), supporting the continuity hypothesis.

Beauchemin and Hays (1995) examined the dreams of 6 subjects with bipolar disorder over a 6-month period. Comparing dream content to normative data from Hall and Van de

Castle, neutral mood states were associated with routine or uneventful dreams, while manic states were associated with bizarre and improbable dreams. What is most interesting is that themes related to death, injury, and mutilation were present in dreams immediately prior to mood shifts in the bipolar patients. The depressed mood state was only associated with shorter and more barren dreams, with no consistent dream themes (Beauchemin & Hays, 1995). These findings are similar to those by Armitage, Rochlen, Fitch, Trivedi, and Rush (1993), who also found that the dreams of depressed patients were short, relatively bland and with little emotion. This contradicts the above-mentioned research which has found greater and more negative affect in the dreams of the depressed (e.g., Beck & Ward, 1961; Pesant & Zadra, 2006; Schredl & Engelhardt, 2001).

More recently, a study by Agargun and Cartwright (2003) looked at dreams in suicidal depressed patients. Based on laboratory dream reports of depressed individuals, suicidal tendency was associated with higher dream-like quality and greater affect in dream reports of the first half of the night. Non-suicidal depressed patients had a very different distribution of dream quality throughout the night. Agargun and Cartwright (2003) added that it is unclear whether such characteristics are suggestive of a state or trait marker for suicidality, and that further research is needed.

An extensive study was performed by Miro and Martinez (2005) on nightmare prevalence and affective characteristics. Although the sample was small, a strong significant relationship was found between having nightmares on a weekly basis and depressed mood. Anxiety level was also measured, yet no significant relation was found between nightmare prevalence and anxiety. Miro and Martinez (2005) noted that this study did not use any restrictive definition of ‘nightmare’ as previous studies have. It has been demonstrated by these previous studies that

only nightmares have been significantly correlated with anxiety, not simply bad dreams (Miro & Martinez, 2005).

The research on dreams and anxiety has been scarce. Gentil and Lader (1978) investigated the relationship between dream content and daytime attitudes in anxious and calm women. Low anxiety and high anxiety groups were compared, and it was found that anxiety levels influenced both dream reporting and dream content. Anxious subjects reported a higher frequency of aggression toward the dreamer, and significant correlations were observed between dream content and daytime attitudes (Gentil & Lader, 1978). A more recent study by Schredl, Pallmer, and Montasser (1996) looked at anxiety dreams (bad dreams) in 624 school-aged children. A significant and positive correlation was found between general trait anxiety and frequency of bad dreams. Correlations were significant for the entire group as well as for the boys and girls separately. Interestingly, the highest trait anxiety scores were associated with dream reports including human or animal aggressors, while lower scores were associated with reports of monsters or no aggressors. Schredl et al. (1996) noted, however, that general trait anxiety only accounted for approximately 10% of the variance, suggesting that other factors were at play.

It is apparent that the research on dreams and mood is controversial and in some cases completely contradictory. While early studies suggested that depressed individuals have more masochistic dreams, further research seemed to discount such findings. More recent findings have suggested that depressed individuals may actually have shorter and less vivid dreams, yet others have found evidence that the depressed have greater and more negative affect in their dream reports. Research on anxiety and dreams however, is quite lacking. While most of the research does support the continuity hypothesis, the present study examines the relationship

between dreams and daytime mood on a much simpler level, possibly adding new light to this issue.

Dreams and Personality

The greater part of the research on dreams and personality has looked at differences between thin and thick boundary individuals. In basic terms, thin or thick boundaries refer to boundaries between various mental functions and processes, such as thoughts and feelings or id and superego. Thinness specifically refers to the level of connection between these processes, while thickness refers to the level of separation. A 1991 study by Hartmann, Elkin, and Garg looked at this particular relationship between boundary thickness and personality. According to the Boundary Questionnaire and recent dreams of subjects, thin boundary individuals had significantly more interaction between characters, more reports of emotions, and more vividness. Thick boundary individuals, on the other hand, had significantly more nightmare-like and bizarre dreams. These results were significant even when adjusted for number of words per dream, suggesting a relationship between dreams and one personality dimension (Hartmann et al., 1991).

These results were confirmed by Schredl, Kleinferchner, and Gell (1996), who found similar correlations between boundary thickness and dream content. In addition, Schredl et al. (1996) found that individuals with thin boundaries had a higher frequency of dream recall and reported more positive dreams. Kunzendorf, Hartmann, Cohen, and Cutler (1997) looked more specifically at bizarreness in the dreams and daydreams of thin and thick boundary individuals. Thin boundary individuals were again found to have higher ratings of bizarreness in their dream content. This was not, however, the case for daydreaming. No significant difference in level of bizarreness was found in daydreams (Kunzendorf et al., 1997).

Utilizing results from patients being evaluated for sleeping disorders, Hartmann, Rosen, and Rand (1998) concluded that boundary thinness was highly associated with an increase in dream length, dream vividness, dream detail and emotional dreaming. Hartmann et al. (1998) also noted that when dream length was controlled for, the relationship between dream content and boundary thinness was not significant. Emotion and detail, however, remained more significantly related to boundary thinness compared to other dream characteristics. Hartmann et al. (1998) suggested that results supported the continuity hypothesis of dreaming.

A handful of studies have looked at the relationship between dream recall and other personality dimensions. An extensive study by Tonay (1993) found that many dimensions had no significant relationship with dream recall, including introversion/extraversion, anxiety, repression, suggestibility, adjustment, introspection, and metaphor generation. Using the Attitude Toward Dreams Scale, a positive attitude toward dreams was found to be highly related to dream recall, accounting for 32% of the variance. In addition, fantasy-proneness, imagery-orientation, and thin boundaries were all significantly correlated with high dream recall (Tonay, 1993). Blagrove and Akehurst (2000) also examined the relationship between dream recall frequency and various personality dimensions, and found even fewer significant correlations with dream recall. Of the personality dimensions looked at, including locus of control and social desirability, only neuroticism and suggestibility after feedback were significantly related to higher dream recall. Blagrove and Akenhurst (2000) noted that these two qualities have been related to thinness of boundaries, further supporting previous findings. Overall, however, results suggested that dream recall frequency had little association with personality (Blagrove & Akenhurst, 2000).

Schredl, Ciric, Gotz, and Wittmann (2003) investigated dream recall frequency in relation to the Big Five personality measures (extraversion, neuroticism, openness to experience,

agreeableness, and conscientiousness). Contradictory to findings by Blagrove and Akenhurst (2000), no significant correlation was found between neuroticism and dream recall, nor was a relationship found between dream recall and extraversion, agreeableness, and conscientiousness. Openness to experience was the only factor of the Big Five that was significantly related to dream recall frequency (higher openness correlated with higher dream recall). Thinness of boundaries, which was measured separately and has been found to be related to openness to experience, was also significantly related to dream recall frequency. Schredl et al. (2003) noted that while substantial correlations were found between openness to experience, boundary thinness, and dream recall, these correlations were small.

Although the relationship between neuroticism and dream recall frequency remains unclear, some evidence exists for a relationship between neuroticism and dream content. The afore-mentioned study by Pesant and Zadra (2006) found consistent and significant correlations between neuroticism (as measured by the Eysenck Personality Inventory) and dream content. Specifically, neuroticism was related to a higher frequency of negative affect, aggressive interactions, and failures and misfortunes in dreams.

Neuroticism has also been related to nightmares. Berquier and Ashton (1992) compared the dreams 30 nightmare sufferers and 30 control subjects who had a low frequency of nightmare occurrence. Subjects were also measured on the Minnesota Multiphasic Personality Inventory (MMPI) and the Eysenck Personality Questionnaire (EPQ), which measures neuroticism. The EPQ neuroticism scale, as well as all of the MMPI scales (hypochondriasis, depression, hysteria, paranoia, schizophrenia, and hypomania) contributed to the overall significant difference between the nightmare group and the control group. In fact, the nightmare group showed more neurotic symptoms on both the EPQ and the MMPI. Although these results suggested a

relationship between personality and nightmares, Berquier and Ashton (1992) note that neuroticism could result in more nightmares just as frequency of nightmares could lead to higher neurotic symptoms.

A 2001 study by Kothe and Pietrowsky investigated the extent to which nightmares effected behaviour according to personality variables. It was found that subjects who scored high on neuroticism and low on openness had more pronounced behavioural effects of nightmares. These findings suggest that the effects of nightmares are worse for neurotics (Kothe & Pietrowsky, 2001). Miro and Martinez (2005) confirmed previous findings that boundary thinness was related to dream recall as well as the tendency to experience frequent nightmares. Neuroticism, however, was not found to have any significant relationship with nightmare prevalence (Miro & Martinez, 2005).

Bernstein and Roberts (1995) examined the relationship between personality factors and dream content using a dream content questionnaire (as opposed to content analysis). It was found that individuals scoring high on agreeableness reported more characters in their dreams, while those scoring high on openness to experience reported more unfamiliar characters in dreams. The use of a dream content questionnaire seems questionable, as it measures dream content based on participants' memories. However, Bernstein and Roberts (1995) compared results from the questionnaire to actual dream reports and deemed the questionnaire to be a valid measurement of dream content.

While the present study attempts to add new light to the relationship between dreams and neuroticism, as well as the other factors of the Big Five, personality has been associated with dreams in additional ways. An interesting study by Barrett (1994) looked at dreams of patients with dissociative disorders, surveying therapists with questions regarding their patients' dreams.

In the dreams of 57% of the patients, alter personalities appeared as main characters, and in 26% of the patients, one personality was actually able to design dreams to be experienced by other personalities. In general, individuals with dissociative personality disorder were found to experience more of a dreamlike state in their waking life compared to those without the disorder (Barrett, 1994).

Wolcott and Strapp (2002) examined the relationship between dreams and the Type A/B personality dimension as measured by the Type A/B Personality Scale. Dream detail was positively correlated with Type A/B scores, and Type B individuals actually reported more dream detail compared to Type A individuals. Wolcott and Strapp (2002) suggested that Type B individuals are usually more relaxed and easygoing, perhaps allowing themselves a greater opportunity to contemplate the details of their dreams.

Gruber, Steffen, and Vonderhaar (1995) found a relationship between personality and lucid dreaming. Using the 16 Factor Personality Scale, it was found that lucid dreamers scored higher on field independence (the ability to distinguish between internal and external stimuli), suggesting a continuity between daytime and nighttime ability to differentiate between the internal and external world (Gruber et al., 1995). Patrick and Durndell (2004) also found a relationship between lucid dreaming and personality. Confirming previous findings, frequent lucid dreamers were found to be more field independent according to the Group Embedded Figures Test. Frequent lucid dreamers were also significantly more internal on the locus of control measure and scored higher on need for cognition. Patrick and Durndell (2004) suggested that these results support continuity between waking and dreaming personality styles.

Dreams and Self-Construal

The concept of self-construal involves the way in which one views him/herself with regard to meaning, purpose, and identification with others. Individuals normally fall into one of three categories: independent self-construal, interdependent self-construal, and metapersonal self-construal**.** Those with independent self-construal tend to view themselves as unique and clearly separate from other individuals. In contrast, those with interdependent self-construal tend to view themselves as connected to others and have a greater value for belongingness (Sinclair & Fehr, 2005). Metapersonal individuals see themselves connected to all life (DeCicco & Stroink, 2003). Self-construal is a more recently studied construct in psychology, and it has been suggested by a great deal of research that it may explain the effects of culture on a number of outcome variables (Levine et al., 2003).

To this date, however, very little if any research has looked at the relationship between self-construal and dreams. An extensive literary search yielded no results in this subject area. The present study explores the relationship between dreaming and self-construal and examines whether or not the continuity hypothesis of dreaming can also be applied to this waking day characteristic. Furthermore, the boundary of the individual and dreaming may be revealed from the relationship between self-construal and dreaming.

Current Dream Attitudes

Another somewhat neglected topic of dream research is dream attitudes. Research is especially scarce on present-day cross-cultural attitudes toward dreams. While slight differences in dream content have been found between various cultures, it has been stated that “dreams [by content] are more similar than they are different around the world” (Domhoff, 2001), based on research from anthropologists like Thomas Gregor (1981). He studied 385 dreams of men and

women from a small native group in the Amazon jungle, finding that “the dream experience is less variant than other aspects of culture” (Domhoff, 2001). However, due to fundamental differences between cultures (historical, geographic, linguistic, as well as differences in moral standards and values) it is highly possible that greater differences may exist in the attitudes toward these dreams.

Barbara Tedlock, Ph.D. reviewed some of these cross-cultural attitudes in her article *The New Anthropology of Dreaming* (1991). In his fieldwork with the Yolmo Sherpa in Nepal, Robert Desjarlais (1990) discovered an implicit dream dictionary among the people, consisting primarily of attitudes regarding health and prophecy. For example, the Yolmo Sherpa believe that dreaming of an airplane indicates that one will soon fall ill, while dreaming of a new house or clothes indicates future good health. Tedlock (1991) notes that it is important to remember that in most cases, not all members of a given culture or society share the attitudes of the majority. Anthropologist Lydia Degarrod (1990) studied the Mapuche Indians of Chile and discovered very positive attitudes toward dreaming. Dream sharing and interpreting were common within families and allowed family members to better express their anxieties and participate in the healing process of their loved ones. Malinowski (1992) studied the Trobriand culture in Poland, finding that the majority of the people had little interest in their dreams and rarely associated any prophetic importance with their dreams. On the topic of American dream attitudes, anthropologists have found that middle-class Americans tend to admit more readily to having had prophetic or precognitive dreams. The popular conception regards dreams as predictors of success and misfortune, having a sort of “psychic” quality (Tedlock, 1991).

Current Western attitudes remain unclear, however, as research is limited. Schredl et al. (1996), while examining the differences in dream recall between thin and thick boundary

individuals, found that 36 out of 50 subjects reported that waking-life problems played a role in their dreams. These 36 subjects also tended to report thinner boundaries (Schredl et al., 1996). These findings suggest an attitude toward dreams reflective of the continuity hypothesis of dreaming, as the majority of the subjects in this study believed that dreams reflected their waking life.

An extensive study by Meyer and Shore (2001) investigated the attitudes of children toward their dreams. Using an interview process with 35 primarily Caucasian American children aged 3 to 7 years, results indicated that children were more likely to say that dreams were not real as they aged. In addition, the children were more likely to judge their dreams as private occurrences as they grew older. Over half of the older children indicated a belief in supernatural or psychological dream origins, citing sources such as "God," "angels," and "in my head." Overall findings suggested that by the age if six, "most believed that dreams were unreal, private, and internal" (Meyer & Shore, 2001). Meyer and Shore (2001) concluded that the children in the sample seemed to be fairly Westernized in their dream attitudes, which reflects previous findings in developmental psychology. This also reflects conclusions made by Watkins (1986) who proposed that Western culture has deemed dreams to be insignificant and meaningless (Meyer & Shore, 2001).

Vann and Alperstein (2000) stated that, "Individuals in American society waver between two disparate cultural beliefs about dreams: dreams mean something, or, dreams mean nothing." In their survey of 241 American college students, Vann and Alperstein (2000) found that the main purpose for telling dreams was entertainment, while only 5.7% of participants reported telling dreams for therapeutic purposes. Interestingly, 78% of participants believed there were situations in which it was unsafe to tell their dreams to others, especially dreams in which the

listener was in danger. Participants were quoted as stating, “It might scare that person into thinking that something was going to happen.” This statement indicates the participants’ awareness of others’ tendency to regard dreams as precognitive. Overall, participants in this study tended to tell their dreams to entertain, to share, and/or to elicit a reaction, and the majority only told their dreams in private (Vann & Alperstein, 2000).

Individuals experiencing nightmares may have a different attitude toward dreams. Kothe and Pietrowsky (2001) found that most of the nightmare sufferers in their German study reflected on their dreams or tried to interpret them. In fact participants indicated that occasionally nightmares encouraged them to change something in their lives. Only 5.1% of the participants regarded the dream as having nothing to do with their life (Kothe & Pietrowsky, 2001). These findings suggest an attitude which reflects the continuity hypothesis of dreaming.

Crook Lyon and Hill (2004) examined client reactions to dream work in psychotherapy and found that clients reacted positively to dream work and felt they benefited greatly from dream-focused therapy sessions. In addition, clients who had never talked about their dreams in therapy stated that this was due to low dream recall and negative attitudes toward dreams. These individuals did, however, find dream activities helpful, even if only asked to describe their dreams (Crook Lyon and Hill, 2004). These findings suggest a lack of knowledge in Western society as to the value of dream work as a therapeutic tool.

Other studies have found that a positive attitude toward dreaming is associated with greater dream detail in dream reports (Wolcott & Strapp, 2002) as well as a higher level of dream recall (Schredl et al., 2003). Simply indicating whether dream attitudes are positive or negative, however, does not indicate exactly what these attitudes are. While it has been stated that Western society deems dreams as meaningless (Meyer & Shore, 2001), little research has looked at

whether or not people actually believe their dreams have meaning. Vann and Alperstein (2000), Schredl et al. (1996), as well as Tedlock (1991) have indicated that Western attitudes may be far more complex than simply the conception that dreams have no meaning. The present study investigates dream attitudes according to whether or not people believe dreams contain important information, and if so, what kind of information they believe their dreams contain. In effect, this study will be determining whether or not there is a common belief in continuity between waking life and dreams. In addition, this study examines whether or not dream attitudes are related to actual waking day characteristics, including physical health, personality, mood, and self-construal.

Assessment Tools

The Medical Outcomes Study (MOS) 36-Item Short-Form Health Survey (SF-36; Ware & Sherbourne, 1992) was used to measure physical, mental, and general health. McHorney, Ware, Lu, and Sherbourne (1994) found the SF-36 to be highly valid and reliable across 24 patient groups with a total of 3445 patients. It has also been deemed highly reliable and valid in individuals with traumatic brain injury (Findler, Cantor, Haddad, Gordon, and Ashman, 2001).

An abbreviated form of the Profile of Mood States (POMS; Shacham, 1983) Scale was used to measure mood state. Norcoss, Guadagnoli, and Prochaska (1984) examined POMS scores in 165 psychiatric outpatients and 298 smokers. Their findings suggested that the POMS was internally consistent with a relatively stable factor structure. Grove and Prapavessis (1992) determined that an abbreviated form of the POMS (with 40 adjectives) was both highly reliable and highly valid in a sample of competitive athletes. More recently, Jianping, Haiyong, and Wenliang (2004) also deemed the reliability and validity of the POMS to be satisfactory among Chinese cancer patients.

To measure personality, the NEO Five-Factor Inventory Short Form (NEO-FFI-S; Costa & McCrae, 1992) was utilized. The NEO-FFI was found to be both valid and reliable by Holden and Fekken (1994), who looked at psychometric properties of the test in female university students. Zeiger (1996) examined the validity of the NEO-FFI. Both criterion validity and convergent and discriminate validity were supported in a sample of Air Force trainees, with significant correlations between the NEO-FFI and both the Minnesota Multiphasic Personality Inventory and the Million Multiaxial Inventory-II (Zeiger, 1996).

The Self-Construal Scale (SCS; DeCicco & Stroink, 2003) was used to measure self-construal. This scale was found to be high in convergent, discriminant, and predictive validity by DeCicco and Stroink (2003).

To measure dream attitudes, an original Dream Attitudes Scale (DAS) was developed. The initial question as to whether or not dreams contain important or relevant information is based on research which has found that Western society views dreams as either meaning something or meaning nothing (Vann & Alperstein, 2000). A checklist of dream attitudes was compiled to reflect current dream research as well as common or historically significant dream attitudes (e.g., Meyer & Shore, 2001; Tedlock, 1991; Vann & Alperstein, 2000). Personality, moods, physical health, and spiritual beliefs were included for purposes of the present study, with spiritual beliefs reflecting aspects of self-construal. The questionnaire was designed to be simple and to determine participants' basic attitudes regarding dreams and their meaning.

The Hall and Van de Castle (1966) system of content analysis was employed to examine the content of dreams in Study 2. Krippner (2002) stated that "reliability, by the method of common agreement, ranges from .60 to .90 for the various categories, a range suitable for most

research studies." Winget and Kramer (1979) have also evaluated and supported the reliability of content analysis (Krippner, 2002).

Study 1

The initial purpose of Study 1 was to observe and survey general dream attitudes, as research is lacking in this area. Study 1 also examined whether or not dream attitudes were reflected in waking life measurements, including mood, personality, physical health, and self-construal. For example, an individual who is experiencing an increased level of depression may be more inclined to believe their dreams contain information about their mood states.

Hypotheses

Hypothesis 1. Based on the evidence supporting a relationship between dreams and physical health (e.g., Gross & Lavie, 1994; Levitan & Winkler, 1985; Smith, 1984, 1986), a significant relationship was predicted between physical health subscales of the SF-36 Health Survey and the attitude that dreams include information concerning physical health.

Hypothesis 2. Evidence of a relationship between mood and dreams (e.g., Agargun & Cartwright, 2003; Beck & Ward, 1961; Cartwright, 1991; Schredl et al., 1996) has been found. The majority of the findings have suggested a relationship between depression and dreams. This has led to the prediction that high scores on the Depression/Dejection factor of the POMS would be significantly related to the attitude that dreams include information regarding moods.

Hypothesis 3. Research has supported a relationship between dreams and personality (e.g., Barrett, 1994; Durndell, 2004; Hartmann et al., 1991, 1998; Miro & Martinez, 2005; Wolcott & Strapp, 2002), and has been particularly suggestive of a relationship between neuroticism and dreams. Therefore it was predicted that scores on the Neuroticism subscale of

the NEO-FFI-S would be significantly related to the attitude that dreams include information regarding personality.

Hypothesis 4. While no research has been found supporting a relationship between self-construal and dreams, overall evidence for continuity between waking life characteristics and dreaming (e.g., Beck & Ward, 1961; Cartwright, 1991; Hartmann et al., 1998; Mitchell, 1923; Schredl, 2003a, 2003b) led to the exploratory prediction that scores on the SCS would be significantly related to dream attitudes. Individuals who score high on Interdependent Self-Construal value belongingness and view themselves as connected to others (Sinclair & Beverley, 2005). Thus, it was predicted that the Interdependent Self-Construal would be correlated with the attitude that dreams contain information regarding relationships. On the other hand, it was predicted that the Metapersonal Self-Construal would be correlated with the attitude that dreams contain information regarding spiritual beliefs. This follows from findings which suggest that metapersonal individuals see themselves as connected to all life (DeCicco & Stroink, 2003).

Method

Participants

Participants were 72 (11 male, 61 female) first-year undergraduate students from an introductory psychology course at Trent University in Peterborough, Ontario. The mean age of the participants was 19.83 years (*SD* = 2.94), and 91.67% were Caucasian, with the remainder being of African or Asian descent. The average number of years of post-secondary education was 1.63 years (*SD* = 1.27). The large majority of participants reported their marital status as single (71.83%), while 25.35% were monogamously coupled and only 1.41% reported that they were married.

Measures

Medical Outcomes Study 36-Item Short-Form Health Survey, Version 1 (SF-36; Ware & Sherbourne, 1992). The SF-36 (see Appendix A) was used to measure physical, mental and general health. The SF-36 consists of 36 individual questions with various scaled answer choices, comprising 8 concepts: (1) Physical Functioning (PF), (2) Role Limitations due to Physical Health (RLP), (3) Role Limitations due to Emotional Problems (RLE), (4) Bodily Pain (P), (5) Emotional Well-Being (EWB), (6) Energy/Fatigue (EF), (7) Social Functioning (SF), and (8) General Health perceptions (GH). Higher scores on any of these subscales suggest better health or a higher level of functioning, while lower scores represent a lower level of functioning. For example, a low score on EF implies a low level of energy and a high level of fatigue, while a high score on RLP implies few role limitations due to physical health problems. Therefore a high score on any of these subscales always implies positive health. The SF-36 has been found to be a reliable and valid test in a number of studies (Findler et al., 2001; McHorney et al., 1994).

Profile of Mood States Scale, Short Form (POMS; Shacham, 1983). An abbreviated form of the POMS (see Appendix B) was used to measure mood state. Composed of 37 adjectives and descriptive phrases to be rated on a 5-point likert scale, the POMS measures 6 factors over the course of the past week: Tension/Anxiety, Depression/Dejection, Fatigue/Inertia, Vigour/Activity, Confusion/ Bewilderment, and Anger/Hostility. A Total Mood Disturbance (TMD) score can also be calculated by summing all subscale scores of the POMS. Lower scores on the POMS indicate more stable moods, while higher scores indicate more mood disturbance. The POMS has been deemed both reliable and valid (Grove & Prapavessis, 1992; Jianping et al., 2004; Norcoss et al., 1984).

NEO Five-Factor Inventory, Short Form (NEO-FFI-S; Costa & McCrae, 1992). The NEO-FFI-S (see Appendix C) was used to measure personality. The NEO FFI-S consists of 60 statements to be rated on a 5-point scale from "strongly agree" to "strongly disagree." It measures five factors of personality (also known as the "Big Five"): Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness. A higher score on any of these factors indicates a higher degree of the construct within the individual. The NEO-FFI has been found to be highly valid and reliable (Holden & Fekken, 1994; Zeiger, 1996).

Self-Construal Scale (SCS; DeCicco & Stroink, 2003). The SCS (see Appendix D) was used to measure self-construal. This scale consists of 40 statements to be rated on a 7-point scale from "strongly disagree" to "strongly agree." This scale measures Independent, Interdependent and Metapersonal Self-Construal. Higher scores on any of these three subscales indicate a higher degree of the specific type of self-construal. This scale was found to be high in convergent, discriminant, and predictive validity by DeCicco and Stroink (2003).

Dream Attitudes Scale (DAS). To measure dream attitudes, an original Dream Attitudes Scale (DAS) was used (see Appendix E). The purpose of this scale is to determine two things: (1) if the participants *believe dreams contain important or relevant information* and (2) if so, what type of information they believe dreams contain. The former part is measured by a statement with *true*, *false*, and *not sure* answer choices. The latter part is measured using a checklist containing 8 items: *my personality*, *my mood*, *my spiritual beliefs*, *my current physical health*, *my past*, *decisions I am currently making*, *relationships*, and *future events*. Participants are asked to check as many items as are applicable. There is also a space for participants to write in any additional information they believe their dreams contain. A revised version of the DAS (see Appendix F) included a third item stating *if you have checked more than one option above,*

please indicate which one is most important/significant to you by circling that choice. This item was added to narrow participants' responses by asking them to choose the most salient attitude. This revised version of the DAS (DAS-R) was used for Study 1.

Procedure

Participants were approached during seminars by the PSYC-101 teaching assistants and informed of the opportunity to participate in the study. Students who decided to participate in the study received credit (in the form of bonus marks) for their participation. Those who did not want to participate in this or any other study had the opportunity to hand in a written assignment for the extra credit. Students were told where they could find more information regarding the study and signup if they were interested in participating. Sign-up sheets for this study were posted at a predetermined location outside of the psychology office at Trent University. Sign-up sheets included a brief outline of the study, its main purpose, the type and number of surveys to be completed, the estimated amount of time required for participation (maximum 1 hour), and all available dates, times, and locations of participation. A total of 12 participation time slots were offered over the course of 6 weeks.

All participants were informed of the purpose of the study and no information was withheld. They were told that this study was surveying dream attitudes and investigating the relationship between dream attitudes and physical health, personality, mood, and self-construal. Any questions on their part were answered honestly and fully. Before completing the surveys they were asked to sign a consent form (see Appendix H) ensuring confidentiality and informing them of their right to withdraw from the study at any time. They were then handed the package of surveys, including a cover page (see Appendix G) asking their age, sex, ethnicity, marital status, and number of years of education since high school. Upon completion of the surveys they

were handed a participant feedback sheet (see Appendix I) describing the study in further detail. They also retained a copy of the consent form for their personal records.

Analyses

Statistica 6.0 was used for all statistical analyses. All surveys were scored and entered into a spreadsheet. To look at general dream attitudes, simple frequency tables were employed. All hypotheses were addressed using a Pearson product-moment correlation matrix between items on the DAS-R and the four scales (the SF-36 Health Survey, the POMS, the NEO-FFI-S, and the SCS). Due to the small sample size and the comparably large number of constructs being tested (31 subscales across all questionnaires) a regression analysis was deemed statistically invalid for this data. Independent t-tests were performed to test for differences between the sexes.

Results

General statistics from the DAS-R are first reported. Regarding the statement *I believe dreams contain important/relevant information*, 68.06% of the participants rated this as true, while 8.33% rated this as false and 23.61% were not sure. Table 1 refers to items 2 through 10 of the DAS-R, which involved checking items which were believed to be reflected in dreams (represented by the statement *I believe dreams contain information about*).

Table 1

Study 1 percentage of participants who indicated (checked) each dream attitude (N = 72)

Attitude that dreams contain information about	Percentage (%)
Decisions I am currently making	81.94
My moods	80.56
Relationships	79.17
My past	70.83
My personality	69.44
Future events	58.33
My current physical health	29.17
My spiritual beliefs	29.17

Note. Items ranked from greatest to least.

Item 10 (*others*) gave participants the opportunity to supply additional information believed to be contained in dreams. Common responses included “fears,” “subconscious mental activity,” and “family.” For the final item on the DAS-R, which asked participants to circle the most important/significant dream attitude, 33.33% circled *decisions I am currently making*, followed by *relationships*, *future events*, *my moods*, *my past*, *my personality*, and *my spiritual beliefs* (15.28%, 13.89%, 12.50%, 12.50% , 6.94%, and 2.78%, respectively). *My current physical health* was not rated as the most significant/important dream attitude by any of the participants.

Independent t-tests. Independent t-tests revealed significant differences between males and females on only 2 dream attitudes. Females were more likely to believe that dreams contain information about their spiritual beliefs, $t(70) = -2.04$, $p = .045$ (two-tailed), and about the past, $t(70) = -2.37$, $p = .021$ (two-tailed) (see Appendix J).

Hypothesis 1. The prediction that physical health subscales of the SF-36 Health Survey would be significantly related to the attitude that dreams include information regarding physical health was weakly supported (see Table 2). The Pain subscale of the SF-36 did correlate with this dream attitude, $r = -.26$ ($p < .05$), yet this correlation was barely significant and none of the other physical health subscales correlated with this attitude.

Hypothesis 2. The prediction that high scores on the depression factor of the POMS would be significantly related to the attitude that dreams include information regarding moods was not supported (see Table 2).

Hypothesis 3. The prediction that scores on the neuroticism subscale of the NEO-FFI-S would be significantly related to the attitude that dreams include information regarding personality was not supported (see Table 2).

Table 2

Study 1 correlations between the DAS-R and factors of the SF-36 Health Survey, the POMS, the NEO-FFI-S, and the SCS (N = 72)

Factor	A1	A2P	A2M	A2S	A2PH	A2PA	A2D	A2R	A2F	A3P	A3M	A3S	A3PH	A2PA	A3D	A3R	A3F
PF	.01	-.16	.13	.12	-.13	-.05	.12	.08	.06	-.27*	-.17	-.03	.00	.18	.07	-.06	.18
RLP	-.03	-.13	-.04	-.03	-.23	.03	.18	.07	.06	-.32*	-.24*	-.10	.00	.23	.21	-.18	.14
RLE	-.07	-.11	-.08	.11	-.22	.19	-.11	.05	.13	.09	-.04	.17	.00	.03	-.02	.01	-.20
EF	-.04	.04	-.02	.03	-.01	.11	-.15	.10	.08	-.03	.08	-.07	.00	-.01	-.01	-.08	.05
EWB	-.18	.04	-.08	.18	-.26*	.11	-.12	.13	-.01	.18	-.04	.11	.00	-.09	.06	.03	-.25*
SF	-.18	-.03	-.14	.12	-.24*	-.07	-.10	.03	.09	.11	.03	-.01	.00	-.10	.13	-.01	-.27*
P	-.08	-.08	-.09	.01	-.26*	-.09	-.03	.03	-.03	-.02	-.10	-.08	.00	-.06	.15	-.19	.16
GH	-.01	.01	.11	.18	-.22	-.10	.04	.07	.05	-.05	-.17	-.03	.00	-.03	.24*	.00	-.10
SCID	.03	.07	.09	.19	.21	.17	.04	.02	-.06	.15	-.00	.13	.00	-.04	-.03	-.02	.03
SCIT	-.01	.10	.08	.03	-.04	.07	.05	-.17	.03	-.07	-.12	.09	.00	-.07	.07	-.10	.19
SCM	.05	.17	.08	.36*	.17	.24*	-.04	.05	.09	.18	-.07	.08	.00	-.09	-.13	-.02	.19
N	.00	.05	-.00	-.19	.07	-.07	-.06	-.01	-.08	-.07	-.13	.10	.00	.01	-.07	.10	.16
E	.07	.06	.01	.19	-.04	-.02	-.07	-.01	.24*	.17	-.16	.15	.00	-.19	-.00	.11	.04
O	-.00	-.00	.11	.07	.06	-.03	-.06	-.23*	-.10	.05	-.14	.13	.00	.17	-.05	.04	-.13
A	-.11	-.08	-.02	-.08	.08	.14	-.02	-.16	.04	.18	-.10	-.06	.00	.00	-.17	.09	.10
C	-.01	.19	.29*	.33*	-.03	.21	.02	.13	.28*	.16	-.07	.04	.00	-.09	.06	-.03	.01
FI	.13	.06	.24*	.10	.01	-.04	.13	-.06	.11	.03	-.00	.08	.00	-.02	-.08	.17	.00
VA	-.09	-.08	.07	.02	-.12	-.04	-.16	.10	.00	-.21	-.12	.02	.00	-.04	.23	.06	-.07
TA	.07	.01	.03	-.01	.07	-.14	.01	-.10	-.02	-.01	.05	.16	.00	.05	-.14	.03	.04
DD	.12	.04	.02	-.16	.22	-.08	-.03	-.08	.01	-.03	-.07	.02	.00	.16	-.15	-.01	.20
AH	.03	.08	.07	-.00	.08	-.05	-.13	-.14	.03	.09	-.02	.04	.00	-.06	-.18	.10	.19
CB	.03	-.18	-.01	-.32*	-.04	-.20	.08	-.12	-.28*	-.13	-.04	.08	.00	.12	.10	.01	-.03
TMD	.08	.08	.12	.09	.10	-.01	-.05	-.09	.06	.09	-.22	.22	.00	-.02	-.09	.16	.06

Note. A1 = DAS-R(I believe dreams contain important/relevant information); A2 = DAS-R(I believe dreams contain information about); A2P = my personality; A2M = my moods; A2S = my spiritual beliefs; A2PH = my current physical health; A2PA = my past; A2D = decisions I am currently making; A2R = relationships; A2F = future events; A3 = DAS-R(The most relevant/important item if multiple items were checked from A2); A3P = my personality; A3M = my moods; A3S = my spiritual beliefs; A3PH = my current physical health; A3PA = my past; A3D = decisions I am currently making; A3R = relationships; A3F = future events; PF = SF-36 Physical Functioning; RLP = SF-36 Role Limitations due to Physical Health; RLE = SF-36 Role Limitations due to Emotional Problems; EF = SF-36 Energy/Fatigue; EWB = SF-36 Emotional Well-Being; SF = SF-36 Social Functioning; P = SF-36 Pain; GH = SF-36 General Health; SCID = Independent Self-Construal; SCIT = Interdependent Self-Construal; SCM = Metapersonal Self-Construal; N = NEO-FFI-S Neuroticism; E = NEO-FFI-S Extraversion; O = NEO-FFI-S Openness; A = NEO-FFI-S Agreeableness; C = NEO-FFI-S Conscientiousness; FI = POMS Fatigue/Inertia; VA = POMS Vigour/Activity; DD = POMS Depression/Dejection; AH = POMS Anger/Hostility; CB = POMS Confusion/Bewilderment; TMD = POMS Total Mood Disturbance.

* $p < .05$

Hypothesis 4. The exploratory prediction that scores on the SCS would be significantly related to dream attitudes was supported. As Metapersonal Self-Construal increased, so did the attitude that dreams contain information regarding spiritual beliefs, $r = .36$ ($p < .05$). The specific prediction that Interdependent Self-Construal would be significantly related to the relationships attitude was not supported (see Table 2).

Discussion

In general, most people tend to believe their dreams reflect aspects of their waking lives. Within this sample, the attitude that dreams reflect current decisions was most common. However, specific dream attitudes do not reflect the most prominent waking life characteristics, as was revealed by the lack of support for hypotheses 1 through 3. That is, people with poor physical health tend not to believe that their dreams reflect this. Similarly, those with greater mood disturbances (e.g., depression) do not believe their dreams reflect their moods, while those who are more neurotic do not believe their dreams reflect their personality. Taken together these findings suggest that, in spite of a popular belief in continuity between dreams and waking life, one of two things must be occurring: 1) Dreams do not accurately reflect the waking life characteristics of health, mood, and personality, indicating that reported dream attitudes may be correct, or 2) Dreams do accurately reflect these waking life characteristics, yet people are highly unaware of their dream content, leading them to report inaccurate dream attitudes. In order to answer this question, a second study was carried out in which dream content was also examined in relation to dream attitudes and waking life characteristics. The findings from Study 1 will be discussed in greater depth following the results from Study 2, so as to make more general inferences on dream attitudes from both studies combined.

Study 2

Study 2 investigated general dream attitudes and whether or not dream attitudes were reflected in measurement. This portion of Study 2 replicated Study 1. In addition, Study 2 examined dream content in order to determine if dream attitudes were actually reflected in the content of dreams. That is, are people dreaming about what they think their dreams mean? In order to determine if prominent waking life characteristics are reflected in dreams, the relationship between dream content and physical health, mood, personality, and self-construal was also examined. In effect, the continuity hypothesis of dreaming (Hall & Nordby, 1972) was tested.

Hypotheses

Hypotheses 1 through 4. The same hypotheses from Study 1 were tested for Study 2. That is, it was predicted that dream attitudes would be significantly related to scores on the SF-36 Health Survey, the POMS, the NEO-FFI-S, and the SCS.

Hypothesis 5. Based on evidence supporting the continuity hypothesis of dreaming (e.g., Beck & Ward, 1961; Bell & Hall, 1971; Berquier & Ashton, 1992; Cartwright, 1991; Gentil & Lader, 1978; Hartmann et al., 1998; Levitan & Winkler, 1985; Mitchell, 1923; Schredl, 2003a, 2003b), it was predicted that dream attitudes would be significantly related to dream content.

Hypothesis 6. Under the same premise as hypothesis 5, dream content was also predicted to be significantly related to scores on the SF-36 Health Survey, the POMS, the NEO-FFI-S, and the SCS.

Method

The data for Study 2 was collected by Professor T. DeCicco in a third year Dreams and Dreaming course at Trent University. The data was part of the course material.

Participants

Participants were 21 female and 6 male undergraduate university students from Trent University who were registered in and attending the Dreams and Dreaming course at Durham College in Oshawa, Ontario, during the summer session of 2005. The mean age of the participants was 28.23 years (*SD* = 10.06), and 75.86% were Caucasian, with the remainder being of African, Asian, and Hispanic descent. The average number of years of post-secondary education was 4 years. The large majority of participants reported their marital status as single (65.52%), while 13.79% were married.

Due to missing data from 2 participants, findings regarding dream attitudes will be based on *N* = 25. All other findings will be based on *N* = 27.

Measures

The SF-36, the POMS, the NEO-FFI-S, the SCS, and the DAS. As in Study 1, physical health, mood, personality, and self-construal were measured using the SF-36 Health Survey, the POMS, the NEO-FFI-S, and the SCS, respectively. Dream attitudes were measured using the original Dream Attitudes Scale (DAS), which did not include the final item asking participants to circle the most important/relevant attitude (see Appendix E).

Dream Content. Each student was also asked to write down and hand in reports of four dreams that they experienced during the 6-week lecture period. These dreams were analyzed using the Hall and Van de Castle (1966) system of Content Analysis. Content Analysis is a scoring system for dream content used to identify the frequency of a large variety of dream images, figures, actions, emotions, and conflicts. Content Analysis has been deemed reliable and valid by multiple studies (Krippner 2002). While Hall and Van de Castle (1966) provide normative data for the frequencies of dream content to be used for measures of significance, this

study only required the raw frequency count for correlational purposes. In effect, only the dream categories and scoring guidelines laid out by Hall and Van de Castle (1966) were utilized.

The dream categories to be scored were chosen based on the content measured by the SF-36 Health Survey, the POMS, the NEO-FFI-S, the SCS, and the DAS. For example, to look at aspects of physical health in dream content, categories such as Body Parts, Physical Movements, and Injuries/Illnesses were scored. The Hall and Van de Castle (1966) categories chosen for scoring are as follows.

Total Emotions were examined, as well as all emotional subcategories, including Sadness, Anger, Happiness, Apprehension, and Confusion. Total Misfortunes were also examined, including subcategories of Death/Dying, Injuries/Illnesses, and Total Bodily Misfortunes, which is a sum of the Death/Dying and Injuries/Illnesses categories. In the category of Objects, Total Body Parts were scored. Subcategories of Body Parts include Head, Extremities, Torso, Anatomy (internal body parts), and Sex Organs. All were examined in the current study.

Total Characters, as well as the subcategories of Human Characters, Familiar People, Unfamiliar People, and Animals were scored. Under the heading of Social Interactions, Total Aggression was scored, as well as the subcategories of Physical Aggression and Dreamer as Victim. Total Friendliness and the subcategory of Dreamer-Involved Friendliness were also scored, and Total Sexuality was scored so that a Total Social Interactions score could be calculated. This score is a sum of Total Aggression, Total Friendliness, and Total Sexuality. Finally, Total Activities were scored, including the subcategories of Physical Activities (for example, hand movements, sitting, lifting arm, turning head), Movement (for example, walking, running, climbing), and Location Change (changes in location by means of physical movement).

A Total Physical Activities Score was calculated by summing the preceding three subcategories of Activities.

For purposes of this study, two new categories were created and examined in dream content. The first was Total Religious Images, and included subcategories of Religious Figures/Characters (e.g., priest, rabbi, Buddha, Jesus, Muhammad), Religious Locations/ Buildings (e.g., churches, synagogues, Mecca, Heaven), Religious Objects (e.g., books, statues, crosses), and Religious Events (e.g., weddings, funerals, historical religious events). The second category was Total Medical Images. This included subcategories of Medical Figures (e.g., doctors, nurses, paramedics), Medical Locations/Buildings (e.g., hospitals, doctor offices), Medical Objects (e.g., equipment, tools), and Medical Events (e.g., appointments, surgeries).

Procedure

Participants were approached in a classroom setting at the end of a scheduled lecture. All participants were informed of the purpose of the study and no information was withheld. They were told that this study was surveying dream attitudes and investigating the relationship between dream attitudes and physical health, personality, mood, and self-construal. In return for their participation in the study, students each received a bonus mark to go towards their final grade. Any questions on their part were answered honestly and fully, and they were informed of their right to withdraw from the study at any time. They were then handed the package of surveys, including a demographic information sheet asking their age, sex, ethnicity, marital status, and number of years of education since high school. They were asked to begin completing the surveys upon receiving them.

Dream reports had been previously collected as part of classroom assignments. The four surveys and demographic information sheets were attached to their corresponding four dream

reports by the instructor, T. DeCicco. All names and/or student identification numbers were removed prior to the primary researcher's possession of the dream reports and surveys.

Analyses

As in Study 1, Statistica 6.0 was used for all statistical analyses. All surveys were scored and entered into a spreadsheet. To look at general dream attitudes, simple frequency tables were employed. *Hypotheses 1 through 4* were addressed using a Pearson product-moment correlation matrix between items on the DAS and the four other scales (the SF-36 Health Survey, the POMS, the NEO-FFI-S, and the SCS). Due to the small sample size and the comparably large number of constructs being tested (31 subscales across all questionnaires) a regression analysis was deemed statistically invalid for this data. Independent t-tests were performed to test for differences between the sexes.

Using the Hall and Van de Castle guidelines for content analysis, all dream reports were scored for the frequency of the afore-mentioned themes. That is, each occurrence of a dream theme was marked, counted, and summed, culminating in totals for each category across all four dreams. This data was entered into a spreadsheet for analysis using Statistica 6.0. To test *Hypothesis 5*, a Pearson product-moment correlation matrix was performed between dream content frequencies and the DAS. To test *Hypothesis 6*, a Pearson product-moment correlation matrix was performed between dream content frequencies and the SF-36 Health Survey, the POMS, the NEO-FFI-S, and the SCS.

Results

Dream Attitudes

As in Study 1, general statistics for the DAS are first reported. Regarding the statement *I believe dreams contain important/relevant information*, 96% of the participants (24 of 25) rated

this as *true*. The remaining one participant rated this statement as *false*. Table 3 refers to items 2 through 10 of the DAS, which involved checking items which were believed to be contained in dreams (represented by the statement *I believe dreams contain information about*). Percentages from Study 1 are also included for comparison.

Table 3

Study 1 (N = 72) and Study 2 (N = 25) percentages of participants who indicated dream attitudes

Attitude that dreams contain information about	S2 Percentage (%)	S1 Percentage (%)
Relationships	96.00	79.17
Decisions I am currently making	84.00	81.94
Future events	84.00	58.33
My past	80.00	70.83
My moods	64.00	80.56
My personality	64.00	69.44
My current physical health	64.00	29.17
My spiritual beliefs	52.00	29.17

Note. Items ranked from greatest to least according to Study 2; S2 = Study 2; S1 = Study 1.

Item 10 (*others*) gave participants the opportunity to supply additional information believed to be contained in dreams. Responses included “unresolved disturbing events/conflicts,” “fears,” “announcements of death of family members or friends,” “unconscious thoughts or motives,” “desires/wishes,” and “synchronicity.”

Independent t-tests. Independent t-tests revealed significant differences between males and females on only 2 dream attitudes. Females were more likely to believe that dreams contain information about their spiritual beliefs, $t(23) = 3.46$, $p = .002$ (two-tailed), and about future events, $t(23) = 2.93$, $p = .008$ (two-tailed) (see Appendix K).

Hypothesis 1. The prediction that physical health subscales of the SF-36 Health Survey would be significantly related to the attitude that dreams include information regarding physical health was not supported (see Table 4).

Table 4

Study 2 correlations between the DAS and factors of the SF-36, the POMS, the NEO-FFI-S, and the SCS (N = 27)

Factor	A1	A2P	A2M	A2S	A2PH	A2PA	A2D	A2R	A2F
PF	-.04	-.06	-.21	-.36	-.21	-.23	-.23	-.04	-.08
RLP	-.12	.04	-.24	-.45*	-.24	-.14	-.27	-.12	-.08
RLE	-.15	-.07	-.07	-.38	.01	-.29	.04	-.15	.04
EF	-.18	-.01	-.03	-.07	-.01	-.20	-.22	-.18	-.02
EWB	-.11	-.22	-.02	-.01	-.09	-.21	-.09	-.11	.18
SF	-.23	-.16	-.06	-.19	.13	-.38	-.36	-.23	-.04
P	-.15	-.10	-.05	-.03	-.18	-.23	-.32	-.15	-.07
GH	.02	.09	.20	.10	.09	-.12	.07	.02	.27
SCID	.12	.09	.41*	.46*	.32	-.06	.37	.12	.41*
SCIT	-.06	-.26	-.03	-.05	-.30	-.08	.04	-.06	.10
SCM	-.01	.08	.18	.44*	.05	.02	.30	-.01	.24
N	-.34	-.22	-.06	-.06	-.26	-.13	.04	-.34	-.04
E	-.01	-.07	.21	.09	.19	.02	-.09	-.01	.25
O	-.10	-.46*	-.20	-.41*	-.36	-.27	-.03	-.10	.16
A	-.15	-.04	-.09	-.15	.04	-.18	.14	-.15	-.15
C	.19	-.15	.33	.07	.02	.09	.02	.19	.36
FI	.02	.21	.11	-.07	-.05	.09	.21	.02	-.01
VA	.02	-.11	-.05	-.02	-.05	.00	.07	.02	.24
TA	.04	.11	-.22	-.03	.00	.08	.15	.04	-.19
DD	-.11	.22	.02	.01	-.01	.07	-.07	-.11	-.21
AH	-.11	.16	-.04	-.03	-.10	.06	.10	-.11	-.14
CB	-.07	.01	-.33	-.10	-.29	-.03	.07	-.07	-.32
TMD	-.05	.18	-.08	-.04	-.08	.06	.09	-.05	-.22

Note. A1 = DAS(I believe dreams contain important/relevant information); A2 = DAS(I believe dreams contain information about); A2P = my personality; A2M = my moods; A2S = my spiritual beliefs; A2PH = my current physical health; A2PA = my past; A2D = decisions I am currently making; A2R = relationships; A2F = future events; PF = SF-36 Physical Functioning; RLP = SF-36 Role Limitations due to Physical Health; RLE = SF-36 Role Limitations due to Emotional Problems; EF = SF-36 Energy/Fatigue; EWB = SF-36 Emotional Well-Being; SF = SF-36 Social Functioning; P = SF-36 Pain; GH = SF-36 General Health; SCID = Independent Self-Construal; SCIT = Interdependent Self-Construal; SCM = Metapersonal Self-Construal; N = NEO-FFI-S Neuroticism; E = NEO-FFI-S Extraversion; O = NEO-FFI-S Openness; A = NEO-FFI-S Agreeableness; C = NEO-FFI-S Conscientiousness; FI = POMS Fatigue/Inertia; VA = POMS Vigour/Activity; DD = POMS Depression/Dejection; AH = POMS Anger/Hostility; CB = POMS Confusion/Bewilderment; TMD = POMS Total Mood Disturbance.

* $p < .05$

Hypothesis 2. The prediction that high scores on the depression factor of the POMS would be significantly related to the attitude that dreams include information regarding moods was not supported (see Table 4). No significant correlations were observed between the POMS and the DAS.

Hypothesis 3. The prediction that scores on the neuroticism subscale of the NEO-FFI-S would be significantly related to the attitude that dreams include information regarding personality was not supported (see Table 4).

Hypothesis 4. The exploratory prediction that scores on the SCS would be significantly related to dream attitudes was supported (see Table 4). Both Independent Self-Construal and Metapersonal Self-Construal were significantly related to the attitude that dreams contain information regarding spiritual beliefs, $r = .46$ ($p < .05$) and $r = .44$ ($p < .05$), respectively. Independent Self-Construal was also significantly related to the attitudes that dreams contain information about moods, $r = .41$ ($p < .05$), and future events, $r = .41$ ($p < .05$). The more specific prediction that Interdependent Self-Construal would be significantly related to the relationships attitude was not supported. Overall, these results indicate that those rating high in Independent Self-Construal are more likely to believe their dreams contain information about their spiritual beliefs, their moods, and future events, while those high in Metapersonal Self-Construal are inclined to believe their dreams reflect their spiritual beliefs. It should be noted that Independent Self-Construal and Metapersonal Self-Construal were highly intercorrelated, $r = .81$ ($p < .05$).

Table 5

Study 2 correlations between the DAS and dream content (N = 27)

Dream Content	A1	A2P	A2M	A2S	A2PH	A2PA	A2D	A2R	A2F
Emotions	.33	.06	-.10	-.23	-.20	.33	-.17	.33	.02
Sadness	.22	.04	.23	-.31	-.28	.38	-.44*	.22	-.03
Apprehension	.21	.03	-.17	-.16	-.05	.02	.07	.21	.07
Anger	.19	.19	-.17	.11	-.07	.22	.01	.19	.01
Happiness	.16	-.28	-.11	-.25	-.23	.18	-.04	.16	.11
Confusion	.15	.34	.12	-.03	.12	.24	-.26	.15	-.26
Misfortunes	.11	-.25	.18	.13	.30	-.03	.21	.11	.34
Death	.11	-.02	.12	-.41*	-.29	.10	-.13	.11	.05
Injuries/Illnesses	.11	-.10	.23	.35	.33	.18	.19	.11	.19
Bodily	.13	-.11	.27	.26	.27	.21	.16	.13	.20
Body Parts	.20	-.26	-.01	.22	.47*	-.31	.26	.20	.23
Head	.15	-.09	-.00	.17	.45*	-.24	.14	.15	.11
Extremities	.16	-.40*	.06	.24	.41*	-.37	.34	.16	.34
Torso	.12	-.28	-.07	.08	-.07	-.07	.12	.12	.12
Anatomy	.06	-.18	-.18	-.10	-.18	.14	.12	.06	.12
Aggressions	-.08	-.04	.01	-.32	-.28	.14	-.14	-.08	.06
Physical Agg	-.40*	.05	-.15	-.39	-.20	-.07	-.12	-.40*	-.08
Drmr as Victim	-.16	.03	.10	-.21	-.14	.11	-.15	-.16	-.02
Friendliness	.29	.15	.22	.02	-.15	.19	.25	.29	.39
Drmr Involved	.26	.20	.27	.04	-.13	.25	.24	.26	.41*
Sexuality	.09	.07	-.19	-.20	.19	-.09	-.14	.09	-.14
Total Social	.16	.08	.14	-.20	-.27	.21	.07	.16	.30
Activities	.28	-.10	.14	.26	.17	-.00	.26	.28	.14
Physical Acts	.15	-.30	-.02	.22	.16	-.23	.23	.15	.10
Movements	.25	-.17	.22	.11	.22	-.01	.24	.25	.34
Loc Change	.24	.13	.21	-.05	.09	.16	-.00	.24	.05
Total Phys	.28	-.24	.15	.17	.23	-.10	.27	.28	.26
Characters	.31	.04	-.05	-.13	-.04	.19	-.05	.31	-.04
Human	.24	-.00	-.08	.01	-.02	.16	-.13	.24	-.09
Familiar	.16	-.01	-.04	-.14	-.20	.22	-.16	.16	.01
Unfamiliar	.25	.10	-.01	.17	.18	-.03	.07	.25	-.16
Animals	.08	.05	.02	-.18	.21	-.02	.22	.08	.14
Relig Themes	.12	.23	-.23	-.09	-.37	.13	.16	.12	-.45*
Relig Figures	.07	.26	-.28	-.19	-.46*	.17	.15	.07	-.56*
Relig Locations	.07	.27	-.27	-.07	-.48*	.18	.16	.07	-.55*
Relig Objects	.00	.00	.00	.00	.00	.00	.00	.00	.00
Relig Events	.08	-.06	.06	.04	.18	-.08	.02	.08	.17
Med Themes	.09	.04	.27	.39	.30	.18	.19	.09	.15
Med Figures	.08	-.02	.30	.38	.30	.20	.17	.08	.17
Med Locations	.09	.02	.22	.41*	.22	.21	.19	.09	.06
Med Objects	.06	.02	.12	.18	.22	.02	.13	.06	.13
Med Events	.06	.22	.22	.28	.22	.15	.13	.06	.13

Note. A1 = DAS(I believe dreams contain important/relevant information); A2 = DAS(I believe dreams contain information about); A2P = my personality; A2M = my moods; A2S = my spiritual beliefs; A2PH = my current physical health; A2PA = my past; A2D = decisions I am currently making; A2R = relationships; A2F = future events; Bodily = bodily misfortunes; Physical Agg = physical aggression; Drmr as Victim = aggression: dreamer as victim; Drmr Involved = dreamer-involved friendliness; Total Social = total social interactions; Activities = total activities; Physical Acts = physical activities; Loc Change = location changes; Total Phys = total physical activities; Human = human characters; Familiar = familiar characters; Unfamiliar = unfamiliar characters; Relig = religious; Med = medical.
* $p < .05$

Hypothesis 5. The prediction that dream attitudes would be significantly related to dream content was somewhat supported (see Table 5). Participants were less likely to believe their dreams contain important/relevant information as number of physical acts of aggression increased in dream content, $r = -.40$ ($p < .05$). The attitude that dreams contain information regarding physical health increased as the number of body parts in dreams increased, $r = .47$ ($p < .05$), and the number of religious locations in dreams decreased, $r = -.46$ ($p < .05$). Interestingly, those who believed their dreams contain information about their relationships displayed a lower frequency of physical acts of aggression in their dreams, $r = -.40$ ($p < .05$). Also, the attitude that dreams contain information about current decisions being made decreased as sadness in dream content increased, $r = -.44$ ($p < .05$). Those who believed their dreams contain information about their spiritual beliefs had fewer misfortunes involving death in their dreams, $r = -.41$ ($p < .05$). Finally, the future events attitude increased as dreamer-involved friendliness increased, $r = .41$ ($p < .05$) and religious content decreased, $r = -.45$ ($p < .05$).

Table 6

Study 2 correlations between dream content and factors of the SF-36 Health Survey, the POMS, the NEO-FFI-S, and the SCS (N = 27)

Dream Content	PF	RLP	RLE	EF	EWB	SF	P	GH	SCID	SCIT	SCM	N	E	O	A	C	FI	VA	TA	DD	AH	CB	TMD
Emotions	.35	.29	-.11	-.04	-.19	-.07	-.01	.00	-.07	.21	-.15	-.20	-.10	-.05	-.10	-.15	-.14	.21	.25	.15	-.03	.17	.05
Sadness	.25	.23	-.42*	-.17	-.49*	-.32	-.12	-.17	-.10	.12	-.27	-.09	.08	.03	.16	.10	.15	-.01	.14	.53*	.18	.31	.28
Apprehension	.22	.07	.23	.16	.22	.32	.11	.13	.05	.02	-.03	-.28	-.08	-.02	-.28	-.15	-.37	.20	-.07	-.34	-.31	-.17	-.31
Anger	.14	.28	-.16	-.07	-.30	-.21	-.03	.15	.01	.32	.10	.08	-.11	-.11	.10	-.20	.07	.19	.47*	.41*	.32*	.19	.29
Happiness	.13	.08	-.12	-.16	-.07	-.32	-.19	-.13	-.19	.20	-.14	.11	-.17	.10	-.08	.03	.06	.11	.22	.01	-.01	.29	.10
Confusion	.26	.20	.05	.12	-.00	.36	.27	-.12	.01	-.17	-.19	-.53*	.11	-.24	-.12	-.20	-.24	-.04	-.13	-.09	-.27	-.11	-.18
Misfortunes	-.38*	-.27	-.13	-.17	-.11	-.08	-.28	-.20	.18	-.22	.21	.16	.42*	.27	.08	.40*	.00	.16	.10	-.07	.11	.03	.01
Death	.17	.25	-.03	.00	-.14	.06	.00	.06	-.14	.12	-.09	.13	-.10	-.01	-.03	-.02	-.04	.18	-.16	-.07	.05	-.08	-.10
Injuries/Illnesses	-.80*	-.62*	-.36	-.53*	-.31	-.41*	-.52*	-.49*	.22	.02	.23	.14	.29	.08	.32	.13	-.03	.09	.06	-.05	.13	-.13	-.01
Bodily	-.78*	-.58*	-.38	-.54*	-.35	-.41*	-.54*	-.49*	.19	.05	.22	.18	.28	.08	.32	.13	-.04	.14	.02	-.07	.15	-.15	-.04
Body Parts	-.40*	-.54*	.23	-.06	.22	.12	-.11	-.05	.06	-.04	-.03	-.04	-.16	-.10	-.02	-.28	-.18	.10	-.14	-.37	-.19	-.33	-.28
Head	-.46*	-.48*	.22	.06	.14	.16	-.16	-.05	.06	-.15	-.02	-.10	-.10	-.11	.17	-.31	-.09	.14	-.05	-.20	-.01	-.28	-.16
Extremities	-.17	-.35	.13	-.12	.22	.09	.02	.03	.11	.01	-.00	.05	.04	-.08	-.33	.09	-.28	-.01	-.40*	-.47*	-.48*	-.42*	-.45*
Torso	.18	-.10	-.05	-.23	.06	-.14	.08	-.04	-.03	.30	-.00	.19	-.36	-.06	-.21	-.22	-.06	-.00	.08	-.15	-.09	.18	-.01
Anatomy	.04	-.07	.11	-.30	.14	-.13	.02	-.15	-.25	.31	-.16	-.04	-.35	.28	-.06	-.22	.01	-.17	.25	-.18	.03	.21	.10
Aggressions	.29	.36	.07	-.14	-.36	-.30	.03	.20	-.03	.64*	-.01	.18	.02	.18	.12	.01	.10	.01	.29	.45*	.24	.17	.28
Physical Agg	.33	.33	.25	-.11	-.08	.02	.09	.07	-.11	.31	-.09	.02	-.02	.15	-.02	-.14	.01	-.11	-.05	.05	-.05	-.01	.01
Drmr as Victim	.18	.28	.09	.10	-.22	-.24	-.01	.32	.02	.38*	-.06	.12	.23	.10	.23	.19	.08	-.10	.13	.40*	.12	.07	.20
Friendliness	.06	.28	-.00	-.06	-.04	-.01	-.02	.38	.38	.17	.26	.02	.08	.17	-.07	.15	.16	.35	-.07	.11	.00	.06	-.01
Drmr Involved	.02	.29	.01	-.03	-.01	-.00	-.08	.38	.46*	.14	.32	.04	.16	.25	-.01	.20	.15	.35	-.08	.12	.03	.02	-.01
Sexuality	.06	.05	.08	.19	-.03	.19	-.09	.03	-.03	-.14	-.24	-.21	.02	-.27	.06	-.35	-.29	.26	-.05	-.10	-.12	-.25	-.22
Total Social	.23	.42*	.05	-.11	-.25	-.17	-.00	.39*	.24	.50*	.16	.11	.07	.21	.03	.08	.15	.27	.12	.34	.14	.12	.14
Activities	-.11	-.18	-.13	-.37	-.31	-.20	-.14	.15	.24	.34	.18	.24	-.06	.07	.09	.01	.07	.03	.13	.20	.10	.12	.13
Physical Acts	-.18	-.23	-.09	-.27	-.21	-.14	-.01	.19	.19	.25	.21	.31	.03	.22	.00	.10	.02	-.04	.06	.18	.11	.21	.13
Movements	-.04	-.26	-.05	-.53*	-.12	-.15	-.25	-.17	.25	.30	.18	.20	-.10	.25	-.06	.06	.09	-.05	-.02	-.09	.01	-.11	-.01
Loc Change	-.04	.08	-.10	-.05	-.34	-.21	-.22	.29	.12	.10	-.12	-.05	-.16	-.14	.16	.08	.33	-.04	.22	.53*	.26	.10	.33
Total Phys	-.13	-.27	-.10	-.48*	-.26	-.21	-.20	.06	.28	.34	.20	.28	-.07	.24	-.01	.11	.13	-.06	.07	.15	.12	.07	.13
Characters	.18	.28	-.14	-.40*	-.49*	-.31	.03	.00	-.19	.20	-.19	.09	-.23	-.03	.02	-.12	.47*	-.12	.49*	.59*	.44*	.45*	.56*
Human	.13	.24	-.19	-.34	-.45*	-.22	.15	-.03	-.22	.20	-.19	.03	-.27	-.19	-.02	-.21	.29	-.12	.50*	.53*	.36	.38*	.48*
Familiar	.11	.32	-.09	-.24	-.44	-.31	.05	.10	-.17	.37	-.12	.04	-.27	-.02	.13	-.05	.33	-.13	.59*	.62*	.44*	.35	.54*
Unfamiliar	.12	-.02	-.16	-.29	-.20	-.01	.22	-.14	-.08	-.12	-.09	.06	.02	-.22	-.24	-.21	.06	-.07	-.09	.02	.00	.15	.04
Animals	.01	-.08	.10	.05	.17	-.04	-.45*	.01	.10	-.32	-.07	.00	.04	.22	-.03	.10	.33	.17	-.16	-.07	-.00	.03	-.00
Relig Themes	.09	.07	-.01	.09	-.07	-.18	.08	.04	-.03	.02	.13	-.00	-.13	-.18	-.10	.05	.12	.06	.08	.00	.05	.28	.10
Relig Figures	-.03	.06	.02	.00	-.11	-.13	-.03	-.19	-.10	.02	-.02	-.08	-.27	.04	.22	-.09	.14	-.08	.17	.06	.17	.31	.20
Relig Locations	.05	-.05	-.14	-.10	-.24	-.42*	-.06	-.04	-.16	.09	.02	.18	-.24	-.02	.14	-.03	.28	-.17	.20	.25	.27	.48*	.35
Relig Objects	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Relig Events	.11	.13	.12	.25	.22	.21	.22	.24	.18	-.08	.23	-.15	.22	-.31	-.46*	.18	-.19	.33	-.18	-.30	-.32	-.23	-.33
Med Themes	-.59*	-.40*	-.41*	-.28	-.36	-.39*	-.48*	-.18	.29	-.02	.11	-.05	.35	.03	.45*	.21	-.11	.03	-.05	.17	-.09	-.00	-.02
Med Figures	-.67*	-.47*	-.40*	-.31	-.33	-.39*	-.51*	-.22	.29	.02	.13	.00	.42*	.03	.40*	.25	-.18	.08	-.14	.05	-.16	-.13	-.14
Med Locations	-.82*	-.46*	-.30	-.48*	-.33	-.34	-.40*	-.16	.22	-.02	.18	.04	.15	.03	.37	.21	.07	-.13	.08	.13	.10	-.05	.10
Med Objects	-.00	.01	-.41*	-.00	-.30	-.28	-.32	-.04	.31	.00	.02	-.11	.38*	.09	.39*	.22	-.15	.07	-.03	.29	-.16	.23	.02
Med Events	-.29	-.32	-.17	.02	-.18	-.20	-.28	-.14	.05	-.11	-.03	-.17	.05	-.09	.28	-.09	-.04	.06	-.02	.17	-.04	.05	.01

Note. PF = SF-36 Physical Functioning; RLP = SF-36 Role Limitations due to Physical Health; RLE = SF-36 Role Limitations due to Emotional Problems; EF = SF-36 Energy/Fatigue; EWB = SF-36 Emotional Well-Being; SF = SF-36 Social Functioning; P = SF-36 Pain; GH = SF-36 General Health; SCID = Independent Self-Construal; SCIT = Interdependent Self-Construal; SCM = Metapersonal Self-Construal; N = NEO-FFI-S Neuroticism; E = NEO-FFI-S Extraversion; O = NEO-FFI-S Openness; A = NEO-FFI-S Agreeableness; C = NEO-FFI-S Conscientiousness; FI = POMS Fatigue/Inertia; VA = POMS Vigour/Activity; DD = POMS Depression/Dejection; AH = POMS Anger/Hostility; CB = POMS Confusion/Bewilderment; TMD = POMS Total Mood Disturbance; Bodily = bodily misfortunes; Physical Agg = physical aggression; Drmr as Victim = aggression: dreamer as victim; Drmr Involved = dreamer-involved friendliness; Total Social = total social interactions; Activities = total activities; Physical Acts = physical activities; Loc Change = location changes; Total Phys = total physical activities; Human = human characters; Familiar = familiar characters; Unfamiliar = unfamiliar characters; Relig = religious; Med = Medical.

* $p < .05$

Dream Content and Waking Life Characteristics

Hypothesis 6. The prediction that dream content would be significantly related to scores on the SF-36 Health Survey, the POMS, the NEO-FFI-S, and the SCS was well-supported (see Table 6). Significant findings are listed below according to the related scale.

SF-36 Health Survey. Physical health subscales of the SF-36, including Physical Functioning (PF), Role Limitations due to Physical Health (RLP), Energy/Fatigue (EF), Pain (P), and General Health (GH) will first be discussed (as opposed to mental health subscales). Social Functioning (SF) will also be included in this group as the ability to function socially is partially reliant upon one's physical health. It should be noted again that higher scores on any of these subscales suggest better health or a higher level of functioning, while lower scores represent a lower level of functioning.

The most significant correlations occurred between the physical health subscales of the SF-36 (PF, RLP, EF, SF, P, GH) and Misfortunes (Injuries/Illnesses) in dream content, $r = -.80$ ($p < .05$), $r = -.62$ ($p < .05$), $r = -.53$ ($p < .05$), $r = -.41$ ($p < .05$), $r = -.52$ ($p < .05$), and $r = -.49$ ($p < .05$), respectively. As physical functioning, energy, vitality, and general health decreased, and as social functioning and roles became more limited as a result, the occurrence of injuries and illnesses in dreams increased. Generally speaking, as physical health declined, individuals dreamed more of injuries and illnesses. Lower scores on PF and RLP were also significantly correlated with a higher number of Body Parts in dreams, $r = -.40$ ($p < .05$) and $r = -.54$ ($p < .05$), respectively. In terms of specific body parts, PF and RLP were only significantly related to the subcategory of Head, $r = -.46$ ($p < .05$) and $r = -.48$ ($p < .05$), respectively (see Table 6).

Those scoring lower on the EF subscale (i.e., those with lower energy levels and more fatigue) displayed a higher number of Physical Movements (e.g., walking, running) in their

dreams, $r = -.53$ ($p < .05$), while those lower on the P subscale (i.e., those with more pain) had more Animals in their dreams, $r = -.45$ ($p < .05$). Higher scores on RLP (i.e., those with fewer role limitations due to physical health) and GH were related to a higher frequency of Total Social Interactions in dreams, $r = .42$ ($p < .05$) and $r = .39$ ($p < .05$), respectively. Finally, the original category of Total Medical themes was significantly correlated with multiple subscales of the SF-36, including PF, RLP, SF, and P, $r = -.59$ ($p < .05$), $r = -.40$ ($p < .05$), $r = -.39$ ($p < .05$), and $r = -.48$ ($p < .05$), respectively (see Table 6). It appears that those who reported lower physical health also reported more medical themes in their dreams.

Mental health subscales of the SF-36, including Emotional Well-Being (EWB) and Role Limitations due to Emotional Problems (RLE) displayed quite different correlations. Both RLE and EWB were significantly related to Sadness in dream content, $r = -.42$ ($p < .05$) and $r = -.49$ ($p < .05$), respectively. It appears that participants reporting lower levels of mental and emotional health had more indications of sadness in their dreams. Those scoring lower on EWB also had more Total Characters, $r = -.49$ ($p < .05$), more Human Characters, $r = -.45$ ($p < .05$), and more Familiar Characters, $r = -.44$ ($p < .05$). Finally, RLE was moderately related to Total Medical themes, $r = -.41$ ($p < .05$) (see Table 6).

POMS. Those rating higher in Depression/Dejection displayed a higher frequency of Sadness, $r = .53$ ($p < .05$), Anger, $r = .41$ ($p < .05$), Total Aggressive Acts, $r = .45$ ($p < .05$), Aggressions (Dreamer as Victim), $r = .40$ ($p < .05$), and Location Changes, $r = .53$ ($p < .05$), in dream content. Those higher in Tension/Anxiety also reported more Anger in their dreams, $r = .47$ ($p < .05$). Surprisingly, significant correlations were observed between Body Parts (Extremities) and 4 of the 6 subscales of the POMS, including Tension/Anxiety, $r = -.40$ ($p < .05$), Depression/Dejection, $r = -.47$ ($p < .05$), Anger/Hostility, $r = -.48$ ($p < .05$), and

Confusion/Bewilderment, $r = -.42$ ($p < .05$), as well as the composite Total Mood Disturbance (TMD) score, $r = -.45$ ($p < .05$) (see Table 6). No significant correlations were observed between Extremities and the subscales of Fatigue/Inertia and Vigour/Activity, which represent more physical aspects of moods compared to the other 4 strictly emotional subscales. It appears then that extremities were less reported in the dreams of individuals with more emotional disturbance, a finding further supported by the correlation between extremities and TMD. Many significant correlations also occurred between the POMS and the categories of Characters, Human Characters, and Familiar Characters (see Table 6). In general, those with higher levels of mood disturbance reported more familiar human characters.

NEO-FFI-S. Very few significant correlations occurred between the subscales of the NEO-FFI-S and dream content (see Table 6). Those that did occur do not contribute to the areas of interest within this study and are therefore not worth noting.

Self-Construal Scale. Independent Self-Construal was significantly related to Dreamer-Involved Friendliness, $r = .46$ ($p < .05$), but not Total Friendliness. Interdependent Self-Construal was significantly related to Total Acts of Aggression, $r = .64$ ($p < .05$), Aggression (Dreamer as Victim), $r = .38$ ($p < .05$), and Total Social Interactions, $r = .50$ ($p < .05$) (see Table 6). Participants scoring high on Interdependent Self-Construal appeared to have more social interactions in their dreams, but these tended to be of an aggressive nature. No significant correlations were observed between dream content and Metapersonal Self-Construal.

Discussion

Dream Attitudes

The initial purpose of Study 1 was to survey general dream attitudes using the Dream Attitudes Scale. Overall findings from both Study 1 and Study 2 suggest that people believe their

dreams contain important information. This is in contrast to conclusions made by Watkins (1986), who proposed that Western culture has deemed dreams to be insignificant and meaningless (as cited in Meyer & Shore, 2001). While this may have been the view in 1986, the current study suggests that North American views have changed and are far more reflective of findings by Schredl et al. (1996), who reported the majority-held belief that dreams reflect waking life. The finding that nearly a quarter of the participants in Study 1 were not sure whether their dreams contain important information is in contrast to Vann and Alperstein's (2000) statement that, "Individuals… [display] two disparate cultural beliefs about dreams: dreams mean something, or, dreams mean nothing." This may be due to the mean age of 19.83 years reported in Study 1, as younger individuals are less likely to have developed well-thought out attitudes about their dreams. On the other hand, it may reflect an overall lack of knowledge by both the general public and the scientific community as to the nature of dreams.

There seems to be some consensus between Study 1 and Study 2 on what information is believed to be in dreams. *Decisions I am currently making* and *relationships* appeared as the most frequently indicated dream attitudes in both studies. This suggests a strong inclination towards the present in dream attitudes, although a relatively high number of people also believed their dreams contain information about the past. The least common attitudes were that dreams contain information about physical health and spiritual beliefs. These findings are likely due to the low mean ages reported in both studies, as younger individuals are less likely to display a great concern with physical health or a well-developed set of spiritual beliefs.

In general, findings regarding specific dream attitudes are reflective of Schredl et al. (1996) and suggest a common belief that dreams contain information about waking life. The majority of participants from both studies indicated more than one type of dream attitude, clearly

believing in some continuity between waking life and dreams. Furthermore, although a small number of participants did not believe their dreams contain any important or relevant information, this minority still reported the belief that dreams contain information from at least one aspect of their waking life. Therefore, even individuals who do not believe their dreams are important appear to maintain the belief that their dreams are reflective of their waking lives. This attitude reflects the continuity hypothesis of dreaming (Hall & Nordby, 1972), in so far that the vast majority of individuals believe their dreams contain some information from their waking lives.

Another commonality observed between the two studies was the finding that women are more likely to believe that dreams reflect their spiritual beliefs. This is not surprising, as recent research has suggested that women are more likely to report higher levels of spirituality in their waking lives compared to men. Stark (2002) has found this pattern to be consistent across cultures and religions.

In general, hypotheses 1 through 3 were not well-supported in either study. The only significant correlation to appear was that between the pain subscale of the SF-36 Health survey and the attitude that dreams reflect physical health in Study 1. However, this correlation was weak and barely reached significance. While it may be suggestive of a relationship (i.e., those with more pain may be inclined to believe their dreams reflect their physical health), it is not strong enough to support the prediction overall. It is possible that a higher participant count may have revealed a stronger relationship, but further research is required. It can be concluded that although people believe their dreams reflect aspects of their waking lives (as previously determined by general dream attitudes), their specific dream attitudes do not reflect their most prominent characteristics (physical health, mood, and personality). That is to say, individuals

with poor physical health do not believe their dreams reflect this. Similarly, those with mood disturbances such as high depression do not believe their dreams reflect their moods.

In terms of self-construal, metapersonal individuals were more likely to believe their dreams reflect their spiritual beliefs. DeCicco and Stroink (2003) have reported that individuals high in metapersonal self-construal see themselves as connected to all life, having experienced a shift to a universal focus of the self. Furthermore, DeCicco and Stroink (2003) describe the metapersonal as the only self-construal which encompasses the spiritual self. Current findings reflect such a profile of the metapersonal self. Independent self-construals were also more likely to believe their dreams reflect their spiritual beliefs in Study 2, and it should be noted that metapersonal and independent self-construal displayed a very strong positive correlation with one another. DeCicco and Stroink (2003, 2005) have found consistent and significant correlations between the independent self and the metapersonal self. The finding that independent self-construal was moderately related to the belief that dreams reflect mood and future events reflects no known research regarding the construct, but might add to the profile of the independent self. These findings may provide an exception to the conclusion made from hypotheses 1 through 3, in that metapersonal individuals' dream attitudes do moderately reflect at least one prominent waking life characteristic – their spiritual beliefs.

Although the fifth hypothesis regarding a relationship between dream attitudes and dream content was somewhat supported, the majority of the significant relationships had no theoretical underpinnings and were not considered meaningful. Worth mentioning is the finding that those who believed their dreams reflect their physical health reported more body parts in their dreams, possibly due to a preoccupation with their physical health. Also, those who believe their dreams reflect their relationships reported fewer physical acts of aggression. However, the remaining

correlations were small in number and weak to moderate in significance. Such findings indicate that dream attitudes do not accurately reflect dream content and that individuals are not dreaming about what they think their dreams mean. This suggests one of two things: 1) Dreams are not accurately reflecting all aspects of waking life, resulting in inaccurate dream attitudes, or 2) People's dreams do accurately reflect their waking life, yet people are deficient in their awareness of dream content. The latter statement is supported by the findings from Study 2. That is, the general population's lack of awareness regarding their dreams.

Dream Content and Waking Life Characteristics

The most significant relationship by far was observed between dream content and waking life characteristics, providing ample support for the continuity hypothesis of dreaming. At least within the limits of this study, physical health appears to be the most frequently incorporated waking life characteristic in people's dreams. Those with lower levels of physical health and physical functioning report more of the following in their dreams: bodily misfortunes, injuries and illnesses, medical themes (including figures such as doctors and nurses, as well as locations such as hospitals), body parts, and specifically more mentions of the head. While the precise nature of this relationship cannot be determined at present, this list of items is evocative of a preoccupation during dreamtime with the physical body and its weakening or deterioration. This suggests that dreams are reactive to biologic function, a hypothesis which has been supported by Mitchell (1923) and Smith (1984). This is especially interesting because current physical health was one of the least reported dream attitudes in both participant samples. Very few people with poor physical health believe their dreams reflect this, indicating that people are highly unaware of what their dreams are saying about their health. Misfortunes were previously linked to poor physical health by Heather-Greener et al. (1996) in a sample of migraine-sufferers. Although

higher frequencies of aggressive acts, anger, and apprehension were also observed within the 1996 sample, these additional findings were not replicated in Study 2.

The term “symptomatic” may be the most appropriate to describe dreams which are reflective of current physical health. This was a term used in the mid-nineteenth century by M. Macario to describe health dreams which occurred during the course of a disease or dysfunction (Van de Castle, 1994). This seems to accurately describe the dreams reported in this study. The dreams were likely not prodromal, as poor physical health was reported consecutively with, as opposed to following the dream content. Considering the amount of evidence for a relationship between dreams and physical health, one cannot help but speculate that the Greek physician Galen was able to make valuable inferences from dreams about the health of his patients. His belief that dreams contain signs of imbalances in the body is one possible explanation for the findings observed here (Van de Castle, 1994).

To add to the findings, those with less energy and vitality display more physical movements such as walking and running in their dreams. In this case dream content may be reflective of a waking preoccupation with energy and movement, providing further support for the continuity hypothesis. However, this may also be evidence of a compensatory function of dreams, as originally proposed by Jung (1964). People who have less energy and are less physically active in their waking lives may be making up for this in their dreams. Essentially, they may be doing in their dreams what they cannot do in their daily lives. This may also explain why those with more role limitations due to physical health reported more social interactions in their dreams.

While there is little support for Jung’s (1964) theory to date, the fact that support for the compensatory theory occurred alongside support for the continuity hypothesis is quite intriguing.

Traditionally the theories have been discussed in a mutually exclusive manner (e.g., Samson & De Koninck, 1986); either the continuity hypothesis is correct and the compensatory theory is wrong, or vice-versa. Findings from Study 2 suggest that this may not be the case, as both theories appear to be supported within the same sample. If indeed they are (and the current findings are not simply examples of continuity between waking preoccupations and dreams), there may exist the need to redefine these theories. Rather than having a mutually exclusive relationship, compensatory dreams may be a subtype of continuous ones. In this light, compensatory dreams can be seen as continuous because they are still a product of (and therefore reflective of) waking experiences. The continuity hypothesis hardly denotes a function of dreams (as does the compensatory theory), but rather describes their relationship with waking life. In effect, the theories may be able to co-exist. The continuity hypothesis may provide an overarching description of the relationship between dreams and waking life, with compensation as one of many possible ways in which waking life is reflected in dreamtime. Additional research is clearly needed to examine the extent to which these theories co-exist.

The finding that individuals with more pain display more animals in their dreams reflects no known previous research. This is especially interesting because this was the only significant correlation observed with animals in dreams. Further research is required in order to increase our understanding of this relationship.

Mental health is also well-reflected in dream content. Those lower in emotional well-being and higher in depression and dejection mention feelings of sadness more frequently. Sadness was also more common in individuals with high role limitations due to emotional problems, further supporting this relationship. This suggests that dreams are reactive to mental and emotional functioning as well. Depressed individuals also display more anger, aggressive

acts, and aggressions in which the dreamer is the victim. This indicates more violence and negativity in the dreams of depressed people, likely due to the accompanying emotions of dejection, pessimism, and anxiety.

According to the American Psychiatric Association Diagnostic and Statistical Manual of Mental Disorders (4th ed.) text revision (2000), excessive or inappropriate guilt and a preoccupation with death and/or suicide are potential symptoms of a major depressive episode. This could explain why the depressed dreamer sees him/herself more often as the victim of aggression. This may be a continuation of a preoccupation with death or suicide, or the dreamer may be feeling "attacked" by excessive amounts of guilt. Furthermore, Beck (1967) describes a cognitive triad whereby depressed individuals commonly display negative views of themselves, their present situations, and their futures. It appears that some of these negative views are reflected in dream content. These findings support previous research which has found more masochism in the dreams of depressed individuals, wherein the dreamer was the recipient of painful experiences (Beck & Ward, 1961; Hauri, 1976). Findings also support research which has found greater negative affect (Cartwright, 1991; Schredl & Engelhardt, 2001) as well as more aggression (Pesant & Zadra, 2006) in the dreams of the depressed.

Mental health is also related to frequency of characters in dreams. Lower emotional well-being (as determined by the SF-36) and higher mood disturbance (as determined by high scores on emotional factors of the POMS and the total mood disturbance score) are related to more familiar human characters in dreams. This may be compensatory, resulting from a longing for more social support by these individuals. Since the characters are more likely to be familiar, this indicates a preoccupation with loved ones and significant others by emotionally unhealthy people. This group (low mental health) also reports more extremities (arms and legs) in their

dream content. The sharp division between the frequency of heads and the frequency of extremities in dreams implies that people with poor physical health report more heads, while those with poor mental health report more extremities. The concurrence between the emotional subscales of the SF-36 and the emotional subscales of the POMS is high, strengthening the conclusions regarding mental health and dream content.

Individuals high on independent self-construal tend to report more dreamer-involved friendliness in their dreams. This may be reflective of the independent individual's preoccupation with him/herself, as opposed to the interdependent's tendency to construe him/herself in terms of connectedness with other people. The finding that independent individuals do not display more total acts of friendliness, but rather only acts of friendliness involving themselves further supports this. Those high in interdependent self-construal do, however, report more social interactions and specifically more acts of aggression in their dreams. This increased social interaction in dreams reflects the interdependent's preoccupation with interconnectedness. It is unknown, however, why there was increased aggression specifically.

The lack of significant findings between dream content and the NEO-FFI-S appears to suggest that personality is not related to dream content. However, keeping in mind the number of significant relationships in this study which support the continuity hypothesis of dreaming, as well as original findings by Bell and Hall (1971) regarding an accurate dream-based profile of a child-molester's personality, it seems premature to conclude that dreams do not reflect personality. Before such a conclusion can be made, further research using alternative personality measures should be performed. Additional dream content should also be examined.

General Conclusions, Limitations, and Suggestions for Future Research

It has been thoroughly demonstrated that dreams are reflective of predominant waking life characteristics (physical and mental health, moods, self-construal), which strongly supports the continuity hypothesis proposed by Hall and Nordby (1972). Yet people appear to be highly unaware of their dreams, as was determined by the finding that dream attitudes do not reflect dream content. While most people believe that dreams reflect waking life, they are inaccurate in determining specifically which waking life characteristics are most reflected in their dreams. This inaccuracy about dreams and the information they contain suggests a lack of insight and awareness for dreams on the part of the general population. Furthermore, the lack of awareness of manifest dream content indicates that people pay little attention to their dreams. The extent of this lack of attention to dreams is well-represented by the finding that depressed individuals report more sadness in their dreams but are not any more likely to believe their dreams reflect their moods. Many similar examples can be taken from this study, and what amounts is a picture of highly informative dreams from which little information is being realized. If people took more time to ponder the information held within their dreams, they would likely develop a greater awareness of their waking life, for the information is reflective of it.

Such an implication can be extended into clinical work. Teaching individuals to better reflect on their dreams could help clinicians increase a patient's self-awareness, particularly of their physical, mental, and emotional health. Incorporating forms of dream therapy into clinical work would also likely prove beneficial due to the strong link between dreams and waking life. Furthermore, many findings in this study add to various mental health profiles. For example, the finding that emotionally disturbed individuals mention more extremities in their dreams, or the

finding that depressed individuals display more aggression in their dreams could facilitate and/or contribute to a mental health diagnosis.

Access to the dreams of a larger participant pool would add greatly to these findings, yet such access is difficult to attain due to commitment problems with participants handing in full series of dream reports. This problem was overcome in the present study by accessing assignments from T. DeCicco's dreams and dreaming course. This brings up a possible limitation of the research on dream content. The fact that the 27 participants were part of a dreams and dreaming course could have skewed the results. These individuals may have changed their attitudes and beliefs regarding dreams as a result of course material. However, this does not appear to be the case, as general dream attitudes in this sample were found to be very similar to those in the sample from Study 1.

The demographic characteristics also limit the generalizability of these findings. All participants were undergraduate university students, most were female, and most were in their late teens to early twenties, with very few adults in their forties, fifties, and sixties. It is very possible that middle-aged and older adults would display very different attitudes towards dreams and/or a higher awareness of dream content. Research with older age groups would provide insight into how dream attitudes change and develop over the life span.

Further research is needed to determine the relationship between dreams and other waking life characteristics, so as to potentially widen the support for the continuity hypothesis of dreaming. The present study has made clear the need for similar research using different measures of personality. Since personality is such a crucial component of our waking lives, it is important to determine its relationship with dream content. Additional dream content should also be explored. The use of the original categories of medical and religious themes contributed

significantly to the current findings, which encourages the use of categories other than those from the Hall and Van de Castle (1966) coding system. This also stresses the need for an even broader set of coding categories so as not to limit research.

The findings here lay the groundwork for future research which can expand on and develop our understanding of dream attitudes, dream content, and their relationships with waking life characteristics. A strong case has been made for the ability of our dreams to reflect our waking lives. Perhaps an even stronger case has been made for the need for greater awareness of our dreamtime. While dreaming has been a source of intrigue for thousands of years, our empirical understanding of this nightly mentation is still very limited. Clearly there remains a great demand for dream research of all kinds.

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Appendix A

Medical Outcomes Study SF 36-Item Health Survey

1. In general, would you say your present health is:

(Circle One Number)

Excellent	1
Very good	2
Good	3
Fair	4
Poor	5

2. **Compared to 6 months ago**, how would you rate your health in general **now**?

(Circle One Number)

Much better now than 6 months ago	1
Somewhat better now than 6 months ago	2
About the same	3
Somewhat worse now than 6 months ago	4
Much worse now than 6 months ago	5

The following items are about activities you might do during a typical day.
Has **your health in the past 6 months limited you** in these activities? If so, how much?

(Circle One Number on Each Line)

		Yes, Limited a Lot	Yes, Limited a Little	No, Didn't Limit at All
3.	**Vigorous activities,** such as running, lifting heavy objects, participating in strenuous sports	1	2	3
4.	**Moderate activities**, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf	1	2	3
5.	Lifting or carrying groceries	1	2	3
6.	Climbing **several** flights of stairs	1	2	3
7.	Climbing **one** flight of stairs	1	2	3
8.	Bending, kneeling, or stooping	1	2	3
9.	Walking **more than a mile**	1	2	3
10.	Walking **several blocks**	1	2	3
11.	Walking **one block**	1	2	3
12.	Bathing or dressing yourself	1	2	3

During the **past 6 months**, have you had any of the following problems with your work or other regular daily activities **as a result of your physical health**?

(Circle One Number on Each Line)

		Yes	No
13.	Cut down the **amount of time** you spent on work or other activities	1	2
14.	**Accomplished less** than you would like	1	2
15.	Were limited in the **kind** of work or other activities	1	2
16.	Had **difficulty** performing the work or other activities (for example, it took extra effort)	1	2

During the **past 6 months,** have you had any of the following problems with your work or other regular daily activities **as a result of any emotional problems** (such as feeling depressed or anxious)?

(Circle One Number on Each Line)

		Yes	No
17.	Cut down the **amount of time** you spent on work or other activities	1	2
18.	**Accomplished less** than you would like	1	2
19.	Didn't do work or other activities as **carefully** as usual	1	2

20. During the **past 6 months,** to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbors, or groups?

(Circle One Number)

Not at all 1
Slightly 2
Moderately 3
Quite a bit 4
Extremely 5

21. How much **bodily** pain have you had during the **past 6 months**?

(Circle One Number)

None	1
Very mild	2
Mild	3
Moderate	4
Severe	5
Very severe	6

22. During the **past 6 months,** how much did **pain** interfere with your normal work (including both work outside the home and housework)?

(Circle One Number)

Not at all	1
A little bit	2
Moderately	3
Quite a bit	4
Extremely	5

These questions are about how you have felt and how things have been with you **during the past 6 months**. For each question, please give the one answer that comes closest to the way you have been feeling.

How much of the time during the **past 6 months**…

(Circle One Number on Each Line)

		All of the Time	Most of the Time	A Good Bit of the Time	Some of the Time	A Little of the Time	None of the Time
23.	Did you feel full of pep?	1	2	3	4	5	6
24.	Have you been a very nervous person?	1	2	3	4	5	6
25.	Have you felt so down in the dumps that nothing could cheer you up?	1	2	3	4	5	6
26.	Have you felt calm and peaceful?	1	2	3	4	5	6
27.	Did you have a lot of energy?	1	2	3	4	5	6
28.	Have you felt downhearted and blue?	1	2	3	4	5	6
29.	Did you feel worn out?	1	2	3	4	5	6
30.	Have you been a happy person?	1	2	3	4	5	6
31.	Did you feel tired?	1	2	3	4	5	6

32. During the **past 6 months,** how much of the time have your **physical health or emotional problems** interfered with your social activities (like visiting with friends, relatives, etc.)?

(Circle One Number)

All of the time 1
Most of the time 2
Some of the time 3
A little of the time 4
None of the time..... 5

How TRUE or FALSE is <u>each</u> of the following statements for you (regarding your present state of health).

(Circle One Number on Each Line)

		Definitely <u>True</u>	Mostly <u>True</u>	Don't <u>Know</u>	Mostly <u>False</u>	Definitely <u>False</u>
33.	I seem to get sick a little easier than other people.....	1	2	3	4	5
34.	I am as healthy as anybody I know.	1	2	3	4	5
35.	I expect my health to get worse.	1	2	3	4	5
36.	My health is excellent.	1	2	3	4	5

Appendix B

Appendix C

Appendix D

Appendix E

Dream Attitudes Scale

Please answer the following questions in relation to **your own** beliefs about dreams.

1. I believe dreams contain important/relevant information (check one).

_____ True _____ False _____ Not Sure

2. I believe dreams contain information about (check all options that pertain to you):

_____ My personality

_____ My moods

_____ My spiritual beliefs

_____ My current physical health

_____ My past

_____ Decisions I am currently making

_____ My relationships

_____ Future events

_____ Other, please identify: _____

Appendix F

Dream Attitudes Scale (Revised)

Please answer the following questions in relation to **your own** beliefs about dreams.

1. I believe dreams contain important/relevant information (check one).

_____ True _____ False _____ Not Sure

2. I believe dreams contain information about (check all options that pertain to you):

_____ My personality

_____ My moods

_____ My spiritual beliefs

_____ My current physical health

_____ My past

_____ Decisions I am currently making

_____ My relationships

_____ Future events

_____ Other, please identify: _____

3. If you have checked more than one option above, please indicate which **one** is most important/significant to you by circling that choice.

Appendix G

Demographics

A. Sex (circle one): Male Female

B. Age: _____

C. Ethnicity/Race (circle one):

1. Black/African/Caribbean
2. Asian/Pacific Islander
3. Caucasian/White/European
4. Hispanic/Latino/South American
5. Native/Aboriginal
6. Middle Eastern/North African
7. Other, please specify: _____

D. Marital Status (circle one):

1. Married
2. Monogamously Coupled
3. Single
4. Divorced
5. Other, please specify: _____

E. Education: Years of education since high school: _____

Appendix H

Consent Form

This study will be looking at the relationship between people's dream attitudes (beliefs about what dreams mean and whether or not they contain important information) and waking life characteristics, including personality, mood, physical health, and self-construal. Self-construal refers to a person's beliefs about meaning, purpose, and identification with other people.

Primary Researcher: David King, available by e-mail: davidking2@trentu.ca
Researcher's Advisor: Teresa DeCicco, available by e-mail: teresadecicco@trentu.ca

In order to pursue this research, we are inviting you to participate in this study. Your participation requires the completion of 5 questionnaires: the Dream Attitudes Scale (to measure beliefs about dreams), the SF-36 Health Survey (to measure physical and emotional health), the Profile of Mood States Scale (to measure mood state), the NEO Five-Factor Inventory Short Form (to measure personality), and the Self-Construal Scale (to measure self-construal). Completion of these surveys should take between 30 and 60 minutes. The study will involve no risk to you. In fact, you may find the experience of participating both positive and informative. Your participation in the research will contribute to our understanding of the relationship between dream attitudes and waking life characteristics.

You are free to refuse to complete any task or answer any question. You are also free to withdraw your consent at any time and terminate your participation without prejudice. The results obtained from the experiment will be used for research purposes only and complete confidentiality of the results will be maintained. You may contact either the primary researcher or the researcher's advisor at any time at the above e-mail addresses. An identification number will be assigned to your data in order to preserve anonymity and only the primary researcher and the researcher's advisor will have access to the records. Your name and student number are requested at the bottom of this page only for purposes of assigning your bonus mark for PSYC-101. This consent form will NOT be attached to or associated with your completed surveys.

I, the undersigned participant, have been informed of the nature of this study as described above and **freely give my informed consent** to participate. I understand that I am **free to leave** at any time before or during the study. I understand that **privacy/confidentiality** of my participation and performance in this study will be maintained in the following manner: my name will be known only by the researcher and will not be part of any public statements or documents. I understand that I will be given an account of the nature and purpose of this study immediately after participation. An account of the study's findings will be provided by July 1, 2006, at which time this information will be sent to me by email at the following e-mail address: _____ **(indicate only if interested in receiving a summary of the results)**. I permit data and records from this research to be used in research publications or for teaching so long as my privacy and confidentiality are protected. I understand that I will receive bonus marks for my participation in this study. I understand that this research project has been reviewed and received ethical approval by the Research Ethics Committee of the Department of Psychology, Trent University.

Name: _____ Student Number: _____

Signed: _____ Date: _____

Appendix I

Participant Feedback Sheet

This study will be looking at the relationship between people's dream attitudes (beliefs about what dreams mean and whether or not they contain important information) and waking life characteristics, including personality, mood, physical health, and self-construal. Self-construal refers to a person's beliefs about meaning, purpose, and identification with other people.

Dream attitudes were measured using the Dream Attitudes Scale (DAS), which was designed for the purpose of this study by the primary researcher and his advisor. This survey was in a checklist format and included possible dream attitudes (such as "I believe dreams contain information about my current physical health") that may reflect waking life characteristics.

Mood was measured using the Profile of Mood States (POMS) scale. Personality was measured using the NEO Five Factor Inventory (NEO-FFI) Short Form. Physical health was measured using the Medical Outcomes 36-Item Short Form (SF-36) Health Survey. Finally, self-construal was measured using the Self-Construal Scale (SCS).

The relationship between dream attitudes and waking life characteristics will be determined in the following manner:

If dream attitudes are related to waking life characteristics, we would expect people with physical health problems to believe that their dreams contain information about physical health. Similarly, we would expect people who are depressed to believe that their dreams contain information about their mood. Such relationships will be measured using correlations (which determine if a relationship exists between 2 variables; it does not, however, determine cause and effect).

Further relationships that may be examined include differences between male and female dream attitudes, differences in dream attitudes between ethnic groups, and differences between age groups.

We thank you for your participation in this study. If you have further questions regarding this study at any time, please contact one of the following individuals:

Primary Researcher: David King, available by e-mail: davidking2@trentu.ca
Researcher's Advisor: Teresa DeCicco, available by e-mail: teresadecicco@trentu.ca

Appendix J

Independent t-tests for Sex Differences (Study 1)

Appendix K

Independent t-tests for Sex Differences (Study 2)