THE PLAYFUL ADVANTAGE: HOW PLAYFULNESS ENHANCES COPING WITH STRESS

BY

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THESIS

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ABSTRACT

This study investigated the interrelationship between playfulness in adults, perceived stress, and styles of coping. Research on playfulness has long centered on its connection to development in children, while the study of playfulness in adulthood has just recently commenced. Similarly, the psychology literature is rife with the study of stress and coping processes, whereas its study through the lens of playfulness is virtually nonexistent. This is unfortunate, as all three constructs are cognitive-emotional in nature, suggesting a natural relationship between them. This thesis study investigated whether playfulness serves an adaptive function in the experience of stress and corresponding coping strategies among college-aged students. Findings revealed that playful individuals reported lower levels of perceived stress than their less playful counterparts. Furthermore, playful individuals more frequently utilized adaptive, stressor-focused coping strategies and were less likely to employ negative, avoidant, and escape-oriented strategies. The findings suggested that as in childhood, playfulness serves a strong adaptive function in young adulthood, providing individuals with more cognitive resources from which they can manifest effective coping mechanisms in the face of stressful situations. Playfulness, then, should not remain on the peripheries of societal and academic thought, but rather should be developed, nurtured and subjected to further scientific inquiry.

To the rose-smellers, the scenic-route-takers, the tree-climbers...may your courageous journey never end. To the rest, may you be inspired to reclaim your youthful spirit.

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CHAPTER ONE: INTRODUCTION

Play has long been known to serve a vital role in human development, particularly in children (Singer & Singer, 1990; Vygotsky, 1978). A myriad of psychological and physiological outcomes have been associated with playful children. Evidence has shown playful children to be divergent thinkers, problem solvers, physically active, emotionally and self-regulated, and imaginative, among other characteristics (Barnett, 1985, 1991a; Barnett & Kleiber, 1982; Brockman, Jago, & Fox, 2011; Christiano & Russ, 1996; Elias & Berk, 2002; Lieberman, 1965, 1977; Singer, Singer, & Sherrod, 1980; Vandenberg, 1980). Certain authors have posited that the functions of play and playfulness decrease in adolescence, but research has shown that playful adults also benefit in a number of arenas, such as creativity, humor, motivation, and affect (Amabile, Hill, Hennessey, & Tighe, 1994; Barnett, 2007, 2011-2012; Glynn & Webster, 1992, 1993; Guitard, Ferland, & Dutil, 2005; Peterson & Seligman, 2004; Tegano, 1990). In addition to these benefits for younger populations, playful behaviors have been shown to predict numerous health related outcomes among older adults (Lindstrom et al., 2005; Singh-Manoux, Richards, & Marmot, 2003; Son, Kerstetter, Yarnal, & Baker, 2007). With the Baby Boomer population approaching retirement age, further investigation is needed into what contributes to and sustains healthy aging. An important question for research is whether the myriad of adaptive outcomes that playfulness provides for children and adolescents carries over into adulthood. As such, it is possible that these benefits are more ubiquitous than previously thought or empirically shown.

As such a universal contributor to positive outcomes, it makes sense to inject playfulness into the discussion of stress and coping processes. These processes have long been salient concerns in the psychology literature and have been studied in countless domains, such as negative life events, caregiver burden, and physical and mental health (Chwalisz, 1992; Chwalisz & Kisler, 1995; Cohen & Lichtenstein, 1990; Cohen, Tyrrell, & Smith, 1993; Kleiber, Hutchinson, & Williams, 2002; Nielsen, Kristensen, Schnohr, & Grønbaek, 2008). Individuals in distress cope in many different ways, both adaptively (e.g. active coping, instrumental support) and maladaptively (e.g. substance use, self-blame). Since evidence has shown both coping processes and playfulness to be aspects of personality (Barnett, 2011-2012; Connor-Smith & Flachsbart, 2007; McCrae & Costa, 1986; Woszczynksi, Roth, & Segars, 2002), it is likely that they share a natural relationship.

More extensive investigation into the stress-coping relationship is needed now more than ever, as the 21st century has seen a significant rise in problematic mental health indicators. The National Center for Health Statistics (2011) reported an almost 500% increase in antidepressant use from the periods of 1988-1994 to 2005-2008, which are used to treat not only depression, but also eating, anxiety, and posttraumatic stress disorders. Additionally, according to the Centers for Disease Control and Prevention (2008), 40% of persons surveyed across 35 states in 2007 reported suffering from serious psychological distress within the past 30 days. Data collected in 2006 and 2008 by the Behavioral Risk Factor Surveillance System revealed that nine percent of adults reported being currently depressed (Centers for Disease Control and Prevention, 2008). With regard to young adults, researchers from the National Institute on Alcohol Abuse and Alcoholism found that from 1999 to 2008 hospitalizations due to alcohol overdoses increased 25% in 18 – 24 year olds. In 2008 excessive alcohol

consumption accounted for one out of every three hospitalizations due to overdose (White, Hingson, I-Jen, & Hsiao-Ye, 2011). Furthermore, another study showed that one in four college-aged students reported being currently depressed (Lindsey, Fabiano, & Stark, 2009).

It follows that the widespread and fundamental issue of the stress-coping interrelationship merits intense as well as non-traditional investigation. Understanding the relationship between playfulness and coping with stress will help build a more comprehensive picture of the adaptive functions of playfulness. In this spirit, this author sought to investigate whether playful young adults experience stress in the same way as less playful young adults. Moreover, an additional question posed to provide further insight into this interrelationship was whether coping styles were different between more and less playful adults.

Thus, there were two overarching questions that guided this study. First, "What is the relationship between perceived stress and playfulness in young adults?"; and second "How do coping styles differ as a function of the level of playfulness in the individual?"

CHAPTER TWO: REVIEW OF RELATED LITERATURE

Playfulness

Playfulness has always been an easy behavior to observe, one knows it when they see it. While playfulness is as old as time itself, scientific inquiry about it is relatively new. Distinctions have been made between play and playfulness, with different authors agreeing that the former is a behavior and the latter a personality predisposition that gives the individual the ability to transform a situation or environment to make it more enjoyable or entertaining (Barnett, 1990, 2007; Glynn & Webster, 1992; Schaefer, 1993; Trevlas, Grammatikopoulos, Tsigilis, & Zachopoulou, 2003).

Playfulness in Children

Systematic conceptualization and research into playfulness began with Lieberman's (1965, 1966, 1977) work. She conceptualized playfulness in children to consist of physical spontaneity, cognitive spontaneity, social spontaneity, sense of humor, and manifest joy. Barnett and Kleiber (1982, 1984) corroborated Lieberman's initial findings, strengthening her proposed five aspects of playfulness. Physical spontaneity captures a child's predisposition to be physically active during play, including running, jumping, skipping, and hopping, as well as to be coordinated in their movements. Cognitive spontaneity refers to a child's tendency to make up and engage in different games and activities, personify different characters, and incorporate unconventional objects into their play. Social spontaneity encapsulates how cooperatively a child plays with a playmate, if they share playthings, if they initiate play with others, and if they assume a leadership role during play. Sense of humor refers to clowning

around, joking, teasing, and whether a child laughs at or tells funny stories. Finally, manifest joy captures the exuberance of a child during play, if they sing or talk frequently, and their level of expressiveness. Further testing and measurement of this conceptualization was conducted by Barnett (1990, 1991b) when she developed the Children's Playfulness Scale, an extension to the set of items found in Lieberman's original instrument.

Since the early stages of conceptualization, playful behavior has been found to correlate with a plethora of adaptive mental, emotional, and physiological outcomes. Lieberman (1977) proposed a model linking playfulness, composed of the five aforementioned elements, with creativity and imagination. Other correlates of playfulness that have been found include divergent thinking (Barnett & Kleiber, 1982; Lieberman, 1965), positive affect (Barnett, 1991a; Jenvey & Jenvey, 2002), problem-solving ability (Barnett, 1985; Vandenberg, 1980), physical activity (Barnett, 1991a; Brockman, Jago, & Fox, 2011), emotional and self regulation (Christiano & Russ, 1996; Elias & Berk, 2002), and imagination (Barnett 1991a; Lieberman, 1977; Singer, Singer, & Sherrod, 1980), among others (see Barnett, 2011-2012).

Lieberman (1965) and Barnett and Kleiber (1982) both found relationships between playfulness and divergent thinking ability among kindergarten and preschool children in similarly designed studies. Lieberman tested kindergarteners on her proposed five components of playfulness and found positive correlations with divergent thinking ability between .21 and .36. Barnett and Kleiber tested preschoolers and further took the children's gender into account. Interestingly, divergent thinking and playfulness correlated positively among girls, but negatively among boys, and sometimes not at all. Barnett (1985) continued with additional investigations into playfulness and problem-solving abilities, concluding that

the unstructured elements of children's play augmented the ability to solve problems and complete tasks.

Playful children have also been found to exhibit more emotional and self regulation (Christiano & Russ, 1996; Elias & Berk, 2002). Christiano and Russ investigated school-aged children's experience of and ability to cope with stress during dental visits. They found that children who showed positive signs relating to playfulness reported less distress throughout the experience as well as higher use of a variety of coping strategies. Elias and Berk built on Vygotsky's hypothesis regarding sociodramatic play and self-regulation. They found that, in particular, impulsive children benefited from sociodramatic play in that they exhibited more self-regulation over the course of their short-term longitudinal study. Barnett (1991a) also found playful children to exhibit higher levels of positive affect, as well as higher levels of physical activity and imagination.

Playfulness in Adults

Research on playfulness in adults is limited, although recently this exploration has begun to proliferate. Researchers have found playfulness in adults to be an aspect of personality (Barnett, 2011-2012; Bozionelos & Bozionelos, 1999; Glynn & Webster, 1992), and to be stable across time (Yager, Kappelman, Maples, & Prybutok, 1997; see Barnett, 2011-2012).

Glynn and Webster (1992) defined adult playfulness in the following way:

> We conceptualize adults' playfulness as an individual trait, a propensity to define (or redefine) an activity in an imaginative, nonserious or metaphoric manner so as to enhance intrinsic enjoyment, involvement, and satisfaction. Playfulness is a

> multidimensional construct, encompassing cognitive, affective, and behavioral components, which together constitute a continuum along which individuals range from low to high. (p. 85)

In their study, Glynn and Webster (1992) uncovered five factors that constituted adult playfulness: spontaneous, expressive, fun, creative, and silly. These five factors explained 57.5% of variance, and were derived from loading 25 of the 32 adjective pairs administered in the scale. Each factor was named for the item that loaded the highest. Reliability scores for the five factors via Cronbach's alpha were relatively high: spontaneous (.83), expressive (.82), fun (.78), creative (.81), and silly (.73). The authors pointed out that these factors closely related to the five factors that Lieberman (1977) found for playfulness in children, suggesting a similar nature in the playfulness construct across age.

> Similarly, Barnett (2007) gave the following definition of playfulness in young adults: Playfulness is the predisposition to frame (or reframe) a situation in such a way as to provide oneself (and possibly others) with amusement, humor, and/or entertainment. Individuals who have such a heightened predisposition are typically funny, humorous, spontaneous, unpredictable, impulsive, active, energetic, adventurous, sociable, outgoing, cheerful, and happy, and are likely to manifest playful behavior by joking, teasing, clowning, and acting silly. (p. 955)

She identified four factors of playfulness in adults: gregarious (alpha reliability coefficient = .87), uninhibited (.96), comedic (.78), and dynamic (.80). These factors accounted for 70.9% of variance. Descriptors were obtained through focus groups when individuals were asked what words related to playfulness. Respondents were then asked to rate themselves on each descriptor, as well as a friend who they saw as possessing high playfulness and a friend they

saw as possessing low playfulness. Of 42 total identified descriptors, 15 were found to significantly relate for both males and females across each rating (self, high playfulness friend, and low playfulness friend). These 15 descriptors then loaded into four separate factors. The 15 descriptors and their more general factors were the following: cheerful, happy, friendly, outgoing, sociable (Factor I: Gregarious), spontaneous, impulsive, unpredictable, adventurous (Factor II: Uninhibited), clowns around, jokes/teases, funny, humorous (Factor III: Comedic), and active, energetic (Factor IV: Dynamic).

Factors uncovered by Barnett (2007) were similar to Glynn and Webster's (1992) five factors. Barnett's "gregarious" factor related very closely to "expressive", with individual adjectives such as "friendly", "outgoing", and "cheerful" similar to Glynn and Webster's "open", and "expressive". The factor that Barnett labeled "uninhibited" was similar to Glynn and Webster's "spontaneous", including three out of four of Barnett's descriptors being exactly the same adjectives that were used by Glynn and Webster (spontaneous, impulsive, adventurous). For this factor, Glynn and Webster also included "carefree", "free-spirited", and "fun" which did not appear in Barnett's descriptors. Barnett's fourth descriptor, "unpredictable", appeared in Glynn and Webster's "silly" factor. Barnett's "comedic" factor (clowns around, jokes/teases, humorous, funny) resembled the "fun" (fun, bright, exciting, playful) and "silly" (silly, childlike, whimsical, frivolous, unpredictable) factors of Glynn and Webster, and Barnett's "dynamic" factor included the descriptor "active", which also appeared in Glynn and Webster's "creative" factor.

Playfulness and Personality

While personality characteristics have been meaningfully studied with regard to leisure pursuits (Barnett, 2012; Diener, Larsen, & Emmons, 1984), very little empirical research exists investigating playfulness as a function of personality. Barnett (2011-2012) attempted to encapsulate playfulness as a function of the Big Five personality dimensions and found Extraversion to predict playfulness in both men and women, and low Conscientiousness to predict playfulness but only in men. Barnett delved further into the playfulness construct and identified various personality dimensions that related to her four components (gregarious, uninhibited, comedic, and dynamic) of playfulness (Barnett, 2007). Not surprisingly, Extraversion predicted the gregarious, uninhibited, and comedic components of playfulness for men and women, and the dynamic component for women only. Low Conscientiousness also predicted the uninhibited factor for men and women, and the gregarious and comedic factors for men only. Low Openness to Experience predicted the gregarious component in both men and women, and the dynamic component in women only. High Openness to Experience predicted the uninhibited factor in men. As for Agreeableness, the uninhibited component was predicted by low scores for men but by high scores for women, while the dynamic component was predicted by low scores for women. Finally, low Neuroticism predicted the dynamic component of playfulness in women.

Another attempt to see playfulness in terms of personality came from Woszczynski et al. (2002). They identified a more specific type of playfulness, that is, microcomputer playfulness, defined by Webster and Martocchio (1992) as "a situation-specific individual characteristic, [which] represents a type of intellectual or cognitive playfulness…[and]

describes an individual's tendency to interact spontaneously, inventively, and imaginatively with microcomputers" (p. 202). Woszczynski et al. (2002) set forth a myriad of hypotheses and corresponding model which held Openness to Experience and emotional stability (low Neuroticism) to be the personality factors responsible for microcomputer playfulness. Yager et al. (1997) also built on Webster and Martocchio's (1992) operationalization of playfulness by conducting a longitudinal study to empirically support the claim that playfulness was a trait that was stable across time. They administered Webster and Martocchio's (1992) Computer Playfulness Scale four times over five weeks and found students' scores to persist over the course of their study.

Other Correlates of Playfulness

Playfulness in adults has been empirically shown to relate to a host of psychological attributes, including creativity (Glynn & Webster, 1992; Guitard et al., 2005; Tegano, 1990), humor (Barnett, 2007, 2011-2012; Peterson & Seligman, 2004), the ability to entertain oneself (Mannell, 1984, 1985), motivation (Amabile et al., 1994; Barnett, 2011-2012; Glynn & Webster, 1993), and affect and expressivity (Barnett, 2011-2012; Bozionelos & Bozionelos, 1999).

Tegano (1990) found significant relationships between adults' creativity, playfulness, and what she called "tolerance of ambiguity", defined as how predisposed an individual is to handle ambiguous situations (see Budner, 1962). She found that both playfulness and tolerance of ambiguity were significantly related to creativity in elementary school teachers and staff. The author noted that these findings held when creativity was viewed as a personality trait, as opposed to a cognitive trait. She cited Sawyers' (1987) findings that

creativity as a cognitive trait was not related to playfulness, which affirmed other research that found no significant relationship between intelligence and playfulness (Glynn & Webster, 1993; Proyer, 2011). Finally, Barnett's (2007) conceptualization of playfulness did not support the inclusion of creativity, but rather better explained playfulness within the context of other descriptors.

Guitard et al. (2005) hypothesized the importance of playfulness within an occupational therapy context. They attempted to define playfulness in a qualitative study and found creativity to be a characteristic of the predisposition of playfulness. In this sense they helped to validate Glynn and Webster's (1992) definition, whose conceptualization of playfulness included creativity as one of its factors. Creativity was the highest loading adjective on that factor, and was accompanied by "imaginative" and "active" adjectives.

With regard to the association of playfulness with sense of humor, certain authors have equated the two (Peterson & Seligman, 2004) while others viewed humor as a function of playfulness (Barnett, 2007, 2011-2012). Peterson and Seligman (2004) defined a humorous (or playful, as they used the terms interchangeably) individual as one who is able to skillfully laugh and see the lighter side of things and inject humor and jokes into everyday situations. In enumerating humor/playfulness, the authors described it as a trait, albeit difficult to narrow down and measure, which was empirically related to positive attributes.

Barnett (2007), however, found humor to be a significant component while still not capturing the entirety of the playfulness construct. "Humorous" was one of her 15 descriptors, and together with "clowns around", "jokes/teases", and "funny" made up the "comedic" factor in her definition of playfulness. Barnett (2011-2012) more systematically looked at sense of humor and its relation to playfulness. She found significant gender

differences between college men and women in humor's relationship to playfulness. Not surprisingly, humor appeared as a predictor most clearly for the comedic factor of playfulness, but beyond that contributed little to the construct. Gender differences arose when investigating the gregarious factor of playfulness, with the appreciation of humor predicting this factor of playfulness in men, but significantly less so in women. For these reasons, Barnett (2011-2012) concluded that playfulness and humor possessed different characteristics and were distinct constructs.

Not surprisingly, playfulness has been found to relate to the ability to entertain oneself (Barnett, 2011-2012; Mannell, 1984, 1985). Mannell (1984) developed a "leisure-specific single-trait personality construct" (p. 232) which he called Self-As-Entertainment (SAE). SAE captures individuals' ability to use their free time in a way that is satisfactory or entertaining. Certain individuals perceive themselves to have too much free time while others seem to stay happily occupied during their free time, representing a range from low SAE to high SAE. This suggested a natural relationship with playfulness, and indeed Mannell cited Lieberman (1977), saying, "Elements of Lieberman's notion of playfulness … are contained in the [Self-As-Entertainment] construct" (p. 233). Mannell's (1984, 1985) corresponding SAE scale was composed of three modes (self, mind, and environment) and was made up of 28 items. Mannell reported finding no gender or age-related differences in his preliminary measurement of SAE. Further investigation into the relationship between SAE and adult playfulness constructs was carried out by Barnett (2011-2012), who found that playfulness in university students correlated with the self and environment modes of the SAE construct. SAE also appeared in the individual components of playfulness, such as the environmental mode for women predicting the "gregarious" component, the environmental mode for men

predicting the "uninhibited" component, and general SAE scores for women predicting the "comedic" component. This built on Barnett's (2007) and Glynn and Webster's (1992) definitions of playfulness as the ability to transform or reframe an environment to be more entertaining or satisfactory and suggested further similarities of playfulness in children to playfulness in adults.

Motivational orientation has been found to significantly interact with playfulness in adults (Amabile et al., 1994; Barnett, 2011-2012; Glynn & Webster, 1993). Glynn and Webster (1993) found intrinsic motivation to be a predictor of playfulness in adults of high intelligence, and hypothesized that intelligence does not affect playfulness, but rather that it influences how playfulness manifests itself. This has been corroborated by other research (Proyer, 2011) and will be discussed in further detail momentarily. Amabile et al. (1994) also paired motivational orientation with playfulness in undergraduate students and found playfulness to positively relate to intrinsic motivation on two playfulness scales. Similarly, in Barnett's (2011-2012) study, tangible rewards (i.e. extrinsic motivation) did not serve as motivators for young adults who scored high in playfulness.

Playfulness in adults has also been found to relate to affect (Barnett, 2011-2012) and expressivity (Bozionelos & Bozionelos, 1999). In the aforementioned work by Barnett (2011-2012), the interplay of affect and playfulness merits further discussion. She found that positive and negative affect were more present in playful women than in playful men, who scored high in negative affect but not in positive affect. Barnett (2011-2012) called for more in-depth investigation into gender differences within playfulness and affect, which seems appropriate when considered in light of the findings of Bozionelos and Bozionelos (1999), who used "the terms 'instrumentality' and 'expressiveness' … instead of 'masculinity' and

'femininity'" (p. 750). These authors found that expressive traits were associated with higher amounts of playfulness and cited Hunt's (1993) findings that linked positive affect with expressivity, thus making it clear that playfulness, affect, and expressivity are all related.

As mentioned previously, intelligence has been empirically shown to have little association with playfulness (Glynn & Webster, 1993; Proyer, 2011). Glynn and Webster (1993) studied 550 members of American Mensa Ltd. and found that mean playfulness scores were the same for intelligent individuals as they were for others, and that playfulness was merely expressed differently for various types of people. Proyer (2011) investigated the link between intelligence and playfulness more systematically in administering psychometric and self-estimated intelligence instruments to 254 psychology undergraduates. Proyer found that psychometric intelligence had little to do with playfulness, but that self-estimated intelligence seemed to be lower for individuals scoring high in playfulness, perhaps because of the characterization as a playful individual, but the author noted that this was purely speculative. Another interesting finding of the study was that playful individuals scored higher on a university examination. The author noted that more research should be undertaken, as higher academic performance appeared to be related to playfulness, but psychometric intelligence was not, thus indicating that there is still much to learn regarding the function and correlates of playfulness in adults.

Demographic Differences in Playfulness

Gender differences in adult playfulness have been investigated by a number of authors (Barnett 2007, 2011-2012; Bozionelos & Bozionelos 1999; Glynn & Webster, 1992, 1993). In Glynn and Webster's (1992) research, they found that three of five studies resulted in

mixed findings: one showed a positive correlation with the gender of the participant, the second produced a negative correlation, and the third showed them to be uncorrelated. This led them to conclude that there was no direct relationship between gender and playfulness in adults. They reaffirmed the lack of a relationship in a subsequent study (Glynn & Webster, 1993). Bozionelos and Bozionelos (1999) found only minor differences between men and women, but found that one of Glynn and Webster's (1992) factors (creative) scored higher for men. Barnett (2007) was more direct with her findings, saying, "the underlying structure of the 15 playfulness qualities was equivalent for the men and women in the study" (p. 956) and, "These findings replicate previous work detecting no differences in the playfulness of men and women" (p. 956). A more in-depth look (Barnett, 2011-2012) at Barnett's (2007) four factors of playfulness showed that while total playfulness may be similar in men and women, different characteristics (factors) of playfulness did show variation, providing evidence for Glynn and Webster's (1993) suggestion that playfulness is manifested in different ways for different people. Barnett (2011-2012) found differences between men and women in each of the four factors of playfulness. Communication characterized by jokes and story-telling significantly predicted the gregarious factor for men, but had an inverse relationship for women. Similarly, men high in the uninhibited factor exhibited a desire for challenging and potentially dangerous adventures and experiences, whereas the uninhibited factor in women manifested itself through broad ranges of emotional expressivity. Men demonstrated high comedic scores mostly through outward-directed humor (i.e. jokes and story-telling), whereas the comedic factor of playfulness meant something much different for women, namely a more internal, self-focused tool meant to amuse oneself. Finally, the dynamic component included more personality, affect, and motivation predictors for women than for men.

In addition to the significant differences found between the factors of playfulness and gender, Barnett (2011-2012) found some differences attributable to race, noting that Caucasians (both men and women) scored higher on the comedic factor of playfulness than did others, and that racial differences were more prevalent for women overall. She stated that race and playfulness deserved to be studied in more depth, as very little had been done to explore their interrelationship. Finally, with regard to age, Glynn and Webster (1992, 1993) found a negligible relationship between playfulness and age, adding to the literature that conceptualizes playfulness as a personality trait that is stable over time.

Measures of Playfulness

A few different measures of playfulness in adults have been developed, the most salient being those by Glynn and Webster (1992) and Barnett (2007). Glynn and Webster's (1992) five factors of playfulness in adults (spontaneous, expressive, fun, creative, and silly) came from the introduction of the Adult Playfulness Scale, which consisted of 32 pairs of adjectives for which the respondent is asked to indicate which is a more accurate representation of themselves. These adjectives were selected from an instrument previously used to identify highly playful adults in a work environment that consisted of 63 total items. Items included in the final version of the Adult Playfulness Scale were the items from the original instrument that showed both face validity and discriminant validity between work and play.

The Adult Playfulness Scale was introduced and tested across five studies (Glynn & Webster, 1992) with over 300 respondents. These five studies included self-report questionnaires and laboratory experimentation, as well as different geographical regions and

vocations, and confirmed the validity and reliability of the instrument. The five factors discovered from the studies accounted for 57.5% of the variance, and yielded high Cronbach coefficient alphas (spontaneous = .83, expressive = .82, fun = .78, creative = .81, silly = .73).

Barnett (2007) developed the Playfulness Scale for Young Adults by conducting focus groups to identify 42 potential descriptors of playfulness in young adults. These descriptors were given to 649 university students who rated themselves on a 10-point Likert scale for each descriptor. These students also rated a friend who they viewed as highly playful and one who they viewed as not playful on each descriptor. Correlations between each of the 42 descriptors and self- and other-rated playfulness ultimately yielded 15 descriptors that loaded into four factors. The four factors accounted for 70.9% of the variance and are the same that were mentioned earlier in Barnett's (2007) definition of playfulness (gregarious, uninhibited, comedic, and dynamic). Cronbach's alphas for each factor were .87 for gregarious, .96 for uninhibited, .78 for comedic, and .80 for dynamic.

Perceived Stress

Perhaps the most seminal work on stress that has persisted over the last few decades comes from the work of Lazarus and Folkman (1984), who noted that stress was not a stand alone construct, but rather contained many interwoven variables taken at the same time, which contributed to the lack of agreement on a sufficient and succinct definition. In attempting to incorporate at least some of these variables, Lazarus and Folkman (1984) defined psychological stress as: "a relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (p. 21). This definition implies a buffer between the individual and the

environment that consists of taxing stressors. Lazarus and Folkman (1984) termed this buffer "cognitive appraisal".

Cognitive appraisal centers on the individual's interpretation and reaction to a stressful event. Naturally, both of these vary greatly across individuals and groups. Stress has long been paired with appraisal, although only in the last half century or so has the systematic study of appraisal been conducted (see Arnold, 1960, 1970; Lazarus & Folkman, 1984; Lazarus, 1999), although the term labeling it has varied (e.g. "decision making under stress", Janis & Mann, 1977).

Cognitive appraisal appears in three forms: primary, secondary, and re-appraisal (Lazarus & Folkman, 1984). During primary appraisal, the level of stress of a situation is surmised. Three possible appraisals exist in this domain: irrelevant, benign-positive, and stressful. An irrelevant event, naturally, invokes no interest from the appraiser; it has no outcome on his or her emotional state. A benign-positive event is one that "preserves or enhances well-being or promises to do so" (Lazarus & Folkman, 1984, p. 32). Finally, stressful appraisals are events that are appraised as incorporating harm/loss, threat, or challenge. Events in the harm/loss category have already transpired, whereas threat events are anticipated and foreseen and have not yet transpired. Challenging events carry with them possibilities of positive outcomes, even though the corresponding event may include some element of distress.

Secondary appraisal invokes the evaluation of appropriate coping mechanisms. This includes determining available coping mechanisms, evaluating "the likelihood that a given coping option will accomplish what it is supposed to" (Lazarus & Folkman, 1984, p. 35) and the likelihood that it can be effectively enacted. Operating in concert with primary appraisal,

secondary appraisal helps determine the level of distress experienced by the individual. If the secondary appraisal returns less than adequate resources to overcome or manage the primary appraisal, stress results.

Updated appraisals from new environmental information are called reappraisals. These can come as a result of either the situation or the individual's efforts to manage the situation. It is essentially equivalent to a regular appraisal, in that "a reappraisal is simply an appraisal that follows an earlier appraisal in the same encounter and modifies it" (Lazarus & Folkman, 1984, p. 38).

Stress has been viewed in the scope of a few salient categorical arenas, including trauma, life events, chronic stress, and daily stressors (Aldwin, 2011; Lazarus & Folkman, 1984). Aldwin (2011) defined each of these groupings in the following way. Trauma refers to events "that involve the threat of or witnessing deaths or severe bodily injury" (p. 17) with little or no forewarning, and can happen to individuals or to groups. Events of trauma involve a lack of individual control; examples may include, on a large scale, natural disasters or wars, and on a smaller scale, car accidents or sexual assault. Life events are stressors that involve major life happenings, such as the loss of a loved one or divorce. Chronic stressors "involve several characteristics, including threats of the possibility of harm; long-term, unresolved conflicts; long-term uncertainty; multiple, uncontrollable demands and complexity; under-rewards; and structural constraints such as resource deprivation and restriction of choice" (p. 18). Examples of these are social problems, such as low socioeconomic status, or chronic illnesses. Finally, daily stressors persist for short periods of time and are of a less egregious nature, such as acute interpersonal conflicts or general inconveniences and hassles.

From this foundation of research and conceptualization of stress has emerged the study of *perceived* stress. A concrete conceptualization of perceived stress was long overdue, as the crux of the stress and appraisal discussion centered on "individual differences" (Lazarus & Folkman, 1984, p. 22), implying the subjective nature of experienced stress. Cohen, Kamarck, and Mermelstein (1983) made this very point, noting that objective measurements of stress underestimated the importance of an individual's cognitive appraisal as a bridge between an event and the coping process. Another benefit of this particular individualized view of stress was its increased scope, as it incorporated the confluence of stressors that an individual may experience at any given time, such as life-events, chronic stressors, or traumas (Cohen et al., 1983). Perceived stress can be conceived of as "the degree to which situations in one's life are appraised as stressful" (Cohen et al., 1983, p. 385). The extent to which one feels their life to be unpredictable, uncontrollable, and overloaded makes up perceived stress (Cohen et al., 1983; Cohen et al., 1993; Cohen & Lichtenstein, 1990).

Correlates of Perceived Stress

Perceived stress has been studied in a variety of contexts, such as smoking cessation (Cohen & Lichtenstein, 1990; Hajek, Taylor, & McRobbie, 2010; Naquin & Gilbert, 1996), caregiver burden (Bedini, Gladwell, & Dudley, 2011; Chwalisz, 1992; Chwalisz & Kisler, 1995), life events (Beatty, Lee, & Wade, 2009; Cohen et al., 1993; Otto et al., 1997), and leisure (Aldana, Sutton, Jacobson, & Quirk, 1996; Bedini et al., 2011; Kleiber et al., 2002; Lutz, Lochbaum, Lanning, Stinson, & Brewer, 2007). Perceived stress has also been found to relate to an assortment of psychosocial and physiological constructs, such as personality (Besser & Shackelford, 2007; Burgess, Irvine, & Wallymahmed, 2010; Candrian et al., 2008;

Ebstrup, Eplov, Pisinger, & Jørgensen, 2011), affect (Besser & Shackelford, 2007; Cohen et al., 1993; Davidsdottir, 2007), self-efficacy (Ebstrup et al., 2011; Moeini et al., 2008; Trouillet, Gana, Lourel, & Fort, 2009), attachment (Cordon, Brown, & Gibson, 2009; Koopman et al., 2000; McCarthy, Moller, & Fouladi, 2001; Reiner, Anderson, Hall, & Hall, 2010), adjustment (Baker, 2004; Curtis, Groarke, Coughlan, & Gsel, 2004; Extremera, Durán, & Rey, 2007; Kulik & Heine-Cohen, 2011), depression (Candrian et al., 2008; Ghorbani, Krauss, Watson, & LeBreton, 2008; Holt-Lunstad, Birmingham, & Light, 2011), happiness (Brief, Burke, George, Robinson, & Webster, 1988; Chatters, 1988; Feist, Bodner, Jacobs, Miles, & Tan, 1995; Schiffrin & Nelson, 2010), health related behavior (Naquin & Gilbert, 1996; Rod, Grønbaek, Schnohr, Prescott, & Kristensen, 2009; Wichianson, Bughi, Unger, Spruijt-Metz, & Nguyen-Rodriguez, 2009), and health problems (Cohen et al., 1993; Lovell, Moss, Wetherell, 2011; Nielsen et al., 2008).

Leisure is one of the many contexts in which perceived stress has been studied. A relatively direct relationship between leisure and perceived stress was found by Aldana et al. (1996) when they showed that working adults who expended more physical activity during their leisure time were less likely to experience high levels of perceived stress. Adding to this insight was the work of Bedini et al. (2011), who found perceived stress to be a mediator between three leisure variables (leisure participation, satisfaction with time for leisure, and satisfaction with the quality of the leisure experience) and quality of life among caregivers. A more holistic approach to the place of leisure in stress and coping will be promulgated shortly.

Measures of Perceived Stress

There have been a number of ways in which stress has been measured, such as in relation to life events (e.g. Horowitz, Wilner, & Alvarez, 1979) as well as from daily hassles (e.g. Kanner, Coyne, Schaefer, & Lazarus, 1981), but these have not been without criticism (Cohen et al. 1983; Dohrenwend, Link, Kern, Shrout, & Markowitz, 1990; Funch & Marshall, 1984). Many authors have also used instruments they have developed specifically for the particular setting of their study (e.g. Beatty et al., 2009; Besser & Shackelford, 2007; Kulik & Heine-Cohen, 2011). With objective conceptualizations of stress providing an incomplete picture (Cohen et al., 1983), and with moderating and mediating variables between stressors and coping mechanisms (e.g. cognitive appraisal; Lazarus & Folkman, 1984), it is more appropriate to measure stress in a subjective context, as it is perceived by the individual. Hence, a measure of how much stress an individual perceives to be in their life is more appropriate than measures of what is "typically" viewed as stressful (Chwalisz, 1992), such as life events or daily hassles, as these do not account for individual differences in appraisal. This fits with Lazarus and Folkman's (1984) definition that stress is the appraisal (or perception) of an event that taxes or exceeds an individual's available resources.

Cohen et al. (1983) developed the Perceived Stress Scale (PSS), a measure of how stressful one appraises the situations in their life to be. A major strength of the PSS is its scope, as "it is sensitive to chronic stress deriving from ongoing life circumstances, to stress from expectations concerning future events, to stress from events not listed on a particular life-events scale, and to reactions to the specific events included on any scale" (Cohen et al., 1983, p. 387). The goal of the PSS is to measure how "unpredictable, uncontrollable, and

overloading" (Cohen et al., 1983, p. 387) an individual surmises his or her life to be. In addition to items measuring these three adjectives, items directly measuring how much stress an individual is experiencing is included.

Validity and reliability of the PSS was assessed over the course of three studies. The first study consisted of 332 freshmen college students and the second consisted of 114 students enrolled in a personality psychology class. A third study was conducted with 64 members of a smoking cessation program. In addition to the PSS, both college student samples were administered the same four instruments measuring life events, social anxiety, and depressive and physical symptoms. The smoking cessation group responded to a life-event scale and the same physical symptom instrument that was used by the college student samples, as well as the PSS. Reliabilities for the three studies assessed by alpha coefficients were .84, .85, and .86, respectively. Test-retest reliability was also measured with 82 university students who took the PSS on a two-day interval; the corresponding reliability was .85. As predicted, the PSS was correlated with the life-events scale in all three samples but also measured perceived stress as a separate construct.

There are no subscales in the PSS, which merely consists of 14 items whose summation provides a measure of perceived stress. A shorter version of the scale consists of four items. The PSS is the salient measure of perceived stress in the literature, and was used in this study.

Coping with Stress

One cannot easily discuss the construct of perceived stress without mentioning efforts and strategies to cope with it. Like stress, coping has emerged in the literature over the last

half century or so. Lazarus and Folkman (1984) highlighted the development of coping perspectives, ranging from animal experimentation to psychoanalytic ego psychology to coping traits and styles. While animal experimentation provided a natural Darwinian-influenced starting point, its focus on drive and arousal left out cognitive and emotional factors that heavily influence a human's coping processes (Lazarus & Folkman, 1984). Cognition, not behavior, served as the core of the psychoanalytic ego psychology approach, which placed coping efforts on a continuum from immature methods to healthier, more adaptive methods and viewed these methods more as traits than as processes. Lazarus and Folkman (1984) provided their own conceptualization of coping in an effort to address the shortcomings associated with the two previous models of coping. They defined coping as "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (Lazarus & Folkman, 1984, p. 141).

Since Lazarus and Folkman's (1984) seminal work, coping has been seen as a process representing many different styles (Carver, 1997; Carver, Scheier, & Weintraub, 1989) that fall into a few salient categories, including emotion-focused coping and problem-focused coping (Lazarus & Folkman, 1984), meaning-focused coping (Folkman, 1997), and engagement and disengagement coping (also termed approach and avoidance coping; Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001; Roth & Cohen, 1986; Skinner, Edge, Altman, & Sherwood, 2003). This is a result of concentrated study, and one not devoid of criticism (see Skinner et al., 2003), as coping "is not a specific behavior that can be unequivocally observed or a particular belief that can be reliably reported" (Skinner et al.,

2003, p. 217). Skinner et al. (2003) characterized coping as "an *organizational construct* used to encompass the myriad actions individuals use to deal with stressful experiences" (p. 217).

A few of these distinctions exhibit significant overlap. Problem-focused and emotion-focused coping efforts naturally attack the problem itself and alleviate the distress felt by a given stressor, respectively. Engagement coping can focus on either the problem or related emotions, as long as efforts are undertaken to deal with the stressor or feelings of distress, while individuals utilizing disengagement coping seek to escape the stress or related negative feelings (Carver & Connor-Smith, 2010). Meaning-focused coping naturally centers on infusing stressful events with some type of redeeming value, and is made up of global meaning and situational meaning (Folkman, 1997; Park & Folkman, 1997). Global meaning refers to the overarching belief system and values of an individual, whereas situational meaning refers to how global meaning interacts with the situation-specific environmental stressors to form meaning (Folkman, 1997).

Individual styles, or "instances", of coping abound in such quantities that an exhaustive review would prove daunting and impractical (see Skinner et al., 2003). However, more reasonable yet still substantive types of coping styles have been compiled (Carver, 1997; Carver et al., 1989) that include the 14 coping styles of Active Coping, Planning, Positive Reframing, Acceptance, Humor, Religion, Using Emotional Support, Using Instrumental Support, Self-distraction, Denial, Venting, Substance Use, Behavioral Disengagement, and Self-blame. Similar to the conceptualization by Skinner et al. (2003), each of these coping styles can fit into a broader category of coping, such as problem-focused (e.g. Active Coping, Planning, Instrumental Support) and emotion-focused (e.g. Emotional Support, Denial, Substance Use).

Coping Styles and Personality

Just as copious investigation has linked personality with playfulness and perceived stress, coping can be seen through the personality lens. Studying coping in relation to personality has been conducted with the Five Factor Model of personality, and relationships have been found with Vulnerability to Stress, one of the facets of the Neuroticism dimension (Costa & McCrae, 1985). Subsequent study has shown Neuroticism to predict numerous maladaptive coping strategies, such as wishful thinking, self-blame, withdrawal, and escape-avoidance (Bolger, 1990; Connor-Smith & Flachsbart, 2007; McCrae & Costa, 1986; O'Brien & DeLongis, 1996), although causal relationships have been debated (see Bolger, 1990). Extraversion has long been found to relate to problem-focused coping (e.g. Connor-Smith & Flachsbart, 2007; McCrae & Costa, 1986; Rim, 1986; Watson & Hubbard, 1996), but studies have also found no relation between the two (O'Brien & DeLongis, 1996). Individuals high in Extraversion also generally tend to think positively (McCrae & Costa, 1986; Rim, 1986) and seek social support (David & Suls, 1999; Watson & Hubbard, 1996), which may account for the relationships that have been found. Interestingly, Extraversion has also been show to relate to self-blame (Lee-Baggley, Preece, & DeLongis, 2005; Rim, 1986), although this has not been consistently found in all studies (see Hooker & Frazier, 1994).

In McCrae and Costa's (1986) investigation into personality and coping, two studies emerged from samples taken from the Augmented Baltimore Longitudinal Study of Aging. Members of the first sample were asked to report on a recent (within the past year) stressful event that was appraised as either a loss, threat, or challenge, and those in the second sample, having no recent event from which to report, were asked to think of an event that fit into a

broader category for the purpose of the study. Both studies generated very similar results, finding Neuroticism to be "associated with increased use of hostile reaction, escapist fantasy, self-blame, sedation, withdrawal, wishful thinking, passivity, and indecisiveness" (McCrae & Costa, 1986, p. 392). It should be noted that in this particular study the limitations included a non-generalizable sample, as well as difficulties establishing causality between coping and stress, as personality and coping efforts were measured in a proximal time frame.

Bolger (1990) studied the relationship between coping patterns and Neuroticism among students taking a medical school entrance exam. Coping efforts were reported at three points in time: 35 days and 10 days before the exam, as well as 17 days after the exam. Two different relationships were examined. First, Bolger looked at whether levels of distress and Neuroticism were explained by coping, and second, whether coping efforts had any effect on students' scores on the entrance exam. The author found that Neuroticism's impact on anxiety was strongly mediated by wishful thinking and self-blame and concluded that "the results suggest that [Neuroticism] leads people to cope ineffectively, and this coping, in turn, leads to increases in distress" (Bolger, 1990, p. 534). This is contrary to the aforementioned study by McCrae and Costa (1986), who claimed that the causal relationship between coping and anxiety was far from certain.

O'Brien and DeLongis (1996) studied the relationship between personality and problem-focused, emotion-focused, and relationship-focused coping among 270 undergraduate students. Measures of stressful situations, personality, and ways of coping were gathered through self-report questionnaires. They found that planful problem-solving was reported less frequently by students with higher Neuroticism scores and also that those same students reported higher levels of escape-avoidance. Interestingly, when controlling for

other personality dimensions, no association was found between Neuroticism and accepting responsibility, but "at the bivariate level, there was a significant positive association between [Neuroticism] and accepting responsibility" (O'Brien & DeLongis, 1996, p. 797). This is noteworthy in light of the evidence linking Neuroticism with less adaptive coping strategies, such as behavioral disengagement, wishful thinking, and self-blame (Bolger, 1990; Carver et al., 1989; Connor-Smith & Flachsbart, 2007).

O'Brien and DeLongis (1996) also investigated the relationship between Extraversion and coping, but without much success. They cited Hooker and Frazier (1994) as obtaining similar findings: that Extraversion played a role in coping, but not when factoring out the other personality dimensions, concluding that "our findings suggest that previous findings regarding the relation between [Extraversion] and problem-focused coping may have been the result of a third variable, most likely [Neuroticism]" (O'Brien & DeLongis, 1996, p. 805). This is somewhat contrary to the findings of McCrae and Costa (1986), who in the study mentioned above found relationships not only with Neuroticism and coping, but also between Extraversion and coping, albeit with questions regarding causality. They found Extraversion to be related to rational action and thinking positively, among other things, and suggested "that the most pervasive and replicable factors in coping are closely related to the major personality dimensions of [Neuroticism] and [Extraversion]" (p. 394).

Connor-Smith and Flachsbart (2007) found Extraversion to be related to cognitive restructuring, problem-focused coping, and seeking social support, as did Watson and Hubbard (1996). Connor-Smith and Flachsbart performed a meta-analysis, accumulating data from 33,094 participants across 165 samples. They noted that difficulties can arise in making broad statements about relations between personality and coping, but that modest associations

between individual personality dimensions and specific coping styles were found in their aggregated data. For example, modest associations existed between Extraversion (r = .15), Openness to Experience (r = .10), Conscientiousness (r = .11) and engagement coping. Neuroticism was moderately associated with disengagement coping (r = .27), with modest negative relationships existing between disengagement coping and Agreeableness (r = -.13) and Conscientiousness (r = -.15). Neuroticism was more strongly associated with specific coping styles, such as focusing on negative emotions (r = .41), and substance use (r = .28). Conscientiousness was also strongly related to specific coping styles, namely problem-solving (r = .30).

While the personality dimensions of Neuroticism and Extraversion may be the most salient in the scrupulous investigation of coping (McCrae & Costa, 1986), or possibly Neuroticism and Conscientiousness (Watson & Hubbard, 1996), Conscientiousness, Openness to Experience, and Agreeableness merit additional discussion. In addition to their work that focused primarily on Neuroticism and Extraversion, McCrae and Costa (1986) also found Openness to Experience to be related to the use of humor in coping with stressful situations. Research has also linked Openness to Experience with employment of relationship-focused coping and to a lower likelihood of distancing oneself (Lee-Baggley et al., 2005). This seemed to affirm O'Brien and DeLongis's (1996) findings that Openness to Experience was associated with empathic reactions toward proximal interpersonal relationships, as well as more frequent uses of positive reappraisal, suggesting that openness "may facilitate an ability to take a broader, more creative view of stressful situations, to appraise stressful situations as challenging, growth-enhancing opportunities, and to derive meaning from adverse situations" (O'Brien & DeLongis, 1996, p. 806). Similarly, Watson

and Hubbard (1996) found Openness to Experience to relate to the use of problem-solving as a coping strategy, although their study, consistent with previous research (Vickers, Kolar, & Hervig, 1989), showed only modest correlations between Openness and coping.

Watson and Hubbard (1996) also found a strong relationship between Conscientiousness and coping, specifically that Conscientiousness was inversely related to the coping styles that were positively associated with Neuroticism, such as emotion-focused coping ($r = -.48$). Conscientiousness was also found to be moderately related to problem-focused coping ($r = .35$), one of the more consistent results found in the literature. This is in concert with the findings of Vickers et al. (1989) that Conscientiousness was strongly related to appraisal and problem-solving. O'Brien and DeLongis (1996) further solidified this proposition, finding that conscientious individuals were more likely to engage in planful problem-solving and less likely to employ escape-avoidance behaviors. Problem-solving also appeared as a correlate of Conscientiousness in Lee-Baggley et al.'s (2005) study as well as Conner-Smith and Flachsbart's (2007) meta-analytic review.

Consistent relationships between Agreeableness and coping have been found across multiple studies, although some results have only been modest (Vickers et al., 1989). Agreeableness has been shown to be inversely related to emotion-focused coping in studies by Lee-Baggley et al. (2005) and Hooker and Frazier (1994). Various studies have also shown Agreeableness to be related to seeking social support (Hooker & Frazier, 1994; O'Brien & DeLongis, 1996; Vickers et al., 1989), and cognitive restructuring and positive reappraisal (Connor-Smith & Flachsbart, 2007; Vickers et al., 1989). Watson and Hubbard (1996) found a positive relationship between Agreeableness and problem-solving. Finally, negative

relationships were found between Agreeableness and self-blame (Lee-Baggley et al., 2005) and the use of confrontation (O'Brien & DeLongis, 1996).

Coping and Leisure

One prominent area of investigation in the stress and coping literature is the function of leisure in the interplay between stressful events and physiological and psychological outcomes (Kleiber et al., 2002). Most notably, leisure has been seen as a "buffer" between stress and health through social support and self-determination (Coleman, 1993; Coleman & Iso-Ahola, 1993), and as providing coping solutions hierarchically consisting of both coping beliefs and coping strategies (Iwasaki & Mannell, 2000), which serve separate purposes in the coping process. Leisure has also been postulated as providing key elements necessary to successfully overcome negative life events (Kleiber et al., 2002).

Coleman (1993) and Coleman and Iso-Ahola (1993) viewed leisure and social support as a "buffer" for stress, specifically with regard to social support and self-determination experienced through leisure. Coleman and Iso-Ahola (1993) suggested that social relationships serve a main purpose of engaging in leisure and also are vital in acting as a buffer to stressful events. Leisure, then, has ample potential to foster and administer adaptive coping efforts. Coleman (1993) demonstrated empirically that self-determination, that is, the ability to freely choose one's own leisure pursuits, was a significant buffer against poor health outcomes attributable to stress, concluding that "people who perceived that they freely participated in their leisure activities appeared to possess enhanced coping resources. Alternatively, people who found their leisure time more constrained appeared less capable of coping with life stress" (p. 358).

Iwasaki and Mannell (2000), however, viewed the function of leisure on stress and health more broadly and developed a hierarchy of coping through leisure. They built on Coleman's (1993) and Coleman and Iso-Ahola's (1993) stress-buffering hypothesis, placing it under the umbrella of leisure coping beliefs made up of the constructs of "leisure autonomy" and "leisure friendships". Leisure autonomy is the belief that one's coping ability will be developed through characteristics augmented and developed through leisure. Leisure friendships refers to social support garnered through leisure. The counterpart of leisure coping beliefs in the first level of Iwasaki and Mannell's (2000) hierarchical model is leisure coping strategies, which are "actual stress-coping situation-grounded behaviors or cognitions available through involvements in leisure" (Iwasaki & Mannell, 2000, p. 167). The choice of which of these two paths are followed—leisure coping beliefs or leisure coping strategies—is dependent on the situational context. More mild stressors will invoke dispositional behavior consistent with one's leisure coping beliefs, whereas a more significant stressor will beckon specific individual strategies and behavior meant to alleviate feelings of distress (Iwasaki & Mannell, 2000).

The behaviors that make up the second level of the model under leisure coping strategies are leisure companionship, leisure palliative coping, and leisure mood enhancement. Leisure companionship differs from leisure friendships in that the former is a specific, situational behavior while the latter refers to perceived social support provided by leisure. Leisure palliative coping serves the function of distracting the individual from a stressor by engaging in a leisure experience, similar to Kleiber et al.'s (2002) first proposition which will be discussed in further detail later.

As mentioned above, the second level of Iwasaki and Mannell's (2000) hierarchy on the leisure coping beliefs side consists of leisure autonomy and leisure friendships. Leisure autonomy is made up of self-determination as well as empowerment. Self-determination can be thought of in the same terms as used by Coleman and Iso-Ahola (1993), that is, leisure activity is controlled and chosen by the individual. Empowerment "refers to the extent to which people believe that they are entitled to leisure and that leisure provides them with the opportunity for self-expression" (p. 168). Finally, below leisure friendships are the subdimensions of emotional support, esteem support, tangible aid, and informational support. These refer to the variety of possible resources one can receive through social support when the need arises. Emotional and esteem support are similar, but differ in that the former offers more comfort or care, whereas the latter is more motivational in nature and seeks to encourage an individual. Tangible aid and informational support are also similar, the former referring to physical forms of aid while the latter refering to advice or knowledge bestowed from one individual upon another.

Kleiber et al. (2002) discussed the shortcomings of the previous models and conceptualizations of leisure within the context of stress and coping, and put forth four of their own functions that leisure provides. The first two functions serve the purpose of coping and self-protection, while the second two functions more comprehensively enhance adjustment. Their first function, similar to Iwasaki and Mannell's (2000) dimension of leisure palliative coping, stated "leisure activities buffer the impact of negative life events by being distracting" (Kleiber et al., 2002, p. 225). Leisure activities can offer a temporary reprieve from negative emotions even though engaging in leisure might seem counterintuitive immediately following a significant negative event. The second function, that "leisure

activities buffer the impact of negative life events by generating optimism about the future" (p. 226), holds that leisure pursuits may give individuals enough space to reframe their perspective toward the future to include more hope and optimism. The authors cited Yoshida's (1993) example of a spinal cord injury victim who rediscovered an appreciation for life after a hike through the woods to the family cabin. The third function posited that "leisure activities buffer the impact of negative life events by aiding in the reconstruction of a life story that is continuous with the past" (Kleiber et al., 2002, p. 228). This referred to the ability to overcome something traumatic and return to a sense of normalcy, such as participating in wheelchair basketball after paralysis ended the individual's ability to play traditional basketball. Not only do new forms of leisure make this possible, but they also provide an avenue for social support to aid in the coping and adaptation process. Finally, Kleiber et al.'s (2002) fourth function was that "leisure activities are used in the wake of negative life events as vehicles for personal transformation" (p. 229). Similarly, this function refers to the ability to use leisure to help redefine or rewrite one's life story in the wake of a negative life event.

Coping has certainly evolved into an extensive literature. It has been studied in many contexts, not the least of which is the domain of leisure. With the previous discussion of leisure and coping, it follows that relationships exist with playfulness, a close relative of leisure, and coping.

Measures of Coping

Coping has been measured in a variety of ways, although several prominent measures have persisted across the literature, including the Ways of Coping checklist (Folkman &

Lazarus, 1980, 1985), the Multi-Dimensional Assessment of Coping (Endler & Parker, 1990), the Coping Strategies Inventory (Tobin, Holroyd, Reynolds, & Wigal, 1989), the COPE Inventory (Carver et al., 1989) and the Brief COPE Inventory (Carver, 1997). Folkman and Lazarus (1980) initially developed the Ways of Coping checklist as a way to describe "a broad range of behavioral and cognitive coping strategies that an individual might use in a specific stressful episode" (p. 224). It consisted of 68 items, 27 referenced problem-focused coping strategies (e.g. "Made a plan of action and followed it.") while 41 referenced emotion-focused strategies (e.g. "Tried to forget the whole thing."). Internal consistency of the items was assessed in a variety of ways. Ten students and faculty members classified the items according to problem-focused or emotion-focused, with 91% agreement obtained. A factor analysis revealed that 21 of the 27 problem-focused strategies loaded together on one factor and 28 of the 41 emotion-focused coping strategies loaded on the other factor. Finally, Cronbach's alpha revealed internal consistencies of .80 for problem-focused coping and .81 for emotion-focused coping. Folkman and Lazarus (1985) revised their Ways of Coping scale somewhat to include more accurate items as well as a Likert scale format. The revised scale consisted of 66 items (as opposed to the initial 68) and responses ranged from 0 (does not apply/not used) to 3 (used a great deal). The final version of the checklist yielded eight scales: a problem-focused scale, six emotion-focused scales (wishful thinking, distancing, emphasizing the positive, self-blame, tension reduction, self-isolation), and a mixed problem- and emotion-focused scale.

Using the Ways of Coping checklist as a framework, Tobin et al. (1989) developed the Coping Strategies Inventory, which initially consisted of 60 items created by the authors as well as 49 items taken from the Ways of Coping checklist. Responses were on a 5-point

Likert scale format. Three separate investigations were carried out by the authors to establish a hierarchical factor structure. The results yielded eight primary coping strategies (problem-solving, cognitive restructuring, social support, express emotions, problem avoidance, wishful thinking, social withdrawal, self-criticism), which fit under four secondary factors (problem engagement, problem disengagement, emotion engagement, emotion disengagement). All of these fell under two broad categorizations of coping, namely, engagement and disengagement coping.

Another instrument developed via factor analysis was the Multi-Dimension Assessment of Coping (Endler & Parker, 1990). Initially, 120 items were provided by psychologists and graduate students, which eventually led to 44 items that loaded into three factors and accounted for 56.8% of variance. The three factors were task (19 items), emotion (12 items), and avoidance (13 items). Each of these factors comprised a subscale scored by summing each item with each given factor.

Carver et al. (1989) developed the COPE scale as the predecessor of the Brief COPE (Carver, 1997), the scale used in this study. The initial COPE scale contained 60 items and 15 scales (four items per scale), some of which were redundant and found to be less practical than others (Carver et al., 1993). From the original 15 scales, two scales were dropped for a lack of relevance, three previously problematic scales were modified, and one pertinent scale was added (Self-blame). This resulted in a total of 14 scales for the Brief COPE, each consisting of two items. Each of the two items for each scale were selected because they loaded strongly on the corresponding factor and were easy to understand and ecologically valid across multiple samples and populations (Carver, 1997). The 14 scales were: Active Coping (i.e. taking action to better the situation), Planning (i.e. coming up with an appropriate

strategy), Positive Reframing (i.e. seeing the situation in a more positive light), Acceptance (i.e. accepting the reality of the fact that a situation happened), Humor (i.e. making jokes about the situation), Religion (i.e. turning to religious or spiritual beliefs for comfort), Emotional Support (i.e. receiving comfort or understanding from someone), Instrumental Support (i.e. getting help or advice from others), Self-distraction (i.e. doing something to think about the situation less), Denial (i.e. refusing to believe that the situation happened), Venting (i.e. saying or expressing unpleasant and negative feelings), Substance Use (i.e. using alcohol or other substances to make oneself feel better), Behavioral Disengagement (i.e. giving up the attempts to deal with the situation), and Self-blame (i.e. blaming or criticizing oneself for what transpired). The Brief COPE was tested on a convenience sample of 168 individuals coming from a hurricane-ravaged area. Responses to the items ranged from 0 (I haven't been doing this at all) to 3 (I've been doing this a lot). Factor analysis revealed the structure of the Brief COPE to be comparable to the full COPE inventory (Carver, 1997).

Perceived Stress, Coping, and Playfulness

Perceived stress, coping, and playfulness are by their very nature largely cognitive and emotional constructs (Barnett, 2007; Carver, 1997; Glynn & Webster, 1992; Lazarus & Folkman, 1984). Stress, according to Lazarus and Folkman (1984) is "a relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (p. 21). The potential for this relationship to tax resources and endanger well-being is an emotional outcome to the *cognitive* appraisal of the given situation. This cognitive appraisal is the link between perceived stress and coping, and in this window lies the potential for playfulness to realize its

effect on how coping styles are employed in the face of a stressful situation. Individuals' interpretation of a stressful event, as well as what they deem to be an appropriate reaction, is the essence of cognitive appraisal.

Coping is also a cognitive and emotional process, with its conceptualization building on drive and arousal theory to include cognitive and emotional factors more befitting of a human's unique abilities (Lazarus & Folkman, 1984). Lazarus and Folkman (1984) defined coping as "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands" (p. 141). Many different coping styles directly reflect the heavy cognitive and emotional nature of coping, such as Planning, Positive Reframing, Acceptance, Emotional Support, and Venting (see Carver, 1997).

Glynn and Webster (1992) defined playfulness as a "multidimensional construct, encompassing cognitive, affective, and behavioral components" (p. 85) as it is the ability to redefine a situation to make it more enjoyable and satisfying. Similarly, Barnett (2007) defined playfulness as "the predisposition to frame (or reframe) a situation in such a way as to provide oneself (and possibly others) with amusement, humor, and/or entertainment" (p. 955). Both conceptualizations of playfulness signify the prominence of cognitive flexibility as well as the ensuing positive emotional outcomes. Playful individuals, it seems, are predisposed to more acutely approach a situation in a cognitive manner, leveraging these abilities in order to derive the maximum emotional and affective benefits.

It is easy to see how playfulness can have a major effect on individuals' cognitive appraisal, and consequently, their experiences of stress and styles of coping. Indeed, a succinct, albeit not comprehensive, definition of playfulness from Barnett (2007) and Glynn and Webster (1992) could hold that playfulness is the ability to view and frame a situation in a

way that makes it the most emotionally beneficial to the individual. This is highly analogous to the conceptualization of cognitive appraisal, which, congruent with playfulness, centers on interpretation of a situation or environment and corresponding emotionally benefiting reactions.

Recent research focusing on playfulness, stressful life events, and coping has focused on the Red Hat Society, which was founded by Sue Ellen Cooper in 1998 "with a mission to use age as a license to play, be 'silly,' and to build relationships with other women. The group's central tenets include no rules, no jobs, no responsibilities and no penalties" (Son et al., 2007, p. 92). Yarnal (2006) looked at how this environment of playfulness provided a context for togetherness and the opportunity to create meaning among older women. Hutchinson, Yarnal, Stafford-Son, and Kerstetter (2008) found that this meaning was created through support systems while dealing with major life events, such as a recent divorce or the death of a loved one. With the opportunity to be playful a primary characteristic of membership in the Red Hat Society (Hutchinson et al., 2008; Son et al., 2007), these investigators found that the playful women shared common experiences, social support, and meaning during both major life events and everyday stressful happenings. Their findings endorsed:

> the contention that leisure can be a positive coping resource in the context of negative life events by: (a) serving as a positive distraction, (b) sustaining coping efforts, (c) providing social supports, and (d) fostering a sense of optimism in the face of persistent stressors. (p. 993)

Similarly, Son et al. (2007) concluded that participation in the Red Hat Society provided the necessary context for women to realize their identities "as 'beautiful', 'fun', and

'playful' older women" (p. 100) and that said women reported "higher levels of socioemotional, psychological, and physical health and also articulated explicit connections between participation in the Red Hat Society and improved health" (pp. 100-101) as a result of their involvement.

While these studies suggest a significant link between adult playfulness, stress, and coping, research on relationships between the three must be extrapolated to more generalizable populations to better understand their interplay. Hutchinson et al. (2008) and Son et al. (2007) disseminated an online survey with open-ended questions on the website of the Red Hat Society, which, as they pointed out, excluded members who did not have access to the Internet. They specifically mentioned their concern that "rural and racially/ethnically diverse [Red Hat Society] members may not be adequately represented" (Son et al, 2007, p. 93) in their study. Yarnal's (2006) investigation was more qualitative in nature, involving three different methods of data collection, including focus groups, individual interviews, and participant observation. The latter two were conducted at the New York "Birthday Bash", an event to celebrate the 60th birthday of the founder of the Red Hat Society. Reports from individuals in Yarnal's (2006) study may not be representative of typical members, as the sample is self-selected by individuals who have a highly vested interest in the organization as well as the mobility and resources to attend such an event.

Qian and Yarnal (2011) used structural equation modeling to investigate whether university students used playfulness to facilitate the use of leisure as a coping mechanism. Among their numerous hypotheses, two were directly related to stress and playfulness—that psychological stress reduces the level of playfulness, and that playfulness leads to an increased use of leisure as a stress-coping strategy. Their findings supported both hypotheses

in that they found that psychological stress was inversely correlated with levels of playfulness. They speculated that "a highly playful university student, in order to cope with psychological stress, is likely to seek companionship through social leisure and to enhance mood through leisure pursuits" (p. 204). Taken together with the other studies with members of the Red Hat Society, it is clear that these investigations serve as a starting point but also that further study into other populations besides older women in this specific leisure organization is necessary to more precisely detail and better understand the relationship between playfulness, stress, and coping in adults.

CHAPTER THREE: METHOD

Participants

A purposive sample was used to examine the research questions of the study. Study participants came from 12 lower- and upper-level classes at three separate midwestern universities. Each of the classes satisfied a social or behavioral science general education requirement and students were offered extra credit for participating in the study. Out of the 916 students offered extra credit for participation, 898 accepted and completed the instruments. No significant differences were found between the three schools or the 12 classes, so no further distinctions between schools or classes were made before additional analyses of were undertaken.

The ages of the participants ranged from 18 – 27 years, with an average age of 20.06 years and a standard deviation of 1.58. Students with senior standing accounted for 177 participants (19.9%), juniors accounted for 304 participants (34.2%), sophomores accounted for 255 participants (28.7%), and freshmen accounted for 154 participants (17.3%). Of the 898 students, 528 were male (58.8%) and 370 (41.2%) were female. There were 630 students who identified themselves as White, non-Hispanic (70.2%; 387 males and 243 females), 101 students who identified themselves as African-American (11.2%; 39 males and 62 females), 103 students who identified themselves as Asian (11.5%; 64 males and 39 females), and 50 students who identified themselves as Latino/Hispanic (5.6%; 32 males and 18 females). The vast majority of participants were single, with five reporting being engaged or married. Most students (n = 544, 61.6%) were not employed, with some (n = 347, 38.6%) employed part-time, and less than one percent (n = 7) employed full-time.

Instrumentation

The data for this study was a part of a larger investigation that included a number of other variables. Self-report surveys measuring a plethora of hypothesized personality characteristics were distributed to each student. The first page asked for demographical information pertaining to the participant, as well as college major, number of currently enrolled credit hours, cumulative grade point average, two Likert items asking about general physical and emotional health, two Likert items asking about sleep habits, and height and weight estimations. The pages that followed contained instruments measuring personality characteristics (playfulness, self-as-entertainment, sensation seeking) and psychological attributes (self-esteem, satisfaction with life, perceived stress, coping styles, depression, and anxiety), as well as habits pertaining to leisure and free time, and the individual's academic habits. Instruments used for this study included those measuring playfulness, perceived stress, and coping, which are further detailed below.

Playfulness

The instrument measuring playfulness was taken from the work of Barnett (2007), in which the author used focus groups to derive descriptors of playfulness. An aggregate list of descriptors was composed and distributed to each individual, who then proceeded to rate themselves from 1 (very little) to 10 (a lot) on each one. Individual participants also rated themselves on the descriptor "playfulness", and a series of analyses resulted in 15 descriptors which satisfactorily measured the playfulness construct. These 15 descriptors accounted for the items on the playfulness survey that was given to each participant in this study.

Equivalent to Barnett's work, each item had a 1 (very little) to 10 (a lot) Likert response scale on which participants rated themselves. The scores for each item were summed and the mean was computed for each individual. Since this mean had a high correlation (r = .91) with participants' responses to a single item inquiry on their general playfulness, it was used as their playfulness score.

Perceived Stress

Measures of perceived stress were established using Cohen et al.'s (1983) Perceived Stress Scale, which they found to have internal and test-retest reliability, as well as construct and convergent validity. The instrument contains 14 questions (e.g. "In the last month, how often have you felt that things were going your way?") which are answered on a five-point Likert scale ranging from "never" (0) to "very often" (4). Respondents were instructed to only answer the questions in reference to the last month, and their total score provided a measure of how much stress they perceived to have in their lives.

Coping Styles

Coping styles were measured using the Brief COPE instrument developed by Carver (1997). This instrument consists of 14 distinct coping styles (Active Coping, Planning, Positive Reframing, Acceptance, Humor, Religion, Emotional Support, Instrumental Support, Self-distraction, Denial, Venting, Substance Use, Behavioral Disengagement, Self-blame) and has two items measuring each style. While considerably more succinct, the Brief COPE yielded highly consistent factors with the standard COPE instrument using exploratory factor analysis. Each item includes a statement typifying a particular coping style (e.g. Positive

Reframing: “I’ve been looking for something good in what is happening”), and respondents answer with “I don’t do this at all”, “I do this a little”, “I do this somewhat”, or “I do this a lot”. Each item was summed with its particular coping style match, and the resulting scores indicated which coping styles were preferred and implemented by the individual when triggered by stressful events.

Procedure

There were a total of 916 students who were present when the offer was made to participate in the research and receive extra credit. Of the students present, 903 received instrument packets, which were completed and returned by 898 students. Each packet included the instruments outlined above, as well as a cover sheet containing demographic questions, instructions, and information detailing consent, risk, and the voluntary nature of the study. Students were assured that no penalties would be incurred for a lack of participation in the study and that they could skip any questions that made them feel uncomfortable. Random ordering of the instruments was employed to minimize confounding order effects on the results. Each instrument packet was distributed electronically to the participant, who could then complete and return the packet in the same manner or print out and turn in a hard copy to a graduate student who was unaware of the nature of the study. Upon submission of the packets, personal information was separated from the instruments and a list was maintained to be forwarded to instructors in order to grant extra credit.

Each participant was assigned a mean playfulness score; for this sample they ranged from 3.47 to 10.00. Out of the 898 surveys that were returned, 27 questionnaires were missing data and were subsequently discarded from further analysis, leaving a sample size of

871 participants, thus yielding a return rate of 98.04%. The mean playfulness score for the entire sample was 7.40 (SD = 1.09). Groups of low, medium, and high playfulness were created based on the responses, with each group representing roughly a third of the entire sample. In between each group (i.e. low and medium, medium and high), all occurrences of one mean playfulness score were eliminated to further distinguish the three groups. Mean scores for the low playfulness group (n = 279, 32.0%) ranged from 3.47 to 6.87; scores of 6.93 (n = 17) were eliminated. Mean scores for the medium playfulness group (n = 284) ranged from 7.00 to 7.87; scores of 7.93 (n = 9) were eliminated. Mean scores of the high playfulness group (n = 282) ranged from 8.00 to 10.00.

Data Analysis

After dividing the playfulness scores into low, medium, and high groups, a univariate analysis of variance (ANOVA) was performed on a Playfulness Groups x Gender (3 x 2) factorial design with mean perceived stress as the dependent variable. In the event of a significant interaction, Sidak post hoc tests were applied. To explore differences as a function of playfulness groups and gender, a multivariate analysis of variance (MANOVA) was performed on a Playfulness Groups x Gender (3 x 2) factorial design with the 14 coping styles as dependent variables. Following a significant multivariate F-ratio, univariate analyses of variance were inspected to determine the source of the differences among the 14 coping styles. Sidak post hoc tests were computed to determine the source of the significance for the Playfulness Group main effect or Playfulness Group x Gender interaction.

CHAPTER FOUR: RESULTS

This study examined differences in perceived stress and coping styles as a function of the level of playfulness of the participants. To more easily comprehend the findings of the present study, results of each construct (perceived stress and coping styles) are presented separately below. Because the focus of the study is on playfulness, and gender was included to examine the extent to which it may mediate the playfulness main effect, the gender main effect is not a focus of the discussion. Table 1 presents the cell means and standard deviations for each of the dependent variables under investigation, and figures for each significant finding are also provided to graphically depict the results.

Perceived Stress

A 3 x 2 (Playfulness Group x Gender) ANOVA revealed significant Playfulness Group ($F(2, 589) = 8.28$, $p \leq .000$) and Gender ($F(1, 589) = 12.03$, $p \leq .001$) main effects for perceived stress (Table 2). The Playfulness Group x Gender interaction was nonsignificant ($p > .05$). Post hoc tests on cell means indicated that individuals in the low playfulness group ($M = 2.00$) reported significantly higher levels of perceived stress than those in the medium ($M = 1.87$) or high ($M = 1.85$) playfulness groups. In addition, it was determined that the medium playfulness group reported lower levels of perceived stress than the low playfulness group. There was no significant difference between the medium and high playfulness groups in their perceived stress ($p > .05$). In addition, cell means revealed that females ($M = 1.97$) reported higher levels of perceived stress than males ($M = 1.85$). These findings are graphically illustrated in Figure 1.

Coping Styles

A 3 (Playfulness Group) x 2 (Gender) MANOVA was conducted to investigate potential main effects and interactions on the 14 coping styles under study (Table 3). Significant multivariate Playfulness Group ($F(28, 1696) = 4.58$, $p \leq .000$) and Gender ($F(14, 849) = 9.43$, $p \leq .000$) main effects for coping styles were found. Similar to the perceived stress results, the multivariate Playfulness Groups x Gender interaction was nonsignificant ($p > .05$). Univariate analyses were conducted to further investigate the source of the significant multivariate main effects for the 14 coping styles, and post hoc tests were further conducted on significant univariate playfulness group main effects.

For both *Active Coping* and *Acceptance*, the univariate analyses revealed a significant Playfulness Group ($F = 14.73$, $p \leq .000$; $F = 9.37$, $p \leq .000$; respectively) main effect (Figures 2 and 3). The Gender main effect as well as the Playfulness x Gender interaction were both nonsignificant ($p > .05$) for the two coping strategies. Inspection of the cell means and post hoc testing indicated that the low playfulness group reported less use of Active Coping and Acceptance (M = 5.97, 5.83, respectively) than both the medium (M = 6.34, 6.12, respectively) and high (M = 6.48, 6.29, respectively) playfulness groups. There was no significant difference between the medium and high playfulness groups in students' use of Active Coping or Acceptance to alleviate perceived stress ($p > .05$).

The univariate analysis resulted in a significant Playfulness Group ($F = 24.16$, $p \leq .000$) main effect for *Positive Reframing* (Figure 4). The Gender main effect and the interaction were both statistically nonsignificant ($p > .05$). Post hoc tests showed that the playfulness significant main effect was due to differences between all three playfulness

groups, with the use of Positive Reframing significantly increasing as playfulness increased. As can be seen from the cell means, the high playfulness group (M = 6.34) reported higher levels of Positive Reframing than the medium playfulness group (M = 5.89), and the medium playfulness group reported higher levels than the low playfulness group (M = 5.56).

Instrumental Support, *Emotional Support*, and *Humor* all exhibited significant Playfulness Group main effects (F = 4.54, $p \leq .011$; F = 5.37, $p \leq .005$; F = 10.25, $p \leq .000$; respectively). Post hoc tests revealed the three significant main effects were all attributable to differences between the high playfulness group and the other two playfulness groups. Cell means and post hoc analyses indicated higher uses of Instrumental Support (Figure 5), Emotional Support (Figure 6), and Humor (Figure 7) between the high playfulness group (M = 6.00, M = 5.81, M = 5.58, respectively) and the medium (M = 5.68, M = 5.47, M = 5.25, respectively) and low (M = 5.66, M = 5.51, M = 4.98, respectively) playfulness groups, which were statistically equivalent. Univariate analyses also revealed Gender main effects for each of these three coping styles (F = 48.84, $p \leq .000$; F = 75.93, $p \leq .000$; F = 25.97, $p \leq .000$; respectively). Cell means revealed that females reported higher levels of Instrumental Support and Emotional Support (M = 6.22; M = 6.12; respectively) than males (M = 5.48; M = 5.23; respectively), while males (M = 5.51) reported higher uses of Humor as a coping style than females (M = 4.92).

A significant main effect for Playfulness Group (F = 5.11, $p \leq .006$) on *Self-distraction* were also obtained in the univariate analysis (Figure 8) following the significant multivariate finding. Post hoc tests revealed significant differences between the low playfulness group (M = 5.50) and the high playfulness group (M = 5.86). There were no significant differences between the low and medium (M = 5.67) playfulness groups or

between the medium and high playfulness groups ($p > .05$). Cell means showed higher uses of Self-distraction as a coping strategy among those in the high playfulness group compared to those in the low playfulness group. Inspection of the cell means for the Gender ($F = 4.73$, $p \leq .030$) main effect also revealed that females ($M = 5.79$) reported higher levels of Self-distraction than males ($M = 5.60$).

Univariate analyses also revealed a Playfulness Group ($F = 8.25$, $p \leq .000$) main effect for *Self-blame* (Figure 9). Post hoc tests revealed the main effect to be attributed to the difference between the low playfulness group and the medium playfulness group, as well as a difference between the low playfulness group and high playfulness group. There was no significant difference detected between the medium and high playfulness groups ($p > .05$). Cell means revealed that the low playfulness group ($M = 4.83$) reported higher uses of Self-blame than the medium ($M = 4.42$) or high ($M = 4.28$) playfulness groups. There was no significant Gender main effect or interaction for Self-blame ($p > .05$).

For the coping style of *Religion*, the univariate analysis revealed a significant Playfulness Group ($F = 9.78$, $p \leq .000$) main effect. The Gender main effect was nonsignificant as was the Playfulness x Gender interaction ($p > .05$). Inspection of the cell means and post hoc tests indicated that both the low ($M = 4.58$) and high ($M = 4.89$) playfulness groups reported significantly higher uses of Religion than the medium playfulness group ($M = 4.10$). Post hoc tests also revealed there to be no significant difference between the low and high playfulness groups ($p > .05$). Religion decreased from the low to medium playfulness groups and then increased from the medium to high playfulness groups, resulting in a U-shaped parabolic graph (Figure 10) that differed from any of the other coping styles.

Univariate analyses revealed a nonsignificant Playfulness Group main effect for the coping styles of *Planning*, *Venting*, *Denial*, *Substance Use*, and *Behavioral Disengagement* ($p > .05$). The analyses further revealed a significant Gender main effect on Substance Use and Venting ($F = 7.71$, $p \leq .006$; $F = 12.11$, $p \leq .001$; respectively). Cell means indicated that males ($M = 3.52$) reported higher levels of Substance Use than females ($M = 3.22$), whereas females ($M = 4.84$) reported higher levels of Venting than males ($M = 4.49$). Again, all Playfulness Group x Gender interactions for the coping styles were nonsignificant ($p > .05$).

Tables and Figures

Table 1. Cell Means and Standard Deviations for Perceived Stress and Individual Coping Styles as a Function of Playfulness Group and Gender

	Low Playfulness				Medium Playfulness				High Playfulness			
	Males		Females		Males		Females		Males		Females	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
PERCEIVED STRESS	1.98	.35	2.02	.36	1.78	.40	1.98	.44	1.81	.35	1.90	.32
COPING STYLES												
Active Coping	5.91	1.22	6.05	1.02	6.32	1.07	6.37	1.06	6.42	1.18	6.57	1.24
Acceptance	5.92	1.35	5.71	1.20	6.12	1.10	6.13	1.37	6.38	1.16	6.14	1.27
Positive Reframing	5.65	1.50	5.44	1.32	5.96	1.30	5.80	1.32	6.33	1.39	6.36	1.17
Instrumental Support	5.26	1.57	6.17	1.55	5.38	1.61	6.12	1.51	5.77	1.64	6.39	1.44
Emotional Support	5.03	1.65	6.12	1.35	5.15	1.38	5.92	1.51	5.48	1.61	6.36	1.49
Humor	5.29	1.46	4.58	1.54	5.53	1.46	4.85	1.59	5.68	1.69	5.41	1.69
Self-distraction	5.42	1.21	5.60	1.30	5.54	1.23	5.87	1.35	5.84	1.37	5.90	1.35
Self-blame	4.87	1.71	4.77	1.39	4.38	1.51	4.48	1.77	4.32	1.66	4.22	1.66
Religion	4.60	1.99	4.56	2.07	3.91	1.77	4.37	2.12	4.88	2.11	4.92	2.35
Planning	6.24	1.20	6.38	1.23	6.26	1.15	6.26	1.23	6.39	1.11	6.28	1.39
Venting	4.64	1.30	4.83	1.40	4.35	1.31	4.98	1.49	4.50	1.35	4.69	1.52
Denial	3.19	1.36	3.27	1.25	3.00	1.26	3.13	1.41	3.32	1.45	3.20	1.34
Substance Use	3.67	1.46	3.20	1.54	3.44	1.67	3.32	1.57	3.48	1.74	3.14	1.57
Behavioral Disengagement	3.36	1.25	3.33	1.23	3.22	1.25	3.29	1.39	3.22	1.40	3.15	1.22

Table 2. Playfulness Group (3) x Gender (2) Analysis of Variance Summary Table for Perceived Stress

Source	SS	df	MS	F	*p*
Playfulness Group	2.36	2	1.18	8.28	.000
Gender	1.71	1	1.71	12.03	.001
Playfulness Group x Gender	.74	2	.37	2.59	.076
error	83.87	589	.14		

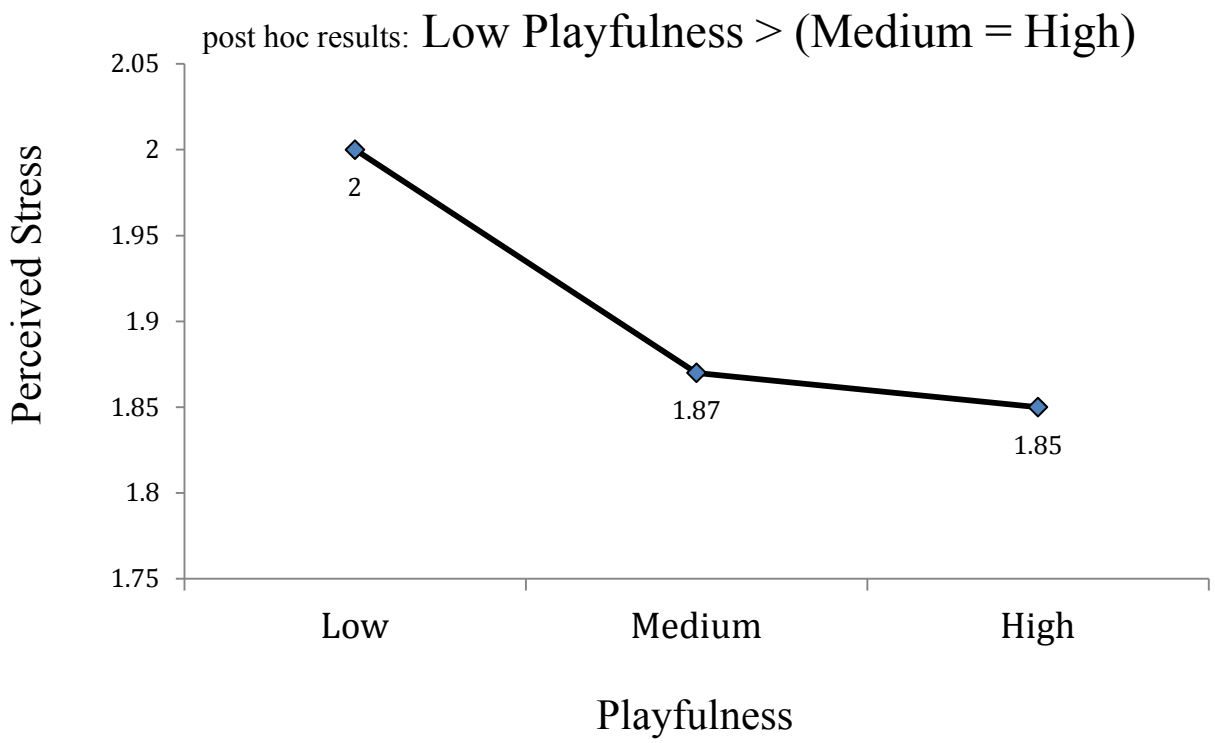

Figure 1. Cell Means for Playfulness
Main Effect for Perceived Stress

Table 3. Results of Playfulness Group (3) x Gender (2) Multivariate Analysis of Variance for Coping Styles

	Playfulness Group Main Effect multiv F(28, 1696) = 4.58, $p \leq .000$		Gender Main Effect multiv F(14, 849) = 9.43, $p \leq .000$		Playfulness Group x Gender Interaction multiv F(28, 1696) = 1.09, $p \leq .338$	
Coping Styles						
univariate findings:	F	*p*	F	*p*	F	*p*
Active Coping	14.73	.000	2.02	.155	.20	.817
Acceptance	9.37	.000	2.94	.087	.84	.430
Positive Reframing	24.16	.000	1.44	.231	.58	.563
Instrumental Support	4.54	.011	48.84	.000	.63	.535
Emotional Support	5.37	.005	75.93	.000	.80	.452
Humor	10.25	.000	25.97	.000	1.68	.187
Self-distraction	5.11	.006	4.73	.030	.77	.465
Self-blame	8.25	.000	.09	.769	.37	.690
Religion	9.78	.000	1.27	.260	1.23	.291
Planning	.28	.754	.01	.911	.73	.485
Venting	.71	.492	12.11	.001	2.42	.089
Denial	1.74	.176	.12	.728	.64	.527
Substance Use	.38	.682	7.71	.006	.87	.421
Behavioral Disengagement	1.00	.367	.01	.937	.23	.794

Figure 2. Cell Means for Playfulness
Main Effect for Active Coping

Figure 3. Cell Means for Playfulness
Main Effect for Acceptance

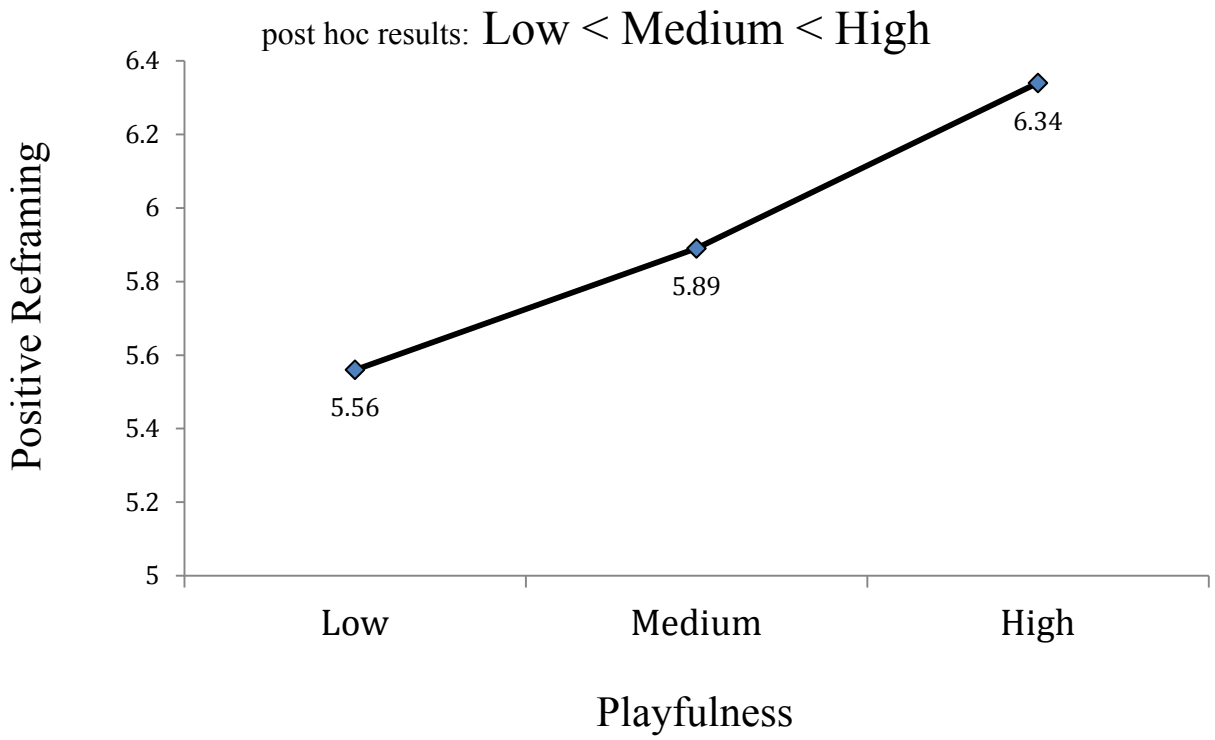

Figure 4. Cell Means for Playfulness
Main Effect for Positive Reframing

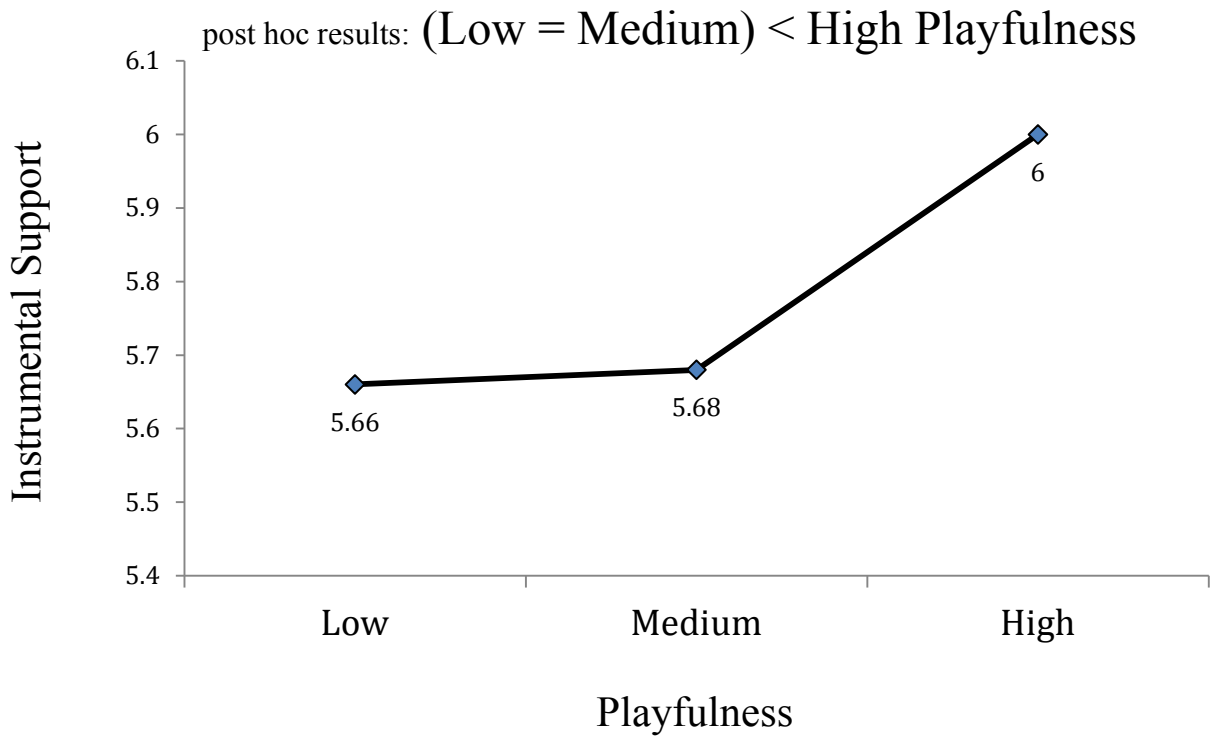

Figure 5. Cell Means for Playfulness
Main Effect for Instrumental Support

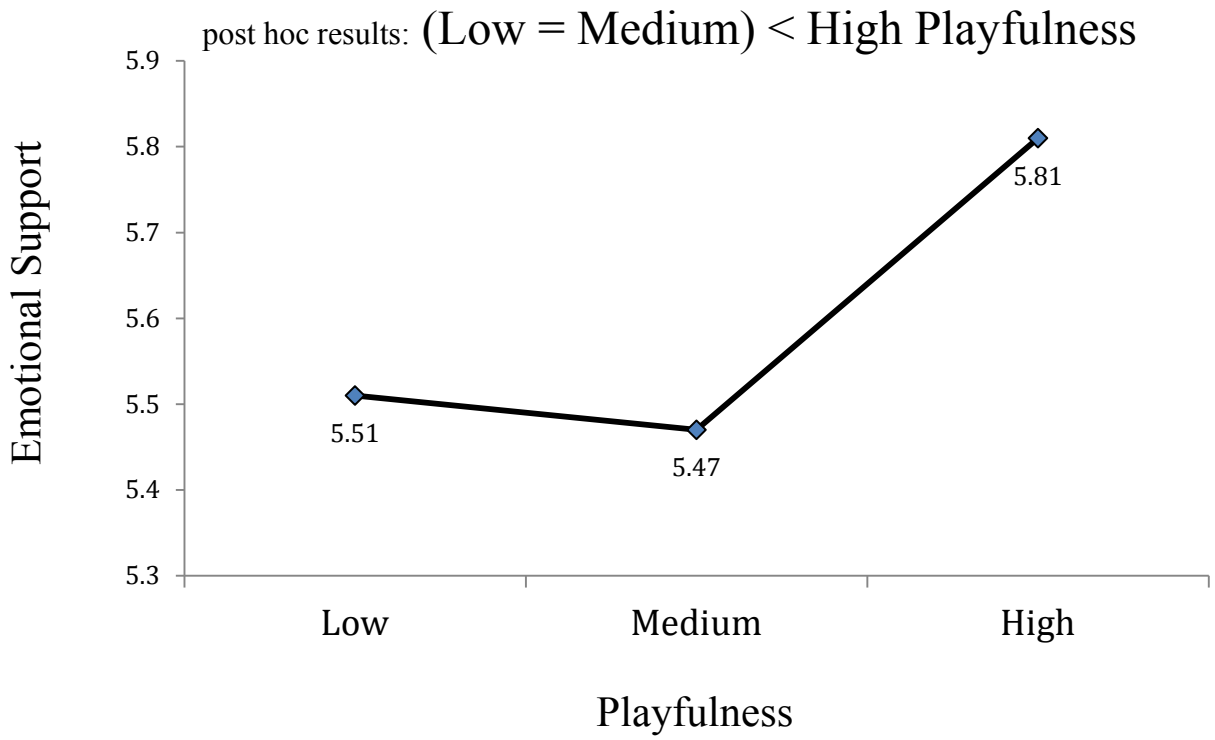

Figure 6. Cell Means for Playfulness
Main Effect for Emotional Support

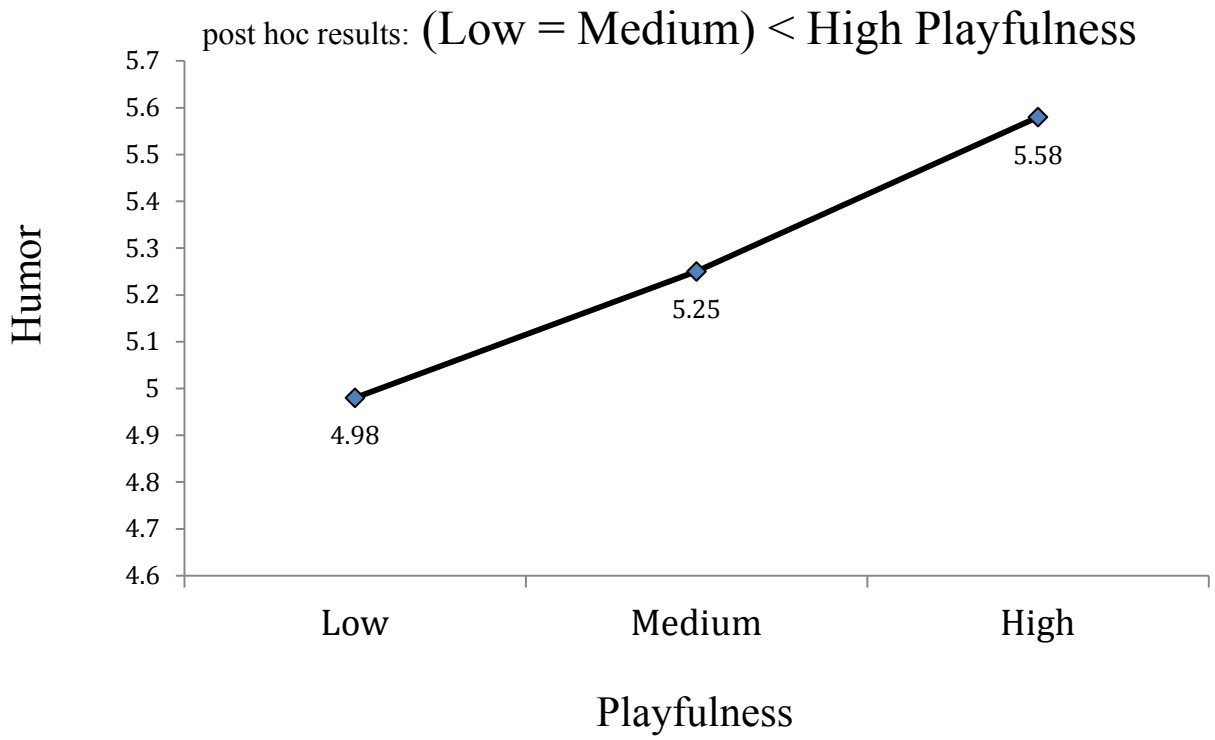

Figure 7. Cell Means for Playfulness
Main Effect for Humor

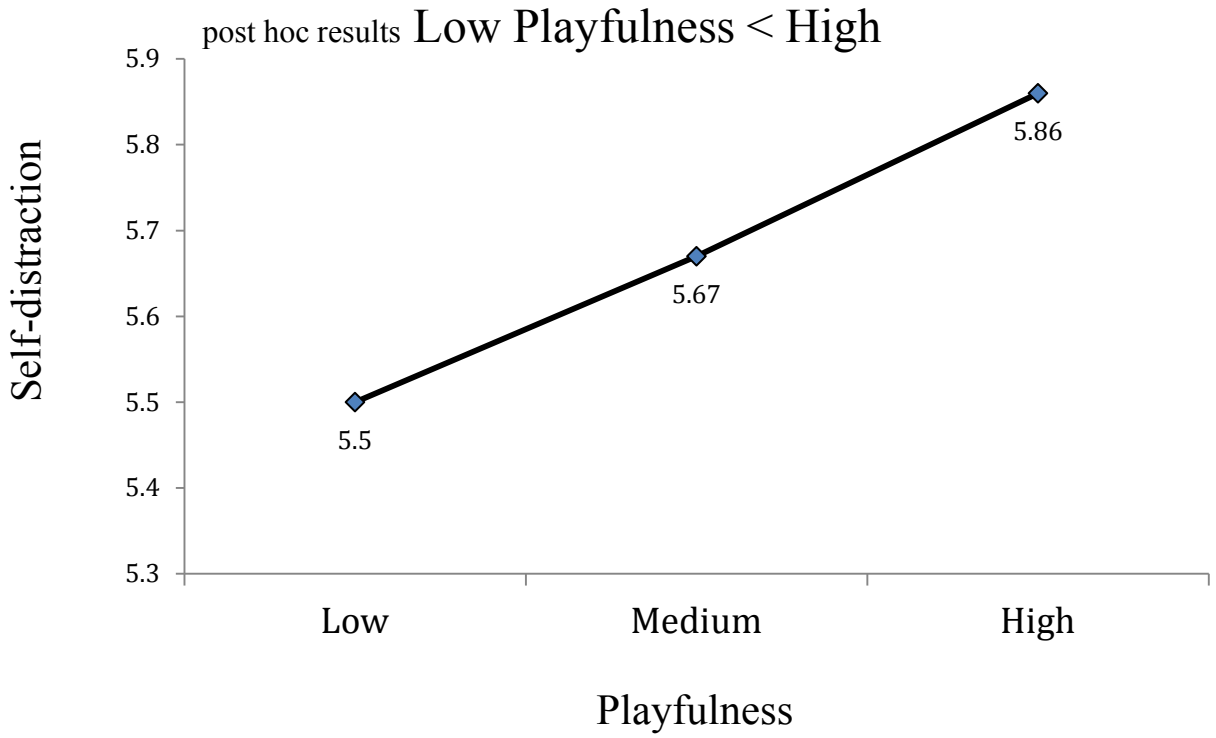

Figure 8. Cell Means for Playfulness
Main Effect for Self-distraction

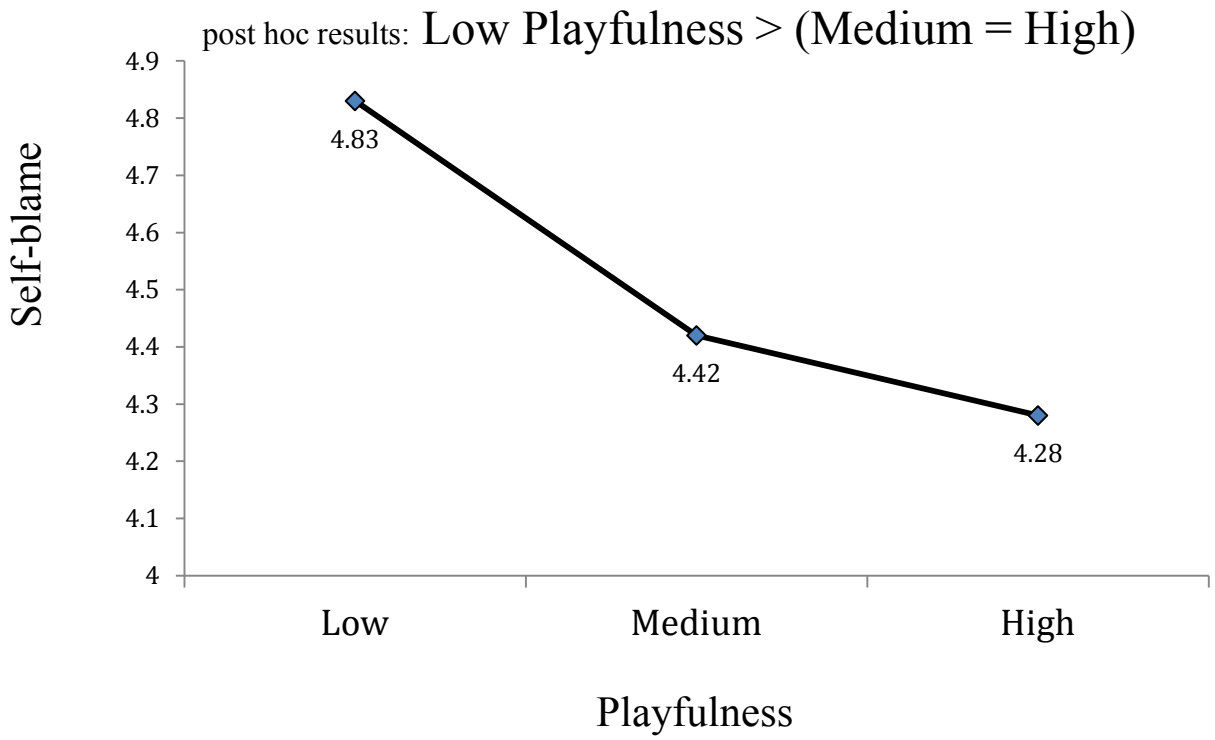

Figure 9. Cell Means for Playfulness
Main Effect for Self-blame

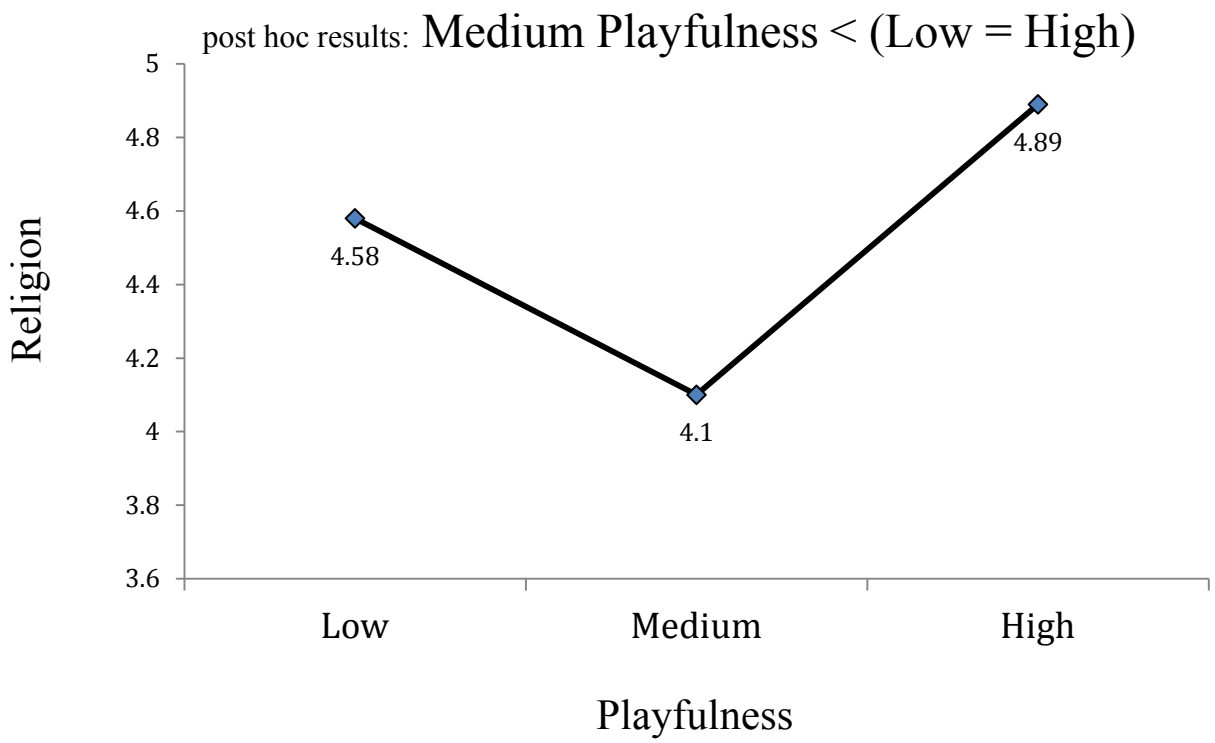

Figure 10. Cell Means for Playfulness
Main Effect for Religion

CHAPTER FIVE: DISCUSSION

The present study sought to better understand the adaptive value of playfulness in young adults by exploring the interrelationship between playfulness, stress, and coping. Correlates of adult playfulness have been found with a number of positive outcomes, but little work has focused on how playful adults experience and cope with stress. This work is pertinent now more than ever, as indicators of negative psychological health are at an all time high. For example, antidepressant use has increased five-fold over the last two decades (National Center for Health Statistics, 2011), 40% of adults reported serious psychological distress within the last 30 days, and nine percent of adults reported being currently depressed (Centers for Disease Control and Prevention, 2008). These results are even more staggering for younger adults, where one in four college-aged students reported being depressed (Lindsey et al., 2009). In addition, the National Institute on Alcohol Abuse and Alcoholism reported that from 1999 to 2008 hospitalizations due to alcohol overdoses increased 25% among those aged 18 – 24 years old (White et al., 2011). The present study investigated whether the personality predisposition of playfulness serves as a protective buffer in the face of perceived stress and/or serves an adaptive function in the coping process in college students.

Overall, the findings indicated that playful individuals experienced lower levels of perceived stress and that, while in many cases playful individuals used similar coping styles, the frequency and ways in which the coping styles are used are what separates playful individuals from their less playful counterparts. Playful individuals, then, may not substantially differ from less playful individuals, but rather notable distinctions may emerge

in how playful individuals perceive and experience stress, as well as how coping styles are utilized and the purposes that they serve. In other words, if coping styles can be seen as a toolbox, playful and less playful individuals seem to have mostly the same sets of tools, but their frequency and styles of implementation differ substantially, as well as their levels of perceived stress. When gender was included in the analyses with playfulness for the dependent variables (perceived stress and coping styles), neither interaction was significant. While the gender main effect was highly significant for perceived stress and six of the coping styles, the lack of a significant interaction with playfulness suggested that its interpretation was beyond the scope of this study.

Playfulness and Perceived Stress

The findings revealed that individuals low in playfulness experienced higher levels of perceived stress than individuals with medium or high amounts of playfulness. Having high levels of playfulness versus medium levels of playfulness had no bearing on the degree of perceived stress. This result raises a variety of questions. The first questions how playful people move from stressful events to perceptions or experiences of stress. Lazarus and Folkman (1984) conceptualized stress in terms of both the stressor itself as well as the process of cognitive appraisal, that is, the declaration of the individual that a stressor is taxing or exceeds available resources. Perceived stress focuses predominantly on the individual's cognitive appraisal; only events appraised as taxing to one's resources are deemed to be a stressor. As such, playful individuals, while not necessarily experiencing fewer stressors, may possess a different perspective during the initial appraisal process. This may enable playful people to evaluate what would typically be seen as a stressful event to their less

playful peers as not exceeding their resources, and thus as or significantly less stressful. Conversely, it is also possible that the higher levels of perceived stress of low playfulness individuals can be explained by their *lack* of resources. A significant paucity of resources could thus yield the perception of even the smallest of stressors as taxing.

The particularly nimble minds of highly playful individuals may provide them with the resources to approach life by taking a broader perspective, which may in turn relegate what would typically be viewed as a stressor to be categorized merely as an annoyance. Since playful people have the ability to think outside the box and reframe situations to be more positive (Barnett, 2007), it may be easier for them to see beyond the immediacy of a stressor. It may be the case that less playful people, on the other hand, cannot see the temporary nature of most stressors, allowing even the slightest feelings of distress to be perceived as potentially crippling and relegating them to a furious search for effective coping strategies. Playful people, however, seem to have enough cognitive resources that they are able to keep stressors in perspective and prevent them from ubiquitously affecting other facets of their life. Stressors, then, may become simply "bumps" in life for the highly playful individual with this broader perspective, while being interpreted as significant events for those who are less playful.

Understanding the interrelationship between playfulness and perceived stress follows naturally when looking at the individual components of playfulness. Playful people are dynamic, that is, they are characterized as being active and energetic (Barnett, 2007). In addition, one of Glynn and Webster's (1992) correlates of their playfulness dimension was the activity level of the participants. That active and energetic individuals experience lower levels of perceived stress builds on Aldana et al.'s (1996) findings that individuals who

engage in higher levels of physical activity report less perceived stress. This is also consistent with the myriad of studies that have found that activity and exercise significantly reduce stress (e.g. Schnohr, Kristensen, Prescott, & Scharling, 2005; Starkweather, 2007).

Furthermore, descriptors that make up Barnett's (2007) factors of gregarious and comedic (e.g. cheerful, happy, friendly, outgoing, sociable, and clowns around, jokes/teases, funny, humorous, respectively) bring to mind opposite notions compared to those that would describe perceived stress. Individuals consistently exhibiting the traits that characterize high perceived stress, namely, feeling that one's life is unpredictable, uncontrollable, and overloaded (Cohen et al., 1983) would have a hard time exhibiting the characteristics of playfulness. Similarly, this study corroborates research that shows that happier people report less perceived stress (Chatters, 1988; Schiffrin & Nelson, 2010), and a number of descriptors (e.g. cheerful, happy, gregarious, friendly) of playful people demonstrate they are characterized in the same way. It follows naturally, then, that individuals characterized as high in Barnett's (2007) playfulness adjectives would be significantly less likely to experience high levels of perceived stress, as was found in this study.

The Big Five personality dimensions also help explain the relationship between playfulness and perceived stress, as many of the dimensions that predict a lack of perceived stress make up the construct of playfulness. That Extraversion is a highly significant predictor of playfulness in both men and women (Barnett, 2011-2012) supports previous research (Burgess et al., 2010; Ebstrup et al., 2011) showing that extraverted individuals report substantially lower levels of perceived stress. Barnett's (2007) conceptualization of playfulness yielded multiple descriptors that are also characteristics of extraverts, such as cheerful, happy, friendly, outgoing, sociable, adventurous, active, and energetic. Likewise,

individuals high in Extraversion have a tendency to be gregarious, active, excitement-seeking, friendly, and to exhibit positive emotions (Costa & McCrae, 1992). This considerable similarity between constructs helps explain Barnett's (2011-2012) findings that Extraversion predicts playfulness and why extraverted and playful individuals report lower levels of perceived stress (Burgess et al., 2010; Ebstrup et al., 2011).

The role of Openness to Experience, another of the Big Five personality dimensions, could be an additional likely explanation for the inverse relationship found between playfulness and perceived stress in this study. Individuals high in Openness to Experience have been found to report lower levels of perceived stress (Burgess et al., 2010), and Openness to Experience has also been found to predict higher degrees of playfulness. Certain descriptors of the Openness to Experience dimension bring to mind similar qualities possessed by playful individuals, such as being imaginative, strongly expressive of feelings, open to trying new things, curious, and open-minded (Costa & McCrae, 1992). These descriptors appeared in Glynn and Webster's (1992) conceptualization of playfulness (i.e. their "creative" and "expressive" factors and related adjectives) and research has also shown Openness to Experience facets to predict the "uninhibited" factor of playfulness in males in a study predicting playfulness from the Big Five personality dimensions (Barnett, 2011-2012). Woszczynski et al. (2002) proposed a model that posited Openness to Experience to be a predictor of more specific microcomputer playfulness. The present findings lend credence to their model. It could be that this aspect of personality is particularly activated when playful individuals are confronted with a stressful situation, as is consistent with previous research linking Openness to Experience to lower perceived stress (e.g. Burgess et al., 2010).

The other predictor of microcomputer playfulness hypothesized by Woszczynski et al. (2002) was low Neuroticism. Barnett (2011-2012), however, found only minor influences of Neuroticism to predict any of the factors comprising playfulness. The only correlate was that low Neuroticism among women was associated with the "dynamic" factor of playfulness, which happened to be the factor that accounted for the least amount of variance. Neuroticism has been empirically shown to predict higher levels of perceived stress (Ebstrup et al., 2011), although its relationship to playfulness has been minimal in most previous research. The first facet of Neuroticism is anxiety, composed of descriptors such as anxious, nervous, high strung, tense, prone to worry, and dwells on what might go wrong (Costa & McCrae, 1992). Other facets, such as depression (e.g. depressed, sorrowful, tense, sad, hopeless) and vulnerability (e.g. easily stressed, worrying) suggest a strong relationship with perceived stress. Accordingly, evidence showing that Neuroticism is not a major predictor of playfulness (Barnett, 2011-2012; Woszczynski et al., 2002) helps explain the inverse relationship between playfulness and perceived stress in the present findings.

Finally, the role of Conscientiousness, another of the Big Five personality dimensions, is a further link between perceived stress and playfulness. Certain descriptors of Conscientiousness (e.g. inhibited, deliberate, cautious) suggest an inverse relationship with playfulness as defined by both Barnett (2007) and Glynn and Webster (1992). This was verified by Barnett (2011-2012), who found low Conscientiousness to be associated with playfulness in men. This previous finding, together with the current results that playful adults experience less perceived stress, somewhat conflicts with the findings of Besser and Shackelford (2006) and Ebstrup et al. (2011) who found that high Conscientiousness predicts lower levels of perceived stress. Contradictory findings could be related to the discrepancy

between samples used in the studies in that Besser and Shackelford studied adults on vacation, while Ebstrup et al. sampled 18-69 year old adults residing in Copenhagen. Barnett's work emanated from a sample of university students. A closer look at the facets comprising Conscientiousness doesn't seem to innately imply characteristics that would be conducive to stress. The competent, dutiful, and disciplined nature of individuals high in Conscientiousness (Costa & McCrae, 1992) may help them "take care of business", thus reducing the amount of avoidable stressful situations that other individuals may naturally experience. These characteristics may also augment successful implementation of coping strategies, also resulting in lower levels of perceived stress. At the same time, a lower level of these attributes does not necessarily imply that one will experience more stress, as men low in Conscientiousness were predicted to be more playful (Barnett, 2011-2012). Playfulness, in turn, predicted less perceived stress in the current study. However, other authors have posited that the "workaholic" nature of highly Conscientious individuals is the opposite of play (McCrae & Costa, 2003). Clearly, further investigation is needed to more fully explore the interrelationships between Conscientiousness, playfulness, and perceived stress.

Playfulness and Coping

A major finding regarding how individuals cope with perceived stressors was that the coping styles invoked more frequently by playful individuals were generally cognitive-emotional in nature, and generally more approach- and engagement-focused (e.g. Active Coping, Positive Reframing, Acceptance, Instrumental Support) as opposed to avoidance- and disengagement-focused. These findings build on an abundance of literature (Arnold, 1960; Janis & Mann, 1977; Lazarus, 1999; Lazarus & Folkman, 1984) that conceptualizes coping as

predominantly a cognitive-emotional process. As mentioned above, the development of the coping literature progressed to incorporate humans' developed cognitive and emotional propensities as well as their individual differences into the stress-coping discussion (Lazarus & Folkman, 1984). Cognitive appraisal begins with an initial assessment of a situation as stressful, and follows with what has been termed "secondary appraisal" (Lazarus & Folkman, 1984), an assessment of necessary coping efforts to successfully handle and overcome the potential stressor. Coping, then, finds its genesis as a cognitive venture. The cognitive nature of coping continues in its journey toward positive emotional outcomes, namely reduced stress, through coping styles such as Planning, Positive Reframing, and Acceptance. Again, Lazarus and Folkman's (1984) defined coping as "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (p. 141). This is uncannily similar to conceptualizations (Barnett, 2007; Glynn & Webster, 1992) that playfulness is the ability to cognitively influence situations to derive more positive emotional outcomes. It is no surprise, then, that the present findings indicated that playful individuals were masterful copers and were successful by directly attacking the source of their stress.

The second major finding was that while both more and less playful individuals generally possessed the same tools in their coping "toolkit", more playful adults utilized adaptive and stressor-focused coping styles more frequently than less playful adults. Each of the three playfulness groups reported the same top five coping styles: Active Coping, Planning, Positive Reframing, Acceptance, and Instrumental Support. All of these, with the exception of Planning, had significant relationships with levels of playfulness. While these five coping styles were the most reported for each of the three playfulness groups, highly

playful individuals (and in some cases, those who were moderately playful) consistently reported more frequent use.

The results indicated that individuals with at least a moderate amount of playfulness reported using Active Coping and Acceptance more often than those low in playfulness. The same relationship existed with Positive Reframing, with the added finding that those high in playfulness reported more frequent use than those with moderate amounts of playfulness, indicating a linear rise in Positive Reframing as playfulness increased. Individuals with high levels of playfulness reported seeking Instrumental Support more frequently than those with medium or low levels of playfulness. Taken together, each of these coping styles (Active Coping, Positive Reframing, Acceptance, Instrumental Support) falls under what numerous authors have called engagement coping (Carver & Connor-Smith, 2010; Skinner et al., 2003), which is a focus on alleviating, rather than escaping, the stressor or related emotions. Engagement coping has traditionally been seen to include more adaptive forms of coping than disengagement coping, which centers on escaping stressor-induced problems and emotions.

Across all playfulness groups the next three most frequently used coping styles were Emotional Support, Self-distraction, and Humor. Highly playful individuals reported higher uses of Emotional Support and Humor than moderate and low playful individuals, while Self-distraction was reported more by individuals with higher levels of playfulness compared to those with lower levels. The greater use of Emotional Support further supports the notion that playful individuals are more engagement-focused in their coping efforts. The explanation of the use of Humor is less clear, although Connor-Smith and Flachsbart (2007) included seeing the humorous aspect of a stressor as a part of cognitive restructuring, another engagement-focused coping mechanism. The fact that highly playful individuals reported significantly

higher uses of Humor supports Barnett's (2007) findings that playfulness contains a "comedic" factor, and that Humor is a type of cognitive restructuring supports previous findings that playful individuals are highly adept cognitively (Barnett, 2007; Glynn & Webster, 1992; Guitard et al., 2005; Tegano, 1990). Similarly, it makes sense that playful individuals would report higher uses of Self-distraction, as Self-distraction may also be viewed as a cognitive-emotional strategy and is at the heart of several definitions of the playfulness construct (Barnett, 2007; Glynn & Webster, 1992). Finally, in their meta-analysis, Connor-Smith and Flachsbart (2007) noted that while Self-distraction incorporated taking a break from a stressor, it "does [not] involve attempts to avoid or deny problems" (p. 1082), further supporting the engagement focus of a playful individual's coping efforts and strategies.

The results of the study also revealed that individuals with moderate or high amounts of playfulness reported significantly lower uses of Self-blame as a coping style. Self-blame has been associated with negative outcomes, both physical and emotional (Moskowitz, Hult, Bussolari, & Acree, 2009; Smith, Lumley, & Longo, 2002), and indicates a negative and unproductive internalization of the feelings of distress. No other indicators from the present study point to moderately or highly playful individuals coping in maladaptive or avoidant ways. This was a most important finding by indicating that playfulness not only facilitates individuals utilizing effective and engagement-focused tools, but also that they are much less likely to employ negative, avoidant, and unhealthy tools.

The use of Religion as a coping mechanism also provided interesting results and added new findings to the extant literature. Moderately playful individuals were significantly less likely to report Religion as a coping style compared to low or high playful individuals,

indicating a decrease in use as an individual moves from low to moderate playfulness, but then increasing as an individual moves from moderate to high levels of playfulness. This coping style stands alone in this regard; other coping styles (when significant) demonstrated a linear relationship with playfulness.

So why do individuals both low and high in playfulness report higher uses of Religion than moderately playful individuals? This finding might be related to the ambiguity of the items in the instrument assessing the Religion coping style, and to the possibility that the authors failed to distinguish between religion and spirituality. Religion, according to Templeton and Eccles (2008), serves primarily as a social function in that individuals typically identify themselves with a religious group that mirrors their own beliefs and characteristics. Spirituality, on the other hand, is more individualistic in nature and is seen in the context of one's individual beliefs, without necessarily conforming to those of a group. It is obvious when looking at the two items on the Religion subscale ("I've been trying to find comfort in my religion or spiritual beliefs" and "I've been praying or meditating") that individuals who turn to religion to cope may score the same as individuals who instead turn to spirituality.

Furthermore, it can be speculated that the nature of playfulness could provide additional insight into which individuals turn to religion and which individuals might be more likely to turn to spirituality. Since playful individuals are more mentally dexterous (Barnett, 2007; Glynn & Webster, 1992; Guitard et al., 2005; Tegano, 1990) it may be more natural for them to develop and turn to their own spiritual beliefs (spirituality) instead of relying on traditional and group-defined standards (religion) of coping. In the same way, less playful individuals may not have the cognitive focus to embark on either defining or turning to their

individual spiritual beliefs and methods for coping, especially in times of high distress. It may be easier for them to turn to traditional manifestations of religious coping, which would be evidenced by participation in more formal gatherings and rituals. Differentiation between spirituality and religion among playful individuals can also be seen from a motivational perspective. Since playful people have been show to possess higher levels of intrinsic motivation (Amabile et al., 1994; Barnett, 2011-2012), they may be drawn to the development of the acutely individual and personal aspects of spirituality whereas individuals with low amounts of playfulness may be drawn to the normative nature of their respective religious inclinations and associations. Clearly, the delineation between religion and spirituality and their relationship with coping needs to be investigated further.

It was interesting to note that across all three playfulness groups the three least reported coping styles were Substance Use, Behavioral Disengagement, and Denial. None of these were significant, indicating that among the college student sample, having high, moderate, or low levels of playfulness was not indicative of the frequency of their use. The lack of significance for Substance Use may be attributed to its ubiquitous use on college campuses (Dunn & Wang, 2003; Mohler-Kuo, Lee, & Wechsler, 2003; Peralta & Steele, 2010) masking the more subtle effects of playfulness and/or gender. There is an absence of literature relating Behavioral Disengagement, Denial, and two other nonsignificant coping styles (Venting and Planning) to playfulness. Hence, further research will need to be conducted.

Extraversion has long been associated with adaptive problem-focused and engagement-focused coping strategies, such as thinking positively, cognitive restructuring, and seeking social support (Connor-Smith & Flachsbart, 2007; McCrae & Costa, 1986; Rim,

1986; Watson & Hubbard, 1996). A closer look at the elements and descriptors of Extraversion lends credence to the idea that it is a solid predictor of healthy coping mechanisms. Extraverts are by nature social creatures who enjoy crowds, seek to be with others, and are warm, affectionate, active, self-determined, and skilled in play and humor (Costa & McCrae, 1992). Additionally, they exhibit predominantly positive emotions and easily derive joy from people and situations. It easily follows that they exhibit the coping styles found in previous research. That Extraverts are also assertive and self-determined may explain their utilization of Active Coping. Because playfulness in adults is strongly predicted by Extraversion, the current findings that playful individuals more frequently utilize such coping styles as Positive Reframing, Instrumental Support, and Active Coping build on the previous literature (e.g. Connor-Smith & Flachsbart, 2007; McCrae & Costa, 1986; Rim, 1986; Watson & Hubbard, 1996) relating Extraversion to coping as well as Barnett's (2007) findings regarding playfulness in adults.

The present findings also lend indirect support to the model set forth by Woszczynski et al. (2002) that Openness to Experience and low Neuroticism are dimensions of playfulness (particularly, microcomputer playfulness) since they, like playfulness, are associated with adaptive coping styles. Previous research has revealed Openness to Experience to relate to positive reappraisal (O'Brien & DeLongis, 1996) and problem-solving (Watson & Hubbard, 1996). The current findings show that playful individuals more frequently utilized Positive Reframing, indicating that Openness to Experience could be an element of playfulness. Further adding to this speculation is that while there was no coping style labeled "problem-solving" in the current study, items measuring the use of Active Coping ("I've been concentrating my efforts on doing something better about the situation I'm in" and "I've been

taking action to try and make the situation better") and Instrumental Support ("I've been trying to get advice or help from other people about what to do" and "I've been getting help and advice from other people") contain comparable elements. In the current study, playful individuals reported more frequent use of Active Coping and Instrumental Support, suggesting a relationship between Openness to Experience and playfulness in adults and supporting the aforementioned model set forth by Woszczynski et al. (2002).

The relationship between Openness to Experience and playfulness is less clear than the relationship between Extraversion and playfulness, however. The coping style of Planning ("I've been trying to come up with a strategy of what to do" and "I've been thinking hard about what steps to take") is also highly similar to problem-solving (found to be a correlate of Openness to Experience; Watson & Hubbard, 1996), but findings for this particular style of coping were nonsignificant in the current study. Also, in Barnett's (2007) investigation into playfulness and the Big Five personality dimensions, Openness to Experience did not serve as a predictor of overall playfulness. When looking at the elements of Openness to Experience (e.g. imaginative, open to trying new things, curious, expressive of feelings; Costa & McCrae, 1992) it seems that there may be some natural relationship to playfulness, especially since expressivity has been found to correlate with playfulness in a previous study with university students (Bozionelos & Bozionelos, 1999). This investigation into the nature of Openness to Experience, together with previous research into how open individuals cope (O'Brien & DeLongis, 1996; Watson & Hubbard, 1996), may add insight into the nature of playfulness and its relationship to coping, and should be studied further.

Neuroticism was not found to predict overall playfulness in Barnett's (2011-2012) study, and was hypothesized to have a negative relationship with playfulness in the model by

Woszczynski and his colleagues (2002). When looking at the facets and descriptors of Neuroticism it can be surmised that neurotic individuals may have little in common with playful individuals. Neuroticism is made up of facets such as anxiety, hostility, depression, and self-consciousness, and its descriptors include "anxious", "fearful", "high strung", "tense", "prone to worry", "hostile", "irritable", "depressed", "sad", "low self-worth", "self-conscious", "embarrassed", "easily stressed", "panicky", and "worrying", among others (Costa & McCrae, 1992). These do not seem to present a picture of someone who is adept at coping with environmental stressors, nor of someone exhibiting playfulness qualities such as cheerful, outgoing, adventurous, humorous, and active (Barnett, 2007). Therefore, one could argue that Neuroticism should be associated with poorer coping styles, which has been established in a plethora of previous studies (Bolger, 1990; Connor-Smith & Flachsbart, 2007; McCrae & Costa, 1986; O'Brien & DeLongis, 1996). Specifically, the present findings demonstrated that less playful individuals reported higher uses of Self-blame as a coping style, which has frequently been linked with Neuroticism (Bolger, 1990; McCrae & Costa, 1986), further supporting the conclusion that Neuroticism is not an element of playfulness in adults (Woszczynski et al., 2002).

Also worthy of note is the personality dimension of Conscientiousness, which has traditionally been associated with positive, problem-focused coping styles, particularly problem-solving (Connor-Smith & Flachsbart, 2007; Lee-Baggley et al., 2005; O'Brien & DeLongis, 1996; Vickers et al., 1986; Watson & Hubbard, 1996). The present findings indicated that playful individuals also coped in this way, but it does not necessarily follow that Conscientiousness is therefore also an element of playfulness. Rather, Conscientiousness has been shown to have an inverse relationship with playfulness in men (Barnett, 2011-2012)

and it was not posited as a dimension of microcomputer playfulness (Wszczynski et al., 2002). Certain elements of Conscientiousness (e.g. inhibited, deliberate, cautious; Costa & McCrae, 1992) also appear to be opposite of the identified elements of playfulness (e.g. uninhibited, spontaneous, unpredictable, impulsive; Barnett, 2007). However, these playfulness elements only make up one of the four factors of playfulness, implying that while Barnett (2011-2012) found low Conscientiousness to predict playfulness in men, it may not be the case that Conscientious and playful individuals display opposite behaviors, particularly with regard to coping. For instance, elements of Extraversion (e.g. assertive, self-determined) may drive similar adaptive coping mechanisms as Conscientiousness, such as problem-solving, especially in light of the copious literature linking Extraversion with problem-focused coping (Connor-Smith & Flachsbart, 2007; McCrae & Costa, 1986; Rim, 1986; Watson & Hubbard, 1996). In summary, the interplay between personality dimensions, playfulness, and styles of coping exist with a certain amount of ambiguity, and should be studied in further detail.

CHAPTER SIX: CONCLUSIONS, FUTURE RESEARCH, AND LIMITATIONS

So what does this tell us about the adaptive and developmental function of playfulness for adults? For children, copious research has shown playfulness to correlate with a myriad of adaptive outcomes that are crucial to development, including divergent thinking (Barnett & Kleiber, 1982; Lieberman, 1965), problem-solving ability (Barnett, 1985; Vandenberg, 1980), emotional and self regulation (Christiano & Russ, 1996; Elias & Berk, 2002), and imagination (Lieberman, 1977; Singer, Singer, & Sherrod, 1980). However, scrupulous investigation into corresponding benefits for adults is more limited. While playfulness has been linked to positive attributes, a more comprehensive understanding of exactly what playfulness provides to an individual is needed.

The highlighted findings add a considerable piece to this picture. In particular, it was significant that playful adults experienced less perceived stress and engaged more frequently in adaptive coping styles than their less playful peers, especially with the limited nature of adult playfulness research and the salience of stress and coping in the literature. The findings in this study clearly indicate that playful adults have a propensity to attack stressors directly, and that they more infrequently utilized less adaptive coping styles, such as Self-blame. This implies that playful individuals correctly believed that they have the inner resources necessary to overcome their stressors and are successful in their utilization of coping strategies. Certainly, coping styles that are maladaptive and internalize stress (i.e. Self-blame), as well as those which seek to avoid or escape from the stress and stressors do nothing to effectively alleviate distress, and are found more frequently in individuals with low levels of playfulness.

Moreover, it is interesting to note that since all individuals reported the same top-five coping styles, and playful individuals reported higher frequency of utilization for four of the five, it seems that playful people may simply cope more than less playful people. Again, in addition to embarking on these coping behaviors more often, these styles are adaptive and engagement-focused coping styles. Since playful individuals reach into their toolbox more often than those who are less playful, one might assume that this is a result of consistently higher levels of perceived stress. However, a better explanation may be that playful individuals more readily and swiftly employ effective coping styles whenever faced with stressors, effectively rendering them innocuous. It seems to be the case that coping is simply a more natural behavior for the playful individual, especially since both coping and playfulness are similar in their cognitive-emotional attributes. As a result, it comes as no surprise that the results showed playful individuals to experience less perceived stress.

These findings suggest that playfulness may serve a purpose much more extensive than previously thought and that its benefits persist beyond childhood and into adulthood. Perhaps most notable is that adult playfulness seems to contribute to an individual's *resilience* through its unique dissemination of coping styles in the face of stressful situations, as playful adults seem to see stressors as nondebilitating and attack them directly and readily. Furthermore, this resilience may also help explain why playful adults reported lower levels of perceived stress. With the ubiquity of changes in social landscape and social climate, the significant continued aging of the population, and the unique challenges of the 21st century, there may be few more valuable attributes to study and develop than resilience. From the current findings it holds that playfulness in adults should not remain a peripheral afterthought, but rather should be thrust into the center of intense, systematic, and comprehensive research.

In light of the considerable benefits of playfulness, another natural question regarding future implications is whether it is possible to teach individuals how to be playful. With the conceptualization of playfulness holding that it is an aspect of personality, which is largely stable across time, it seems that enhancing playfulness in an individual would be a challenging endeavor. At the same time, it does not seem accurate to view playfulness as dichotomous; it should not be viewed as an all or nothing construct. Rather, playfulness seems to range along a continuum from low to high (Glynn & Webster, 1992). If every individual possesses at least some amount of playfulness, it follows that the adaptive functions of playfulness can be enhanced to benefit everyone. Unfortunately, many times latent playfulness is mistaken for a lack of playfulness, and it is subsequently not further developed, encouraged, or given credence. Playfulness in all people, however, should be nurtured so that its benefits can be realized. Playfulness should be seen and experienced apart from traditional assumptions regarding its "frivolity" and the corresponding negative societal reinforcements that seem to exist within a number of cultures. Addressing these challenges will further the evolution of playfulness in adults and advance the benefits it provides.

As with any study, the presence of limitations must be stated. Since the sample was university students, the results cannot be generalized to the entire adult population. Also, because of the unique behaviors and dynamics of university students, it is possible that the results are more characteristic of these students as opposed to all young adults. Differences such as socioeconomic status, amount of education, and race where not accounted for in the study, which may be of particular note as the significant coping styles were primarily cognitive-emotional in nature. As with all forms of self-report data collection, the researchers operated under the assumption that participants' responses were truthful, although there was

no way to establish their veracity. A social desirability bias may also have been present, as individuals may have been influenced by positive or negative connotations relating to the three constructs. While the above are unlikely, due to the anonymous and confidential assurances provided to participants, they cannot be completely discounted. Finally, this study was cross-sectional in nature, and as such no causal relationships can be inferred. While these limitations exist and merit mention, they should not distract from the significant relationships found concerning the significant potential that playfulness has in the face of perceived stress and in the successful implementation of adaptive coping strategies.

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