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Fantasy Proneness And Psychological Coping

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FANTASY PRONENESS AND PSYCHOLOGICAL COPING

by

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This dissertation meets the standards for appearance, conforms to the style and format requirements of the Graduate School of the University of North Dakota, and is hereby approved.

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ABSTRACT

In this study, objective measures of self-esteem, satisfaction with life, trait anxiety, and schizotypal psychopathology were administered to 493 subjects representing the full range of fantasy proneness as determined by their scores on the Inventory of Childhood Memories and Imaginings (ICMI); in addition, subjects selected for high, medium, and low levels of fantasy proneness were administered measures of state anxiety and coping skills during a stressful laboratory condition. This was done in order to contribute to the construct validity of fantasy proneness and to provide empirical inquiry into the nature of fantasy proneness as a psychological coping strategy.

In replication of earlier research, elevated scores on the ICMI correlated with a greater incidence of childhood trauma, higher trait anxiety, and deeper involvement in schizotypal thinking and experiences. This finding is consistent with previous studies which indicated that a sizable minority of fantasy prone subjects exhibit serious psychopathology. Despite these findings, the ICMI failed to correlate significantly with measures of self-esteem or satisfaction with life, indicating that associated negative features of fantasy proneness do not preclude a healthy level of adjustment. High fantasizers did not differ from other subjects in their level of situational anxiety or their coping responses to a laboratory condition designed to elicit performance anxiety. However, high fantasizers did exceed the medium and low fantasizers in their self-reported use of fantasy and imagination as a coping device. Similarly, the high fantasizers were significantly more likely than their less fantasy prone counterparts to report that fantasy and imagination were very effective in helping them cope. However, the overall lack of significant differences in coping styles among high, medium, and low fantasizers

lent credence to earlier reports that the majority of high fantasizers are relatively well-adjusted individuals. Within each of the three groups, heightened levels of anxiety were correlated with indices of distress and perceived lack of psychological resources needed to cope with the situation. There was inconclusive evidence that medium fantasizers were more adversely affected by heightened levels of situational anxiety than either high or low fantasizers.

CHAPTER 1: INTRODUCTION

The current interest in fantasy proneness developed out of attempts to find stable personality and developmental correlates of hypnotic ability, particularly those attributes which contribute to superb hypnotic performances. Since its inception, the construct of fantasy proneness (Wilson & Barber, 1981/83) has generated a body of research which has attempted to validate the construct (Council, Greyson, Huff, 1986; Huff & Council, 1987; Council & Huff, 1990; Lynn & Rhue, 1986), and delineate its associated features (Myers & Austrin, 1985; Rhue & Lynn, 1987a) and developmental antecedents (Lynn & Rhue, 1988; Rhue & Lynn, 1987b).

Fantasy Proneness and Hypnosis

Prior to Wilson and Barber's (1981/83) initial description of the fantasy prone personality, a number of researchers had linked hypnotic talent with various cognitive attributes, including vividness of mental imagery and imaginal skills. For example, Sutcliffe, Perry, and Sheehan (1970) proposed that hypnotic ability depends not so much on specific induction techniques as on the characteristics of the hypnotic subject. They suggested that the hypnotic relationship constitutes a form of legitimized fantasy or make-believe (see also Orne, 1959), and that a person who is already prone to fantasize would make an ideal hypnotic subject. However, fantasy involvement, as measured by dream report, was not significantly related to hypnotizability in the results obtained by Sutcliffe et al. (1970). They did, however, note a significant correlation between mental imagery and hypnotizability, with fantasizers tending to be classified as vivid imagers.

A study by Spanos and McPeake (1975) found that hypnotic ability was significantly determined by both involvement in everyday imaginative activities and attitudes toward

hypnosis and hypnotic susceptibility. They concluded that an emphasis on imaginative activities in many aspects of one's life would tend to foster a willingness to engage in hypnotic experiences. Similarly, in a review of the literature, Singer and Pope (1981) stated that there was clear evidence of a relationship between daydreaming ("waking fantasy"), imagery vividness, and hypnotic susceptibility.

Wilson & Barber (1981) first described the fantasy prone personality after conducting extensive interviews comparing excellent with average hypnotic subjects. Subjects with superb hypnotic talent appeared unique in that they reported a high degree of involvement in a private world of fantasy and imagination, often spending the majority of their waking hours in fantasy. In addition, Wilson and Barber (1981/83) found that many of their fantasy prone subjects reported vivid daydreams and memories (often experienced in all five sensory modalities), and belief in paranormal phenomena. Fantasy prone persons (also referred to as high fantasizers throughout this paper) appeared to find imagining and daydreaming so gratifying that they reported that life would hardly be worth living without these activities. The Wilson and Barber (1983) study used only female subjects, and recent studies of fantasy proneness have indicated that females tend to score higher on a measure of fantasy proneness than males (e.g., Myers & Austrin, 1985). It should also be noted that the only paper-and-pencil measure of fantasy proneness, the Inventory for Childhood Memories and Imaginings, was adapted by Wilson and Barber (1981) from their 103-item Memory, Imagining, and Creativity Interview Schedule.

Subsequent investigations have generally supported Wilson and Barber's (1981/83) description of the fantasy prone individual, but significant discrepancies have also been reported. One possible reason for such discrepancies was due to bias in Wilson and Barber's (1981/83) method for selecting subjects; i.e., their subjects were selected on the basis of hypnotic responsivity alone, which virtually negated the possibility of studying fantasy prone subjects who did not exhibit hypnotic talent. Lynn and Rhue (1986) found

only a weak association between fantasy proneness and hypnotic ability; this finding was replicated in a recent study by Council and Huff (1990), who also found that fantasy prones were significantly more hypnotizable than low fantasizers, but did not differ significantly from the middle comparison group. It should be noted that other researchers (e.g., Council, Kirsch, and Hafner, 1986; Kirsch, Council, and Mobayed, 1987) have produced evidence that imaginative ability/involvement may be only indirectly related to hypnotic responsivity.

Despite evidence (e.g., Lynn & Rhue, 1986) suggesting that fantasy proneness is only moderately predictive of hypnotic talent, research has indicated that fantasy prones do possess several characteristics thought to mediate hypnotic responsivity. For example, a number of researchers (e.g., Council, Greyson, & Huff, 1986; Lynn & Rhue, 1986; Myers & Austrin, 1985) have found a significant correlation between fantasy proneness, hypnotizability, and scores on the Tellegen Absorption Scale (Tellegen & Atkinson, 1974), which assesses the tendency to become deeply involved in sensory and imaginative processes. In addition, both Lynn and Rhue (1986, 1987a) and Council and Huff (1990) found that fantasy prones produced significantly higher scores than medium and low fantasizers on the Tellegen Absorption Scale. Absorption refers to the total attentional fixation on a stimulus which renders the individual relatively immune to distracting stimuli; it is "a full commitment of available perceptual, motoric, imaginative and ideational resources to a unified representation of the attentional object" (Tellegen & Atkinson, 1974, p. 274). For example, a person can be absorbed in a visual stimulus, a symphony, in his or her private thoughts, etc. This description of absorption is congruent with the cognitive style reported by Wilson and Barber's (1983) fantasy prone subjects, who tended to spend a majority of their waking time immersed in their private fantasy worlds, and sometimes even using fantasy to block out or deny unpleasant aspects of their existence.

Other hypothesized mediators of hypnotic ability include the experience of and tolerance for unusual states (As, O'Hara, & Munger, 1962), which is certainly in harmony with the image of fantasy proneness presented in Wilson and Barber (1983), and a construct which As (1962) referred to as role absorption. Basically, role absorption "includes earlier experiences of being strongly absorbed in, or even enraptured by, something ... experiences of changing inner feelings and self-perceptions as a result of changes in the social environment, and a vivid imagination that may even take on reality character" (As, 1962, p. 120). The fact that high fantasizers report similar experiences would possibly account for Wilson and Barber's (1983) contention that fantasy prones tend to exhibit excellent hypnotic ability. However, as previously mentioned, several investigators (Rhue & Lynn, 1987a; Council & Huff, 1990) found only a weak association between scores on a measure of fantasy proneness and a measure of hypnotic responsivity, which is interesting in light of recent empirical evidence (i.e., Council, Kirsch, & Hafner, 1986) suggesting that expectancy effects, rather than imaginative ability, are predominantly responsible for the quality of hypnotic performances.

In summary, fantasy proneness remains a somewhat elusive construct which has been only partially operationalized and validated. The literature on fantasy proneness has shown that high fantasizers are significantly more suggestible than low fantasizers but there were no differences between high and medium fantasizer groups. This finding is congruent with a growing body of evidence (e.g., Council et al. 1986) suggesting that hypnotic responsivity is mediated by a wide range of variables related to cognitive processes and learning. Another consistent finding is that high fantasizers outscore medium and low fantasizers in reporting a tendency to become deeply involved in sensory and imaginative processes.

Developmental Antecedents

In Wilson and Barber's (1981/83) research, a subset of fantasy prone subjects reported extensive parental encouragement of various imaginative activities; for example, many of them had parents who encouraged them to treat their stuffed toys as if they were living creatures, and it was common for these parents to read them fanciful bedtime stories. However, approximately 33 percent of Wilson and Barber's fantasizers reported a higher incidence of aversive childhood experiences than their less fantasy prone counterparts, including long periods of isolation from agemates and more physical punishment. Fantasy prone subjects who reported early traumatic events stated that they used fantasy to escape from their unpleasant circumstances. Most of them also had a secret hiding place where they could find solace as they indulged in undisturbed imaginings. Hilgard (1979) specified a number of ways in which fantasy can function as a defense. For example, it can substitute for a lack of social stimulation in the isolated or lonesome child, or it can arise out of conflict, as when a child seeks to block out the pain of physical punishment or when the child is ruminating, perhaps vengefully, following an abusive episode. Fantasy prones in a recent study (Huff, 1987) reported using significantly more imaginative coping after being punished during childhood, and their primary use of imaginative coping was to block out the negative aftereffects of punishment.

Other researchers have discovered a similar link between aversive childhood experiences and hypnotic talent, with superb hypnotic subjects describing more troublesome developmental histories than other subjects (Nash & Lynn, 1985-86; Nash, Lynn, & Givens, 1984). Evidence that fantasy prones had a variety of difficulties during childhood may explain Council and Huff's (1990) finding that fantasy prones experience more guilty-dysphoric daydreaming than other subjects, as well as fantasy prones' elevated scores on measures of psychopathology (Huff, 1987; Rhue & Lynn, 1987).

In a clinical study (Crockett, 1984), fourteen women who had experienced incest and/or severe physical abuse in childhood were interviewed to ascertain how they coped with the trauma of living with an abusive parent. One of the four general coping strategies that emerged was the use of fantasy to construct an ideal make-believe life or to contemplate plans of a more practical nature. The fantasizers also reported that, while being physically or sexually abused as children, they would sometimes enter an intense trance-like state that helped them block out at least part of the aversive experience. Crockett (1984) also observed that the fantasizers in her study appeared to lack contentment or satisfaction in their lives:

> Because they focus on perfection in their daydreams, the fantasizers tend to be dissatisfied with real situations and real people. Because they fantasize rather than act, they tend to drift into circumstances in which they are dependent on someone else. Then they resent this imperfect, more powerful person. Isolation deepens. So does discontent. As this occurs, they must work even harder to protect their pleasant inner world. Their possibilities of finding satisfactions in the real world diminish even further. The early coping methods of the fantasizers have now become handicaps rather than assets. (p. 64)

One self-protective strategy that was widely reported by Wilson and Barber's (1983) fantasy prone subjects was the development of imaginary companions in childhood. Imaginary companions are conceptually related to transitional objects; i.e., familiar objects that represent the security associated with the parent (Fischer & Lazerson, 1984). Benson and Pryor (1973) pointed out that an imaginary companion is often important in the development of the child's object relations. In some cases, it can help prolong the child's sense of omnipotence and control, but can also be used as a scapegoat to divert blame from the self. Huff (1987) found that fantasy prones were more likely to report having childhood imaginary companions than nonfantasizers, but did not differ significantly from medium fantasizers in this respect.

The use of fantasy-oriented coping mechanisms is particularly important from a developmental perspective, in that the content and functional aspects of fantasy change in

conjunction with other aspects of cognitive-emotional development (Abrams, 1985), and the time-investment in fantasy typically drops precipitously as the child matures into adolescence (Arasteh, 1968; Myers, 1983). However, it is possible that when fantasy activity in childhood serves an adaptive function, such as shielding the child from emotional trauma, it will be integrated into a general cognitive style. The finding that most fantasy prones reported using fantasy as children to deny or escape from extremely stressful events, and that their imaginative abilities have been preserved as a traitlike coping style, suggests that the cognitive style of these persons deviates considerably from the norm.

Fantasy Proneness and Psychopathology

Wilson and Barber's (1981/83) contention that fantasizers tend to be well-adjusted persons was challenged by Rhue and Lynn (1987b, 1988), who reported that fantasizers appeared to use fantasy for defensive as well as adaptive purposes, and that a subset of high fantasizers tend to produce 8/9 modal codetypes on the MMPI (Rhue & Lynn, 1987); that is, the fantasizers displayed clinically significant elevations on scale 8 (Schizophrenia) and scale 9 (Hypomania). Even when not clinically elevated, these scales tended to be the highest for the fantasy prones. Rhue & Lynn (1987) interpreted this codetype as reflecting "ideational productivity, unconventional and peculiar thinking, and perhaps greater alienation and preoccupation with an internal world of fantasy" (p. 16). Although results obtained on the Rorschach failed to yield indications of morbid thoughts, pronounced psychopathology, or dysphoria, there was evidence of excessive use of "projected" hostility which fell within a "neurotic" range. Rhue and Lynn stated that "Fantasizers' use of projective defenses may help modulate and channel ego dystonic affect toward socially appropriate ends" (p. 17).

Rhue and Lynn (1987) also found that fantasy prones tended to display one of two developmental profiles, with subjects reporting the use of fantasy in childhood either to

cope with physical abuse or with extended periods of social isolation. Specifically, fantasy was used as an escape, as a safe outlet for anger, or to foster the perception of a controllable and stable internal "environment." When the subjects were asked about their psychiatric history, the great majority of high fantasizers in the Rhue and Lynn study reported neither psychiatric hospitalizations, the use of psychotropic medications, nor involvement with mental health professionals. In addition, most fantasizers rated themselves as being moderately-to-extremely well-adjusted on a self-report questionnaire. The fact that unpleasant and lonely childhoods were over-represented among the fantasizers, and that they used fantasy to cope with aversive childhood experiences, caused Rhue and Lynn to conclude that fantasizers most often use fantasy for defensive or adaptive purposes. This conclusion was further supported by the finding that fantasizers acknowledged having more personal problems and yet rated themselves as being psychologically well-adjusted.

Huff (1987) found that fantasy prones, as compared to other groups, registered significantly lower scores on the Ego Strength research scale of the MMPI, suggesting the presence of poor self-concept, feelings of helplessness, and "problems that are characterological rather than situational in nature" (Graham, 1977). Mean scores on the MMPI Anxiety and Repression (research) scales indicated that high fantasizers tend to fit the High A-Low R profile described by Graham (1977).

> Subjects falling into this (category) may be expected to be introspective, ruminative and overideational, with complaints of worrying and nervousness. There may be chronic feelings of inadequacy, inferiority, and insecurity which are often accompanied by rich fantasies with sexual content. Emotional difficulties may interfere with judgment, so that they are seen as lacking common sense. Patients in this (category) do not use somatic defenses, and although they seem to admit problems readily, the prognosis (for psychotherapy) is poor. (p. 85)

In a recent study (Council & Huff, 1990), a group of fantasy prone subjects appeared more likely than other subjects to engage in positive-constructive daydreaming (i.e., day-

dreams that reflect positive affect, assist the person in problem-solving of personal problems, and are vivid in terms of visual and aural qualities) and guilty-dysphoric day-dreaming (i.e., daydreams that are characterized by negative affect, such as guilt and fear, and content involving failure, aggression, and revenge), as measured on the Short Imaginal Processes Inventory (Huba, Singer, Aneshensel, & Antrobus, 1982). Council and Huff (1990) interpreted these findings as supporting Rhue and Lynn's (1987a) contention that a subset of fantasizers are maladjusted or evidence deviant thinking. Thus, the content of fantasy prone persons' daydreams may not be as uniformly gratifying as Wilson and Barber (1981/83) have suggested. However, Council and Huff (1990) also found that fantasizers were no more likely to report mindwandering, drifting thoughts or distractibility in everyday life, as measured on the SIPI, suggesting that fantasy prones do not exhibit poor attentional control.

In sum, the literature on antecedents of excellent hypnotic and imaginative ability suggests that fantasy proneness may develop as a means of coping with aversive or traumatic experiences in childhood, or as a result of parental encouragement of fantasy (Rhue & Lynn, 1987; Wilson & Barber, 1983). In high fantasizers, imagination and fantasy may become integrated into the personality as a major coping style during early development, and these persons may not experience the decline in imaginative skills which is typically exhibited by other children. Finally, high fantasizers are more likely than medium or low fantasizers to report both positive-constructive and guilty-dysphoric daydreams, which is consistent with the data reported by Rhue and Lynn (1987a) indicating that a subset of fantasizers are maladjusted or exhibit aberrant thinking. However, while a relatively small proportion of fantasy prone subjects do exhibit significant levels of psychopathology (Rhue & Lynn, 1987a), most of them do not appear to be severely maladjusted.

CHAPTER II: RESEARCH OBJECTIVES

In order to develop evidence for the construct validity of fantasy proneness, measures were included in this study that allowed the replication and extension of findings in the literature. Phase 1 of this study employed several paper-and-pencil measures of anxiety, aversive childhood experiences, self-esteem, satisfaction with life, and schizotypal ideation for construction validation purposes. A demographic questionnaire and a measure of religiosity were also included. Phase 2 involved exposing subjects to a potentially anxiety-provoking laboratory situation, with the aim of assessing the coping responses of high, medium, and low fantasizers.

Phase 1

The study focused on a recent finding (Huff, 1987) that fantasy prones produced evidence of schizotypal ideation on the MMPI (Hathaway & McKinley, 1967), while elevating the Anxiety scales on both the Millon Clinical Multiaxial Inventory (Millon, 1984) and the MMPI. Fantasy prones have consistently asserted their deep and pervasive imaginal involvement, and they appear to have higher than average levels of odd and "schizotypic" ideation, as measured both on the MMPI and in structured interviews (Rhue & Lynn, 1987; Huff, 1987). In the present study, support for the construct validity of fantasy proneness was sought through two measures of schizotypal thought processes, i.e., the Cognitive Slippage Scale and the Magical Ideation Scale.

The State-Trait Anxiety Inventory was included in order to replicate earlier research (Huff, 1987) indicating that fantasy prones exhibit a surplus of anxiety. Because fantasizers appear to crave their fantasy worlds as much or more than human contact and report higher levels of isolation and aversive interactions during childhood (Wilson & Barber,

1983), it was hypothesized that they would exhibit more anxiety than their less fantasy prone counterparts on the STAI.

Finally, reports of aversive childhood experiences among fantasy prones have been consistently reported in the literature (e.g., Rhue & Lynn, 1987b; Wilson & Barber, 1983). Therefore, it was hypothesized that high fantasizers would register lower self-esteem on the Index of Self-Esteem (ISE; Hudson, 1982), lower satisfaction with life on the Satisfaction With Life Scale (SWLS; Diener, et al. 1985), and attain higher scores on the Survey of Traumatic Childhood Events (STCE; Council & Edwards, 1986) than medium and low fantasizers.

Phase 2

Phase 2 of the study consisted of individual sessions designed to assess how high fantasy subjects differ from medium and low fantasizers in how they perceive, cope and respond to an anxiety-provoking situation. Based on the above-cited evidence that fantasizers use their imaginal skills to cope with unpleasant experiences, it was hypothesized that they would report a disproportionate use of fantasy as a coping mechanism. The measure of anxiety allowed for inferences as to whether the fantasy prone subjects' use of fantasy as a defensive or coping mechanism was effective in minimizing their self-perceived anxiety.

CHAPTER III: METHOD

Subjects

This study was comprised of two phases: Phase 1 served the dual function of providing a large pool of subjects for purposes of construct validation and to screen subjects for Phase 2, an empirical study of fantasy proneness as a method of coping with stress. Subjects were recruited from introductory courses in psychology at the University of North Dakota. Subjects participated for course credit and signed consent was obtained. A total of 658 subjects (i.e., 485 females and 173 males) participated in the study. Of these, 493 subjects (i.e., 352 females and 141 males) were administered the entire Phase 1 questionnaire battery, while the remaining 165 took only the ICMI in order to be screened for Phase 2. Selection criteria for Phase 2 are described below.

On the basis of their scores on the ICMI, female subjects were screened for Phase 2; males were excluded due to the paucity of male high fantasizers within the subject pool. High and low fantasizers were selected on the basis of their scores falling above the 96th percentile and below the 5th percentile, respectively; i.e., those who scored above 36 (out of a possible 52) were classified as high fantasizers, while those who scored below 12 were classified as low fantasizers. Medium fantasizers were randomly selected from those who obtained scores within one-half standard deviation above or below the mean. Group size and ICMI scores for the three groups were as follows: High fantasizers (n=12; M= 38.3, SD= 2.4); medium fantasizers (n=13; M= 21.5, SD= 2.1); low fantasizers (n=16; M= 9.3, SD= 1.4).

Materials

Phase 1 Self-report Questionnaires

The Cognitive Slippage Scale (CSS; Miers & Raulin, 1985) is a measure of cognitive impairment which focuses on cognitive slippage, a primary aspect of schizophrenic thought processes. Subjects respond to a selection of self-statements as being true or false in terms of applicability to the respondent. Hallucinations, delusions, speech deficits, attentional disorders, and confused thinking are all manifestations of cognitive slippage, but the CSS deals mainly with speech deficits and confused thinking. Corcoran and Fischer (1987) suggested that "Although the scale was developed to identify schizotypic characteristics, it may also be useful in identifying cognitive disorders among other populations" (p. 125). Although no test-retest correlations are available for the CSS, it has been shown to possess excellent internal consistency with alphas of .87 for males and .90 for females; furthermore, it was found to correlate significantly with several other scales that tap into schizotypic characteristics (e.g., perceptual aberration, intense ambivalence, social fear, magical ideation, somatic symptoms, and distrust) (Miers & Raulin, 1985).

The Demographic Questionnaire (DQ) samples a range of demographic and behavioral data of potential relevance to the study of fantasy proneness. For example, this study sought to confirm Huff's (1987) finding that fantasy prones were significantly more likely to be first-born children than medium and low fantasizers. Other developmental data, such as the number of close friendships during childhood, are also assessed.

The Index of Self-Esteem (ISE; Hudson, 1982) is a 25-item scale designed to measure the severity of a problem that a subject may have with self-esteem. Self-esteem, as a component of the broader construct of self-concept, is evaluative in nature. Each item is responded to on a 5-point Likert-type scale ranging from "rarely or none of the time" to "most or all of the time." The ISE has been shown to possess a mean alpha of .93 and a

two hour test-retest correlation of .92. According to Corcoran and Fischer (1987), this scale has also been shown to have good known-groups validity and construct validity.

The Inventory of Childhood Memories and Imaginings (ICMI; Myers, 1983) was adapted from the interview format developed by Wilson and Barber (1983) as a measure of fantasy proneness; with this measure, the subject endorses any of 52 items which apply to him or her. The items are self-statements which cover the range of phenomena that have been repeatedly associated with fantasy-proneness (e.g., having had an imaginary companion during childhood, belief in paranormal experiences, vivid childhood memories). In a review of the literature, Lynn and Rhue (1988) reported that the ICMI has been found to possess adequate validity and reliability. For example, high fantasizers have been shown to differ from both medium and low fantasizers on measures of hypnotizability, response to waking suggestion, creativity, and absorption.

The Magical Ideation Scale (MIS; Eckblad & Chapman, 1983) was designed to assess the magical thoughts characteristic of schizotypal disorders, and is also regarded as a measure of proneness to psychosis. According to Corcoran and Fischer (1987), the magical ideation which is measured on the MIS is defined as "the belief in what general Western culture would consider invalid causation, such as superstitiousness, clairvoyance, telepathy, and so on. The focus of the MIS is not on the credibility of these forms of causation, but the respondent's personal beliefs and experiences" (p. 218). The internal consistency of this scale is rather good, with correlations of .82 for males and .85 for females; the MIS was also found to correlate significantly with measures of perceptual aberration, physical anhedonism, and psychoticism, suggesting that this scale possesses adequate concurrent validity (Eckblad & Chapman, 1983). According to Corcoran and Fischer (1987), "Known-groups validity was evident with differences on psychotic and psychoticlike symptoms for subjects whose MIS scores were two standard deviations above the mean and a control group" (p. 218). Rhue and Lynn (1987b) reported that their

fantasy prone subjects produced significant elevations on the MIS, but did not provide actual scores or significance levels. The MIS was included in this study to both replicate Rhue and Lynn's (1987b) findings and to supply actual scores and significance levels. Fantasy prone subjects should attain higher scores than medium and low fantasizers on the Magical Ideation Scale, due to their schizotypal profiles as measured on the MMPI (Huff, 1987; Rhue & Lynn, 1988).

The Satisfaction With Life Scale (SWLS; Diener, et al. 1985) was designed to assess subjective life satisfaction. Both internal consistency and test-retest reliability have been established, as indicated by an alpha of .87 and a correlation of .82, respectively. Concurrent validity has also been demonstrated, according to Corcoran and Fischer, 1987).

The State-Trait Anxiety Inventory (STAI; Spielberger, Gorsuch, & Lushene, 1970; Vagg, Spielberger, & O'Hearn, 1980) is a widely-used measure of both situational and chronic/pervasive anxiety. The Trait-Anxiety scale (STAI-TA) consists of 20 items, scored on a 4-point Likert scale ranging from "not at all" to "very much so", which evaluate how subjects generally feel. The test-retest correlation for the STAI-TA was found to average .77 for college students. In terms of internal consistency, Spielberger (1983) reported a median coefficient alpha of .93. The concurrent validity of the STAI-TA was established by demonstrating its correlation (.80 for college males and .79 for college females) with the Taylor Manifest Anxiety Scale (Taylor, 1953).

The Survey of Religious Attitudes and Beliefs (SRA) is a collection of 22 items from a national survey of religiosity among American politicians (Benson & Williams, 1982). The psychometric properties of these items have not been investigated.

The Survey of Traumatic Childhood Events (STCE; Council & Edwards, 1986) is a 30-item pencil-and-paper questionnaire which was designed to explore a wide range of negative childhood experiences. It samples a broad spectrum of traumatic or abusive

situations, such as a serious illness or injury, having one's parents divorce, or experiencing some form of physical, sexual, or emotional abuse, occurring during childhood, and the subject is asked to list the number of occurrences for each event as a way of indexing the extent of early trauma. No reliability or validity statistics are available for this measure.

Phase 2 Self-report Questionnaires

In addition to the research scales described below, the author of the study developed a series of 14 additional questions (AQ), each of which taps into various coping-related variables such as tension level, self-efficacy, outcome expectancy, and use of fantasy and imagination. All of the AQ items are presented in Likert-type format.

The Dakota Cognitive Appraisal Inventory (DCAI; Hexum & Holm, 1990) is a scale designed to measure an individual's appraisal process pertaining to a specific situation or event. It is a 49-item questionnaire that has two dimensions. The first dimension, consisting of 10 items, assesses the individual's primary and secondary appraisal of a situation. Primary appraisal refers to deciding whether an event/situation was irrelevant, benign-positive, or stressful (e.g., "This event/situation was very important to my physical, psychological, or emotional well-being."). Secondary appraisal refers to evaluating the availability of resources (e.g., physical, social, psychological) needed to cope with the situation (e.g., "I had the physical resources available (health, energy, stamina) that I needed to cope with this event/situation."). The second dimension, which makes up the remaining 39 items, is composed of seven subscales: a) Personal Comprehensibility and Control, b) Other Control, c) Predictability, d) Personal Familiarity, e) Vicarious Familiarity, f) Meaningfulness, and g) Situational Comprehensibility and Control.

Personal Comprehensibility and Control refers to the degree to which the individual feels he or she controls, influences, and understand his or her thoughts, feelings, and behaviors during an event or situation (e.g., "I knew what was expected of me during this

event/situation."). In contrast, Other Control is the belief that some outside force controls the outcome of an event (e.g., "I believed that someone/something I trusted could influence the outcome of this event/situation."). Predictability is the degree to which the individual can know in advance the outcome of a transaction (e.g., "I was very sure that this event/situation would occur."). Personal Familiarity assesses the individual's familiarity with the present situation due to having similar experiences (e.g., "This is a completely new experience for me."), while Vicarious Familiarity measures the extent to which an event is familiar because of vicarious experiences such as friends, books, or television (e.g., "I was very familiar with this event/situation because one of my friends/family had been in it before."). Meaningfulness is a subscale which identifies the degree of personal involvement or commitment to a situation (e.g., "I felt this event/situation was important and worthwhile."). Finally, Situational Comprehensibility and Control refers to an individual's appraisal of how comprehensible the situation was and how much control he or she had over the various aspects of the environment (e.g., "I knew I could influence the outcome of this event/situation.").

Hexum and Holm (1990) have reported that most of these subscales have demonstrated adequate reliability. They reported that with the exception of the vicarious familiarity scale, split-half reliability coefficients ranged from .68 to .82, internal consistency coefficients (Chronbach's alpha) ranged from .67 to .86, and two week test-retest correlations ranged from .66 to .87. The exception, the vicarious familiarity subscale, may not be reliable as Chronbach's alpha was only .17, the split-half reliability coefficient was only .14, and the two week test-retest correlation was .49. Hexum and Holm (1990) have also reported that preliminary data suggests that the DCAI appears to be a valid measure of appraisal as it is related to measures of similar constructs and discriminates among measures of divergent constructs.

The Dimensional Coping Checklist (DCC; Kaloupek, 1987) is a post hoc assessment of coping in a stressful situation. It is a 24-item checklist with three coping dimensions. The first concerns the focus of coping thoughts and behavior. It examines the degree to which the coping effort is focused externally on the environment or internally on the self. The second dimension assesses the direction of the coping; that is, whether the individual approaches or avoids the situation. The third dimension deals with the production of the coping. It examines the location on the continuum of active to passive coping styles. Each item contributes to one or more of the dimensions (e.g., "I was analyzing the details of the situation."; focus is on environment, direction is approach and production is active) and thus, each subject gets three scores, one for each dimension ranging from 0 to 100. No reliability or validity information is currently available for this scale.

As noted in the previous section, the State-Trait Anxiety Inventory (STAI; Spielberger, Gorsuch, & Lushene, 1970; Vagg, Spielberger, & O'Hearn, 1980) was designed to measure both situational and chronic anxiety. The State-Anxiety scale (STAI-SA) consists of twenty self-statements that appraise state anxiety; i.e., how subjects feel "right now, at this moment." Each item is responded to on a 4-point Likert scale ranging from "not at all" to "very much so." The test-retest correlation for the STAI-SA was found to average .33 for college students; this low correlation was anticipated for the STAI-SA "because a valid measure of state anxiety should reflect the influence of unique situational factors that exist at the time of testing" (Spielberger, 1983). Evidence for the construct validity of the STAI-SA was demonstrated by showing that college students who were asked to respond according to how they would feel prior to an important examination obtained significantly higher scores than students tested under normative conditions (Spielberger, 1983).

Video Equipment

Laboratory equipment consisted of a videocamera connected to a monitor located in an adjacent room and observed by the research assistant for signs of extreme distress, in case the procedure needed to be aborted. Subjects were informed that they would deliver a speech that would possibly be observed and rated by an unspecified panel of "faculty judges."

Design and Procedure

The following measures were administered during Phase 1 of the study (in order of presentation): Inventory of Childhood Memories and Imaginings, State-Trait Anxiety Inventory–Trait Anxiety, Demographic Survey, Survey of Religious Attitudes and Beliefs, Satisfaction With Life Scale, Survey of Traumatic Childhood Events, Magical Ideation Scale, Cognitive Slippage Scale, and the Index of Self-Esteem. These measures were presented to subjects as an assessment of 'various aspects of your thinking and experiences,' and were administered in group sessions. Subjects were informed that, on the basis of their test results, a small portion of them would be asked to return in order to participate in Phase 2 of the study.

Upon returning for Phase 2, subjects were asked to consent to participate in a potentially anxiety-provoking research project. The consent form informed subjects that they would be asked to deliver a prepared speech on short notice, in front of a videocamera. Furthermore, they were told that their videotape "may or may not" be rated by a panel of faculty judges at a later date; however, they were not told what criteria constituted a positive performance. After obtaining consent, subjects were handed the script for their presentation and told that they would have four minutes to read it over, following which the script would be taken from them for an additional four minutes, giving them time to "mentally rehearse" how they would present the script on camera. At the time the script was taken away, each subject was told: "Research has shown that there

is great variety in the ways that people cope with performance-related events. Since this procedure tends to make some people anxious, I would encourage you to make free use of whatever personal methods you normally use to cope with stress."

Immediately following the speech preparation phase, the research assistant administered the State-Trait Anxiety Scale–State Anxiety, Dakota Cognitive Appraisal Inventory, Dimensional Coping Checklist, and the 14 Additional Questions in order to assess the subject's current level of anxiety as well as the coping strategies used by the subjects to minimize stress levels. Following this assessment, the subject delivered the speech to the videocamera, was informed that her speech had not been preselected for viewing by faculty judges, and exited the laboratory.

CHAPTER IV: RESULTS

Phase 1

Correlational analyses were done with all subjects and then separately with females and then males. The test of difference between two independent correlation coefficients was used to determine significant sex differences. Table 1 presents correlations between the ICMI and the major dependent variables. Most correlations were highly significant due to the large sample size; however, no significant sex differences were found. In terms of the total sample, the ICMI correlated with measures of trait anxiety, childhood trauma,

Table 1

Pearson Product Moment Correlations Between the ICMI and Measures of Anxiety, Psychopathology, Satisfaction With Life, and Self-Esteem for All Subjects, Females, and Males

	All Subjects (N=493)		Females (n=352)		Males (n=141)	
Scale	Correlation Coefficient	Probability Level	Correlation Coefficient	Probability Level	Correlation Coefficient	Probability Level
STAI-TA	.22	.001	.18	.001	.31	.001
STCE	.38	.001	.39	.001	.38	.001
MIS	.59	.001	.60	.001	.57	.001
CSS	.40	.001	.42	.001	.36	.001
SWLS	-.04	.17	.00	.48	-.16	.03
ISE	.05	.12	.04	.22	.08	.16

Note. Scales are as follows: STAI-TA = State-Trait Anxiety Inventory–Trait Anxiety; SWLS = Satisfaction With Life Scale; MIS = Magical Ideation Scale; CSS = Cognitive Slippage Scale; ISE = Index of Self-Esteem.

cognitive slippage, and the magical ideations characteristic of schizotypal disorders at the .001 level of significance. There was no significant correlation between the ICMI and measures of self-esteem or satisfaction with life.

Table 2 presents correlations between the ICMI and subscales on the Survey of Traumatic Childhood Events. There was only one significant sex difference, with higher

Table 2

Pearson Product Moment Correlations Between the ICMI and the STCE subscales for all Subjects, Females, and Males

	All Subjects (N=493)		Females (n=352)		Males (n=141)	
STCE Subscales	Correlation Coefficient	Probability Level	Correlation Coefficient	Probability Level	Correlation Coefficient	Probability Level
1	.14	.01	.14	.01	.08	.17
2	.26	.001	.26	.001	.21	.01
3	.19	.001	.21	.001	.16	.03
4	.19	.001	.18	.001	.20	.01
5	.21	.001	.19	.001	.31	.001
6	.21	.001	.23	.001	.14	.05
7	.20	.001	.21	.001	.16	.03
8	.17	.001	.18	.001	.17	.03
9	.32	.001	.36	.001	.23	.01
10	.10	.01	.17	.01	.03	.35
11	.12	.01	.11	.02	.10	.12
12	-.06	.10	.00†	.48	-.20†	.01
13	.12	.01	.11	.02	.13	.06

Note: STCE = Survey of Traumatic Childhood Events. STCE subscales are as follows: 1 = Incestual experiences; 2 = Extrafamilial sexual abuse; 3 = Verbal or physical abuse by family members; 4 = Witnessing verbal or physical family conflict; 5 = Physical abuse by nonfamily members; 6 = Major injury or death of a family member; 7 = Serious personal illness or injury; 8 = Major injury or death of a close friend; 9 = Extended social isolation; 10 = Being confronted by a robber; 11 = Experience with parents' divorce, separation, abortion, or miscarriage; 12 = Vandalizing, robbing, or destruction of home; 13 = Moving to a new town, changing schools.

† refers to a significant sex difference ($p<.05$).

ICMI scores in males being associated with fewer experiences of having their home vandalized, robbed, or destroyed, and females showing no relationship between ICMI scores and such experiences. In terms of the total sample, there were four correlation coefficients (ranging from .10 to .14) significant at the .01 level and eight (ranging from .17 to .32) that were significant at the .001, indicating a significant concordance between the fantasy proneness measure and a broad range of aversive experiences in childhood.

Table 3

Pearson Product Moment Correlations Between the ICMI and Items on the Demographic Questionnaire for all Subjects, Females, and Males

	All Subjects (N=493)		Females (n=352)		Males (n=141)	
Demographic Questionnaire	Correlation Coefficient	Probability Level	Correlation Coefficient	Probability Level	Correlation Coefficient	Probability Level
1	-.10	.015	-.13	.008	-.01	.46
2	-.07	.054	-.10	.03	.00	.49
3	-.01	.44	-.01	.40	.00	.49
4	-.08	.03	-.14†	.006	.08†	.18
5	-.12	.003	-.12	.01	-.13	.06
6	-.04	.17	-.05	.19	-.03	.37
7	-.07	.07	-.03	.29	-.17	.02
8	.39	.001	.38	.001	.45	.001
9	.14	.001	.17	.002	.13	.06
10	.22	.001	.22	.001	.21	.006
11	.23	.001	.20	.001	.29	.001

Note. Demographic Questionnaire items are as follows: 1 = Total family size; 2 = Birth order; 3 = Number of younger brothers; 4 = Number of older brothers; 5 = Number of younger sisters; 6 = Number of older sisters; 7 = Average number of close friends in childhood; 8 = Average vividness of dreams; 9 = Emotional valence of dreams (unpleasant vs. pleasant); 10 = Average percentage of dreams recalled the next day; 11 = Average percentage of lucid dreaming.

† refers to a significant sex difference ($p<.05$).

Table 3 contains the correlations between the ICMI and the Demographic Questionnaire. Across the total sample, those who scored higher on the ICMI reported having a smaller family size, and fewer older brothers and younger sisters. In general, females seemed to account for most of this covariance, as they produced significant ($p<.05$) correlations on eight out of the 11 items, whereas males produced only four significant correlations. However, despite this discrepancy, there was only one significant sex difference, on the item dealing with the number of older brothers. Females who scored high on the fantasy proneness measure reported having fewer older brothers than females who scored lower on the ICMI. Males did not show a relationship between ICMI scores and the number of their older brothers. Only the items dealing with dream phenomena produced correlations at the .001 level of significance. This can partially be explained by the fact that the ICMI contains one item dealing with vividness of dreams and one item that covers lucid dreaming. In general, higher ICMI scores were associated with greater vividness and pleasantness of dreams, lucid dreaming, and better recall of dreams.

Correlations between the ICMI and the Religious Beliefs Questionnaire are presented in Table 4. For the total sample, only seven out of the 27 items produced correlation coefficients that were significant. There was only one significant sex difference, with females who scored high on the ICMI expressing more belief that what happens in peoples lives is strongly influenced by their abilities and skills; males, however, did not produce a significant correlation between the ICMI and this item. Most of the significant correlations involved items devoted to religious or mystical experiences, rather than attitudes, behaviors, or dogmatic beliefs. Specifically, higher scores on the ICMI were associated with such experiences as being spoken to by God, feeling God's presence, feeling one with God and with the universe, and receiving a specific answer to prayer. Belief in life after death was also significantly correlated with higher ICMI scores.

Table 4

Correlations* Between the ICMI and the Survey of Religious Attitudes and Beliefs for all Subjects, Females, and Males

	All Subjects (N=493)		Females (n=352)		Males (n=141)	
Religion Questionnaire	Correlation Coefficient	Probability Level	Correlation Coefficient	Probability Level	Correlation Coefficient	Probability Level
1	.04	.20	.01	.42	.05	.26
2	-.01	.41	.02	.33	-.06	.25
3	-.07	.06	-.10	.03	-.02	.42
4	-.01	.44	.05	.16	-.11	.09
5	.04	.17	-.01	.42	.14	.052
6	.05	.16	.03	.27	.07	.21
7	-.05	.13	.05	.17	-.04	.33
8	.08	.03	.07	.11	.11	.09
9	-.00	.48	-.02	.37	-.00	.49
10	.05	.12	.08	.06	-.03	.38
11	.05	.14	.11†	.02	-.09†	.14
12	.02	.33	.04	.23	-.03	.38
13	.04	.20	.08	.08	-.08	.17
14	-.12	.005	-.10	.03	-.16	.03
15	-.25	.001	-.22	.001	-.31	.001
16	-.21	.001	-.20	.001	-.23	.004
17	-.27	.001	-.29	.001	-.24	.003
18	-.04	.17	-.02	.32	-.08	.16
19	-.01	.44	-.03	.29	.04	.33
20	-.14	.002	-.10	.03	-.22	.005
21	-.04	.20	.00	.49	-.09	.14
22	-.01	.45	-.01	.45	.01	.48
23	.04	.18	.03	.26	.08	.17
24	-.02	.34	.01	.44	-.07	.22
25	.02	.35	.08	.06	-.09	.14
26	-.12	.005	-.10	.03	-.14	.045
27	-.05	.14	-.02	.36	-.13	.06

Note. Religious Beliefs Questionnaire items are as follows: 1 = Belief in God; 2 = Involvement of God in one's life; 3 = Life after death; 4 = Influence of God in one's life; 5 = Influence of God in peoples' lives; 6 = Influence of Satan in peoples' lives; 7 = Influence of free will in peoples' lives; 8 = Influence of the social system in peoples' lives; 9 = Influence of values and motives in peoples' lives; 10 = Influence of the environment in peoples' lives; 11 = Influence of abilities and skills in peoples' lives; 12 = Influence of inherited traits and capacities in people's lives; 13 = Image of human nature; 14 = Experience of being spoken to by God; 15 = Experience of feeling God's presence; 16 = Experience of feeling one with God; 17 = Experience of feeling united with the universe; 18 = Experience of being born again; 19 = Experience of speaking in tongues; 20 = Experience of having prayers answered; 21 = Importance of one's religious beliefs; 22 = Membership in a church or synagogue; 23 = Level of church attendance; 24 = Time spent reading scripture; 25 = Time spent in prayer; 26 = Belief in life after death; 27 = Belief in God's role in writing scripture.

* Items 14-20 and 22 are point biserial correlations, all others are Pearson Product Moment Correlations.
† refers to a significant sex difference ($p<.05$).

Phase 2

Only females participated in Phase 2, and subjects were sorted into groups of high, medium, and low fantasizers. Correlational analyses were done within groups using Pearson Product Moment correlations to determine the relationship between the measure of state anxiety (STAI-SA) and the other dependent measures. Due to the size of the groups ($n<20$), it was inadvisable to test for group differences among the correlation coefficients.

In comparing the three groups, multivariate analysis of variance (MANOVA) and univariate analysis of variance (ANOVA) were also conducted. The Wilk's Criterion was used for interpreting MANOVAs. If the initial analysis was significant, then subscale scores were analyzed using ANOVAs. Tukey's studentized range test was used for post hoc comparisons of the scale means for each group.

Multivariate and Univariate Analysis

A MANOVA was done using the three subscales (i.e., Direction, Production, and Focus) of the DCC as dependent variables. The effect of ICMI was nonsignificant [$F(2, 37)=1.30$; $p=.27$]. Three separate MANOVAs were done on the subscales comprising the three dimensions of the DCAI. The MANOVA on the seven subscales (i.e., Personal Comprehensibility and Control, Other Control, Predictability, Personal Familiarity, Vicarious Familiarity, Meaningfulness, and Situational Comprehensibility and Control) that cover important beliefs related to coping ability was nonsignificant [$F(2, 36)=1.09$; $p=.39$]. The MANOVA on the five Primary Appraisal subscales was nonsignificant [$F(2, 38)=.213$, $p=.99$], as was the MANOVA on the five Secondary Appraisal subscales [$F(2, 38)=.424$, $p=.93$]. Finally, separate ANOVAs were done on each of the AQ items (see Table 5). Of these, only the effect of group on item seven [$F(2, 37)=6.49$, $p<.004$] and item eight [$F(2, 36)=6.42$, $p<.004$] were significant. Tukey's studentized

Table 5

Pairwise Comparisons of AQ items using Tukey's Studentized Range Test for High, Medium, and Low Fantasizers

	Level of fantasy proneness					
	High (n=12)		Medium (n=13)		Low (n=16)	
AQ items	Mean	SD	Mean	SD	Mean	SD
1	2.83	1.47	3.08	2.10	2.83	1.83
2	2.25	1.91	1.85	1.21	2.56	1.46
3	1.92	1.00	2.15	1.46	2.38	1.59
4	2.92	1.98	2.85	2.19	3.06	1.48
5	3.33	1.37	2.46	1.13	2.94	1.69
6	3.50	1.57	3.85	2.04	3.38	1.75
7	2.92[a]	2.02	4.77[b]	1.48	5.13[b]	1.51
8	2.50[a]	1.93	4.46[b]	1.71	4.93[b]	1.77
9	4.50	2.30	5.08	1.93	5.00	1.86
10	4.00	2.26	4.91	1.92	4.46	1.85
11	4.50	2.12	4.33	1.88	4.92	1.78
12	2.17	1.34	2.31	1.84	2.81	1.80
13	2.58	.79	2.23	.83	2.25	1.07
14	2.50	1.57	2.85	1.77	2.56	1.26

Note. AQ = Additional Questions. AQ items were in Likert-type format as follows: 1 = Calm vs. tense; 2 = Interested vs. disinterested; 3 = Competent vs. not competent; 4 = Good concentration vs. poor concentration; 5 = Concerned vs. unconcerned; 6 = Extremely embarrassed vs. not at all embarrassed; 7 = Using a great deal of imagination vs. using no imagination; 8 = Imagination being extremely useful for coping vs. imagination not being at all useful; 9 = Extremely helpful imagining you were someone else vs. not at all helpful imagining you were someone else; 10 = Extremely helpful imagining you were someplace else vs. not at all helpful imagining you were someplace else; 11 = Extremely helpful imagining you possessed talents you do not really have vs. not at all helpful imagining you possessed talents you do not really have; 12 = Feeling very tense vs. feeling not at all tense; 13 = Feeling not at all effective in coping with the speech situation vs. feeling extremely effective in dealing with the speech situation; 14 = Expecting to do extremely well in delivering the news story vs. expecting to do an extremely poor job.

For any given measure, scores labeled with superscripts a or b are significantly different from each other at $p<.05$. Scores with the same superscript are not significantly different from each other.

range test revealed significant group differences at the .05 level, with high fantasizers exceeding both medium and low fantasizers on both items; however, the medium and low fantasizers did not differ significantly on these two items. Thus, the high fantasy group reported using more imagination and fantasy to cope with the task than did the two comparison groups, and also believed that imagination and fantasy were more useful in the coping process.

Correlational Analyses

STAI-SA and Measures of Coping. All three groups produced significant correlations between the STAI-SA and various subscales on the DCAI (see Table 6). For high fantasizers, increasing levels of anxiety were inversely related to their perception that they controlled, influenced, and understood their thoughts, feelings and behaviors during the task. Higher STAI-SA scores also corresponded to reports that the task was not a positive experience and that subjects felt hurt (physically, psychologically, or emotionally) by the experience. Finally, increasing levels of anxiety were also correlated with their perception that they lacked the physical resources (e.g., healthy, stamina) and psychological resources (e.g., attitudes, problem-solving skills) needed to cope.

Only the medium group produced significant correlations between the measure of state anxiety and scales on the DCC. Negative correlations between the STAI-SA and the Direction and Focus subscales indicated that, medium fantasizers experiencing greater anxiety tended to be more avoidant and to focus more on environmental factors rather than on personal reactions. Subjects in the medium group who scored higher on the STAI-SA tended to believe they had decreasing levels of control, influence, and understanding of their thoughts, feelings, and behaviors during the task; they also tended to appraise the situation as being less comprehensible and indicated that they had relatively little control over situational factors. Anxious medium fantasizers were more likely to

Table 6

Pearson Product Moment Correlations Between the STAI-SA and DCC subscales and DCAI subscales for High, Medium, and Low Fantasizers

	Level of fantasy proneness					
	High (n=12)		Medium (n=13)		Low (n=16)	
Subscale	Correlation Coefficient	Probability Level	Correlation Coefficient	Probability Level	Correlation Coefficient	Probability Level
DIRECT	-.26	.21	-.67	.007	-.07	.41
PRODUCT	.00	.50	.07	.42	.05	.43
FOCUS	-.28	.18	-.53	.03	.10	.36
PCC	-.60	.02	-.68	.005	.08	.39
OCONT	-.35	.14	.20	.26	.55	.01
PRED	-.35	.15	-.15	.31	-.03	.46
SCC	-.34	.14	-.62	.02	.08	.39
VFAM	-.40	.10	.10	.37	-.07	.40
FAM	-.27	.20	.21	.25	.28	.14
MEAN	-.29	.18	-.14	.33	-.20	.22
PA 1	.15	.32	-.13	.34	.24	.18
PA 2	-.64	.01	-.37	.11	-.42	.054
PA 3	-.14	.33	.84	.001	.58	.01
PA 4	.83	.001	.68	.007	.39	.07
PA 5	-.45	.07	-.19	.26	.33	.11
SA 1	-.61	.02	-.70	.005	-.57	.01
SA 2	.04	.45	-.28	.18	-.24	.18
SA 3	-.12	.36	-.26	.20	-.38	.07
SA 4	-.83	.001	-.75	.003	-.69	.003
SA 5	-.45	.07	-.66	.008	-.52	.02

Note. DCC subscales are as follows: Direct = Direction; Product = Production; Focus. DCAI subscales are as follows: PCC = Personal Comprehensibility and Control; OCONT = Other Control; PRED = Predictability; SCC = Situational Comprehensibility and Control; VFAM = Vicarious Familiarity; FAM = Personal Familiarity; MEAN = Meaningfulness. Remaining DCAI scales are individual items, where PA = Primary Appraisal and SA = Secondary Appraisal. PA 1 = This event/situation was very important to my physical, psychological, or emotional well-being; PA 2 = This event/situation was a very positive experience for me; PA 3 = This event/situation was very threatening to my physical, psychological, or emotional well-being; PA 4 = I was very hurt (physically, psychologically, or emotionally) by my experiences in this event/situation; PA 5 = This event/situation provided a good opportunity for growth, mastery, or gain; SA 1 = I had the physical resources available (e.g., health, energy, stamina) that I needed to cope with this event/situation; SA 2 = I had the social resources available (e.g., friends, family) that I needed to cope with this event/situation; SA 3 = I had the material resources available (e.g., money, tools, equipment) that I needed to cope with this event/situation; SA 4 = I had the psychological resources available (e.g., beliefs, attitudes, problem-solving skills) that I needed to cope with this event/situation; SA 5 = Overall, I was very confident that I could cope with this event/situation (with or without assistance).

report that the task was threatening to their physical, psychological, or emotional well-being and that they had been hurt (physically, psychologically, or emotionally) by their involvement. At higher anxiety levels, medium fantasizers reported less adequate physical and psychological resources needed for coping, along with less confidence that they would be able to cope with the situation.

Low fantasizers who registered greater situational anxiety were more likely than nonanxious low fantasizers to believe that some outside force controlled the outcome of the task. Higher STAI-SA scores also corresponded to the perception that the task was threatening to their physical, psychological, or emotional well-being. These subjects were generally more doubtful regarding the availability of physical and psychological resources needed for coping, and were less confident about their overall coping ability than were subjects who scored lower on the STAI-SA.

STAI-SA and Additional Questions. As shown in Table 7, among high fantasizers, higher levels of state anxiety, as reflected on the STAI-SA, correlated significantly with feelings of tension, perceived lack of competence, and the belief that imagining they were someplace else was ineffective in coping with the task. For the medium group, elevations on the STAI-SA corresponded to greater tension, disinterest, feelings of embarrassment, poor self-efficacy, and poor outcome expectancy. However, medium fantasizers who scored higher on the STAI-SA also reported that imagining they were someone else, or imagining that they had talent or experience that they did not actually possess, were helpful in coping with the situation. Finally, among the low fantasizers, higher state anxiety was significantly correlated with tension, embarrassment, poor self-efficacy, and feelings of concern. There were no significant correlations between the STAI-SA and AQ items dealing with the use of fantasy and imagination for the low group.

Table 7

Pearson Product Moment Correlations Between the STAI-SA and AQ items for High, Medium, and Low Fantasizers

	Level of fantasy proneness					
	High (n=12)		Medium (n=13)		Low (n=16)	
AQ Item	Correlation Coefficient	Probability Level	Correlation Coefficient	Probability Level	Correlation Coefficient	Probability Level
1	.67	.01	.93	.001	.76	.001
2	.06	.42	.64	.01	.04	.44
3	.76	.003	.70	.005	.50	.02
4	-.17	.29	.83	.001	.41	.06
5	-.48	.06	-.36	.12	-.63	.006
6	-.34	.14	-.83	.001	-.83	.001
7	-.10	.38	-.23	.23	-.34	.11
8	-.13	.35	-.10	.37	.30	.15
9	-.04	.46	-.67	.009	-.25	.22
10	.52	.04	-.30	.19	.42	.08
11	.15	.34	-.55	.03	-.28	.19
12	-.23	.24	-.75	.003	-.74	.002
13	-.46	.07	-.82	.001	-.59	.01
14	.43	.08	.85	.001	.11	.34

Note. AQ = Additional Questions. AQ items were in Likert-type format as follows: 1 = Calm vs. tense; 2 = Interested vs. disinterested; 3 = Competent vs. not competent; 4 = Good concentration vs. poor concentration; 5 = Concerned vs. unconcerned; 6 = Extremely embarrassed vs. not at all embarrassed; 7 = Using a great deal of imagination vs. using no imagination; 8 = Imagination being extremely useful for coping vs. imagination not being at all useful; 9 = Extremely helpful imagining you were someone else vs. not at all helpful imagining you were someone else; 10 = Extremely helpful imagining you were someplace else vs. not at all helpful imagining you were someplace else; 11 = Extremely helpful imagining you possessed talents you do not really have vs. not at all helpful imagining you possessed talents you do not really have; 12 = Feeling very tense vs. feeling not at all tense; 13 = Feeling not at all effective in coping with the speech situation vs. feeling extremely effective in dealing with the speech situation; 14 = Expecting to do extremely well in delivering the news story vs. expecting to do an extremely poor job.

CHAPTER V: DISCUSSION

In general, high fantasizers scored higher than their less fantasy prone counterparts on measures of ideation and childhood trauma, which previous research (e.g., Lynn & Rhue, 1988; Wilson & Barber, 1983) had associated with the construct of fantasy proneness. The hypothesized interrelatedness between fantasy proneness, and poor coping skills and impaired self-esteem, however, was not supported. Phase 1 of the present study rendered numerous correlations based on large samples, increasing the likelihood of obtaining weak but significant coefficients. To provide more stringent criteria for interpretation of the analyses, only significance levels of .001 or greater will be discussed for data pertaining to Phase 1. Smaller group sizes in Phase 2 prompted a conservative interpretation of group differences that were significant at the .01 level or greater.

Support for the construct validity of fantasy proneness and its association with psychopathology was indicated by strong correlations between the ICMI and measures of cognitive slippage and magical ideation (see Table 1), two aspects of cognitive dysfunction that are believed to be characteristic of schizotypical disorders such as schizophrenia. This supports Lynn and Rhue's (1988) finding that the ICMI and the Magical Ideation Scale (Eckblad & Chapman, 1983) were strongly correlated; in the present study they shared approximately 35 percent of their variance. Results of the present study are also consistent with Rhue and Lynn's (1987) finding that high fantasizers endorsed more items on the F (Frequency), Pa (Paranoia), Pt (Psychasthenia), Sc (Schizophrenia), and Ma (Hypomania) scales of the MMPI. The extensive research program of Rhue and Lynn has provided consistent evidence that a sizable minority of fantasy prone persons (estimated at between 20 percent and 35 percent) "exhibit

significant signs of maladjustment, psychopathology, or deviant ideation, and perhaps a smaller proportion of fantasizers can be aptly characterized as schizotypal or borderline personalities" (p. 42; Lynn & Rhue, 1988).

Despite the covariance between the ICMI and measures of schizotypical distortions of thought and perception, it failed to correlate significantly with measures of self-esteem and satisfaction with life (see Table 1). This finding runs counter to expectations that higher ICMI scores would correlate negatively with self-esteem and subjective life satisfaction. Because satisfaction with life is regarded as a key constituent of mental well-being (Corcoran & Fischer, 1987), it must be assumed that fantasy prone persons possess skills or attributes which somehow neutralize the negative effects of their unusual thought processes. Support for Huff's (1987) finding that high fantasizers outscored medium and low fantasizers on the Anxiety Scale of the MMPI (Hathaway & McKinley, 1967) was indicated by a significant, albeit weak, association between the ICMI and a measure of trait anxiety.

Fantasy proneness was not strongly correlated with family size or composition (see Table 3). Females who were more fantasy prone did report having dreams that were more vivid, a greater degree of lucid dreaming (i.e., dreams which can be edited or controlled by the dreamer), and better recall of dreams. Similarly, males who scored higher on the ICMI reported having dreams that were more vivid and more lucid. As noted by Wilson and Barber (1983), it can be postulated that dreams constitute an aspect of life that is central to the identity and functioning of most fantasy prone individuals. Contrary to expectations, fantasy proneness was not strongly associated with the more functional or mundane aspects of religiosity (i.e., attitudes, beliefs, and behaviors). (see Table 4). High fantasizers have reported greater belief in paranormal experiences than medium and low fantasizers (e.g., Council & Huff, 1990). Given earlier results and the current findings, it would appear that fantasy prones are more likely than other groups to acknowledge

experiencing mystical phenomena, but do not differ in other aspects of their religiosity. In the present case, females scoring high on the fantasy proneness measure reported having the experience of feeling God's presence, feeling one with God, and feeling united with the universe. Males who ranked as being more fantasy prone also tended to be more likely to have felt God's presence.

The results of this study support the hypothesized association between fantasy proneness and childhood trauma (see Table 2), with females seeming to account for most of the variance. Overall, the ICMI and the Survey of Traumatic Childhood Events shared approximately 14 percent of their variance. For females, higher ICMI scores correlated with a variety of aversive childhood experiences, including: Extrafamilial sexual abuse, verbal or physical abuse by family members, witnessing verbal or physical family conflict, extrafamilial physical abuse, major injury or death of a family member, serious personal illness or injury, major injury or death of a close friend, and extended social isolation. Males with elevated ICMI scores were more likely to report physical abuse by nonfamily members during childhood. Despite this apparent discrepancy, there was only one significant sex difference among correlation coefficients, and the within sex correlations for the total scale were nearly identical (see Table 1).

In summary, individuals who score high on the fantasy proneness measure are willing to acknowledge a wide range of deviant or unusual thoughts, vivid and lucid dreams, mystical experiences, and an array of traumatic childhood experiences. Nevertheless, they tend to report little trait anxiety and do not differ from less fantasy prone groups in terms of their satisfaction with life or their level of self-esteem. Thus, persons manifesting a predilection for deviant ideation who also obtain elevated scores on the ICMI seem relatively immune to the clinical sequelae of such cognitive distortions; i.e., they report only a slight increase in anxiety and are no less satisfied with themselves or their circumstances than are other subjects. It may be conjectured that fantasy prone persons

have somehow learned to cope with their tendency toward ideational deviance or psychopathology.

When subjected to a laboratory condition designed to elicit performance-related anxiety, high, medium, and low fantasizers did not differ significantly in their use of various coping strategies, nor were there significant differences in terms of self-reported anxiety. The groups were roughly equivalent in terms of whether they viewed the situation as irrelevant, benign-positive, or stressful. Furthermore, they did not differ significantly in their evaluation of the availability of resources (e.g., physical, social, psychological) needed to cope with the situation. Subjects in all three groups reported similar levels of predictability, personal involvement or commitment, familiarity, control over environmental factors, and control over personal thoughts, feelings, and behaviors.

Other aspects of psychological coping were also comparable across groups. For example, the degree to which the coping effort was focused externally on the environment or internally on the self was not incumbent upon group membership. Whether the subject tended to approach or avoid the situation, and whether she tended to adopt an active or passive coping style, also had no relationship to group affiliation. The similarity of state anxiety across groups also argues for lack of significant differences in terms of coping effectiveness.

The only significant group differences were obtained on two items supplied by the experimenter (see Table 5), which directly addressed the use of imagination and fantasy as a method of coping. The high fantasizers exceeded both medium and low fantasizers in their use of fantasy and imagination, and in their assessment of how effective these variables were in helping them cope with the situation. Compared to other groups, high fantasizers clearly believed that using fantasy, imagination, or daydreaming was more useful or effective in coping with the task. Interestingly, there were no group differences on related variables (e.g., usefulness of imagining they were someone else, imagining

they were someplace else, or that they possessed skills, knowledge, experience, or talent that they did not actually have). Questions related to self-efficacy and outcome expectancy also failed to discriminate among the groups. Finally, high, medium, and low fantasizers reported similar levels of interest, competence, concentration, concern, and embarrassment in dealing with the laboratory situation.

Additional analyses were done to determine whether level of anxiety within each of the groups exerted a differential effect on the other dependent variables. Thus, it was possible to assess the impact of anxiety on coping strategies for each group. As noted above, only correlations that were significant at the .01 level will be considered for purposes of interpretation.

Overall, high fantasizers produced five correlation coefficients, significant at the .01 level, that signified lack of adequate coping skills. By contrast, the medium group produced 16 such correlations, and the low group produced nine. High fantasizers who indicated higher levels of anxiety were more likely to view the situation as being a negative experience, to report being hurt (i.e., physically, psychologically, or emotionally), to perceive themselves as lacking the psychological resources (e.g., beliefs, attitudes, problem-solving skills) needed to cope, and to feel less competent to deal with the situation.

Medium fantasizers experiencing increased anxiety also rendered the largest number of significant correlations indicating impaired coping and negative self-efficacy. Anxious medium fantasizers tended to deal with the situation through avoidance, believing that they had less control, influence, and understanding of their thoughts, feelings, and behaviors. They were likely to believe the situation was very threatening and that they had been hurt physically, psychologically, or emotionally by the procedure. Anxious subjects in the medium group also tended to doubt that they possessed the psychological (e.g., beliefs, attitudes, problem-solving skills) or physical (e.g., health, energy, stamina)

resources needed to cope with the situation. Overall, they expressed considerable lack of confidence in coping with the situation. Perhaps in a defensive maneuver, anxious medium fantasizers indicated feeling relatively disinterested in the task; they also benefited from imagining they were someone else during the procedure. Poor concentration, acute embarrassment, and less favorable outcome expectancy were more likely to be reported.

Members of the low group who reported higher levels of anxiety tended to view the situation as being under the control of an external force. They were more likely to believe the situation was threatening to their physical, psychological, or emotional well-being, and that they lacked the physical (e.g., health, energy, stamina) and psychological (e.g., beliefs, attitudes, problem-solving skills) resources required for effective coping.

In summary, while it may appear that the medium fantasizers acknowledging higher levels of anxiety were generally more impaired than anxious members of the high and low groups, it should be noted that sample sizes precluded direct comparisons of correlation coefficients in determining significant differences. As previously noted, anxiety levels did not differ significantly across groups and there were no significant group differences in terms of the integrity or effectiveness of coping skills. However, it can be stated with certainty that the laboratory condition in Phase 2 was quite anxiety-provoking for at least a few members of all three groups.

A content analysis failed to discriminate major group differences in the subjects' narrative accounts of their coping strategies. Many subjects used basic self-calming cognitions such as reminding themselves that the videotaping was "no big deal," that it was "not a life or death situation," or that it would "soon be over." Overall, the low fantasizers seemed more pragmatic and practical in their problem-solving: e.g., "I feel a little better because I have taken a broadcasting class before. I am trying to remember some of the tips that were given in that class. I am trying to remain relaxed by going over

in my head how I will give the speech." Another low fantasizer wrote: "I am blocking it out. I refuse to think about that at this point. I am only concerned with what I am going to say. I'll worry about what the judges think later. In my mind I am rehearsing the best way to relate what I read. I am trying to remember the important points. I guess that's the way I live also. I have enough to cope with in one day, I can't worry about what will happen tomorrow. I, likewise, am breaking this down in sections and worry about one section at a time. I haven't come to the taping yet, so I won't worry about it. I'll just do what I can do. This isn't life and death to me—by keeping that perspective I control my anxiety." Yet other low fantasizers were quite terse in their introspections: e.g., "I have no anxiety. I'll give the speech then go home. It'll be interesting to see if my video will be used."

By contrast, high fantasizers reported more extensive use of imagination and fantasy as methods to facilitate coping. For instance, one high fantasizer wrote, "I'm going to pretend I am all alone and try to forget I am being watched." Another wrote that, "I guess I've held conversations in my mind as to what I will say about this experiment to my friends." Several high fantasizers described a process of absorption, whereby they reduced their anxiety by focusing on internal sensations (e.g., regulating their breathing) or on visual stimuli in the environment. A high fantasizer also produced what may have been the oddest response of all: i.e., "I used creative visualization (nice word for imagination?) and pictured white light moving through my body to illuminate all negative self damning thoughts." Similar to low fantasizers, the medium fantasizers seemed more practical and mundane in their problem-solving than the high fantasizers; their descriptions of imaginal or fantasy-based coping strategies also seemed, at an impressionistic level, midway between the two extreme groups.

Several limitations in the present study are worthy of mention, and may suggest lines of future inquiry. Lynn and Rhue (1988) noted that "Scales that measure absorption and fantasy proneness rely on subjects' interpretations of their experiences and abilities, and

self-reports are notoriously sensitive to social-desirability biases, demand characteristics, and context and expectancy effects" (p. 42; see also Lynn & Rhue, 1987). The fact that subjects in Phase 1 completed the ICMI before going on to the remaining questionnaires in the battery may have created bias in terms of situationally induced expectancies; for instance, a subject scoring high on the ICMI may have felt obliged to endorse more items on the measures of schizotypy. This threat to internal validity could be compensated for by testing subjects over two or more sessions, thereby creating the impression that the questionnaires involved are not part of the same study. Parenthetically, Lynn and Rhue (1988) reported that their fantasy prone subjects did not differ from other subjects on a measure of social desirability. It is also noteworthy that, in the present study, subjects were given strong demands for honesty, including repeated assurances of confidentiality.

The external validity of the present study should not be taken for granted. Fantasy prone college students may represent a subset of that population who were able to invest heavily in their imaginative involvements while still exhibiting normal or near-normal levels of adjustment. Canvassing the general population for high, medium, and low fantasizers would be crucial in ruling out the possible singularity of college samples.

It is highly doubtful that the development and role of fantasy in the lives of young fantasizers will adequately be investigated through retrospective data collection. Future studies could make greater use of collaborative data from parents, siblings, teachers, etc. Most studies of fantasy proneness have also relied extensively on interviews or paper-and-pencil measures; future inquiry should, like the present study, adopt a more empirical approach to research in this area. In addition, there is a clear need for more studies, both cross-sectional and longitudinal, of fantasy-proneness among children. This would help answer the etiological problem of whether traumatic childhood experiences (e.g., sexual or physical abuse) influence the development of fantasy proneness, or whether certain

children become fantasy prone due to their heightened sensitivity or psychological vulnerability to traumatic experiences.

The laboratory procedure in the present study was designed to tap into performance anxiety as a means of activating the subjects' characteristic coping behaviors. Conceivably, other experimental designs could produce other forms of anxiety (e.g., social anxiety, pressure to meet a deadline, exposure to confusing demands), which might have better emphasized any group differences in coping styles. There is no reason to assume that this procedure exploited the same type of anxiety which high fantasizers displayed on the MMPI in a recent study (Huff, 1987).

A final caveat concerns the ICMI itself, which at present represents the only checklist approach to indexing a subject's level of fantasy proneness. Little psychometric data are available on the reliability of this instrument. Furthermore, each of the 52 items on the ICMI is answered in the same direction, with a "true" response signifying greater fantasy proneness. Rewording some of the items to allow for reverse-scoring would help minimize the likelihood of an acquiescent response set. Finally, a thorough analysis of the inventory's psychometric properties (e.g., factor-analytic studies) could make it possible to discard some items which may be highly intercorrelated.

General Discussion

The present results are consistent with other data suggesting (e.g., Huff, 1987; Lynn & Rhue, 1988; Wilson & Barber, 1983) that fantasy proneness constitutes a method whereby certain imaginatively endowed individuals have learned to cope with the effects of negative childhood experiences. This conceptualization follows the developmental model of fantasy proneness which suggests that a child's normally extensive involvement in imaginative activities may serve a protective function in an attempt to cope with aversive experiences, such as prolonged social isolation, or physical, sexual, or emotional abuse (e.g., Arasteh, 1968; Myers, 1983). Over time, this pattern of imaginative coping

may become integrated into the child's developing personality, eventually emerging as the fantasy prone personality type. Furthermore, the results suggest that most high fantasizers make a satisfactory adjustment in spite of their early traumatic experiences; i.e., fantasizers did not differ from other subjects in their ability to cope with a stressful situation and fantasy proneness was not correlated with self-esteem or subjective life satisfaction.

It should be noted that the correlation between fantasy proneness and childhood trauma is far from absolute. This would allow for Wilson and Barber's (1983) finding that many fantasizers were spared a history of childhood trauma, but instead were encouraged to imagine and fantasize by significant others, such as parents and teachers. Those individuals who developed fantasy proneness as a protection against childhood traumata may be over-represented among the minority of fantasizers who exhibit significant signs of maladjustment or psychopathology.

APPENDIX 1: ADDITIONAL QUESTIONS

Directions: While you were preparing to deliver your speech, how did you feel? For those items which are numbered, mark your responses directly on your Opscan answer sheet. For those items which begin with an asterisks (*), please write your answers onto the lined paper that was provided to you.

1. A B C D E F G
Calm/relaxed — Nervous/tense

2. A B C D E F G
Interested — Disinterested

3. A B C D E F G
Competent — Not Competent

4. A B C D E F G
Good Concentration — Poor Concentration

5. A B C D E F G
Concerned — Unconcerned

6. A B C D E F G
Extremely embarrassed — Not at all embarrassed

*How are you coping with the prospect of having your speech evaluated by a panel of judges? On the lined answer sheet, describe how you are mentally and emotionally coping with this situation (i.e., what mental strategies are you using to reduce your anxiety and plan your delivery of the news story?). Please be specific.

*Did you use imagination, fantasy or daydreaming to cope with this task? On the lined paper, describe exactly what you imagined in order to cope (or leave blank if you did not use imagination or fantasy to deal with the situation).

7. (Continuation of previous question.) How much imagination or fantasy did you use?

A B C D E F G
A great deal — None

8. (Continuation of previous question.) In general, how useful or effective was it for you to use fantasy, imagination or daydreaming to cope with this task?

A	B	C	D	E	F	G
Extremely useful						Not at all useful

*Did you cope with this task by imagining that you were someone else? On the lined paper, describe how this helped you cope (or leave blank if you did not imagine that you were someone else in order to deal with the situation).

9. (Continuation of previous question.) Indicate how helpful it was to imagine that you were someone else.

A	B	C	D	E	F	G
Extremely helpful						Not helpful at all

*Did you cope with this task by imagining that you were some*place* else? On the lined paper, describe how this helped you cope (or leave blank if you did not imagine that you were someplace else in order to deal with the situation).

10. (Continuation of previous question.) Indicate how helpful it was to imagine that you were someplace else.

A	B	C	D	E	F	G
Extremely helpful						Not helpful at all

*Did you cope with this task by imagining that you possessed skills, knowledge, experience, or talent that you don't really have? On the lined paper, describe how this helped you cope (or leave blank if you did not imagine that you were someplace else in order to deal with the situation).

11. (Continuation of previous question.) Indicate how helpful was it to imagine that you possessed skills, knowledge, experience, or talent that you don't really have.

A	B	C	D	E	F	G
Extremely helpful						Not helpful at all

12. How tense did you become when you prepared to deliver the speech? Please rate your tension level at its *highest* point.

A	B	C	D	E	F	G
Very tense						Not at all tense

13. Overall, how effective do you feel you were in coping with the speech situation?

A	B	C	D	E
Not at all effective	Somewhat effective	Moderately effective	Very effective	Extremely effective

14. How well do you expect to do in delivering the news story?

A	B	C	D	E	F	G
Extremely well						Very poor

APPENDIX 2: DEMOGRAPHIC SURVEY

Instructions: This survey asks questions about many aspects of your personal and social life. Please respond as honestly as you can, and be assured that your answers will be kept confidential.

1. What was the total size of your family when you were a child (before the age of 12 years)? Include parents and any adopted brothers and sisters, but do not count younger brothers or sisters who died before you were six months old.

A = 2
B = 3
C = 4
D = 5
E = 6
F = 7
G = 8
H = 9
I = 10
J = more than 10

2. What is your birth order? Fill in "A" on your answer sheet if you were the first born child, etc.; do not count younger brothers or sisters who died before you were six months old.

A = first born
B = second born
C = third born
D = fourth born
E = fifth born
F = sixth born
G = seventh born
H = eighth born
I = ninth born
J = beyond ninth born

3. Specify the number of your younger brothers:

A = 0
B = 1
C = 2
D = 3
E = 4
F = 5
G = 6
H = 7
I = 8
J = more than eight

4. Specify the number of your older brothers:

A = 0
B = 1
C = 2
D = 3
E = 4
F = 5
G = 6
H = 7
I = 8
J = more than eight

5. Specify the number of your younger sisters:

A = 0
B = 1
C = 2
D = 3
E = 4
F = 5
G = 6
H = 7
I = 8
J = more than eight

6. Specify the number of your older sisters:

A = 0
B = 1
C = 2
D = 3
E = 4
F = 5
G = 6
H = 7
I = 8
J = more than eight

7. On the average, how many close friends (confidantes) did you have at any given time before the age of 12 years?

A. No close friends
B. One close friend
C. Two close friends
D. Three close friends
E. Four or more close friends

8. In general, how vivid/life–like are your dreams?

A	B	C	D	E	F	G
Not vivid at all						Extremely vivid

9. In general, how pleasant/pleasurable are your dreams? Focus on the feelings or emotions they evoke in you, not so much on the content.

A	B	C	D	E	F	G
Extremely unpleasant						Extremely pleasant

10. On the average, what percentage of your dreams do you recall the next day?

A = approximately 0 %
B = approximately 10%
C = approximately 20%
D = approximately 30%
E = approximately 40%
F = approximately 50%
G = approximately 60%
H = approximately 70%
I = approximately 80%
J = approximately 90% to 100%

11. What percentage of your dreams are you able to edit or control *while you are dreaming?*

A = approximately 0 %
B = approximately 10%
C = approximately 20%
D = approximately 30%
E = approximately 40%
F = approximately 50%
G = approximately 60%
H = approximately 70%
I = approximately 80%
J = approximately 90% to 100%

APPENDIX 3: INVENTORY OF CHILDHOOD MEMORIES AND IMAGININGS*

Instructions: This inventory was designed to assess a variety of memories and experiences, some of which are quite ordinary and some rather unusual. Please answer as honestly as possible and do not be concerned if you find that almost all of the items or almost none apply to you. The first set of items concerns childhood imaginative activities, fantasies, and related experiences, and how these might carry over into adult functioning.

THESE ITEMS ARE IN "TRUE–FALSE" FORMAT. Please mark "A" on your answer sheet if the item applies to you, and "B" if it does not.

1. When I was a child, I enjoyed active movement such as running and jumping.

2. When I was a child, I enjoyed swinging (on a swing).

3. When I was a child, I liked some kinds of music.

4. When I was a child, I enjoyed cartoons (on TV or in movies).

5. I can remember clearly one or more things that happened to me when I was two years of age or younger.

6. When I remember back to when I was 6, 7, or 8 years of age, I can re–experience myself as a child; that is, I can "see" and "hear" again what I saw and heard then and I can feel again the emotions and sensations I felt then.

7. Although I have grown and I've had more experience, I still feel basically the same as I did when I was a child.

8. When I was a child, I believed in such beings as fairies, leprechauns, or elves, etc.

9. Now that I am an adult, I still in some sense believe in such beings as fairies, leprechauns, or elves, etc.

10. When I was a child, I would dream or imagine I was flying with such vividness that *I felt as if I actually did fly.*

11. When I was a child, I enjoyed fairy tales.

12. As an adult, I would still enjoy fairy tales.

13. When I was a child, I was *very* imaginative.

*Source: Myers, S. A. (1983). The Creative Imagination Scale: Group norms for children and adolescents. *The International Journal of Clinical and Experimental Hypnosis, 31,* 28-36.

14. At the present time, I am *very* imaginative.

15. When I was a child, I was "a childhood philosopher." That is, I spent time thinking about such things as the meaning of life and of death, about hypocrisy, levels of existence, etc.

16. When I was a young child (below age 12), I preferred playing make–believe games which require imagining or pretending, such as cowboys, school house, etc. I *preferred such make–believe games over realistic games* which require skills such as hopscotch, checkers, building things, ball games, etc.

17. When I was playing make–believe games as a child, I usually would imagine so vividly that what I pretended seemed real to me.

18. When I was a child, I lived in a make–believe world *much or most* of the time.

19. As an adult, I still occasionally live in a make–believe world.

20. When I was a *young* child, I believed that my doll(s) or stuffed animals were alive.

21. When I was a child, I had an imaginary companion (or companions) such as an imagined person, animal, or object which I talked to, shared feelings with, or took along with me.

22. When I was a child, I would at times pretend and *in some sense believe* I was someone else such as a fairy tale character (e.g., Snow White, Peter Pan, Rapunzel), a prince or princess, an orphan, etc.

23. As an adult, I occasionally *pretend* I am someone else.

24. When I was a child, I would have *enjoyed* or I did *enjoy* taking ballet dancing lessons.

25. When I was a child or teenager, at times I was afraid my imagining would become so real to me that I would be unable to stop it.

26. When I was a child or teenager, sometimes I was accused of lying when I was just reporting what I had imagined.

27. When I was a young (pre–teenage) child, I had sexual fantasies.

28. I have had an orgasm (or orgasms) just by imagining only.

29. When I was a child, I would spend at least half of my total waking day imagining.

30. Now as an adult, I spend a substantial part of my total waking day imagining.

31. If I could *not* imagine anymore, besides other effects it would have on my life, *I wouldn't be me anymore—I would be a basically different person.*

32. At times, when I was a child or adolescent, it was difficult for me to determine whether something had actually happened or whether I had imagined it happened.

33. If given the opportunity, I would be very eager to experience an *entirely new* sensation—a sensation such as vision, hearing, smell, or touch but as different from all of these as they are all different from each other.

34. I have had a deeply moving personal religious, spiritual, or mystical experience.

35. I have felt, heard, or seen an apparition (a spirit or ghost).

36. I have had an out–of–the–body experience; that is, I have felt as if "I" (my mind or my spirit) left my body and existed for a while independently of my body.

37. I have experienced precognition (prophecy or foretelling the future) in a dream or while awake. That is, I have known something would happen before it happened even though there was no rational way I could have known.

38. I have at times written poems, inspirational messages, stories, or songs, etc., and I did not feel it was I who was creating them.

39. I have at times felt unexplainably compelled to go somewhere or to do something I wouldn't ordinarily do (such as call someone I wouldn't ordinarily call) and then later discovered there was a reason for my compulsion. (For instance, the person I called desperately needed me at that moment.)

40. I believe reincarnation is possible, and *I have become aware of a life (or lives) that I may have lived prior to this time.*

41. I have at some time in my life experimented with marijuana, psychedelic drugs (LSD, etc.), amphetamines ("uppers"), tranquilizers ("downers"), or other such drugs *in order to experience the world in a new way, not just to relax or feel good.*

42. I would like to experience hypnosis (or I have enjoyed experiencing hypnosis).

43. I think I am hypnotizable; that is, I think I could be hypnotized (or I have been hypnotized).

44. I have at times thought something happened to me, developed *physical symptoms* but later I found out that what I thought happened never actually occurred. (Some possible examples to illustrate this are as follows: (a) you thought something was in your eye, your eye became irritated, but you couldn't find anything in your eye; (b) or you thought you ate spoiled food, became ill, but later found out that others eating the same food were not bothered; (c) or you thought you touched poison ivy, developed an itch but the doctor said it wasn't poison ivy.)

45. (Females only; males answer "false.") I have at some time in my life thought I was pregnant and in addition to not menstruating, *developed other symptoms of pregnancy* (e.g., morning sickness, abdominal enlargement, breast changes), only to find out later that I was not pregnant.

46. While listening to my favorite music, in addition to experiencing mood changes (e.g., feeling calm, relaxed, energetic, mellow) *I also often experience a transformation* (e.g., a

feeling of oneness with the music, or being transported to the past or to another place or time).

47. When I remember significant events in my life, in addition to thinking about them, I can also re–experience them. That is, I can see again what I saw then, hear again the sounds, voices, etc., as I heard them before, feel the emotions and sensations I felt then. *I can re–live them—not* just think about them or see them in my mind's eye.

48. I can *vividly re–experience* in my imagination such things as: the feeling of a gentle breeze, warm sand under bare feet, the softness of fur, cool grass, the warmth of the sun, and the smell of freshly cut grass.

49. When asked to close my eyes and imagine holding a baby or an animal (dog, cat, etc.) on my lap, *I can experience it as if it were actually there.* That is, I can feel its weight and warmth, touch it, see it, hear it, etc.

50. At times just before I fall asleep, I experience vivid images.

51. Many or most of my dreams tend to be *at least as vivid* as actual life experiences.

52. If I wish, I am usually able to finish or change a dream after I awaken.

APPENDIX 4: SURVEY OF RELIGIOUS ATTITUDES AND BELIEFS*

1. What statement do you agree with the most?
   A. I don't believe in God or an ultimate Religious Reality (some power, being, force, or energy that holds things together and influences the world's destiny).
   B. I don't think it is possible for me to know whether God or an ultimate Religious Reality exists.
   C. I am uncertain but lean toward not believing in an ultimate Religious Reality.
   D. I am uncertain but lean toward believing.
   E. I definitely believe that God or some ultimate Religious Reality exists.

2. Which statement do you *most* strongly agree with?
   A. God is in charge of everything that happens in my life.
   B. God has a plan for my life. If I listen to God, the plan with become known to me, and then I can act on it.
   C. God is not automatically in charge of persons' lives. But if I ask God for help and direction, he will enter my life and help direct me.
   D. I am in charge of my own life, but God will give me help if I ask him.
   E. God may have a plan for my life, or may be in my life, but I'm not sure.
   F. God has put us in charge of our own lives. We are able to make our own mistakes. I am on my own, but I am aware of what God hopes we will be and what he expects from us.
   G. God has put us in charge of our own lives. Because he loved me, I am in the world with a certain attitude.
   H. I am in charge of my life. God is not involved directly or indirectly.

3. Is there life after death?
   A. Yes
   B. Not sure
   C. No

4. Which of these five statements is truest for you?
   A. God is the *strongest* influence in my life.
   B. God is a *very strong* influence in my life.
   C. God is a *moderate* influence in my life.
   D. God has a *small* influence in my life.
   E. God has *no* influence in my life.

*Source: Benson, P. L., & Williams, D. L. (1982). Religion on capitol hill: Myths and Realities. San Francisco: Harper & Row, Publishers.

Generally speaking, how much do each of the following have to do with determining what happens in peoples lives? Use this scale to respond to each item:

A B C D E
No influence Extreme influence

5. God

6. Satan, or some evil force

7. The exercise of free will

8. The social system—its economic and political arrangements

9. One's values and motives

10. The kind of environment one grew up in

11. One's abilities and skills

12. One's inherited traits and capacities

13. Which of the following images of human nature is *most true* in your opinion?
A. Predominantly evil, sinful.
B. Selfish, competitive.
C. Predominantly good.
D. Loving, cooperative.

Which, if any, of these religious experiences have you had? Respond with "A" if you *have* had the experience, and "B" if you *have not* had the experience.

14. The experience of having God speak to me.

15. The experience of feeling God's presence.

16. The experience of feeling one with God.

17. The experience of feeling united with the universe.

18. A born–again experience in which Jesus entered my life.

19. The experience of speaking in tongues.

20. The experience of specific answer to prayer.

21. Which statement is most true for you? (Choose only one.)
A. My religious beliefs and convictions are at the center of my life.
B. My religious beliefs are moderately important to me.
C. My religious beliefs are not too important for me.
D. I do not believe in religion.

22. Are you a member of a church or synagogue?
    A. Yes
    B. No

23. What is your level of church attendance?
    A. More than once a week
    B. Weekly
    C. One to three times a month
    D. Less than once a month
    E. Never attend (if less than once per year answer "never")

24. How often do you read Scripture?
    A. Daily
    B. Once a week or more, but less than daily
    C. One to three times a month
    D. Less than once a month
    E. Never (if less than once per year answer "never")

25. How often do you pray?
    A. Daily
    B. Once a week or more, but less than daily
    C. One to three times a month
    D. Less than once a month
    E. Never (if less than once per year answer "never")

26. Do you believe in life after death?
    A. Yes
    B. Uncertain
    C. No

27. God did not play a role in the writing of Scripture.
    A. True
    B. Not sure
    C. False

APPENDIX 5: SURVEY OF TRAUMATIC CHILDHOOD EVENTS*

Instructions: The following items describe a number of events which may disrupt a child's life and affect his or her happiness and functioning. Using the scale below, indicate how many times (if at all) any of these events occurred in your childhood or adolescence. Please be open and honest in your responses.

Number of occurrences: (A) *none* (B) 1 (C) 2 to 5 (D) 6 to 10
(E) more than 10 times

1. Moved to a new town, started in a new school, had to make new friends.

2. Your parents were divorced or separated.

3. A serious illness or operation which required you to be hospitalized or miss much school.

4. Having a major injury or accident.

5. Having an abortion or miscarriage.

6. A parent, sibling or other close family member was hospitalized because of a serious illness or operation.

7. Major injury or accident of parent, sibling or other close family member.

8. The death of a parent, sibling or other close family member.

9. Major injury or accident of close personal friend.

10. Serious illness or operation of close personal friend.

11. The death of a close personal friend.

12. Having your house destroyed or damaged (e.g., by flood, fire, or earthquake).

13. Having your home robbed or vandalized.

14. Being confronted by a person and robbed of money or belongings.

15. Being struck or beaten up by someone other than a family member (e.g., school bully, stranger).

*Source: Council, J. R., & Edwards, P. W. (1986). Survey of Traumatic Childhood Events. Unpublished research measure, North Dakota State University.

16. Being spanked by your parents or other caregivers (e.g., older sibling, baby–sitter) severely enough to cause bruises or other injuries.

17. Being struck or hit by your parents, other family members or caregivers.

18. Being struck or hit by someone who wanted to injure you and requiring medical attention (e.g., broken bone, stitches).

19. Being yelled and screamed at by a parent, other family member or caregiver.

20. Observing or hearing your parents fighting.

21. Seeing one of your parents being physically abused by the other (e.g., struck, shoved).

22. Seeing one of your siblings being physically abused or verbally berated by your parent(s).

23. A family member or relative exposed their sex organs to you when you did not want or expect this to happen.

24. Another person exposed their sex organs to you when you did not want or expect this to happen.

25. A family member or relative touched you in a sexual way when you did not want or expect this to happen.

26. Another person touched you in a sexual way when you did not want or expect this to happen.

27. A family member or relative made you or asked you to engage in a sexual activity when you did not want to.

28. Another person made you or asked you to engage in a sexual activity when you did not want to.

29. You were isolated from friends or playmates for a long period(s) of time (e.g., due to quarantine, chronic illness, foreign travel, living on an isolated farm).

30. Continuation of item 29: Average period of time spent in isolation =

(A) no isolation (B) 1 week (C) 1 month (D) 6 months (E) more than 1 year.

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