

## ABSTRACT

Title of Document:

**INVESTIGATING THE ROLE OF  
PERSONALITY IN (SPORT) CONSUMER  
BEHAVIOR**

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This dissertation is presented as three empirical investigations examining the state of personality research in consumer behavior (CB). Each study supports the notion that the use of established personality theory can serve to better inform CB research (e.g., Baumgartner, 2002). Study one builds upon previous research in evaluating and comparing the validity and reliability of the Impulsive Sensation Seeking (ImpSS) scale with the more established Sensation Seeking Scale, Form V (SSS-V) and a third measure of Optimum Stimulation Level (OSL) in both homogenous and heterogeneous samples. Findings suggest ImpSS to be a valid and reliable alternative to SSS-V. Structural Equation Modeling (SEM) results point to concurrent validity of ImpSS and SSS-V. In addition, the predictive validity of ImpSS compares favorably to both SSS-V and CSI in the context of high-risk behavioral correlates (i.e., gambling, smoking, and drinking).

Consumer use of imagery to process advertising messages has received much attention in the literature (e.g., Thompson and Hamilton 2006) yet little is known about its underlying structure. Study two adopts a hierarchical personality approach (cf. Mowen and Spears 1999) in examining the influence of certain traits on an individual's processing style. Results suggest that variance in preferences for a visual processing style may be explained by interplay among some higher-order personality traits (i.e., Openness to Experience and fantasy-proneness) but not others (i.e., ImpSS). The findings of study two also provide a platform for the third investigation by demonstrating that a theoretically-grounded personality trait (i.e., fantasy proneness) appears to play a role in mode of processing.

The third study examines the role of personality in the imagery processing of sport marketing stimuli. Specifically, this investigation explores the effects of fantasy proneness on processing and response to print ads containing varying levels of sport-related imagery. While the research hypotheses are not supported, this study follows existing imagery-processing literature (e.g., Petrova & Cialdini, 2005) in that manipulation of imagery-eliciting ad elements (i.e., ad copy) can lead to increased processing and more favorable ad response. Results of post hoc regression analyses also imply that fantasy proneness may, in fact, play a small role in consumer processing.

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By

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## Foreword

In accordance with University of Maryland Graduate School policy, it is recognized that a graduate student may co-author work with colleagues that should be included in a Dissertation. A portion of this Dissertation, Chapter 3 (Study one) and Chapter 4 (Study 2) was co-authored by Dr. Steve McDaniel, the Dissertation Chair; his contributions fall within the customary bounds of graduate supervision. The candidate solely authored all other chapters, though feedback and suggestions from the Committee were incorporated into the final manuscript. This foreword, as approved by the Dissertation Committee, certifies that the candidate made significant contributions to all co-authored facets of this Dissertation.

## Dedication

This dissertation is dedicated to the following people:

To my wife, Christine; there are not enough words with which to express my gratitude and appreciation for your encouragement and support throughout...I love you.

To my parents, Joe & Susan; thank you for instilling in me enough strength, perseverance, and good, old Irish stubbornness to see this through. Dad, wish you were here.

To my children, Erin & Ethan; thank you for always being supportive of 'Daddy the student'. It is my hope that someday you both can use this experience to see that anything is possible with a great support system in place.

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## Chapter 1: Introduction

Personality has long been used in consumer research as a predictor of behavior, with a history that may be traced back five decades (Endler & Rosenstein, 1997). Scholars point to the utility of personality in explaining differences in response (e.g., attitudes) over and above the use of group-level (i.e., demographic) characteristics or purchase patterns (Endler & Rosenstein, 1997). Despite the early promise, however, interest in consumer personality waned in the 1970s (Bosnjak, Bratko, Galesic & Tuten, 2007). As such, current consumer literature is largely devoid of studies that draw upon established personality constructs and theory (Baumgartner, 2002).

This lack of interest in consumer personality perhaps may be a result of criticisms levied against the field, which lead many to liken its study to “armchair theorizing or atheoretical empiricism” (Baumgartner, 2002, p. 291). Critics of this line of research point to concerns such as the atheoretical manner with which personality is applied as well as the lack of valid and reliable measures employed (Kassarjian, 1971; Lastovicka, 1982). Further, Mischel (1968) suggests trait-based methods do not have the same explanatory merit as other approaches, such as social learning.

One of the most pointed critiques of personality surrounds its measurement. In particular, the validity and reliability of personality measures as applied in consumer behavior is often disregarded by consumer researchers (Kassarjian, 1971). Substandard internal consistency (e.g., Cronbach alpha) levels and a failure to

validate a measure for the population of interest are among the noted problems. For example, tests validated by psychologists on college students are employed in studies on the general population (Kassarjian, 1971).

A related issue is found with researchers using or altering scales as they see fit in seeking to meet the demands of a particular design (Kassarjian, 1971). As evidence of this, studies in marketing and consumer behavior often include scales that are outdated, have been significantly shortened or re-worded (Bosnjak et al., 2007). Certainly, such practices raise issues with the psychometrics of these instruments.

One example of this problem is seen with measurement of the sensation seeking, a trait characterized by a preference for novel or complex stimuli. The sensation-seeking construct shows utility in a variety of consumption contexts (Ball, 1995; Krmar & Greene, 1999; Lejuez, Aklin, Bornoalova & Moolchan, 2005; Leone & D'Arienzo, 2000; McDaniel, 2002; Shoham, Rose & Kahle, 1998). The most heuristic measure of this trait is the Sensation Seeking Scale Form V (SSS-V; Zuckerman, Joireman, Teta & Kraft, 1993). Despite many apparent questions regarding the psychometric properties of the SSS-V (cf. Deditius-Island & Caruso, 2000), this measure is still used extensively (Roberti, 2004). Moreover, current theory identifies an impulsivity component to the sensation-seeking trait; the SSS-V does not account for such a dimension (Zuckerman, 1996). A newer instrument, the Impulsive Sensation Seeking Scale (ImpSS), is more in line with contemporary theory yet its application is not generally evident in the literature.

A variety of techniques are employed in assessing the psychometric viability of measures. Among these is structural equation modeling (SEM), which is used to

examine the structure of latent factors purportedly estimated by a particular instrument (cf. Ferrando & Chico, 2001). SEM is particularly helpful in assessing the structure of multidimensional scales, such as the SSS-V and ImpSS. This method also shows utility in comparing the psychometrics of personality instruments (Ferrando & Chico, 2001; Grande, 2000). Therefore, the first investigation seeks to compare the validity and reliability of a newer measure of the sensation-seeking trait (i.e., ImpSS) to an older, more established one (i.e., SSS-V) through the use of multiple techniques, including SEM.

A second issue with the use of personality in consumer behavior is the atheoretical nature of the research (Baumgartner, 2002). Critics point to the creation of scales to measure 'traits' that lack any particular theoretical rationale (Kassarjian & Sheffet, 1991). A recent movement in the consumer literature seeks to circumvent this issue by applying a hierarchical approach in explaining individual differences in consumption behavior (Harris & Lee, 2004; Harris & Mowen, 2001; McDaniel, Lim & Mahan, 2007; Mowen, 2000; Mowen, Harris & Bone, 2004; Mowen & Spears, 1999). This approach is grounded in work in psychology by Allport (1961) and identifies three levels of traits—cardinal (basic), central, and surface (context-specific)—that can help explain variance in consumer-related outcomes (e.g., attitude toward ads or purchase intentions).

A surface trait indicates an individual's predisposition for a certain behavior; higher levels of a bargaining proneness trait suggest one's preference for negotiating in a purchase context (Harris & Mowen, 2001). According to the notion of personality hierarchies, an individual's behavior is driven not only by this surface

trait but also more basic traits that operate across contexts. Cardinal traits are representative of the basic elements of human personality and are commonly defined by factor models established in the psychology literature, such as the Five Factor Model (McCrae & Costa, 1987). Central traits are defined as those that appear across contexts and can interact with the more abstract cardinal traits to influence surface traits (Mowen & Spears, 1999). Proponents of this approach posit that use of hierarchies demonstrate improved predictive potential over individual traits (Endler & Rosenstein, 1997; Mowen & Spears, 1999).

One area in consumer behavior that appears fruitful for the application of a hierarchical personality approach is imagery processing. Advertising research suggests that individuals tend to show a preference for processing message information either verbally (i.e., using words) or visually (i.e., using imagery) (MacInnis & Price, 1987). Imagery processing is theorized to involve the use of pictures rather than words in interpreting information (MacInnis & Price, 1987; Miller et al. 2000; Puto & Wells, 1984). Some studies demonstrate the positive effects of imagery processing on consumer preferences (Burns, Babin & Biswas, 1993; MacInnis & Price, 1987; Miller, Hadjimarcou & Miciak, 2000; Thompson & Hamilton, 2006). While there is a fair amount of literature dedicated to the study of individual differences in imagery processing, there remains much debate as to its exact nature (Miller et al., 2000).

Much of the research on how consumers respond to ad messages holds that imagery processing only operates at low levels of cognition, which leads to weak attitude change or formation (Petty & Cacioppo, 1986). Some scholars counter that



imagery processes, such as fantasies, can occur under conditions of high cognitive effort (MacInnis & Price, 1987). Additionally, though a few studies suggest the existence of ‘individual differences’ in imagery processing (e.g., Petrova & Cialdini, 2005; Thompson & Hamilton, 2006), none employ existing personality constructs or theory. The literature indicates that personality can influence preferences for fantasy-related behaviors, such as role-projection (d’Astous & Deshenes, 2005; Hirschman, 1983; McDaniel, Lee & Lim, 2001). As such, study two seeks to extend the work in this area by adopting a hierarchical personality approach in examining the underlying structure of consumer imagery processing. Specifically, this second investigation considers the structural relationship among traits (i.e., Impulsive Sensation Seeking, Openness to Experience, Fantasy-Proneness, and Visual Style of Processing) relevant to an advertising context.

A number of studies in advertising treat processing style as an indicator of differences in imagery processing (e.g., Babin & Burns, 1997; LaBarbera, Weingard & Yorkston, 1998). Further, some show that differences in imagery processing mediate effects of ad execution on consumer response (Thompson & Hamilton, 2006). However, while many of these studies purport to measure ‘individual differences’ in imagery processing, none appear to apply established personality theory to assess such differences. As such, the underlying structure of individual differences in imagery processing has yet to be explored. Based on preliminary research (study two of this dissertation), an individual’s style of processing appears to be influenced by personality traits, such as fantasy-proneness. Expanding upon this premise that personality may be helpful to the study of consumer imagery processing,

the third study uses an experimental design to investigate the role of a personality trait in gauging processing and response in a specific (i.e., sport) advertising context.

This dissertation is comprised of three empirical investigations that discuss topics pertaining to the measurement of personality constructs, the underlying personality framework in consumer behavior, and the role of a personality construct in processing of, and response to, of advertising messages. Each study takes a distinct theoretical and methodological approach in the examination of certain personality constructs in a (sport) consumption context. Chapter two is a review of literature that examines the application of personality in consumer behavior. Chapter three (study one) attempts to respond to the criticism of measurement in personality by establishing validity and reliability for a measure of a construct important to the study of consumers. Chapter four (study two) addresses the critique that personality research in the consumer behavior realm is often not grounded in theory. In particular, study two investigates the underlying structure of consumer imagery using the hierarchical personality approach (Mowen & Spears, 1999). As such, the relationship between fundamental personality constructs and a trait that is specific to a consumer context (i.e., visual style of processing) is explored. Chapter five (study three) consists of an experiment to assess the role of a personality construct, fantasy-proneness, in consumer processing of, and response to, advertisements in a sport marketing context. The goal of this study is to draw upon personality theory to help explain potential individual differences in an advertising context. Thus, the third study addresses concerns raised in the scholarly literature (Baumgartner, 2002; Kassarian, 1971; Lastovicka, 1982; Mischel, 1968) about the lack of theoretically-

grounded personality research in consumer behavior. Chapter six includes a summary and conclusion of the findings of the three studies as well as directions for future research.

## Chapter 2: Review of Literature

### *Introduction*

This dissertation examines personality research in consumer behavior (CB) through three empirical investigations. This review is intended to provide the foundation for the primary research question of this dissertation. To that end, the contents of this review are general in nature; the literature specific to each of the three studies is contained within the subsequent chapters.

The sections in this chapter comprise an overview of the application of personality in CB research. The first part discusses a summary of the theoretical underpinnings of this line of inquiry. The influence of personality psychology is unmistakable in those studies exploring aspects of consumer personality (Endler & Rosenstein, 1997). Thus, examining the conceptual origins of this line of research is warranted. The second part outlines two distinct perspectives that appear to have informed the evolution of personality research in CB: 1) early criticisms levied against the field; and, 2) more recent calls for a re-emphasis of consumer personality in CB. The former suggests the use of personality is inappropriate in CB research while the latter proposes a resurgence of consumer personality research through the utilization of theoretical frameworks. The third section surveys the application of personality theory in CB studies. Early work in this domain appears dominated by divergent approaches: trait/factor (i.e., personality is stable across situations) and situationist (i.e., external or environmental situations determine behavior). However, there is clear evidence of a paradigm shift in more recent literature, with

interactionism (i.e., looking to person x situation interactions for explaining consumer behavior) becoming more frequently applied (Endler & Rosenstein, 1997).

### *Theoretical Background.*

In psychology, the individual differences or trait paradigm is the most prominent approach to the study of the human personality (Endler & Rosenstein, 1997). This model asserts that traits are enduring characteristics which play a central role in driving behavior. One theoretical framework that is widely applied in this line of research is the Five Factor Model (FFM; McAdams, 1992). Moreover, scholars posit that personality remains stable across situations or contexts (Endler & Rosenstein, 1997).

A competing model in this domain is taken by those who theorize that, while internal factors are important, the primary determinants of behavior occur externally (i.e., situations) (e.g., Mishel, 1968). This situationist approach proposes that variance in an individual's behavior is best explained within the context of a particular situation and all but eliminates the importance of individual differences (Endler & Rosenstein, 1997). This dichotomy between approaches fuels the on-going debate as to whether the person or the situation is more important to the study of human behavior (Endler & Rosenstein, 1997).

One theory that appears to straddle the two sides of this debate is the Interactional Personality Model (Endler & Magnusson, 1976). Proponents of this approach suggest that human behavior is guided by the interplay between person and situation as opposed to one being more important (Endler & Rosenstein, 1997). The

first examples of this approach are found in early studies of anxiousness (Endler & Hunt, 1969; Endler, Hunt & Rosenstein, 1962). The original investigation by Hunt et al. (1962), sought to explain individual differences in anxiety responses. Findings point to interactions between person and situation as accounting for more variance than the main effects of situation, person, or mode of response (e.g., increased heartbeat). A replication by Endler & Hunt (1969) reaffirms these results, indicating the person-situation interaction as explaining more variance than either main effect combined.

Support for the interactionist approach is found in the literature in the form of psychographics, which has been used to study consumer-related phenomena (Endler & Rosenstein, 1997). The study of consumer behavior includes work dedicated to examination of those psychological characteristics that appear to drive consumption choices (Endler & Rosenstein, 1997). Additionally, one stream of consumer research that follows this notion of Person x Situation interaction is the hierarchical personality approach (cf. Mowen & Spears, 1999). Adherents of this particular paradigm put forth that behavior is driven by the interaction of personality traits that operate within tiered frameworks (Mowen & Spears, 1999). This hierarchical approach represents one attempt to bridge the chasm between trait and situationist approaches (Mowen & Spears, 1999).

#### *Evolution of personality research in CB*

Despite the widespread use of personality in the study of consumers in the mid- to late-20<sup>th</sup> Century, there are a number of scholarly criticisms of the manner in

which it is applied (Kassarjian, 1971; Lastovicka, 1982; Mischel, 1968; Mischel & Shoda, 1998). There appear to be several bases for this concern, including: the ad hoc nature of theory application (Kassarjian, 1971), imprecise measurement of constructs (Kassarjian, 1971; Lastovicka, 1982), and the notion that ‘personality’ does not exist at all (Mischel, 1968). In all, such derision suggests that personality research is not important in the study of consumers (Baumgartner, 2002).

Kassarjian (1971) offers that CB researchers show a tendency for neglecting established theory in study design. Many scholars take a “shotgun approach” in arriving at findings (Kassarjian, 1971, p. 292). That is, rather than simply listing what is (or is not) found according to a priori hypotheses, some studies give the implication that any significant relationship is important. The end result, according to Kassarjian (1971) is a body of work filled with unimportant contributions.

Another related concern with personality research in surrounds the validity of measures employed (Kassarjian, 1971; Lastovicka, 1982). Modification of instruments appears to be a common practice, with some researchers altering the original to fit a particular study (Kassarjian, 1971). This pattern often leads to low levels of validity (e.g., construct) and reliability (i.e., internal consistency) (Kassarjian, 1971; Lastovicka, 1982). Studies will also utilize measures that gauge broad personality traits to predict discrete consumer preferences (e.g., for a particular brand of car). Moreover, such methods lead to an excessive number of ‘traits’ with little or no conceptual value (Lastovicka, 1982).

Perhaps the most notable criticism of this line of inquiry posits that individual differences in behavior are determined by the situation or context as opposed to

personality traits (Mischel, 1968). In his critique, Mischel (1968) notes a lack of consistency in behavior across situations. This perspective is widely considered a censure of personality psychology and, thus, a call for research that disregards personality factors in exploring human behavior (Mischel, 2004).

Whereas the above critics appear to advocate for the elimination of personality research in CB, other scholars maintain that increasing the number of theoretically-grounded research agendas could reinvigorate the use of personality in the study of consumers (Baumgartner, 2002; Endler & Rosenstein, 1997; Mischel, 2004). This shift stresses the importance of conceptual frameworks and is used as a platform for informing more recent CB studies (e.g., Mowen et al., 2004).

Endler and Rosenstein (1997) trace the history of personality theory in CB and offer that the interactionist (i.e., combined effects of personality and situation) approach may provide the most suitable platform for research of this nature. The authors further suggest such a method could improve the perceptions of this line of inquiry. Moreover, Endler and Rosenstein (1997) submit that studies in this domain might benefit from the application of established personality models.

Further illustrating the need for renewed focus in the discipline, Baumgartner (2002) notes the “sorry state of personality research” in CB (p. 286). In noting this deficiency, Baumgartner (2002) argues that the importance of consumers at the individual level (i.e., personality) has been lost. One solution offered is the adoption of comprehensive theoretical frameworks to connect abstract personality traits with context-specific behavior. Thus, a more concerted effort to draw from personality



theory rather than single traits, could vastly improve the condition of the study of consumer personality (Baumgartner, 2002).

In line with the above calls, Mischel (2004) departs from his earlier assessment of personality research to posit a need for reliance on a systematic personality framework. This paradigm suggests that a personality ‘type’ includes elements of individual (i.e., processing) and environmental (i.e., situations) input in driving behavior. Mischel (2004) illustrates this through the example of an individual who is sensitive to (social) rejection that receives situational feedback of an indifferent other (e.g., partner or spouse). This approach offers that the combination of these pieces of information could lead to a behavioral response of ‘acting out’ (i.e., blaming others or lashing out). Applied to a consumption context, this paradigm could have utility in explaining how two consumers with different levels of a trait (e.g., need for arousal) might vary in their response to the same situation (e.g., skydiving). As such, Mischel (2004) appears to support earlier propositions (Baumgartner, 2002; Endler & Rosenstein, 1997) that consistent application of established theoretical frameworks can serve to advance the field of consumer behavior.

#### *Application of personality theory in CB research*

The primary function of personality in the consumer literature is to explain differences in consumption outside of using group-level (e.g., demographics) or usage (e.g., purchase frequency) data (Endler & Rosenstein, 1997). Historically, the trait/factor model (e.g., using the Five Factor Model) and the interactionist approach,

labeled psychographics in the consumer literature (Endler & Rosenstein, 1997) appear to prevail in consumer research. Moreover, the apparent sporadic popularity of personality is evidenced by an abundance of followers in the 1950s and 1960s, a significant drop-off for a few decades, then another recent resurgence since the 1990s (Baumgartner, 2002). Despite this lack of consistency and the criticisms of the application of personality research in CB (cf. Kassarian & Sheffet, 1991), there are studies that extend the interactionist concept through the use of broader personality frameworks known as the hierarchical personality approach (Mowen & Spears, 1999). This approach is shown to provide a comprehensive theoretical basis for the use of personality traits in the explanation of behavior in various consumption contexts (e.g., Harris & Mowen, 2001; Mowen, Harris & Bone, 2004).

Early use of the trait/factor approach in CB is characterized by studies examining correlations among traits and consumption behavior (Kassarian, 1971). One of the first studies in this tradition utilizes the Edwards Personal Preference Schedule (EPPS) to explore the relationship between certain traits and behaviors (Kaponen, 1960). The findings of this study point to a positive correlation between traits (e.g., aggression) and smoking frequency as well between personality and preferences for reading certain magazines. Another study employs a different measure, the Gordon Personal Profile to investigate the influence of traits (e.g., emotional stability and sociability) on tendencies for consumption of certain product categories (e.g., gum and vitamins) (Tucker & Painter, 1961). Similar to Kaponen (1960), their results pointed to significant positive correlations between the traits assessed and the reported consumption of different product categories (Tucker and

Painter, 1961). While these two studies demonstrate support for the applicability of personality traits in the study of consumers, Kassarian (1971) points to the low amount of variance explained (e.g., 10% in the Tucker & Painter study). Moreover, the use of different measures in assessment of traits in these early studies suggests a lack of agreement on the scope of 'personality' in CB which perhaps contributes to the relative dormancy of its use over the next few decades (Endler & Rosenstein, 1997).

The origins of the interactionist approach in CB are traced to the concept of 'psychographics' as developed by marketers in the 1960s (Endler & Rosenstein, 1997). Psychographics are indicators of a consumer's tendency to behave in particular consumption contexts which, like traits, remain stable over time (Endler & Rosenstein, 1997). The research in this area focuses on the intersection between these tendencies to act (i.e., respond) and different product categories, suggesting that behavior is a function of both personality and the situation.

More recent application of the interactionist tradition is found in the work utilizing hierarchical personality models to the study of CB. Based upon the literature advocating for person x situation interactions (e.g., Alport, 1961; Buss, 1989; Endler & Rosenstein, 1997), scholars posit that personality traits work together to drive behavior in specific consumer contexts (Mowen & Spears, 1999). That is, basic personality dimensions (e.g., from the Five Factor Model) serve as the foundation and can influence situation-specific traits that are (e.g., compulsive buying). Scholars theorize that these more established fundamental traits can be applied across

situations and, as such, this approach would appear to counter the ‘ad hoc’ nature of much personality researchers to create unique ‘traits’ for every situation.

Following this line of research, more recent work focuses on a comprehensive hierarchy. Mowen and Spears (1999) put forth a three-level model to explore the interaction of traits in consumer contexts. In this model, *cardinal traits* represent the highest level of the hierarchy. These traits are considered to be fundamental predispositions of human behavior that emerge from a combination of genetics and early learning, and it is proposed that only a limited number of these exist (Allport, 1961; Mowen, 2000). Research designs will often employ multiple cardinal traits in order to determine the combination that best influences lower-level traits (e.g., Harris & Mowen, 2001; Mowen et al., 2004).

*Central traits* are conceived to mediate the effects of cardinal traits in specific situations (Mowen & Spears, 1999). These traits are comprised of the interaction among cardinal traits in addition to certain external influences, such as learning environment (Harris & Lee, 2004). Studies point to the possible existence of dozens of central traits, such as need for arousal, which could vary across broad consumption categories (Mowen & Spears, 1999).

Individual predispositions to act in certain situations are represented in this line of inquiry by *surface traits*, which are considered the most discrete traits in the hierarchy (Mowen & Spears, 1999). Such characteristics correspond to individual differences that drive behavior within a specific consumption situation, with examples including a tendency to use coupons (i.e., coupon proneness; Lichtenstein,

Netemeyer & Burton, 1990) and a preference for bargaining (Harris & Mowen, 2001).

Consumer research using hierarchies indicates a multitude of surface traits influenced by different combinations of cardinal and central traits. The authors in this area largely employ the Five-Factor Model (FFM) at the cardinal level and hypothesize relationships among combinations of traits in explaining behavior. Mowen and Spears (1999) examine factors influencing the surface trait of compulsive buying among college students and suggest that certain cardinal (e.g., stability) and central (e.g., materialism) traits affect compulsive buying among college students. An extension of this study investigates similar interrelationships among traits on bargaining and complaining tendencies of college students (Harris & Mowen, 2001). Their results converge with those of Mowen & Spears (1999) in that varying combinations of cardinal and central traits can drive behavior. Further, given that these two studies investigate different surface traits through the application of the FFM, they appear to provide support for the basic tenet of this paradigm that context-specific behaviors can be explained by a small number of fundamental personality traits. Thus, Harris and Mowen's (2001) results are in line with previous studies that find hierarchical models of personality can account for a large amount of variance in surface traits (Mowen & Spears, 1999).

The advertising literature also includes work using hierarchical models of personality (e.g., Mowen et al., 2004; McDaniel et al., 2007). One such study explores the interrelationship among personality traits that might influence fear response to advertising appeals depicting driving behavior (Mowen et al., 2004).

Findings indicate that differences in fear response are a function of deeper, more basic traits (i.e., need for arousal, emotional stability and need for body resources). McDaniel et al., (2007) adopt a similar method in the examination of individual differences in response to print advertisements depicting varying levels of violent sport content. The authors use a partial hierarchy (i.e., central and surface traits) in finding that a surface trait (Curiosity About Morbid Events; CAME) mediates the effects of a central trait (Impulsive Sensation Seeking; ImpSS) on certain indicators of advertising response (i.e., attitude toward the ad and viewing intentions). Together, these two studies suggest the utility of personality models, such as in the hierarchical approach, in the examination of the effects of marketing phenomena, such as advertising, on consumer ad response.

The premise of interactionist theory and, specifically, personality hierarchies, appears to have promise in a variety of CB contexts, including sport consumption (e.g., Harris & Mowen, 2001; McDaniel et al., 2007; Mowen & Spears, 1999). To date, only a relatively small number of studies employ this paradigm. However, given the calls for theoretically-grounded examination of consumer personality (e.g., Baumgartner, 2002), it would seem prudent to continue to adopt a similar approach in examining the underlying structure of consumer behavior.

## Chapter 3: Study One

McDaniel, S.R. & Mahan, J.E. (2008). An examination of the ImpSS scale as a valid and reliable alternative to the SSS-V in optimum stimulation level research. *Personality and Individual Differences, 44*, 1563-1583.

### *Introduction*

The notion of a sensation-seeking personality trait was borne out of the study of optimum levels of stimulation (OSL). The notion of OSL states that there is a level of stimulation at which individuals are most comfortable (Zuckerman, 1994). When the environment fails to provide the appropriate level of stimulation, individuals seek out (or avoid) additional arousing stimuli (Zuckerman, 1994). Arguably the most heuristic OSL paradigm, sensation seeking is defined as “the seeking of novel, varied, complex, and intense sensations and experiences, and the willingness to take physical, social, legal, and financial risks for the sake of such experience” (Zuckerman, 1994, p.27). For the better part of five decades, the utility of this paradigm has been demonstrated in the study of a wide variety of social and psychological phenomena (Joireman & Kuhlman, 2004). Specifically, sensation-seeking is considered an important construct in a variety of domains including psychology, health, and communication (see Roberti, 2004 for a review).

One aspect of sensation seeking that distinguishes it from many other personality traits is that it has been theorized to have psychobiological roots. Research finds the trait to be related to high levels of testosterone and low monoamine oxidase (MAO) levels (Zuckerman, 1994). As evidence of this, studies

consistently show sensation-seeking to vary according to gender (higher in males) and to decrease across the life span (Zuckerman & Kuhlman, 2000).

Another personality construct deemed important in the study of similar social and psychological phenomena and also appears rooted in psychobiology is impulsivity (cf. Lejuez, Aklin, Bornovalova & Moolchan, 2005; Zuckerman & Kuhlman, 2000). Impulsivity represents a predilection to engage in behavior without planning or consideration of potential consequences (Zuckerman & Kuhlman, 2000). While this definition offers face validity for a conceptual link between this trait and sensation seeking, there is also scholarly support pointing to the shared biological connection, as in low MAO levels (Zuckerman & Kuhlman, 2000). Further, a number of studies link both traits to high-risk behaviors, such as alcohol consumption or tobacco use (e.g., Dom, Hulstijn & Sabbe, 2006; Lejuez et al., 2005).

A number of self-report scales exist for assessment of the sensation-seeking trait. Across domains, the measure most often employed to assess the trait has been Zuckerman's (1979) Sensation Seeking Scale, Form V (SSS-V) (Deditius-Island & Caruso, 2002). The SSS-V is a 40-item instrument that assesses four facets of the trait: Thrill and Adventure Seeking (TAS), Experience Seeking (ES), Disinhibition (Dis), and Boredom Susceptibility (BS) (Zuckerman, 1994). Other measures include Arnett's Inventory of Sensation Seeking (AISS; Arnett, 1994), the Brief Sensation Seeking Scale (BSSS; Hoyle et al., 2002) and the Impulsive Sensation Seeking (ImpSS) scale (Zuckerman, Kuhlman, Joireman, Teta & Kraft, 1993).

Departing from Zuckerman's conceptualization of sensation-seeking (as measured by SSS-V), Arnett's (1994) scale excludes items related to risky or



socially-undesirable behaviors and accounts for two dimensions of sensation-seeking: intensity and novelty (Roth, 2003). Research has found the predictive validity of AISS to compare favorably to SSS-V (Arnett, 1994; Roth, 2003). Despite its shorter length (20 items) as compared to SSS-V, the major criticism of AISS concerns internal consistency (Roth, 2003). Arnett (1994) reports low Cronbach's alpha for AISS Total score (.70) as well as both subscales (Intensity = .64; Novelty = .50). Some have reasoned that these low reliability estimates could be due to selection of items based on face validity rather than psychometric analyses (Roth, 2003).

Hoyle et al. (2002) derive the eight-item BSSS from the SSS-V for inclusion as part of large-scale surveys. The measure contains two items from each of the four SSS-V subscales and is adapted for use with adolescent populations. While the BSSS shows strong predictive validity with a variety of drug-related behaviors, research using the BSSS points to low reliability levels (Hoyle et al, 2002). Furthermore, as the BSSS is a derivative of SSS-V, it also does not assess the impulsivity construct.

The Alternative Five-Factor model combines both impulsivity and sensation seeking onto a single factor labeled Impulsive Sensation Seeking (ImpSS; Zuckerman et al., 1993). This comprehensive model of personality comes from an effort to place sensation seeking within a larger framework (Zuckerman et al., 1993). Assessment of the trait(s) of the Alternative Five is conducted with the Zuckerman-Kuhlman Personality Questionnaire (ZKPQ), versions of which consist of five subscales including ImpSS (Zuckerman et al., 1993). The ImpSS scale gauges a preference for change and uncertainty as well as a tendency to act without thinking or planning and consists of two subscales, Impulsivity (Imp) and Sensation Seeking (SS), the latter of

which (SS) includes eight items adapted from the SSS-V (Zuckerman, 1994). Like other alternatives to SSS-V (i.e., AISS, BSSS), brevity is a strength of the 19-item ImpSS (Stephenson, Hoyle, Palmgreen, & Slater, 2003). However, some research reports internal consistency of ImpSS as more favorable than BSSS and AISS (Stephenson et al., 2003). In addition, existing findings show suitable reliabilities for the Imp and SS subscales of ImpSS (cf. Angleitner, Riemann & Spinath, 2004). Further, Zuckerman (1996) offers that ImpSS might be a suitable selection over SSS-V as it excludes the culture-specific references and outdated terminology characteristic of SSS-V.

The theoretical basis, format and psychometric properties of ImpSS as compared to other sensation-seeking measures would seem to show its utility for research on OSL phenomena. It appears, however, that SSS-V still remains the most widely employed measure (Deditius-Island & Caruso, 2002). Following Deditius-Island and Caruso (2002), a search performed using the terms ‘sensation-seeking’ and ‘sensation-seeking scale’ (in ‘All Text’) of peer-reviewed articles in the *PsycInfo* database between 1994-2007 (the period after the introduction of ImpSS) generated a pool of 472 documents. Six documents that were either false hits or not obtainable were removed. Also eliminated were 70 studies that utilized instruments other than SSS-V or ImpSS. However, studies utilizing translations of SSS-V into other languages were counted as these measures originate from the same conceptualization as SSS-V. Of those remaining, 378 studies included SSS-V while only 15 employed ImpSS; an additional three used both. This highlights the widespread use of an instrument (i.e., SSS-V) not in line with current theory (Zuckerman et al., 1993).

Use of the ImpSS has demonstrated predictive validity in both clinical (cf. Ball, 1995) and field (cf. McDaniel & Zuckerman, 2003) studies on risky and addictive behaviors. Yet, regardless of the theory shift and apparent utility of the ImpSS in OSL research, the SSS-V is still overwhelmingly favored by scholars investigating sensation-seeking phenomena (Deditius-Island & Caruso, 2002). In addition to the SSS-V's arguable inconsistency with contemporary SS theory, it is also curious that it continues to be utilized in spite of a variety of psychometric criticisms, including low (subscale) reliability levels (Deditius-Island & Caruso, 2002), forced-choice format (Arnett, 1994; Grande, 2000) as well as overall length (Arnett, 1994; Hoyle et al, 2002). In certain instances, some scholars employ separate measures of impulsivity and the SSS-V in the study of risky behaviors (cf. Lejuez et al, 2005).

With the apparent questions surrounding the psychometrics of the 40-item SSS-V, in addition to the inclusion of an impulsivity dimension into current sensation-seeking theory, it would seem that ImpSS could be argued to be a more suitable assessment of the sensation-seeking trait (Zuckerman, 2007). Likewise, the type of research methodology often employed in certain types of clinical and field research of sensation seeking-related phenomena (e.g., phone surveys) might benefit from a less cumbersome instrument such as the 19-item ImpSS (cf. McDaniel & Zuckerman, 2003). Further, initial research on the ZKPQ indicates a relationship between SSS-V and ImpSS. Principal components analysis (PCA) in developing the ZKPQ instrument shows the subscales of the SSS-V to load on the ImpSS factor, thus providing initial support as to the correspondence of the two instruments in assessing

the sensation-seeking trait (Zuckerman et al., 1993). While use of an exploratory method such as PCA is useful in identifying factor structure, confirmatory factor analysis (CFA) allows for testing specific theoretical models (Aluja, Garcia & Garcia, 2004). Confirmatory factor analytic procedures have been employed in examination of SSS-V and other alternative sensation-seeking measures, such as Arnett's (1994) AISS (Ferrando & Chico, 2001; Haynes, Miles, & Clements, 2000). Despite the fact that the ImpSS is derived in part from the SSS-V, such confirmatory techniques have not yet been performed using the ImpSS.

Given that the ImpSS has utility in the study of sensation-seeking phenomena, the purpose of the current research is to confirm the nature of its factor structure in a manner consistent with existing research of other sensation-seeking measures (cf. Ferrando & Chico, 2001). Specifically, the present study seeks to compare the validity and reliability of ImpSS with more established OSL measures. To this end, the internal consistency and validity (i.e., concurrent, construct, and predictive) of ImpSS and SSS-V are analyzed. Following Ferrando and Chico (2001), the current study applies a structural equation model (SEM) to further explore the concurrent validity of ImpSS.

As a point of comparison, a third OSL measure—the Change Seeking Index short-form (CSI: Steenkamp & Baumgartner, 1995)—is also included here. Research shows CSI to be a valid and reliable OSL measure in a variety of contexts, specifically in the study of exploratory behavior (Steenkamp & Baumgartner, 1995). While initial research points to the measure's validity, CSI short-form has largely been used in non-student samples (Steenkamp & Baumgartner, 1995). Moreover, the

utility of the change-seeking construct in research of risky behaviors is uncertain, as it does not gauge the impulsivity dimension. Thus, in addition to evaluation and contrast of internal consistency and concurrent validity of CSI with ImpSS, the predictive validity of all the above OSL measures is assessed in the context of high-risk behavioral correlates often applied in OSL research.

Given the documented psychometric problems with SSS-V, further exploration of the validity and reliability of ImpSS could provide further support for its use as an alternative to SSS-V in personality research. In addition, other OSL measures such as CSI, while brief, do not account for an important construct (i.e., impulsivity). Moreover, validation of the ImpSS through use of a CFA procedure (i.e., SEM) could extend earlier findings as to factor structure of the measure (e.g., Zuckerman et al., 1993) and lend support for ImpSS to be employed in favor of other OSL measures.

## *Method*

### *Data Collection*

Data were obtained from two different studies that each examined personality and various behaviors. Much of the research on SS has drawn on homogenous student samples (which provides internal validity). However, the trait is also shown to decrease across the life span (see Zuckerman, 1994 for a review). Therefore, the present study examined the performance of ImpSS in two samples that varied in age homogeneity: one comprised of undergraduate students and a non-student sample

consisting of adults (i.e., 18 years and older) stratified by age and gender. The college student sample included 201 participants (age range: 18-33;  $M = 20.7$ ;  $SD = 2.58$ ; 44% female) from a major East Coast research university, 177 (88.1%) of which were between the ages of 18-22. Data from the Non-student sample were collected by students in an upper-level undergraduate course who were trained in survey research methods. A stratified sampling technique resulted in a sample of 256 participants not currently attending college (age range: 18-84;  $M=40.4$ ;  $SD = 16.28$ ; 51% female).

Participants in each study responded to a survey instrument including three OSL measures (SSS-V, ImpSS and CSI Short Form), the order of which was rotated in an attempt to control for possible ordering effects. Each instrument also included demographic items and dichotomous single-item measures of risky behaviors (e.g., gambling, alcohol use and tobacco use). Because the data were from two different studies, the behavioral correlates varied across the two samples. Participants in the Student sample responded to single-item measures of alcohol consumption and smoking while those in the Non-student sample answered single-item measures of gambling and smoking.

### *Measures*

*ImpSS.* The 19-item ImpSS (Appendix B) contains 11 items that assess sensation-seeking and eight that measure impulsivity (Zuckerman et al., 1993). This instrument has a ‘true-false’ format in that participants respond to each of the nineteen items (e.g., “I tend to do things on impulse”) with “false” (scored 0) or

“true” (scored 1). The scores from the two subscales are summed to create a composite score ranging from 0 to 19 (Zuckerman, 1994).

*SSS-V.* Zuckerman’s (1979) SSS-V (see Appendix A) includes 40 pairs of items corresponding to behavioral correlates of the trait (e.g., “I often wish I could be a mountain climber/I can’t understand people who risk their necks climbing mountains”). Each pair contains one item representing the presence (scored 1) and one representing the absence (scored 0) of the trait. The measure is comprised of four 10-item subscales: TAS, ES, Dis, BS. Use and scoring for the measure can involve the individual subscales (0-10) as well as the full scale (0-40).

*CSI Short Form.* Steenkamp and Baumgartner’s (1995) instrument contains seven five-point scales (e.g., “I like to experience novelty and change in my daily routine”) that are summed to create an overall CSI composite score. The present study used a five-point Likert-type scale for this measure, ranging from ‘completely false’ (1) to ‘completely true’ (5).

### *Data Analysis*

Similar to other studies on the psychometrics of personality measures (e.g. Grande, 2000), several analyses were performed in the current study in order to provide support as to the reliability and validity of ImpSS. Internal consistency of all three personality measures was compared using Cronbach’s alpha at the threshold of  $\alpha \geq .80$  as established by Nunnally (1970). Concurrent validity of ImpSS as a measure of the OSL construct was examined in two ways. First, Pearson correlations between CSI and the two sensation-seeking measures (i.e., ImpSS and SSS-V) were

compared. Second, because of the similar (i.e., hierarchical) structure of ImpSS and SSS-V, a structural equation model (Figure 1) was applied in a manner similar to Ferrando and Chico (2001).

In this model, each measure exhibits a hierarchical structure with latent second-order factors SSS-V (F1) and ImpSS (F2). The variables entered into the model were the four subscales of SSS-V (TAS, ES, Dis, and BS) and the two subscales of ImpSS (Imp and SS). Using EQS 6.1 for Windows, this model was applied separately to each sample in order to evaluate validity of ImpSS in both homogeneous (Student sample) and heterogeneous (Non-student sample) populations. The coefficient of interest in the present analysis was the correlation between F1 and F2 ( $\Phi_{12}$ ). A correlation approaching 1.00 would indicate that ImpSS is essentially measuring the same theoretical construct as SSS-V (Ferrando & Chico, 2001). Following Hu and Bentler (1999), a two-index approach (i.e., CFI and SRMR) was used to evaluate model fit.

Sensation seeking (as measured by SSS-V) has been found to be a negative function of age and males have exhibited higher levels than females (Zuckerman, 1994). Previous research has also found significant age and gender differences on ImpSS (cf. McDaniel & Zuckerman, 2003). A one-way ANOVA (gender on ImpSS) was performed in the Student sample; the Pearson correlation ( $r = -.06, ns$ ) between age and ImpSS indicated homogeneity of age in this sample and was therefore excluded from the analysis. A two-way (age x gender) ANOVA was run on the data from the Non-student sample. Following existing research on sensation-seeking



measures (cf. McDaniel & Zuckerman, 2003), mean age was re-coded into five groups (18-22, 23-32, 33-45, 46-53, and 54-90) in this analysis.

Finally, predictive validity of ImpSS was compared to that of SSS-V and CSI by examining Pearson correlations between the three measures and risky behavior items in both the Student (alcohol use and smoking) and Non-student (smoking and gambling) samples.

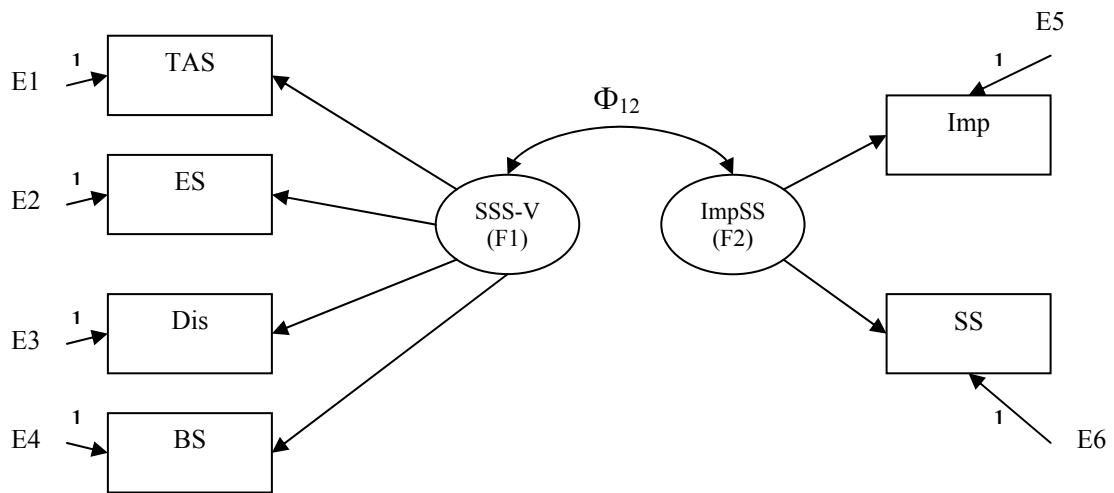


Figure 1. SEM for testing  $\Phi_{12}$  as an indicator of concurrent validity.

## Results

### Reliability and concurrent validity

Table 1 shows the Cronbach's alpha coefficients for ImpSS, SSS-V and CSI. Internal consistency for ImpSS in both samples is comparable to that of SSS-V and CSI in the present analyses. Reliability estimates for ImpSS subscales (Table 1) in

both samples are also adequate. Moreover, with the exception of TAS in both samples (as well as Dis in the Non-student Sample), alphas for the SSS-V subscales fall well below the threshold of .80 (Nunnally, 1970).

Table 1

*Cronbach's alphas indicating full-scale and subscale reliability of ImpSS, SSS-V and CSI*

	Student Sample	Non-student Sample
SSS-V	.81	.89
<i>TAS</i>	.82	.83
<i>ES</i>	.53	.57
<i>Dis</i>	.63	.84
<i>BS</i>	.55	.63
ImpSS	.84	.87
<i>Imp</i>	.78	.81
<i>SS</i>	.74	.82
CSI	.80	.77

Examination of Pearson correlations between CSI and the two sensation-seeking measures indicated concurrent validity of ImpSS as an OSL measure. Strong positive correlations were shown between ImpSS and SSS-V in the Student ( $r=.76$ ,

$p < .01$ ) and Non-student ( $r = .73$ ,  $p < .01$ ) samples. Moderate positive correlations were found between CSI and ImpSS in the Student ( $r = .55$ ,  $p < .01$ ) and Non-student ( $r = .56$ ,  $p < .01$ ) samples. Similarly, correlations between CSI and SSS-V were also moderate in the Student ( $r = .55$ ,  $p < .01$ ) and Non-student ( $r = .52$ ,  $p < .01$ ) samples.

*Further assessment of concurrent validity: SEM*

The structural equation model was applied separately to each sample to examine the correlation between the second-order factors as measured by ImpSS and SSS-V. Figure 2 reports the correlation between latent factors (F1 and F2) and path values for both the Student and Non-student samples. The correlation in the Student sample was estimated by the model to be very strong (0.99). Fit indexes indicated good model fit (Hu & Bentler, 1999). The robustness of standardized path values of ImpSS suggested that both subscales (Imp and SS) are strong predictors of the sensation-seeking construct in a homogenous student sample. Conversely, path values of some SSS-V subscales (i.e., ES and BS) appear to be less precise in their loadings onto the latent factor.

The correlation between the latent factors was also estimated to be very strong in the model for the Non-student sample (0.94) and the overall fit of this model was good (Hu & Bentler, 1999). Standardized path values of ImpSS in this model showed subscales to be accurate indicators of the sensation-seeking construct in a heterogeneous non-student sample.

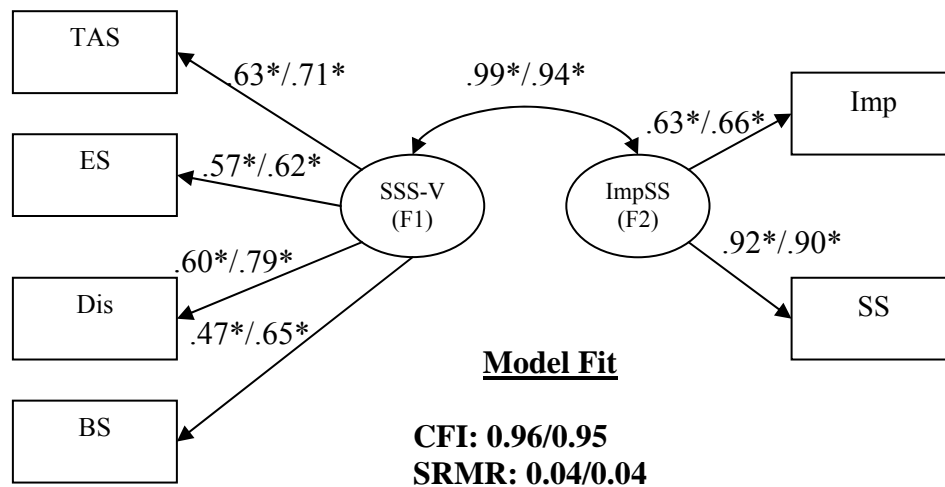


Figure 2. Final SEM model for Student/Non-student samples.

#### Construct validity of ImpSS

Results of ANOVAs run on the Student sample data revealed significant gender differences on mean scores of both ImpSS ( $F(1,196) = 17.26, p < .001$ ) and SSS-V ( $F(1,185) = 6.12, p < .05$ ). Mean ImpSS scores were significantly higher for male participants ( $M = 11.64; SD = 4.09$ ) than for their female counterparts ( $M = 9.03; SD = 4.66$ ). Similarly, males ( $M = 21.81; SD = 5.91$ ) scored significantly higher than females ( $M = 19.44; SD = 7.12$ ) on SSS-V.

Results of a two-way (age x gender) ANOVA from the Non-student sample showed a significant main effect for age on mean scores for ImpSS ( $F(4, 246) = 19.24, p < .01$ ) and SSS-V ( $F(4, 226) = 18.51, p < .001$ ). A significant main effect was also found for gender on mean scores for ImpSS ( $F(1, 246) = 12.01, p < .01$ ) and SSS-V ( $F(1, 226) = 38.64, p < .001$ ). ImpSS scores for males ( $M = 8.60, SD = 4.88$ ) were significantly higher than for females ( $M = 6.73, SD = 4.98$ ). Likewise, males

( $M = 18.76$ ,  $SD = 7.91$ ) scored higher than females ( $M = 13.54$ ,  $SD = 7.60$ ) on SSS-V. There was no significant interaction (age x gender) effect on either scale.

#### *Comparative predictive validity of ImpSS*

Significant positive correlations (Table 2) were found between two sensation-seeking measures (ImpSS and SSS-V) and the single-item risky behaviors across both samples. Conversely, CSI was only significantly correlated with alcohol use ( $r=.15$ ,  $p<.05$ ) in the Student sample. ImpSS ( $r=.32$ ,  $p<.01$ ) and SSS-V ( $r=.45$ ,  $p<.01$ ) were both moderately correlated with alcohol use, whereas SSS-V was significantly related to smoking ( $r=.17$ ,  $p<.01$ ) in the Student sample. In the Non-student sample, both ImpSS ( $r=.23$ ,  $p<.01$ ) and SSS-V ( $r=.17$ ,  $p<.01$ ) were significantly correlated with smoking. However, only ImpSS exhibited a significant positive relationship ( $r=.12$ ,  $p<.05$ ) with gambling.

Table 2

*Pearson correlations demonstrating comparative predictive validity of ImpSS*

		ImpSS	SSS-V	CSI
Student Sample	Smoking	.11	.20**	.03
	Alcohol use	.32**	.45**	.15*
Non-student Sample	Smoking	.23**	.17**	.08
	Gambling	.12*	.10	.07

\*p < .05. \*\*p < .01.

### *Discussion*

The current study examined the validity and reliability of ImpSS as an OSL measure. In general, these results follow existing research pointing to the relationship between the impulsivity and sensation-seeking traits (Zuckerman & Kuhlman, 2000; Zuckerman et al., 1993). Moreover, use of CFA to examine the theoretical structure of ImpSS is in line with research on the psychometrics of personality measures (cf. Aluja et al, 2004). As such, SEM results, along with the fact that ImpSS contains items that are derived from the SSS-V, contradict Hoyle et al's (2002) assertion that results based on ImpSS cannot be interpreted in the same manner as those using SSS-V.

Despite the development of ImpSS almost fifteen years ago, SSS-V continues to be the overwhelming choice by scholars (Deditius-Island & Caruso, 2002). However, current SS theory (Zuckerman, 1994) calls for the inclusion of the impulsivity dimension which is not assessed by SSS-V (or other SS scales). To date, though some have utilized the measure (cf. Ball, 1995), there has been a lack of psychometric support for ImpSS. The results of the present analyses point to ImpSS as psychometrically sound and support its future employment in favor of SSS-V.

Reliability estimates for the full ImpSS scale (Table 1) exceed acceptable threshold levels and align with earlier research on the psychometrics of ImpSS as a subscale of the ZKPQ (cf. Joireman & Kuhlman, 2004). In addition, our analyses reveal favorable subscale reliabilities for ImpSS that are in line with existing studies on the measure (e.g., Angleitner, et al., 2004). The findings as to the scale reliability of SSS-V are also consistent with existing research (Arnett, 1994; Deditius-Island & Caruso, 2002). However, low internal consistency estimates for three SSS-V subscales in the Student sample and two in the Non-student sample support scholarly claims of measurement issues with this instrument (cf. Deditius-Island & Caruso, 2002). As such, our findings appear to indicate that ImpSS is a reliable alternative to SSS-V.

Research using SSS-V has consistently found a significant relationship between the trait and both age and gender variables (Zuckerman & Kuhlman, 2000). ANOVA results in the present study reproduce these patterns for ImpSS. Thus, this finding follows existing research showing construct validity of ImpSS in both

homogeneous (Zuckerman & Kuhlman, 2000) and heterogeneous (McDaniel & Zuckerman, 2003) samples.

The significant positive correlations (Table 2) found between the two sensation-seeking measures (i.e., ImpSS and SSS-V) and the risky behavior items are consistent with existing research on the construct and such behaviors (e.g., McDaniel & Zuckerman, 2003; Zuckerman & Kuhlman, 2000). The (largely) nonsignificant correlations between CSI and these items appear to reinforce the importance of the impulsivity construct in these types of behaviors (i.e., smoking, drinking, and gambling). Moreover, given that recent work continues to link risky behavior with both sensation-seeking and impulsivity (e.g., Lejuez et al., 2005), an instrument that measures these dimensions together (i.e., ImpSS) might prove more fruitful for future research in this domain.

The SEM analysis in the present study represents the first endeavor to compare the factor structures of ImpSS and SSS-V through confirmatory factor analytic procedures. The strong correlation between the latent factors in the final model (Figure 2) suggests that the two instruments estimate the same latent sensation-seeking trait (Ferrando & Chico, 2001). This finding lends additional support to the notion of similarity between the construct of ‘sensation-seeking’ as measured by both ImpSS and SSS-V, thus departing from claims that the two measures arise from different conceptualizations (Hoyle et al., 2002, p.403). While model fit here was robust, however, future replication of this technique could serve to corroborate the present SEM results.



Although not directly compared in the current study, the sound internal consistency of ImpSS compares favorably to reported alphas for the BSSS (cf. Hoyle et al, 2002). The BSSS is derived from the SSS-V existing research points to a positive correlation between it and ImpSS (Stephenson et al., 2003). Whereas Stephenson et al. (2003) utilized an adolescent sample, it could be fruitful for future research to directly compare and contrast ImpSS and BSSS in other populations (e.g., adults).

The format and length of ImpSS suggest its potential in the research of OSL-related phenomena. Given the types of behaviors (i.e., high-risk) and research methodology (i.e., self-report questionnaires) often associated with sensation-seeking, it would appear intuitive that a shorter measure (i.e., 19-item ImpSS vs. 40-item SSS-V) would be preferable in survey and field research (Stephenson et al, 2003). Similarly, given the forced-choice format of SSS-V, study participants must read (or listen to) forty pairs of (or 80 total) statements when responding. Additionally, the true-false format of ImpSS could significantly reduce response time as compared to completion of the SSS-V which might reduce participant fatigue and/or attrition. Thus, given these results along with the importance of impulsivity in SS theory (Zuckerman, 1994), more researchers should strive to employ ImpSS when investigating SS-related phenomena.

## Chapter 4: Study Two

Mahan, J.E. & McDaniel, S.R. (2008). Investigating the structure of consumer imagery processing: A hierarchical personality approach. Manuscript submitted for publication.

### *Introduction*

There is extensive use of imagery in advertising practice to influence consumers' attitudes or decisions. For example, imagery-evoking phrases such as "imagine yourself" or "picture yourself here" are often used in print advertisements (Petrova & Cialdini, 2005, p.442). Some scholars note that certain ads (i.e., transformational) can bring to mind a sense of using the brand and consumption-related emotions (Puto & Wells, 1984; Yoo & MacInnis, 2005). Likewise, advertising and consumer behavior research points to the use of imagery-based processing by consumers and the resultant positive effects on their preferences (Burns, Babin & Biswas, 1993; MacInnis & Price, 1987; Miller, Hadjimarcou & Miciak, 2000; Thompson & Hamilton, 2006). Some define imagery as a style of processing "by which sensory information is represented in working memory" (MacInnis & Price, 1987, p. 473). This notion of imagery processing is theorized to differ from discursive (or verbal) processing in that it involves the use of mental pictures rather than words in the processing of information (MacInnis & Price, 1987; Miller et al., 2000; Puto & Wells, 1984). Some research indicates that individuals tend to show a preference for one type of processing over the other (e.g., MacInnis &

Price, 1987). Despite its extensive application, however, there is disagreement as to the exact nature of these imagery processes (Miller et al., 2000).

The prevailing approach to explaining differences in how consumers interpret message information is the information processing (IP) paradigm (Heath & Feldwick, 2008). While this paradigm is considered a significant contribution to advertising and consumer behavior literatures, some point to possible shortcomings regarding the treatment of certain consumption behaviors, such as those related to imagery processing (MacInnis & Price, 1987). For example, one popular IP model, the Elaboration Likelihood Model (ELM), holds that this type of processing occurs only through the use of low levels of cognitive effort and, as such, is not as effective in shaping attitudes or behavior (Petty & Cacioppo, 1986). However, some scholars suggest certain imagery processes, such as daydreams and fantasies, in fact involve high levels of cognition (MacInnis & Price, 1987). Thus, this study examines the structure of consumer processing in addressing this tension in the literature.

The existing consumer imagery literature identifies ‘individual differences’ as influencing response to ad messages (Petrova & Cialdini, 2005; Thompson & Hamilton, 2006). In extending this line of research, this study focuses on the use of a personality variable (i.e., fantasy-proneness) to help explain differences in how consumers interpret information. Further, it is suggested that the study of personality in consumer behavior research operate within the context of a fundamental theoretical structure (Haugtvedt, Petty & Cacioppo 1992). As such, the current study employs a hierarchical personality model (cf. Mowen & Spears, 1999) to investigate the underlying framework of consumer imagery processing.

Hirschman (1983) and others (d'Astous & Deshenes 2005) posit that certain traits can influence participation in fantasy-related consumption behaviors, including role-projection and escapism (i.e., to get away from one's everyday life) or other activities involving visualization. Specifically, an individual's preference for using imagination can predict a tendency to engage in certain types of fantasy, including both role-projection and escapism. The current study adopts a similar approach in employing a personality trait, fantasy-proneness, which appears conceptually similar to Hirschman's (1983) operationalization of imagery. Existing research suggests that certain measures of the fantasy-proneness trait can gauge tendencies to engage in projective fantasy (McDaniel, Lee & Lim, 2001).

It is generally accepted that two types of processing exist: visual and verbal (see Miller et al., 2000 for a review). While these categories are not thought to be mutually exclusive, individuals do appear to show a preference for one over the other (MacInnis & Price, 1987). Some studies suggest that the visual style has utility in examination of imagery-related phenomena (Bloch, Brunel & Arnold, 2003). Therefore, the current research employs a measure of visual processing style (Childers, Houston & Heckler, 1985) to gauge individual differences in this context.

### *Review of Literature*

#### *Information Processing in Advertising*

The dominance of information processing (IP) in the advertising literature is difficult to refute (Heath & Feldwick, 2008; Holbrook & Hirschman, 1982). The IP

paradigm holds that consumers are rational beings that process information primarily through the use of cognitive elements (e.g., knowledge structures, thoughts, beliefs) (Bettman, 1979; Holbrook & Hirschman, 1982). The principal model used to explain IP, in relation to advertising effectiveness, is the Elaboration Likelihood Model (ELM; Petty & Cacioppo, 1986). The ELM states that persuasion or attitude change results from information processed by one of two routes—central and peripheral (Petty & Cacioppo, 1986). The central route involves a high amount of cognitive effort (i.e., generating relevant thoughts) in evaluating message information (e.g., product description in an advertisement). Conversely, the peripheral route includes less cognitive effort; the individual relies on heuristic cues (e.g., images in an ad) when forming or changing attitudes (Petty & Cacioppo, 1986). Factors contributing to use of the central or peripheral route include individual differences in motivation and ability to engage in elaborated thought, such as need for cognition (NFC) (Haugtvedt et al., 1992). A fundamental principle of this model is that attitudes resulting from central processing are generally stronger than those formed (or changed) through the peripheral route (Petty & Cacioppo, 1986). Despite the adherence to this model and others of the IP paradigm, however, there exist challenges to its validity (Heath & Feldwick, 2008).

One criticism of ELM is that it only accounts for imagery via the peripheral route, indicating that there is little or no cognition occurring (Heath & Feldwick, 2008). On the contrary, it is argued that imagery processing can occur along the full elaboration continuum. In particular, some imagery processes, such as daydreams or fantasies, appear to involve higher levels of cognitive effort (MacInnis & Price,

1987). For example, more recent personality research suggests that the tendency to fantasize is positively related to NFC (McDaniel et al., 2001). Likewise Bolls & Lang (2003) find that imagery-based advertising can evoke significantly higher levels of elaboration than low-imagery ads. However, as noted by MacInnis and Price (1987), there is still a need for additional theory-based research into the structure of consumer imagery processing.

One of the earliest challenges to traditional IP models argues that there are a variety of consumption-related phenomena, such as fantasies and daydreams, which do not necessarily fit with this “rational” perspective of cognition (Holbrook & Hirschman, 1982). Holbrook & Hirschman (1982) posit that, while the IP paradigm has explanatory power in certain aspects of consumer behavior, the hedonic (i.e., experiential) perspective would allow scholars to explore issues including “product-related fantasies and imagery” (p.139) as might be found in advertising. They also suggest that certain personality traits, such as sensation seeking, offer face validity in the study of hedonic consumption.

The literature points to the existence of ‘individual differences’ in imagery processing as playing a role in response to advertising messages (Bone & Ellen, 1992; Petrova & Cialdini, 2005; Thompson & Hamilton, 2006). There have been calls for studies that examine different factors (e.g., consumer characteristics) related to imagery processing (e.g., Petrova & Cialdini, 2005); however, studies still appear to use constructs not grounded in a comprehensive psychological paradigm (e.g., Thompson & Hamilton, 2006). Some research suggests that theory-based personality variables have utility in explaining differences in consumer response in other

advertising contexts (e.g., Haugtvedt et al., 1992; McDaniel, Lim, Mahan, 2007; Mowen Harris & Bone, 2004). As such, extending this line of research into the study of factors influencing consumer imagery processing could prove fruitful.

### *Factor Models of Personality*

Research suggests that factor models of personality have utility in investigating individual differences (Baumgartner, 2002). Perhaps the most widely accepted factor model of personality is the Five Factor Model (FFM: McCrae & Costa, 1987; Goldberg, 1993; John & Srivastava, 1999). The vast majority of scholars using the FFM concur on the nature of four factors (i.e., Stability, Conscientiousness, Agreeability, and Extraversion). However, there has been widespread disagreement as to the fifth, Openness to Experience (or Openness) (Garcia, 2005). In particular, some versions of the FFM label the fifth factor, 'Intellect' and offer that it is a more cognitive personality dimension, characterized by curiosity, creativity and culture (Goldberg, 1993). Others, however, contend that this conceptualization discounts the affective dimensions of Openness, such as awareness of emotions, preference for novelty, and tendency to fantasize (McCrae & Costa, 1987). Further challenges to the existence/independence of Openness as a basic personality dimension are offered by Zuckerman's Alternative Five model, which is the Zuckerman Kuhlman Personality Questionnaire or ZKPQ (Zuckerman, Kuhlman, Thornquist & Kiers, 1991). More recent research finds that Openness is, in fact, an independent personality dimension that has a consistent pattern of relationships with other constructs (e.g., sensation seeking) (Garcia et al., 2005).

Other accepted models also contain traits that could be considered to be fundamental dimensions of personality (Harris & Lee, 2004). For example, the Alternative Five Factor Model (AFFM) contains Neuroticism-Anxiety, Aggression-Hostility, Sociability, Activity, and Impulsive Sensation Seeking (ImpSS) (Zuckerman et al., 1991). The Zuckerman et al (1991) model is the result of a search for a reliable personality structure and subsequent factor analyses of several existing personality scales. The authors offer that the a model that uses five factors (rather than three) is preferable going forward due to achieving a higher degree of specificity while not sacrificing reliability (Zuckerman et al., 1991).

Research on the factor structures of these models consistently points to cross-loadings among many of the factors, such as FFM's Extraversion and both Sociability and Activity of the Alternative Five as well as FFM's Conscientiousness and the AFFM's Aggression-Hostility (Zuckerman, Kuhlman, Joireman, Teta & Kraft, 1993). However, there have been conflicting results as to the relationships between other factors. For example, Zuckerman et al's (1993) study indicates little or no relationship among Openness and any of the AFFM factors. However, more recent studies point to a positive correlation between Openness and ImpSS (Garcia et al., 2005; Roberti, 2004). Despite empirical support for the existence of Openness and ImpSS as fundamental personality traits, none of the existing factor models account for both. Therefore, additional investigation into a potential link between these two fundamental personality dimensions could prove useful.

A general criticism of the early use of personality traits in the study of consumer behavior was the atheoretical nature with which constructs were applied



(Kassarjian & Sheffet 1991). More recently, however, marketing and media scholars have argued for the importance of personality theory (Baumgartner, 2002; Krcmar & Keane, 2005; Mowen, 2000). Research suggests that examination of traits, within a broader theoretical framework, can have utility in answering such issues (Haugtvedt et al., 1992). Consequently, one could argue that there is a need for more trait-based research, in the consumer-processing literature, where the traits are grounded in personality models (as opposed to utilizing certain individual difference variables that are devoid of theoretical context).

#### *Hierarchical Approach to Studying Personality Traits in Consumer Behavior*

Some psychology scholars claim that personality traits may be categorized according to their levels of abstraction (Allport, 1961; Buss, 1989). Buss (1989) suggests two types of traits: surface and psychological. Surface traits are situation-specific and are closely related to behaviors whereas psychological traits are more abstract and provide a basis for the surface traits (Buss, 1989).

Following this notion of a personality framework, recent research points to a more comprehensive hierarchy. Mowen and Spears (1999) put forth a three-level model to explore the interaction of traits in consumer contexts. In this model, *cardinal traits* represent the highest level of the hierarchy. These traits are considered to be fundamental predispositions of human behavior that emerge from a combination of genetics and early learning, and it is proposed that only a limited number of these exist (Allport, 1961; Mowen, 2000). While the exact number of cardinal traits is debated, scholars in this area (e.g., Mowen & Spears, 1999) appear to show a

preference for use of the Five-Factor Model (FFM) of personality, which consists of: Stability, Conscientiousness, Agreeability, Extraversion, and Openness (John & Srivastava, 1999; McCrae & Costa, 1987). Specifically, studies utilize multiple cardinal traits in order to determine which have the greatest influence on specific central and/or surface traits in a particular context (cf. Harris & Mowen, 2001; Mowen et al., 2004).

The second level of the hierarchical model consists of *central traits* and they are typically theorized to mediate the effects of cardinal traits on surface traits (Mowen & Spears, 1999). According to the literature, these traits are narrower than, and arise from the interaction of, cardinal traits in addition to one's culture and learning (Harris & Lee, 2004). Studies indicate the possible existence of many traits at this level and that they could either partially or fully mediate the effects of cardinal traits on surface traits (Mowen & Spears, 1999).

At the most concrete level, *surface traits* represent individual predispositions to act in certain situations (Mowen & Spears, 1999). Examples of surface level traits in the consumer psychology literature include compulsive buying (Mowen & Spears, 1999), coupon proneness (Lichtenstein, Netemeyer & Burton, 1990), and bargaining proneness (Harris & Mowen, 2001). Each of these traits corresponds to individual differences that drive behavior within a specific consumption situation.

Consumer research using the hierarchical approach has examined the operation of several surface traits in different contexts. For example, Mowen and Spears (1999) employ survey methodology and utilize a hierarchical model in two studies examining factors influencing the surface trait of compulsive buying among

college students. The authors utilize the Five-Factor Model of personality as cardinal traits along with the hypothesized central traits of need for arousal and materialism. Results of this series of studies indicate existence of a personality hierarchy that drives compulsive buying behavior in college students. That is, the surface trait of compulsive buying is influenced by both cardinal (e.g., stability) and central (materialism and need for arousal) traits (Mowen & Spears, 1999).

Harris and Mowen (2001) replicate and extend the work of Mowen and Spears (1999) in investigating the interrelationships among cardinal, central and surface traits on behavioral intentions of bargaining and complaining. Using survey methodology, this study employs a full hierarchical model, using the Five-Factor Model traits at the cardinal level and both value and materialism at the central level (Harris & Mowen, 2001). Results point to the surface traits of bargaining proneness and complaint propensity as jointly influenced by the central trait of value. Further, these surface traits are driven by combinations of cardinal traits, albeit differentially (Harris & Mowen, 2001). Thus, Harris and Mowen's (2001) results are in line with previous studies that find hierarchical models of personality can account for a large amount of variance in surface traits (Mowen & Spears, 1999).

Others in this area employ Mowen's (2000) meta-theoretical model of motivation and personality (the 3M model). This model offers that an individual's behavior is driven by the differences between anticipated and actual outcomes along with the interplay among personality traits (Mowen & Sujan, 2005). Departing from Allport's (1961) three-level personality hierarchy, the 3M model posits four levels of traits: elemental, compound, situational and surface. Whereas elemental, compound

and surface traits all correspond to Allport's levels (i.e., cardinal, central and surface), situational traits in the 3M model are those traits that are thought to arise from a combination of elemental and compound traits yet may be subdivided into more concrete surface traits (Mowen & Sujan, 2005). Further, while much of this line of research employs the Five-Factor traits at the top of the hierarchy, this model proposes a total of eight elemental traits, with need for arousal, material needs and physical/body needs joining those from the Five-Factor Model (Mowen, 2000, p. 29).

Hierarchical models of personality have also been employed in examining individual differences in advertising response. One such study explores the interrelationship among personality traits that might influence fear response to advertising appeals depicting driving behavior (Mowen et al., 2004). Findings indicate that differences in fear response are a function of elemental traits (i.e., need for arousal, emotional stability and need for body resources) but not hypothesized compound traits (competitiveness and general self-efficacy). Though the authors did not employ the full hierarchy in their treatment, results point to the potential for use of personality traits in developing and targeting advertising messages (Mowen et al., 2004).

McDaniel et al., (2007) also employ a hierarchical approach in examining individual differences in response to print advertisements depicting varying levels of violent sport content. In this study, the authors utilize a partial hierarchy (i.e., central and surface traits) and their findings demonstrate that a surface trait (Curiosity About Morbid Events; CAME) mediates the effects of a central trait (ImpSS) on certain advertising response indicators (attitude toward the ad and viewing intentions).

Further, similar to Mowen et al (2004), they call for future research in this context that employs a full (three-level) hierarchy (McDaniel et al., 2007).

The nature of this line of inquiry lends itself to further exploration in a variety of consumer contexts (Harris & Mowen, 2001; McDaniel et al., 2007; Mowen & Spears, 1999). While there appears to be two different versions of hierarchical models—the three-level approach and the four-level approach—each stems from the basic concept that fundamental personality traits (e.g., Five-Factor Model) combine to influence the more concrete traits (i.e., central and surface) in the hierarchy which, in turn, drive (consumer) behavior. Given the calls for parsimony in model development (e.g., Mowen & Spears, 1999), it would seem prudent to adopt the three-level approach in examining the underlying personality traits behind consumer processing style.

Thus, based on the above literature review, possible hierarchical relationships among cardinal traits (i.e., Impulsive Sensation Seeking and Openness), a central trait (i.e., Fantasy-Proneness) and a surface trait (i.e., Visual Style of Processing) are explored. The hypothesized model for this study is found in Figure 1.

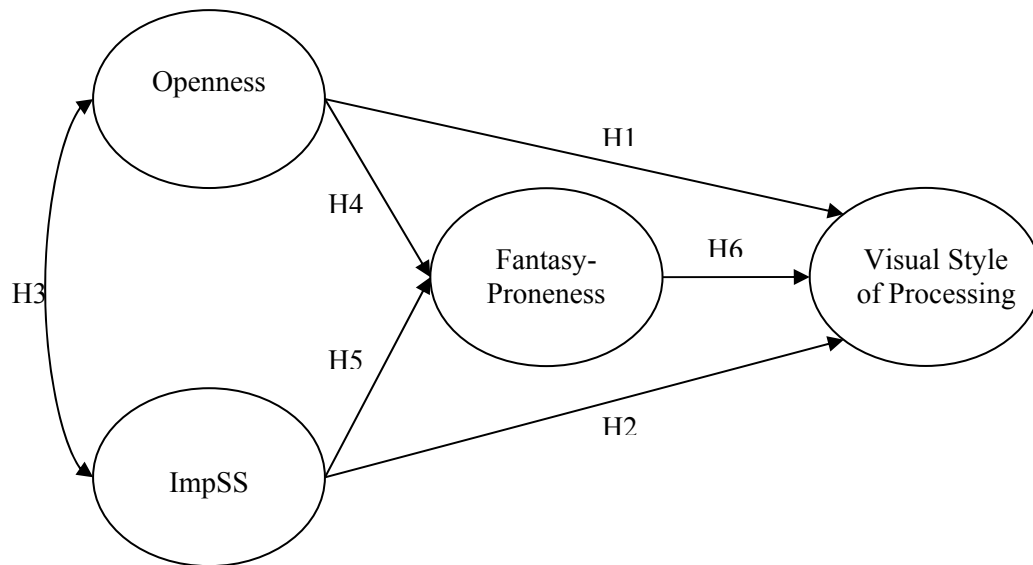


Figure 3. Hypothesized hierarchical model of consumer imagery processing

### Hypotheses

It is expected that the two cardinal traits employed in this study will have both indirect and direct effects on the surface trait of visual processing style. Based on Garcia et al (2005), it is predicted that Openness will be positively related to visual processing style because individuals who score high on the Openness scale tend to create and use mental pictures. Likewise, McDaniel et al's (2001) findings suggest that high-ImpSS individuals show a predilection for engaging in fantasy-related processing. Thus, the first two hypotheses are:

- H1: A significant positive relationship will be found between Openness and Visual Style of Processing.

H2: A significant positive relationship will be found between ImpSS and Visual Style of Processing.

Those using hierarchical models typically draw the cardinal traits from a single personality model (e.g., Five-Factor Model) (e.g., Mowen & Spears, 1999). Though the present study utilizes two constructs that are accounted for by different personality factor models, some studies indicate there is a significant correlation between Openness and ImpSS (Garcia et al., 2005). As such, the hypothesized model will include the a priori assumption of an existing positive correlation between these two cardinal traits:

H3: There will be a significant positive correlation between Openness and ImpSS.

Relationships are also hypothesized to exist between the cardinal and central traits in this model. Literature on the Five-Factor Model points to a fantasy component of the Openness factor (John & Srivastava, 1999; McCrae & Costa, 1992). Similarly, McDaniel et al's (2001) findings show individuals who scored high on a measure of fantasy were also high-ImpSS. Therefore, the following hypotheses are proposed:

H4: There will be a significant positive relationship found between Openness and Fantasy-Proneness.

H5: There will be a significant positive relationship found between ImpSS and Fantasy-Proneness.

Psychology research suggests that fantasy-prone individuals show a preference for using imagination and other imagery-related behaviors (e.g., Merklebach, Horselenberg & Muris, 2001). Likewise, the consumer imagery literature indicates that individuals who show a preference for visual (i.e., imagery) processing also tend to engage in fantasies or daydreams (MacInnis & Price, 1987). As such:

H6: There will be a significant positive relationship found between Fantasy-Proneness and Visual Style of Processing.

### *Method*

#### *Sample*

A convenience sample (n=283) of undergraduate students currently enrolled at a major research University in the Eastern United States was used for this study. Stratified sampling (by gender) was employed to ensure equal numbers of male and female participants. Recruitment was done with the assistance of students enrolled in an Undergraduate course in Kinesiology studying marketing research techniques. The thirty-two students were each instructed to recruit ten participants (5 male and 5



female), which resulted in a potential participant pool of 320. Thirty-seven recruits did not complete the survey, leaving 283 (140 female, 143 male) valid cases for analysis.

### *Measures*

*Openness.* The study of personality includes a variety of factor models in explaining the fundamental elements of human personality (John & Srivastava, 1999). One such model, the Big Five, includes the Openness factor. Several instruments have been put forth to measure this construct, including Costa and McCrae's (1992) NEO-PI-R and John and Benet-Martinez's (2000) Big Five Inventory (BFI). Research comparing Big Five instruments showed the BFI Openness scale (see Appendix C) to have higher Cronbach's alpha reliability (.81) than the same scale on the NEO-PI-R (.70) (John & Srivastava, 1999). Moreover, the brief nature of the BFI would appear to make it efficient when for use as part of longer survey instruments (John & Srivastava, 1999).

*Impulsive Sensation Seeking (ImpSS).* Some personality scholars suggest Impulsive Sensation Seeking is among the basic traits of human personality (Zuckerman et al., 1991). Moreover, some studies indicate a relationship between this trait and fantasy-related behaviors (e.g., McDaniel et al., 2001). ImpSS is assessed with a 19-item instrument (see Appendix B) that contains 11 items to assess sensation seeking and eight that measure impulsivity (Zuckerman et al., 1993). This instrument has a 'true-false' format in that participants respond to each of the nineteen items (e.g., "I tend to do things on impulse") with "false" (scored 0) or

“true” (scored 1). In line with existing personality research using structural equation modeling (cf. Ferrando & Chico, 2001), subscale items were summed to create two index variables (i.e., impulsivity and sensation seeking) that were included in the model equations.

*Fantasy-Proneness (FS).* The Fantasy Subscale (FS) of Davis’ (1983) Interpersonal Reactivity Index (IRI) was employed to assess the fantasy-proneness trait. This subscale of the IRI (see Appendix D) consists of seven items to assess the tendency to engage in fantasy. Existing findings indicate that this scale can serve as a measure of projective fantasy and has been found to be related to the impulsive sensation seeking construct, as well as the tendency to engage in elaborative processing (McDaniel et al., 2001).

*Visual Style of Processing (SOP).* The consumer information processing literature identifies two types of processing: visual and verbal (MacInnis & Price, 1987). While not mutually exclusive categories, most individuals demonstrate a preference for one style or the other (MacInnis, 1987). One measure designed to independently assess these two types of processing is the Style of Processing (SOP) scale (Childers et al., 1985). The Visual subscale of the SOP measure (see Appendix E) consists of 11 items intended to gauge an individual’s preference for processing information using mental images (or pictures). This subscale has shown utility in the context of processing visual information (Bloch et al., 2003). The measure was originally constructed with a four-point scale (always true-always false). As noted by Childers et al (1985), however, this scaling format can present problems with normality of

data. Thus, the present study employed the Visual subscale using a five-point scale, while maintaining the original anchors (i.e., always true-always false).

### *Procedure*

Similar to (on-line) survey methodology was employed here to investigate the underlying structure of the surface trait of Fantasy-Proneness. Once recruited, study participants received an e-mail from the researcher acknowledging their voluntary participation and explaining the general nature of the research. The survey was created on the University server and was restricted to those with a University ID (UID) and password, thus allowing the researcher to limit access to only registered students. The researcher was able to match UIDs of those who completed the survey to the list obtained directly from the pool of potential participants. Further, the tracking of UIDs would allow duplicate participants to be excluded.

Once the researcher received a response including the information, participants were sent a second e-mail containing the URL for accessing the survey. Participants were then instructed to visit the Web site and complete the survey in the allotted time window (approximately 10 days). Upon arriving at the Web site, participants viewed the Consent Form and indicated consent by clicking 'Next' immediately prior to responding to the survey items. Participants responded to items by 'clicking' the circle next to their choice. The total time to complete this survey was approximately 20 minutes for each participant. In addition to the self-report personality measures, the survey included basic demographic items (e.g., gender, age,

race, education level) as well as single-item behavioral measures related to the personality constructs to gauge predictive validity.

### *Results*

Prior to model testing, validity and reliability of the scaled measures were examined. Cronbach's alphas achieved levels that were in line with existing research (Heckler et al., 1993; McDaniel et al., 2001; Robins et al., 2001; Zuckerman, 1994). The alpha for the surface trait (Visual Style of Processing) approached .80, while the central trait (Fantasy-Proneness) was .74. Likewise, reliability for ImpSS was sufficient (.86) and Openness approached .80.

Research has found males to exhibit higher sensation-seeking levels than females (McDaniel et al., 2007). Results of an one-way ANOVA revealed significant gender differences on mean scores of ImpSS ( $F(1,265) = 11.64, p < .01$ ). Mean ImpSS scores were significantly higher for male participants ( $M = 10.80; SD = 4.78$ ) than for their female counterparts ( $M = 8.84; SD = 4.58$ ). Similarly, studies have shown that the fantasy-proneness trait differs by gender; females tend to demonstrate higher levels than males. ANOVA results pointed to significant gender differences on mean scores of FS ( $F(1,274) = 6.24, p < .05$ ). Female participants' scores ( $M = 3.64; SD = .52$ ) were significantly higher than for males ( $M = 3.48; SD = .59$ ) indicating construct validity of the ImpSS measure.

Prior studies show that higher scores on an Openness measure indicate a preference for novelty or aesthetics (Garcia et al., 2005). ANOVA results suggested

significant differences in Openness on a single-item measure (i.e., “I would like to have a ‘9-to-5 desk job that has very little variety”) of novelty preference ( $F(2,263) = 7.22, p < .01$ ). High Openness participants’ scores ( $M=1.45; SD=.08$ ) were significantly lower than those of Medium Openness ( $M=1.80; SD=.10$ ) and Low Openness ( $M=1.87; SD=.08$ ) participants. Additionally, ANOVA results on a single-item measure (i.e., “I enjoy watching/attending performing arts events”) of aesthetic preference ( $F(2,261) = 25.47, p < .001$ ) pointed to significant differences in Openness. Reported scores for high Openness participants ( $M=3.94; SD=.09$ ) were significantly higher than both Low ( $M=2.99; SD=.09$ ) and Medium ( $M=3.43; SD=.12$ ) Openness participants. These results support the predictive validity of the Openness measure.

Existing imagery processing research suggests that visual processors are more likely to use imagery in processing message information (e.g., Bloch et al., 2003). Results of an ANOVA showed significant differences in Visual Style of Processing ( $F(1,269) = 9.02, p < .01$ ) on a single-item measure of preference for use of imagery in processing ad information (i.e., “When looking at an advertisement in a magazine, I usually picture myself in the ad or using the product”). High visual processors ( $M=2.86; SD=.96$ ) reported significantly more likely to use imagery in this context than low visual processors ( $M=2.53; SD=.84$ ), thus supporting predictive validity of the Visual SOP scale.

Using EQS 6.1 for Windows (Bentler 1995), latent variable path analysis was employed to explore the hypothesized relationships among the factors in the hierarchical model. Openness and ImpSS were specified as exogenous variables, Fantasy-Proneness was employed as a mediating variable, and Visual Processing

Style was the dependent variable. Following a procedure similar to Mowen and Spears (1999), a full mediation model was run in the first analysis. Due to the hypothesized direct paths between the cardinal traits and the surface trait, this model was not expected to fit the data. Fit indexes for this full mediation model were poor ( $\chi^2 = 926.3$ ,  $p < .001$ ; CFI = .73; RMSEA = .07). As such, a partial mediation model is recommended (Mowen & Spears, 1999).

The model in Figure 1 was then run to test the study's hypotheses. Following re-specification to add paths (i.e., using Lagrange Multiplier test) as warranted, model fit was assessed (Mowen & Spears, 1999). Figure 2 (below) depicts the results of this analysis. Model fit was much improved over the full mediation model ( $\chi^2 = 557.10$ ,  $df = 377$ ,  $p < .001$ ; CFI = .90; RMSEA = .04, CI = .03, .05). The model explained 21% of the variance in Fantasy-Proneness and 35% of the variance in Visual Style of Processing.

As indicated in Figure 2, four of the six hypotheses were supported. As expected in H1, a significant (weak) positive path was shown between Openness and Visual Style of Processing. In support of H3, a significant moderate positive correlation was found between Openness and ImpSS. As predicted by H4, a significant (weak) positive path was found between Openness and Fantasy-Proneness. Finally, in support of H6, a significant moderate positive path was shown between Fantasy-Proneness and Visual Style of Processing.

In this model (Figure 2), the paths between ImpSS and Fantasy-Proneness (H2) and ImpSS and Visual Style of Processing (H5) were not significant. Following Mowen and Spears (1999), bivariate correlations were run to further explore the

nature of these relationships. Results indicated a weak significant correlation between ImpSS and Visual Style of Processing ( $r = .18, p < .05$ ). However, the correlation between ImpSS and Fantasy-Proneness was not significant ( $p > .05$ ). This analysis appears to provide no support for H5 and only limited support for H2.

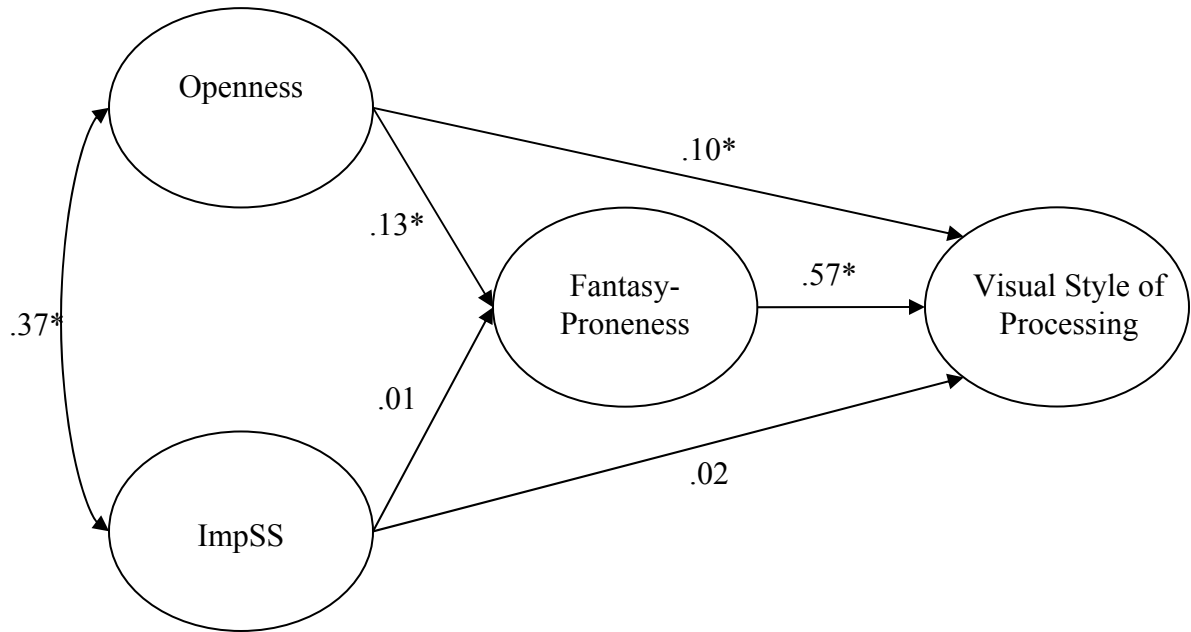


Figure 4. SEM results for hypothesized partial mediation model

These findings indicate any covariance between ImpSS and both Fantasy-Proneness and Visual Style of Processing was accounted for by other variables in the model. In order to further investigate the nature of the relationship among the traits in this hierarchy, an exploratory model was created by eliminating the nonsignificant paths between ImpSS and both Fantasy-Proneness and Visual Style of Processing (Figure 3). The fit of this model ( $\chi^2 = 558.14, df = 379, p < .001$ ; CFI = .91; RMSEA =

.04, CI = .03, .05) was similar to that of the hypothesized model. Similarly, the exploratory model explained identical amounts of variance as the originally hypothesized model for both Fantasy-Proneness ( $R^2 = .21$ ) and Visual Style of Processing ( $R^2 = .35$ ). Following Mowen and Spears (1999), nested model tests were run to compare the hypothesized model and this exploratory model. A comparison between the two models produced a nonsignificant chi-square difference ( $\chi^2_{diff} = 1.04$ ,  $df = 2$ ,  $p > .05$ ), indicating support for the more parsimonious exploratory model (Mowen & Spears, 1999).

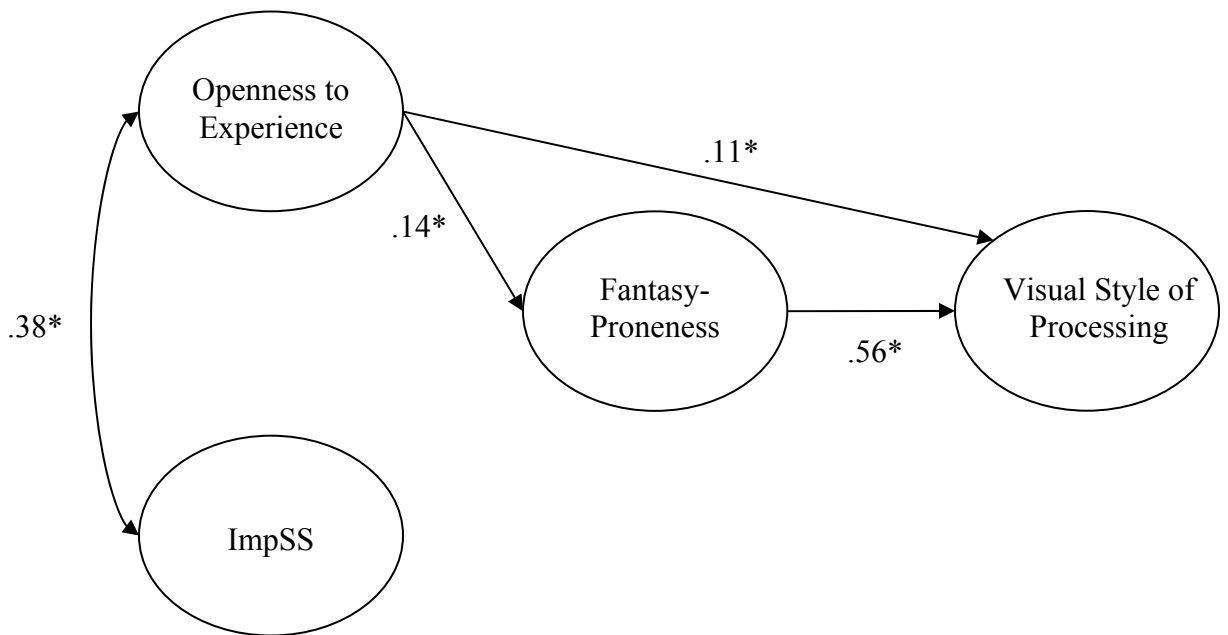


Figure 5. Exploratory model based on re-specification



## *Discussion*

The current study examines the underlying structure of a consumer processing construct (SOP) through the application of a hierarchical model of personality (Mowen & Spears, 1999). In particular, the current study investigates the potential utility of certain personality traits (e.g., fantasy-proneness) in explaining individual differences in imagery processing. The advertising literature demonstrates that individual differences are important to the understanding of how consumers process imagery-related ad information (Haugtvedt et al., 1992; McDaniel et al., 2007; Thompson & Hamilton, 2006). The present findings point to the theoretical underpinnings of such differences and, as such, could serve as a foundation for future studies on consumer response in an advertising context. The current study represents the first known effort to place consumer imagery processing within a hierarchical personality model and, as such, extends earlier work on individual differences in imagery processing (Petrova & Cialdini, 2005; Thompson & Hamilton, 2006). Further, these results also align with existing studies in other consumer contexts (e.g., Harris & Mowen, 2001; Mowen & Spears, 1999).

Overall, four of the six hypotheses are supported. The model indicates significant paths (see Figure 1) between Openness and Visual Style of Processing (H1), Openness and Fantasy-Proneness (H4), Fantasy-Proneness and Visual Style of Processing (H6). A significant moderate correlation (.37) is also shown between Openness and ImpSS (H3). There is no support for significant relationships between ImpSS and Visual Style of Processing (H2) or ImpSS and Fantasy-Proneness (H5).

The significant direct effect (.10) of Openness on Visual Style of Processing (H1) supports existing research stating that high-Openness individuals show a predilection for using mental pictures (i.e., processing information visually) (Garcia et al., 2005). In addition, the significant correlation between Openness and ImpSS (H3) follows the notion of a relationship between these two fundamental traits (Garcia et al., 2005). Moreover, the prevailing influence of Openness in this model appears to support its independence as a fundamental dimension of personality. (Garcia et al., 2005).

The significant moderate direct effect (.57) of Fantasy-Proneness on Visual Style of Processing (H6) is in line with the notion that certain traits can play a role in determining preference for fantasy-related behaviors (d' Astous & Deshenes, 2005; Hirschman, 1983). This lends support to existing work pointing to some imagery processes (e.g., daydreams and fantasies) as involving high levels of cognitive effort (Bolls & Lang, 2003; MacInnis & Price, 1987). However, this study did not employ a measure of elaboration. As such, future studies in this context should employ a measure to assess this construct to provide a better understanding of these processes.

The lack of significance of the ImpSS-related paths in the model (H2 & H5) leads to the exploratory model (Figure 3) in examining the hierarchy with these paths eliminated. Using a method similar to Mowen and Spears (1999), this step allows further investigation of the direct and indirect effects of the cardinal traits on Fantasy-Proneness and Visual Style of Processing. Results of nested model tests indicate fit similar to that of the hypothesized model, thus suggesting superiority of the more parsimonious exploratory model (Mowen & Spears, 1999). That is, the exploratory

model demonstrates that ImpSS has no direct or indirect effects on Fantasy-Proneness or Visual Style of Processing in this study. However, this result deviates from the a priori hypothesized relationships and, as such, should be interpreted with caution. Future research should employ a similar model to confirm these findings.

The present results are in line with existing consumer research using hierarchical personality models (e.g., Mowen & Spears, 1999). In particular, the influence of a cardinal trait (i.e., Openness) and a central trait (i.e., Fantasy-Proneness) on the surface trait of Visual Style of Processing provide preliminary support to the claim that personality variables are useful in explaining differences in certain consumption contexts, including advertising (Harris & Mowen, 2001). However, this study relies on a priori decisions regarding selection of cardinal and central traits. As such, future studies in this area should employ different combinations of traits (e.g., other traits of the FFM) to further explore the structure of consumer imagery processing (cf. Mowen & Spears, 1999).

The total effect of the cardinal traits on the central trait of Fantasy-Proneness accounts for a moderate amount of variance (21%). This finding supports earlier work showing a fantasy component of Openness (e.g., Garcia et al., 2005). In addition, the current study demonstrates the effects of Openness and Fantasy-Proneness on reported preferences for visually processing information. In the final model (Figure 2), the cardinal and central traits account for a moderate amount of variance in the surface trait of Visual Style of Processing (35%). This follows the notion that surface traits may be driven by the interaction of more fundamental

personality traits, such as those at the cardinal and/or central level (Mowen & Spears, 1999).

SEM results indicate there is no significant relationship between ImpSS and Visual Style of Processing or between ImpSS and Fantasy-Proneness. These findings run counter to McDaniel et al's (2001) finding that high-ImpSS individuals tend to engage in fantasy. Examination of bivariate correlations show some (weak) support for the ImpSS-Visual Style of Processing relationship ( $r = .18, p < .05$ ). Consequently, ImpSS does appear to play some role in influencing (consumer) processing style. More study in this area could prove useful in further explicating the nature of the relationship between these two constructs.

While this study employs survey methodology to examine the relationships among constructs in the hierarchy, there are some practical implications of these results. One implication could be in the area of designing marketing communications. Harris and Mowen (2001) note that ad messages devised to match the cardinal and/or central traits of consumers could result in more effective targeting. Moreover, Thompson and Hamilton (2006) put forth that matching an imagery-based message to visual mode of processing can result in more favorable attitudes and intentions. For example, an ad that incorporates fantasy or imagery may result in more favorable response (e.g., attitude toward ad or brand) or elaborated processing by consumers who are more prone to processing information visually. On the contrary, marketers desiring to reach verbal processors might highlight product attributes or information without the use of imagery-eliciting pictures or words. Future study would be necessary to test this proposition.

Another implication of the current findings might be to inform selection of ad execution type for certain product categories. Research suggests that emotion or fantasy-related motives may eclipse utilitarian motives in inducing positive response toward some products (Puto & Wells, 1984; Yoo & MacInnis, 2005). For example, employing imagery-eliciting tactics—such as a contest or sweepstakes that offers a chance to win a prize—in promoting a utilitarian product (e.g., ballpoint pens) could result in more favorable response toward the ad and/or brand. That is, for consumers who prefer visual processing, enjoyment of an imagery-based ad execution would transfer to attitude toward the ad or brand and purchase intentions (Thompson & Hamilton, 2006). Additional work is required to investigate these propositions.

In conclusion, the findings presented here support the need for better understanding of how consumers process images and the level of elaboration in interpreting information (MacInnis & Price, 1987). The hierarchical approach to modeling relationships among certain personality traits and consumer behaviors employed herein demonstrates utility in investigating cognitive processes related to imagery-evoked thoughts (Mowen & Spears, 1999). The current study suggests an underlying framework of individual differences in consumers' imagery processing, which has been shown to be important to the study of their response to certain types of advertising (cf. Petrova & Cialdini, 2005; Thompson & Hamilton, 2006). Moreover, the results underscore the need for consumer research to examine certain (arguably neglected) traits, such as fantasy-proneness, which offer face validity in the study of ad processing, given the projective nature of many ad executions (Burns,

Babin & Biswas, 1993; Hirschman, 1983; MacInnis & Price, 1987; Miller et al., 2000; Puto & Wells, 1984).

## Chapter 5: Study Three

### *Introduction*

The use of sport-related imagery in marketing communications, such as advertisements, is a common tactic in sport marketing (Meenaghan & O'Sullivan, 1999). It is theorized that when these elements (i.e., pictures or text) are linked to sport, consumers 'transfer' positive feelings from the sport image to the brand depicted (e.g., Belch & Belch, 1998), which, in turn, results in more ad favorable response (Bennett, 1999; Ferrand & Pages, 1996; Meenaghan & Shipley, 1999). This type of pair association is utilized not only for advertising sport products (e.g., sporting goods) but non-sport products as well (Van Hoeske, Van Hoeske, De Knop & Taks, 2002). While there is a growing body of scholarly work on the use of sport to promote non-sport products, there is a need for additional investigation into the underlying framework of consumer processing of sport marketing-related phenomena (Cornwell, Weeks & Roy, 2005).

The general advertising literature suggests that, regardless of medium, advertisements commonly contain imagery-inducing elements, including pictures and text (Miller, Hadjimarcou & Miciak, 2000). For example, print advertisements frequently feature words and phrases such as "imagine", "visualize" or "picture yourself" (Petrova & Cialdini, 2005, p.442). Many advertising and consumer behavior scholars suggest that these ad-imagery elements positively influence consumer preferences, including attitude-toward-the-ad ( $A_{Ad}$ ) and attitude-toward-

the-brand ( $A_B$ )(Bone & Ellen, 1992; Burns, Babin & Biswas, 1993; Edell & Staelin, 1983; Escalas, 2004; MacInnis & Price, 1987; Miller et al., 2000; Petrova & Cialdini, 2005; Thompson & Hamilton, 2006). Imagery is characterized as a style of processing “by which sensory information is represented in working memory” (MacInnis & Price, 1987, p. 473). The notion of imagery processing is put forward as involving the use of mental pictures—rather than words—when interpreting ad messages (MacInnis & Price, 1987; Miller et al., 2000; Puto & Wells, 1984). Research suggests that some individuals can show a tendency toward relying on this type of processing in consumption contexts, including advertising (e.g., MacInnis & Price, 1987; Miller et al., 2000). Despite its extensive application, there remains some question as to the underlying characteristics of these imagery processes (Miller et al., 2000).

The scholarly literature in advertising largely considers imagery processing from two perspectives on: examination of the imagery-based characteristics of advertisements and investigation of the cognitive activity (i.e., imagery processing) occurring during ad exposure (MacInnis & Price, 1987). The first posits that manipulation of imagery-related content (e.g., pictures or text) in ads drives outcomes such as ad recall (e.g., Lutz & Lutz, 1977; Leigh, Zinkhan & Swaminathan, 2006), attitude-toward-ad and -brand ( $A_{Ad}$  and  $A_B$ ) and purchase intentions (PI) (e.g., Burns et al., 1993). The second perspective points to the individual’s interpretation (i.e., processing) of imagery content as the primary influence on ad response. Conceptualizations range from ad-evoked processing (e.g., Babin & Burns, 1997; Bone & Ellen, 1992; Miller & Stoica, 2003) to work that examines gender (e.g.,



Chang, 2007; Meyers-Levy & Maheshwari, 1991), and individual (Petrova & Cialdini, 2005; Thompson & Hamilton, 2006) differences. These methods, while conceptually distinct, are not necessarily mutually exclusive, as a few studies explore both (e.g., Babin & Burns, 1997; Thompson & Hamilton, 2006). Despite the wealth of research in this area, however, there are calls for additional exploration of how imagery-based messages affect consumer evaluation, such as ad- or brand-related attitudes (Babin & Burns, 1997; Petrova & Cialdini, 2005). As such, additional investigation using theoretically-grounded personality constructs to investigate this premise could add to this growing body of literature (Meyers-Levy & Peracchio, 1992).

A topic important to a growing number of consumer behavior scholars is the effectiveness of a particular type of marketing communication (i.e., sales promotions) (Chandon & Neslin, 1998). The literature clusters sales promotions into two categories, namely: monetary (e.g., coupons and discounts) and nonmonetary (e.g., sweepstakes) (Chandon, Wansink & Laurent, 2000). Some consumer research suggests that nonmonetary sales promotions, such as promotional games, can enhance the consumption experience and may play a role in influencing consumer ad response (Wakefield & Barnes, 1996; Ward & Hill, 1991). Ward and Hill (1991) define the above as opportunities to win a prize and posit that this prospect of winning can induce consumers to imagine winning (i.e., fantasy). However, there is no empirical evidence as yet to support their proposition (Ward & Hill, 1991).

Use of nonmonetary sales promotions, such as contests and sweepstakes, is a popular tactic in sport and leisure marketing (Feinman, Blashek & McCabe, 1986;

Wakefield & Barnes, 1996). Yet, their popularity in industry practice notwithstanding, little is known about how and why consumers respond to such marketing tactics (Chandon et al., 2000; Ward & Hill, 1991). As such, there are calls for added empirical exploration into the nature of consumer processing in this context (Chandon et al., 2000; Wakefield & Barnes, 1996; Ward & Hill, 1991). Thus, the purpose of the current study is to examine the role of individual differences in the processing of, and response to, advertisements including varying degrees of imagery-eliciting elements. In particular, this research seeks to investigate the influence of a personality-related construct (i.e., fantasy proneness) on the processing of (i.e., quantity, vividness and valence) and response to (i.e., attitudes and intentions) sport marketing-related print advertisements containing varying degrees of imagery-eliciting content (i.e., nonmonetary sales promotion).

### *Review of Literature*

#### *The study of imagery in print advertising*

Research on print advertising includes several approaches to the study of imagery processing (Miller et al., 2000). One major approach centers on the effectiveness of different advertising strategies for eliciting processing of messages. Such strategies usually include modifying one of three elements: pictures, concrete words (e.g., those that are easily pictured in the mind) or instructions to imagine (e.g., words or phrases such as ‘imagine yourself’) that are either read by an experimenter or embedded in the ad (Babin & Burns, 1997; MacInnis & Price, 1987). Of these,

pictures and instructions to imagine receive the most scholarly attention and most studies examine them independently (Babin, Burns & Biswas, 1992). While some research does suggest increased effectiveness of certain strategies (i.e., pictures and instructions to imagine), there are calls for further investigation of this proposition, such as exploring the potential effects of combining two or more imagery-evoking elements in an ad (Babin & Burns, 1997; Babin et al., 1992).

Another main focus of a number of studies in the print advertising domain is the examination of processing style as an indicator of differences in consumer interpretation of messages (Babin & Burns, 1997). Further, some scholars suggest that one's ability to process information using imagery can explain effects of ad execution on subsequent consumer response (Petrova & Cialdini, 2005; Thompson & Hamilton, 2006). While many of these studies purport to measure 'individual differences' in processing, they do not appear to employ psychological constructs grounded in personality theory. This seems prudent given that some scholars argue for the utility of applying personality research in explaining variance in ad response (Haugtvedt, Petty & Cacioppo, 1992; McDaniel, Lim & Mahan, 2007; Mowen, Harris & Bone, 2004). Moreover, based on preliminary research (see Study 2 of this dissertation), an individual's style of processing appears to be influenced by personality traits, such as fantasy proneness. Despite the appearance of support for this concept, there is a need for additional investigation of the underlying elements of imagery processing (Petrova & Cialdini, 2005).

*Imagery-eliciting strategies.* The initial work in this domain focuses on imagery-eliciting strategies and their resultant effects on consumer response (Lutz &

Lutz, 1978). Scholars theorize a typology of these advertising strategies: 1) use of pictures; 2) use of concrete words; and, 3) use of instructions to imagine (Babin & Burns, 1997; Lutz & Lutz, 1978; MacInnis & Price, 1987). Despite the notion that concrete words (i.e., those easily imagined) can be effective in imagery-related ad executions, few studies focus on this ad strategy (see Babin et al., 1992 for a review). Rather, the majority of studies center on the effectiveness of pictures and/or instructions to imagine in eliciting imagery processing (e.g., Babin & Burns, 1997).

The prevailing conclusion in the imagery literature is that ad pictures have positive effects on dimensions of response, including recall and  $A_{Ad}$  (e.g., Miller & Stoica, 2003). For example, some point to variance in picture concreteness (i.e., clarity of focus) as having influence on ad response (e.g., Lutz & Lutz, 1977; Percy & Rossiter, 1983). Moreover, other picture elements, such as color (Lichtlé, 2007) and picture size (Percy & Rossiter, 1983) are found to play a role in explaining consumer preferences for ad stimuli.

The study of the third strategy, instructions to imagine, is considered the most direct method to manipulating ad-related imagery (Babin et al., 1992). Use of this tactic takes on one of two distinct methods: external instructions (e.g., read by an experimenter) and those embedded within the ad copy (e.g., ‘picture yourself’) (Babin & Burns, 1997). Studies that employ external instructions appear more prevalent in the literature (e.g., McGill & Anand, 1989; Keller & McGill, 1994; Thompson & Hamilton, 2006). Though this research method has been widely studied, there is no evidence demonstrating its significant effects (Babin et al., 1992). Likewise, the relatively few studies employing instructions as part of the ad copy demonstrate

significance. For example, Burns et al. (1993) placed instructions to imagine the ad copy: in the headline and at the bottom of the ad. Their results did not confirm the hypothesis that in-ad instructions would elicit significantly different responses from the ad without instructions. To the contrary, a more recent study by Babin and Burns (1997) indicates that in-ad instructions to imagine and pictures have separate (and significant) influences on differences in response (i.e.,  $A_{Ad}$  and  $A_B$ ). While the results of studies using in-ad instructions to imagine have been equivocal to this point, there appears to be conceptual grounds for further inquiry (Babin et al., 1992). Moreover, there are calls for further examination of interaction effects of multiple ad strategies (e.g., use of in-ad instructions and pictures) on response to, ad stimuli (Babin et al., 1992; MacInnis & Price, 1987).

*Processing of imagery-based information.* Information processing (IP) theory holds that consumers are rational beings that process information primarily through the use of cognitive elements (e.g., knowledge structures, thoughts, beliefs) (Bettman, 1979; Holbrook & Hirschman, 1982). It is largely held in this paradigm that interpretation of imagery-based content occurs with little to no elaborative cognitive activity (Heath & Feldwick, 2008). In contrast, others argue that imagery processing can occur along the full elaboration continuum (Heath & Feldwick, 2008; MacInnis & Price, 1987). Some imagery processes, such as daydreams or fantasies, are theorized to involve high levels of cognitive effort (MacInnis & Price, 1987). It is argued that imagery-based advertising can evoke significantly higher levels of imagery generation (i.e., elaborated thought) than low-imagery ads (Bone & Ellen, 1992; Petrova & Cialdini, 2005). Moreover, several factors, including group (i.e.,

gender) and individual differences, are shown to play a role in explaining processing imagery-based information (e.g., Chang, 2007; Meyers-Levy & Maheswaran, 1991).

Advertising scholars posit that gender differences are important to explaining the processing of ad information (e.g., Meyers-Levy & Maheswaran, 1991). In particular, it is theorized that gender moderates processing in various advertising contexts, including comparative (e.g., Chang, 2007) and emotional (Fisher & Dube, 2005) appeals. According to this line of research, differences stem from the belief that females utilize more detailed and elaborated processing than do males (Meyers-Levy & Maheswaran, 1991). Some, however, appear to depart from this convention, finding that males, under some conditions, follow response patterns typically shown by females (Fisher & Dube, 2005; Meyers-Levy & Maheswaran, 1991). To the contrary, these contradictory findings would seem to support the notion that within-gender (i.e., individual) differences may have utility in the study of advertising response, thus additional research using theoretically-grounded concepts (e.g., personality traits) in this context could prove fruitful (McDaniel et al., 2007).

The existing literature does identify 'individual differences' in imagery processing as playing a role in response to advertising messages, yet studies still appear to use constructs not grounded in traditional personality theory (e.g., Petrova & Cialdini, 2005; Thompson & Hamilton, 2006). There are calls for additional research examining the different factors related to imagery processing, including consumer characteristics (e.g., Petrova & Cialdini, 2005; Thompson & Hamilton, 2006). Given that theory-based personality variables are useful in explaining differences in response across various advertising contexts (e.g., Haugtvedt et al.,

1992; McDaniel et al., 2007; Mowen Harris & Bone, 2004), extending this line of research into the study of factors influencing imagery processing could add to the body of knowledge on the underlying structure of consumer ad response.

### *Personality theory in advertising research*

The history of applying personality research to the study of consumer behavior dates to the early 20<sup>th</sup> Century (Endler & Rosenstein, 1997). Throughout this period, the evolution of the study of consumer personality is symbolized by two distinct perspectives: 1) the early criticisms of the use of personality; and, 2) the more recent calls for an increase in the application of established theoretical (i.e., personality) frameworks to understand consumers. The first viewpoint consists of those who consider personality inappropriate for explaining consumer behavior (e.g., Kassirjian, 1971; Lastovicka, 1982; Mischel, 1968). The contentions raised include issues surrounding inadequate measurement instruments and the ad hoc nature of employing personality constructs in early consumer behavior studies (e.g., Kassirjian, 1971). While there are several who appear to agree with these allegations, much of the work is dated and, in one case, is amended (cf. Mischel, 1968; 2004). The other group of scholars point to a decline in the number of consumer behavior studies applying established paradigms from personality psychology (Baumgartner, 2002; Endler & Rosenstein, 1997). According to these scholars, despite the apparent acknowledgement in the literature that individual-level variables are important to the study of consumers, there is a dearth of research that draws constructs and concepts from personality theory (Baumgartner, 2002).

In an effort to address the above shortcomings of this line of inquiry, there is a segment of advertising research that applies personality theory in the context of established theoretical frameworks (Haugtvedt, Petty & Cacioppo, 1992; Lichtlé, 2007; McDaniel et al., 2007; Mowen et al., 2004; Peracchio & Meyers-Levy, 2005; Putrevu, 2008). For example, several scholars adopt an IP approach and utilize an individual difference construct, Need for Cognition (NFC), in studying how individuals recall and respond to ad messages (Haugtvedt et al., 1992; Peracchio & Meyers-Levy, 2005; Putrevu, 2008). NFC is theorized within the Elaboration Likelihood Model (ELM) as a motivational construct. High scores on the NFC scale are indicative of individuals who enjoy engaging in effortful thinking (Haugtvedt et al., 1992).

Some studies using the NFC construct focus on the influence of the construct on processing of, and response to, print ads varying in argument strength (e.g., Haugtvedt et al., 1992; Peracchio & Meyers-Levy, 2005; Putrevu, 2008). Scholars point to high NFC individuals as responding more favorably to ads featuring strong, as opposed to weak, arguments (Haugtvedt et al., 1992). For example, Peracchio and Meyers-Levy (2005) show that varying properties of ad pictures (e.g., view or perspective) can lead to more extensive processing of ad information. Putrevu (2008) posits that NFC and level of involvement with the product category moderate ad response (i.e.,  $A_{Ad}$ ,  $A_B$  and PI) in print ads containing contrasting levels of stimulating content (i.e., sexual images). Product category involvement is defined as the extent to which a product category has personal relevance for an individual and is posited to influence ad response (Putrevu, 2008). The author further suggests that the



effects of images peripheral to the main ad message (i.e., not related to the product in the ad) may be a function of individual differences (i.e., NFC) (Putrevu, 2008). Thus, it appears from this line of inquiry that individual difference constructs may have utility in exploring consumer processing of imagery-based ad information, including in the context of low-involvement product categories. Given the assumptions of the above body of work as well as the IP paradigm in general that imagery-related content is only processed at low levels of thought, cognitive elaboration of imagery appears to be neglected (Heath & Feldwick, 2008). Therefore, investigation of ad imagery phenomena might profit from the application of other theoretical approaches.

There is also evidence in the literature regarding the effectiveness of other theoretical frameworks for examining individual differences in ad response (Lichtlé, 2007; Mahan & McDaniel, 2008; McDaniel et al., 2007; Mowen et al., 2004; Mowen & Spears, 1999). Some studies employ a hierarchical model, which suggests consumer behavior is guided by the interplay among traits at varying levels of abstraction—ranging from fundamental traits (e.g., The Big Five) to those that are unique to a particular context (e.g., McDaniel et al., 2007; Mowen & Spears, 1999). Studies using this approach examine the role of personality in mediating effects of different advertising appeals (e.g., Mowen et al., 2004). Consumer response to a particular ad appeal (e.g., fear) appears to be influenced by a set of interrelated personality traits. As such, these findings suggest potential for consideration of personality traits in examination of other advertising appeals, such as those utilizing imagery-related content (Mahan & McDaniel, 2008; Mowen et al., 2004).

Another personality paradigm that appears to demonstrate utility in an advertising context is Optimum stimulation level (OSL) theory, which states that individuals possess an ideal level of stimulation at which they prefer to operate. McDaniel et al., (2007) utilize a similar approach as Mowen et al. (2004) in investigating how individual differences in OSL influence response to print advertisements depicting varying levels of violent sport images. In this study, the authors utilize a personality hierarchy to demonstrate that a context-specific trait (Curiosity About Morbid Events; CAME) mediates the effects of a central trait (ImpSS) on indicators of advertising response ( $A_{Ad}$  and viewing intentions). Lichtlé, (2007) provides additional support that individual differences can be useful in explaining response to print ads. Specifically, OSL is shown to moderate the color effects of ads on affect (i.e., pleasure and arousal) and response (i.e.,  $A_{Ad}$ ). That is, high-OSL individuals report higher levels of affect and  $A_{Ad}$  toward ads using varying degrees of color hue and saturation (Lichtlé, 2007). Together, these studies indicate that application of personality theory (e.g., OSL) can have utility in advertising research.

The literature in this domain incorporates individual difference constructs grounded in personality theory in the study of advertising effects. This research responds to calls for its application in consumer behavior research (e.g., Baumgartner, 2002; Endler & Rosenstein, 1997). The scholarly advances in this area notwithstanding, additional research as to the role of personality in response to advertising messages is needed (Haugtvedt et al., 1992; Lichtlé, 2007; McDaniel et al., 2007; Mowen et al., 2004; Peracchio & Meyers-Levy, 2005; Putrevu, 2008).

*Research on consumer-related fantasy behaviors*

In a challenge to conventional IP models, such as the Elaboration Likelihood Model (ELM), Holbrook and Hirschman (1982) argue that there are a variety of consumption-related phenomena—such as fantasies and daydreams—that do not fit within the realm of the “rational” IP perspective. Further, they argue that, while the IP paradigm has utility in certain aspects of consumer behavior, application of a hedonic (i.e., experiential) perspective allows for exploration of issues such as “product-related fantasies and imagery” (p.139) that could have relevance in the study of advertising. Moreover, some offer that certain personality traits offer face validity in the study of hedonic consumption, which includes fantasy proneness (Holbrook & Hirschman, 1982).

The literature suggests that certain factors can influence participation in fantasy-related consumption behaviors, such as those related to socio-demographics and personality (Belk, Ger & Askegaard, 2003; d’Astous & Deshenes 2005; Fournier & Guiry, 1993; Hirschman, 1983). Included among these forms of behavior are role-projection and escapism (i.e., to get away from one’s everyday life) or other activities involving visualization (Hirschman, 1983). In particular, gender appears to play a role in determining fantasy content (Belk et al., 2003). These initial forays into the study of consumption-related fantasy lend support to the notion that this phenomenon is important in the domain of consumer research (d’Astous & Deshenes, 2005). One advertising context that may offer promise for research in this manner is the use of promotional games (e.g., sweepstakes), as these are proposed to incorporate elements of fantasy, as argued by Ward & Hill (1991).

### *Promotional games research*

As previously noted, the literature on sales promotions points to two forms: monetary (i.e., price-related); and, nonmonetary (i.e., value-added) (Chandon et al., 2000). The vast majority of empirical research on sales promotion focuses on monetary promotions, such as coupons (Shi, Cheung & Prendergast 2005). However, it is argued that nonmonetary sales promotions provide hedonic benefits, including entertainment, that are important to some consumers (Chandon et al., 2000). Included in this category are promotional games (e.g., sweepstakes or contests), a popular tactic that offers an opportunity for consumers to win a prize (Shi et al., 2005; Ward & Hill, 1991). Despite the popularity of this form of sales promotion, very little is known about their potential effects on consumer processing or response (Shi et al., 2005; Ward & Hill, 1991).

Wakefield & Barnes (1996) examine nonmonetary promotions in sport marketing that enhance the consumption experience, which they term “value-added” (p.410). The authors posit that consumers will process information related to this form of promotion differently than they would with price-based promotions. Additionally, they examine individual-level variables, including promotion proneness, which is characterized by a liking for sales promotions (Wakefield & Barnes, 1996). The authors posit that this construct can be helpful in explaining the extent to which sales promotions aid in enticing consumers (Wakefield & Barnes, 1996). Moreover, they recommend future research examine the effectiveness of matching nonmonetary, (hedonic) sales promotions (e.g., promotional games) with utilitarian brands or products (e.g., batteries or pens) (Wakefield & Barnes, 1996).

Ward and Hill (1991) offer a conceptual framework for designing effective promotional games. The authors propose that there are a number of influences to consumer participation (and enjoyment) of such games. Individual-level factors, such as personality, are hypothesized to interact with other antecedents to predict preferences for certain game types. Further, advertisements featuring promotional games are argued to provide an environment within which consumers can fantasize about winning a prize (Ward & Hill, 1991).

There are a small number of studies that suggest specific individual characteristics play a role in determining preference for such games and contests (Browne, Kaldenberg & Brown, 1993; McDaniel, 2002). Browne et al. (1993) note similarities between promotional game participation and gambling. Particularly, individuals appear attracted to the experiential aspect of these games, suggesting a psychographic profile similar to that of gamblers. In an extension of Browne et al. (1993), McDaniel (2002) shows a personality trait (i.e., sensation seeking) to be significantly related to enjoyment of promotional games participation. Thus, it appears that personality traits could have utility in the study of promotional games (Browne et al., 1993; McDaniel, 2002). In addition, added examination of the underlying structure of promotional-game participation could be helpful in furthering the understanding of consumer processing and response in this context (Browne et al., 1993; Chandon et al., 2000; Shi et al., 2005; McDaniel, 2002; Wakefield & Barnes, 1996; Ward & Hill, 1991).

### *Hypotheses*

Existing advertising studies suggest that response to imagery appeals will differ based on individual differences in processing style (Petrova & Cialdini, 2005; Thompson & Hamilton, 2006). Psychology research on imagery suggests certain personality constructs (e.g., fantasy proneness) are useful in explaining individual differences in imagery processing (Aleman & de Haan, 2004; Merckelbach, 2004; Wilson & Barber, 1983). Thus, based on the preceding review of literature, the following hypotheses are proposed:

- H1: High fantasy-prone participants will report a greater degree of imagery processing (quantity, vividness and valence) than medium or low fantasy-prone participants.
  
- H2: High fantasy-prone participants will report more favorable ad response (i.e., attitude toward the ad ( $A_{Ad}$ ), attitude toward the brand ( $A_B$ ), purchase intention (PI), and intention to visit Website (VI)) than medium or low fantasy-prone participants.

Studies on imagery in advertising suggest that matching ad format (e.g., high-imagery or low-imagery appeal) with an individual's preferred processing style (e.g., fantasy proneness) can result in more favorable ad response (Thompson & Hamilton, 2006). Similarly, there is evidence in the literature for an interaction between

individual differences in processing and ad format (Peracchio & Meyers-Levy, 2005).

Based on this line of inquiry, the following hypotheses are generated:

H3: Fantasy proneness will moderate the effect of high/low imagery ad stimuli (Ad type x Fantasy Proneness interaction) on the quantity, vividness, and valence dimensions of imagery processing.

H4: Fantasy proneness will moderate the effect of high/low imagery ad stimuli (Ad type x Fantasy Proneness interaction) on  $A_{Ad}$ ,  $A_B$ , PI and VI.

### *Method*

This study employs a 2 (ad type) by 3 (fantasy proneness) between subjects factorial design to investigate the effect of a personality construct (i.e., fantasy proneness) in the processing of and response to print advertisements. Following existing advertising-imagery research (e.g., Babin & Burns, 1997), ad appeal is manipulated as high-imagery appeal (picture and high imagery-eliciting text) and low-imagery appeal (picture and low imagery-eliciting text). Fantasy proneness is assessed using a tripartite split (high, medium, and low; Aleman & de Haan, 2004) of the Creative Experiences Questionnaire (CEQ; Merckelbach, Horselenberg & Muris, 2001)

The data collection for this study was conducted in several phases, following existing advertising research (e.g., Sojka & Giese, 2006; Thompson & Hamilton, 2006; Walters, Sparks & Herington, 2007). First, a pilot study (Pilot Study One) was performed to aid in the construction of ad stimuli (e.g., Sojka & Giese). Pilot Study One used survey methodology to identify a low-involvement, utilitarian product category as well as determine level of personal relevance (i.e., enduring involvement) related to various professional sporting events (McDaniel, 1999). In order to gauge validity and reliability of the scaled measures as well as validate proposed ad manipulations, a second pilot (Pilot Study Two) was employed using a sample of Undergraduate college students (N=50). Participants first completed an on-line survey then took part in a lab session in which they viewed print ads and responded to outcome measures on imagery processing (i.e., quantity, vividness, and valence) and ad response (i.e.,  $A_{Ad}$ ,  $A_B$ , PI and VI). Once validity and reliability of measures and ad manipulations were assessed, the main study was carried out using the same procedures as Pilot Study Two. The following sections describe these data collection procedures in greater detail.

#### *Pilot Study One: Stimulus Construction*

It is noted in the ad processing literature that certain imagery-based ad elements (e.g., pictures) can influence consumer response (i.e.,  $A_{Ad}$ ,  $A_B$ , PI) to low-involvement product categories (Putrevu, 2008). Likewise, there are calls for additional examination of consumer processing and response in the context of promoting utilitarian (i.e., functional) products or services (Wakefield & Barnes,



1996). Moreover, some offer that sport-related imagery is important in the promotion of non-sport products (Van Hoesche et al., 2002). To these ends, a convenience sample of undergraduate students (N = 105) was surveyed and data from this pilot study are employed in order to select a low-involvement, utilitarian product category as well as to identify level of personal involvement with certain professional sport events. This approach was undertaken to facilitate the design of ecologically-valid advertisements that provide an opportunity to attribute variance in processing and response to the chosen manipulations (i.e., imagery-based ad elements).

Existing scholarly research in consumer behavior suggests that both product category involvement and hedonic/utilitarian attitudes toward product category are important to understanding consumer response to marketing stimuli, such as advertising (Batra & Ahtola, 1990; Voss, Spangenberg & Grohmann, 2003). Likewise, some marketing research indicates that consumers tend to process certain categories of products (e.g., utilitarian) differently (Ang & Lim, 2006; Voss et al., 2003). Further, scholars suggest that the involvement construct can be related to the processing of sport marketing stimuli (e.g., Cornwell, et al, 2005). As such, this pilot study aligns with this body of work in seeking to identify a low-involvement, utilitarian product as well as differing levels of personal involvement with an a priori list of professional sporting events (Gwinner & Eaton, 1999; McDaniel, 1999).

*Product category selection.* Involvement is a construct characterized by an individual's perceived relevance based on needs or wants (Zaichkowsky, 1986). This concept has been found to be valid in various contexts, including product categories (Zaichkowsky, 1994). This most heuristic measure of involvement in consumer

behavior is Zaichkowsky's (1994) Personal Involvement Inventory (PII), which is designed to estimate both the cognitive and affective dimensions of personal relevance. A five-item adaptation of the PII measure was employed in the current study (Martin, Lang & Wong, 2003). This version of the scale has been pointed to as a reliable and valid measure of product-category involvement (Martin et al., 2003). Items include: important-unimportant; of concern—of no concern; matters to me—does not matter; significant—insignificant; means a lot to me—means nothing to me.

In line with existing marketing research (cf. Spangenberg et al., 1992; Voss, Spangenberg & Grohmann, 2003), an a priori list of low-involvement, utilitarian product categories were selected (i.e., alkaline batteries, paper napkins and ballpoint pens). Participants responded to a questionnaire including brief measures to assess the utilitarian and involvement dimensions for the list of three product categories. The Utilitarian subscale of Voss, et al's (2003) Hedonic/Utilitarian (HED/UT) scale is comprised of five 7-point semantic differential items (i.e., effective-ineffective, helpful-unhelpful, functional-not functional, necessary-unnecessary, and practical-impractical) and assesses the functional nature of product categories (Voss et al., 2003). This measure has shown to be a valid and reliable measure of product-related attitudes (Voss, et al, 2003). Cronbach's alpha for UT was adequate for ballpoint pens ( $\alpha = .83$ ) and alkaline batteries ( $\alpha = .80$ ) but was less desirable for paper napkins ( $\alpha = .75$ ). Scores for the items were summed and averaged for each product category. Paired-sample *t*-tests were then used to compare means of all three product categories. Results (see Table 3) showed mean UT scores for each product category was above four (on a five-point scale) and revealed no significant differences among

the three ( $p > .05$ ). This supports the a priori notion that each is low-involvement in an undergraduate sample.

Alpha reliabilities for the involvement scale were adequate across product categories and ranged from .82 to .91. As with the UT scale, items from the involvement scale were summed and averaged, then analyzed using paired-sample  $t$ -tests for product categories.

Table 3.

*Paired  $t$ -tests Indicating Differences on Utilitarian Scale (UT) Among Product Categories.*

Product Category Pairs	$M^a$	$SD$	$df$	$t$
Batteries	4.29	0.63	47	-2.09*
Pens	4.06	0.69		
Batteries	4.24	0.69	52	0.43
Napkins	4.18	0.64		
Napkins	4.22	0.64	53	-1.05
Pens	4.09	0.66		

<sup>a</sup>Measure is on a five-point scale; higher number signifies more utilitarian product category.

\* $p < .05$ .

Results (see Table 4) revealed no significant differences among the three products, also confirming the a priori assumption that the selected product categories were similar with respect to level of involvement. Though the differences on the UT scale for two of the product categories (i.e., alkaline batteries and ballpoint pens) were statistically significant, both were rated above four on the five-point scale. Further, there were no significant differences between ballpoint pens and alkaline batteries on the PII in this pilot study. These results indicated that both were rated as utilitarian and low-involvement product categories in this undergraduate sample. As such, both product categories were selected for use in the treatment ads to be tested in Pilot Study Two.

*Sport event.* In addition to a product category, this pilot test sought to examine sport events that represent varying levels of involvement (as measured by the five-item adaptation of PII). Advertising scholars have suggested that sport events elicit varying degrees of consumer response as a function of level of personal relevance (Gwinner & Eaton, 1999). Following this notion, an a priori list of major professional sport events (i.e., the Super Bowl, Wimbledon (tennis tournament), The Masters (golf tournament), and the Daytona 500 (NASCAR event)) was selected for use in this pilot test. In line with existing studies (cf. McDaniel, 1999), participants were asked to self-report sport event involvement (using the same adapted scale as above).

Table 4.

*Paired t-tests Indicating Differences on Personal Involvement Inventory (PII) Among Product Categories.*

Product Category Pairs	$M^a$	$SD$	$df$	$t$
Pens	2.82	0.65	58	-1.32
Batteries	2.70	0.51		
Napkins	2.96	0.62	63	-2.60*
Batteries	2.73	0.60		
Pens	2.85	0.68	58	0.58
Napkins	2.91	0.66		

<sup>a</sup>Measure is on a five-point scale; higher number signifies higher involvement with product category.

\* $p < .05$ .

Internal consistency for the sport involvement scale ranged from .93 to .98 across the four sport events. Paired sample  $t$ -tests were conducted to determine the relative involvement levels among the four events. Results (see Table 5) indicated that the Super Bowl was significantly more personally relevant than the other three events. Moreover, though males reported significantly higher involvement than females, mean scores for both were above four (on a five-point scale), suggesting that both males and females consider the Super Bowl to be a high-involvement sport event. While there were significant differences among the means for the remaining three events (see Table 3), these means fell below the midpoint (three on a five-point

scale). This indicates that these three sport events (i.e., Daytona 500, The Masters, and Wimbledon) could be considered low-involvement in this particular sample of undergraduate students.

Gender is posited to influence preferences for certain sports (McDaniel, 2004; Sargent, Zillman & Weaver, 1998). Following this notion, additional *t*-tests were conducted for gender differences on level of enduring involvement with respect to these three sport events. Results of these analyses point to Wimbledon as the only sport event without significant gender effects on involvement (see Table 6).

Wimbledon appears to represent a low-involvement sport event with no significant gender differences in an undergraduate sample. Thus, Wimbledon and the Super Bowl were selected for use in creating ad treatments. These ads were subjected to a second pilot study for the purposes of validating the intended manipulations (Gwinner & Eaton, 1999).

### *Pilot Study Two*

As a result of Pilot Study One, five ads were created with the assistance of a professional graphic artist: two sets of treatment ads and a non-sport dummy ad. A second set of treatment ads featuring a high-involvement sport event (i.e., the Super Bowl) and a different low-involvement product category (i.e., alkaline batteries) were created for the purposes of further validating the selected product category (i.e., ballpoint pens) and sport event (i.e., Wimbledon) pairing. Thus, two sets of treatment ads (see Appendix F) were generated for each level of ad type (high- or low-imagery): one set depicted a tennis match and included copy related to a promotional

game (high-imagery) or merely the advertised brand (low-imagery); the second contained a picture of a football game and had copy related to a promotional game (high-imagery) or the only advertised brand (low-imagery).

Table 5.

*Paired t-tests Indicating Differences on Personal Involvement Inventory (PII) Among Sport Events.*

Sport Event Pairs	$M^a$	$SD$	$df$	$t$
Wimbledon	2.52	1.24	76	-4.03***
Daytona 500	1.74	1.11		
Super Bowl	4.23	1.04	73	-15.13***
Daytona 500	1.64	1.06		
The Masters	2.47	1.46	72	-5.30***
Daytona 500	1.69	1.09		
Super Bowl	4.20	1.03	74	-9.92***
Wimbledon	2.49	1.23		
Wimbledon	2.68	1.22	74	0.84
The Masters	2.51	1.46		
Super Bowl	4.24	0.98	71	10.56***
The Masters	2.44	1.46		

<sup>a</sup>Measure is on a five-point scale; higher number signifies higher involvement with sport event.

\*\* $p < .01$ . \*\*\* $p < .001$ .

Table 6.

*Gender differences for Personal Involvement with Sport Events.*

Sport Event	Males		Females		Df	t
	M <sup>a</sup>	SD	M <sup>a</sup>	SD		
Wimbledon	2.48	1.22	2.74	1.29	82	0.47
Super Bowl	4.45	0.94	3.76	1.01	80	-2.99**
Daytona 500	1.91	1.25	1.35	0.61	81	-2.70**
The Masters	3.03	1.56	1.65	0.86	79	-5.11***

<sup>a</sup>Measure is on a five-point scale; higher number signifies higher involvement with sport event.

\*\* $p < .01$ . \*\*\* $p < .001$ .

Format and layout was consistent across all ads, in line with existing advertising studies (Ang & Lim, 2006; Petrova & Cialdini, 2005; Thompson & Hamilton, 2006). In order to control for potential confounds, all ads were black-and-white, contained a fictitious brand (i.e., WriteIt pens or PowerPak batteries) in a low-involvement product category (i.e., ballpoint pens or alkaline batteries), and depicted an image of the product. In addition, sport photos selected for the ads were modified to remove any association with a particular team, athlete, or event, aligning with the ad imagery processing literature (e.g., Miller & Stoica, 2003). While some ad



processing research indicates that certain picture properties (e.g., camera angle) can evoke varying degrees of imagery (e.g., Meyers-Levy & Peracchio, 1992), a point of view (POV) perspective has not been employed. A POV picture can be described as one that allows the consumer to project him/herself in a particular situation; this concept stems from research pointing to ‘role projection’ as a fantasy-related consumption behavior (Hirschman, 1983). The selection of an offer to win a trip to a particular sporting event (e.g., Wimbledon) is in line with research suggesting that trips are among the most popular types of consumption-related fantasies, such as those involved in promotional games (d’Astous & Deshenes, 2005).

Ads were placed in a booklet and order was rotated along with a non-sport dummy ad to help mask the intent of the study (McQuarrie & Phillips, 2005; Putrevu et al., 2004). This dummy ad depicted a low-involvement product category (i.e., paper towels) different from those in the treatment ads and is devoid of any reference to sport. Booklets were constructed so that all participants were exposed to three ads (a tennis ad, a non-sport dummy ad, and a football ad). These steps ensured that participants viewed one of four versions of the booklet: 1) high-imagery tennis, dummy ad, low-imagery football; 2) low-imagery football, non-sport dummy ad, high-imagery tennis; 3) high-imagery football, non-sport dummy ad, low-imagery tennis; 4) low-imagery tennis, non-sport dummy ad, high-imagery football.

Using the treatment booklets, the pilot (N=50) was conducted to investigate differences in imagery-evoking potential of high- and low-imagery ads using either a high-involvement (i.e., the Super Bowl) or low-involvement (i.e., Wimbledon) sport event. The treatment ads included high-imagery appeal ad (text describes chance to

enter a sweepstakes and win a prize) and a low-imagery appeal ad (text describes product-related information); each participant viewed one high- and one low-imagery ad. Of these two ads, one contained football-related content and one contained tennis-related content. Participants completed an initial on-line survey instrument including a measure of fantasy proneness (CEQ) and other (e.g., demographic) items. Participants were then grouped using a tripartite split of CEQ scores (high/medium/low fantasy-prone) then assigned to a lab session during which they viewed three ads: one treatment ad, a dummy ad, and a second treatment ad. Following the viewing of each ad, participants responded to outcome measures (see Appendix C) relating to ad processing. Additionally, participants engaged in a distracter task consisting of completing simple math problems (see Appendix N) prior to viewing the second treatment ad to control for possible imagery-evoking effects of the first treatment ad (Miller & Stoica, 2003). At the end of the session, subjects were debriefed and thanked for their participation.

MANOVA results (see Table 7) indicated significant effects of tennis ad-type on imagery processing (i.e., quantity, vividness and valence). Follow-up univariate tests indicated the participants in the high-imagery group reported significantly higher levels than subjects in the low-imagery condition on the variables of quantity, vividness and valence. There were no significant differences between the high-and low-imagery football ads on the three processing measures (see Table 8). A power analysis conducted at the conclusion of these analyses suggested a sample size of approximately 200 should yield sufficient power in the main experiment.

These results support the validity of the tennis ads, by demonstrating significant effects of manipulations on all three measures of ad processing. This follows existing advertising research employing a two-level ad manipulation (e.g., Petrova & Cialdini, 2005). As such, support is demonstrated for use of the tennis ad manipulations in the main experiment.

Table 7.

*Multivariate and Univariate Analyses of Variance for Tennis Ad type on Ad Processing Measures in Pilot Study Two.*

	ANOVA			
	MANOVA	Ad Quantity	Ad Vividness	Ad Valence
	<i>F</i> (3, 46)	<i>F</i> (1, 48)	<i>F</i> (1, 48)	<i>F</i> (1, 48)
Ad type	5.46**	5.92*	15.86***	10.22**

*Note.* Wilks's *F* used for multivariate analysis.

\**p* < .05. \*\**p* < .01. \*\*\**p* < .001.

*Main study*

*Independent measure: CEQ.* The independent variables in this study include ad type (i.e., high- or low-imagery) and fantasy proneness. The Creative Experiences Questionnaire (CEQ; Merckelbach et al., 2001) is employed here as a measure of fantasy proneness. The CEQ (see Appendix G) is derived from Wilson and Barber's (1983) Inventory of Childhood Memories and Imaginings (ICMI). This instrument consists of 25 yes-no items (scored 1 for "yes" and 0 for "no"); the 'yes' answers are

typically summed, resulting in a total CEQ score (Merckelbach et al., 2001). Higher scores represent a tendency to engage in fantasy (Sanchez-Berardos & Avia, 2004). Existing research indicates that this scale is a valid and reliable measure of fantasy proneness (Sánchez-Berardos & Avia, 2004).

Table 8.

*Multivariate and Univariate Analyses of Variance for Football Ad type on Ad Processing Measures in Pilot Study Two.*

	ANOVA			
	MANOVA	Ad Quantity	Ad Vividness	Ad Valence
	<i>F</i> (3, 46)	<i>F</i> (1, 48)	<i>F</i> (1, 48)	<i>F</i> (1, 48)
Ad type	0.34	0.05	0.19	0.88

*Note.* Wilks's *F* used for multivariate analysis.

For the purposes of the current analyses, a tripartite split of CEQ Total Score is utilized in creating three groups of fantasy-prone individuals: high, medium and low. This method follows earlier imagery-processing research using an individual difference variable (Petrova and Cialdini, 2005).

A second measure of the fantasy-proneness construct was also included in order to assess the concurrent validity of CEQ. The Fantasy subscale of the Interpersonal Reactivity Index (IRI; Davis, 1983) consists of seven Likert-type items.

Research indicates that this scale can serve as a measure of projective fantasy (McDaniel, Lee & Lim, 2000).

*Covariate measure: Promotion-Proneness Scale.* The sales promotion literature identifies a construct defined by “a tendency to use sales promotion information as a basis for making retail patronage decisions” (Wakefield & Barnes, 1996, p.413). Promotion proneness is theorized to play a role in consumer response in that individuals may respond more favorably due to the positive nature of a promotion. That is, consumers’ attitudes toward an ad or brand may be influenced by the presence of a promotion (Wakefield & Barnes, 1996). As such, the present study employs this construct as a covariate to control for possible confound of promotion-prone individuals being drawn to the high-imagery ad because of the mere presence of a promotional game rather than the intended imagery-elicitation effect.

The scale (see Appendix H) consists of six seven-point items (always true-always false) items and is shown to have acceptable internal consistency ( $\alpha=.92$ ; Wakefield & Barnes, 1996). In order to maintain consistency with other scaled measures in the current study, this scale is adapted to a five-point Likert scale (strongly disagree-strongly agree).

*Dependent Measures.* The present investigation examines various facets of ad-evoked imagery. In particular, outcome measures are grouped into two categories: 1) ad processing; and 2) ad response; this results in seven dependent variables.

Miller et al. (2000) put forth a multi-dimensional measure to assess (mental) imagery as evoked by advertising. The Imagery scale (see Appendix I) gauges an individual’s imagery processing. In the original form, it includes 20 seven-point

semantic differential items that comprise four dimensions related to advertising stimuli: quantity (number of mental images generated), modality (which senses used), vividness (clarity of images generated), and valence (positive-negative aspects of images generated) and is developed for use with advertising in different media (i.e., print, TV, radio) (Miller et al., 2000).

Following Miller and Stoica (2003), the measure is adapted for specific use in a print ad context though use of three dimensions of the full scale: quantity (three items), vividness (five items), and valence (five items). Reliability of this version of the Imagery scale is shown to be strong, with alphas for the subscale dimensions ranging from .88 to .94 (Miller & Stoica, 2003). In order to maintain consistency with other outcome measures in this study, the items were further adapted to a five-point scale.

All response outcome measures (see Appendix J) are presented in semantic differential format as consistent with existing advertising research (e.g., McDaniel et al., 2007; Petrova & Cialdini, 2005; Sojka & Giese, 2006).  $A_{Ad}$  is assessed with four items (good/bad, interesting/uninteresting, like/dislike, pleasant/unpleasant).  $A_B$  is estimated with three items (like-dislike, unfavorable-favorable, good-bad). Likewise, PI is measured with three items (probable-improbable, likely-unlikely, and possible-impossible). Moreover, the current study uses (Website) Visit Intention (VI) to gauge ad effectiveness in increasing likelihood of Website visitation because scholars posit this construct to be an important indicator of consumer behavior (Graham & Havlena, 2007). Similar to the PI measure, three items (probable-improbable, likely-unlikely, and possible-impossible) are used. All ad response measures utilize a five-

point scale and items are summed and averaged to create an index for each variable (Petrova & Cialdini, 2005).

*Sample.* A convenience sample (N=204) of undergraduate students currently enrolled at a major East Coast research University was used for the main study. Data from thirteen participants were removed from the analysis for various reasons (e.g., incomplete surveys), which resulted in a final sample of 191. A stratified sampling technique was employed in an attempt to ensure equal numbers of male and female participants, as gender is a variable of interest in this study; this resulted in 96 (50.3%) female participants. The sample consists of 61% Caucasian participants with a mean age of 21.36.

*On-line survey.* In line with earlier advertising studies (e.g., McDaniel et al., 2007), participants first completed a survey including personality scales (e.g., CEQ), items relating to reliability and validity of measures and manipulations (e.g., single-item behavioral correlates), as well as demographic items. This survey was administered via the Web and was similar to that used in Pilot Study Two. After participants finished the survey, their total CEQ scores were calculated and the sample then was sorted into three fantasy-proneness groups (high, medium, and low) in preparation for the experiment.

*Experiment.* Random assignment to one of two ad conditions was stratified by CEQ group and gender to ensure balance across treatment groups. During the treatment session ( $M_{\text{group size}} = 10$ ), each participant received a booklet containing three black-and-white print ads (the same as used in the pilot study) in which they viewed three ads for 60 seconds each: a treatment ad (i.e., high- or low-imagery with

tennis-related content), a non-sport dummy ad (to mask study intent), and a second sport-related (i.e., football) ad. As in Pilot Study Two, the position of ads with sport content was rotated while the dummy ad remained in second position to control for potential order of treatment effects, (Putrevu, Tan & Lord, 2004). After each timed viewing, participants were given three minutes to complete dependent measures for imagery processing (Imagery Scale; Miller et al., 2000) and ad response ( $A_{Ad}$ ,  $A_B$ ,  $PI$ ,  $VI$ ). The presentation of the scales was also counterbalanced across ads to control for possible order effects (Petrova & Cialdini, 2005). Further, following Miller & Stoica (2003), a three-minute distracter task (consisting of simple math problems; see Appendix N) was employed prior to exposure to the third ad in an attempt to control for any imagery-evoking properties of the first two ads. At the end of the last timed response period, participants were debriefed and thanked for their participation. The duration of the lab session was approximately 30 minutes.

*Data analyses.* Consistent with existing advertising research on imagery processing (e.g., Thompson & Hamilton, 2006), multivariate analysis of variance procedures were selected for testing hypotheses. Given that research on sales promotions identifies promotion proneness as influencing preferences for nonmonetary sales promotions (e.g., promotional games), attempts were made to control for potential confounding effects of this construct. As such, Wakefield & Barnes's (1996) Promotion-Proneness scale is employed as a covariate, resulting in the choice of MANCOVA analyses.

The literature indicates gender differences in fantasy proneness, with females traditionally showing higher levels of the trait (Sánchez-Bernardos & Avia, 2004).



Moreover, advertising research points to gender differences in message processing style, as females demonstrate more of a preference for imagery processing than males (Fisher & Dube, 2005; Meyers-Levy & Mahareswan, 1991). As such, analyses are run separately by gender in order to examine for potential mediating effects of fantasy proneness on gender differences in processing and response. This resulted in four distinct MANCOVA analyses: 1) ad processing outcomes for males; 2) ad response outcomes for males; 3) ad processing outcomes for females; and, 4) ad response outcomes for females.

## *Results*

### *Scale Reliability*

Inspection of Cronbach alphas indicated sufficient internal consistency ( $\alpha > .80$ ) for all scaled measures (Nunnally, 1978). Reliability of CEQ ( $\alpha = .80$ ) was in line with existing fantasy-proneness research (Aleman & de Haan, 2004). The Promotion-Proneness Scale ( $\alpha = .84$ ) supported earlier findings in the sales promotion literature (Wakefield & Barnes, 1996). Internal consistency of each of the three processing scales (all  $\alpha > .94$ ) followed existing advertising imagery research (Miller & Stoica, 2003). Likewise, Cronbach alphas were satisfactory for the four ad response measures (all  $\alpha > .90$ ), aligning with other advertising studies using these constructs (Petrova & Cialdini, 2005; Sojka & Giese, 2006).

### *Scale Validity*

Examination of Pearson correlations supported the concurrent validity of CEQ as a measure of fantasy proneness. A moderate positive correlation ( $r = .40, p < .001$ ) was shown between the measure and the Fantasy subscale of IRI in the full sample. Further inspection of the relationship between the two measures in groups separated by gender revealed moderate positive correlations among both males ( $r = .28; p < .01$ ) and females ( $r = .50, p < .001$ ).

ANOVA results (see Table 9) indicated significant gender effects on mean CEQ scores. CEQ scores for females ( $M = 8.92, SD = 4.60$ ) were significantly higher than for males ( $M = 7.39, SD = 4.49$ ) in this sample. These results supported construct validity of CEQ as a fantasy-proneness measure and the need to run the main analyses separately by gender in this undergraduate student sample.

Predictive validity of the independent and covariate measures is shown through two ANOVAs. Results for CEQ (see Table 10) indicated significant fantasy-proneness effects on a single-item behavioral measure from the on-line survey (i.e., “When looking at an advertisement in a magazine, I usually picture myself in the ad or using the product”). Post hoc Bonferroni tests ( $p < .05$ ) revealed significant differences between high-fantasy prone ( $M = 2.90, SD = 1.13$ ) and low-fantasy prone ( $M = 2.43, SD = 0.79$ ) individuals. A significant Promotion-Proneness (high, low; median split) effect (see Table 11) was found on a single-item behavioral measure from the on-line survey (i.e., “I usually participate in promotional games”). High promotion-prone participants ( $M = 2.56, SD = 0.94$ ) responded more favorably to this item than low promotion-prone ( $M = 2.22, SD = 1.05$ ) participants.

Table 9

*One-Way Analysis of Variance Summary for Gender on Fantasy Proneness.*

Source	<i>Df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>
Between Groups	1	110.59	110.59	5.33*
Within Groups	189	3917.78	20.72	
Total	190	4028.38		

\* $p < .05$

Table 10.

*Analysis of Variance Summary Showing Predictive Validity of CEQ.*

Source	<i>Df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>
Between Groups	2	8.20	4.10	4.27*
Within Groups	186	178.60	4.10	
Total	189	1478.00		

\* $p < .05$

Table 11.

*Analysis of Variance Summary Indicating Predictive Validity of Promotion Proneness Scale.*

Source	<i>Df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>
Between Groups	1	5.39	5.39	5.32*
Within Groups	179	181.30	5.39	
Total	181	1213.00		

\* $p < .05$

Similar to Miller et al. (2000), factor analysis with Varimax rotation was employed to assess the dimensionality of the Imagery scale. Results (see Table 12) showed all items to load on the appropriate factor, lending support to the discriminant validity of the subscales (Miller et al., 2000).

#### *Internal Validity*

*Manipulation check.* As in Pilot Study Two, MANOVA results (see Table 13) indicated significant effects of ad type on all facets of imagery processing. Follow-up univariate tests demonstrated that participants exposed to the high-imagery tennis ad reported significantly higher levels than those exposed to the low-imagery tennis ad on the measures of quantity, vividness, and valence. In addition, examination of participant responses to the debriefing item revealed no apparent demand or

contamination effects. As such, manipulation of imagery-evoking content was supported.

*Treatment groups.* Results of t-tests (see Table 14) suggest there were no significant differences between treatment groups for fantasy proneness or promotion proneness, providing further support for internal validity of the study. Participants in the high-imagery ad condition were not significantly more fantasy-prone than those in the low-imagery ad condition. Moreover, there were no significant differences in reported levels of promotion proneness for those exposed to high-imagery ads (i.e., with promotion) as opposed to those in the low-imagery ad condition (i.e., did not contain promotion).

Table 12.

*Eigenvalues, Percentages of Variance and Cumulative Percentages for Factors of the 13-item Imagery Scale.*

Factor	Eigenvalue	% of variance	Cumulative %
Quantity ( $\alpha = .94$ )	2.76	21.2	32.6%
Vividness ( $\alpha = .94$ )	4.20	32.3	55%
Valence ( $\alpha = .94$ )	4.28	32.9	72%

*Note.*  $N = 191$  and  $\alpha = .94$  for full scale.

Table 13.

*Multivariate and Univariate Analyses of Variance for Tennis Ad type on Ad*

*Processing Measures in Main Experiment.*

	ANOVA			
	MANOVA	Ad Quantity	Ad Vividness	Ad Valence
	<i>F</i> (3, 187)	<i>F</i> (1, 189)	<i>F</i> (1, 189)	<i>F</i> (1, 189)
Ad type	5.63**	9.37**	15.26***	10.34**

*Note.* Wilks's *F* used for multivariate analysis.

\*\**p* < .01. \*\*\**p* < .001.

Table 14.

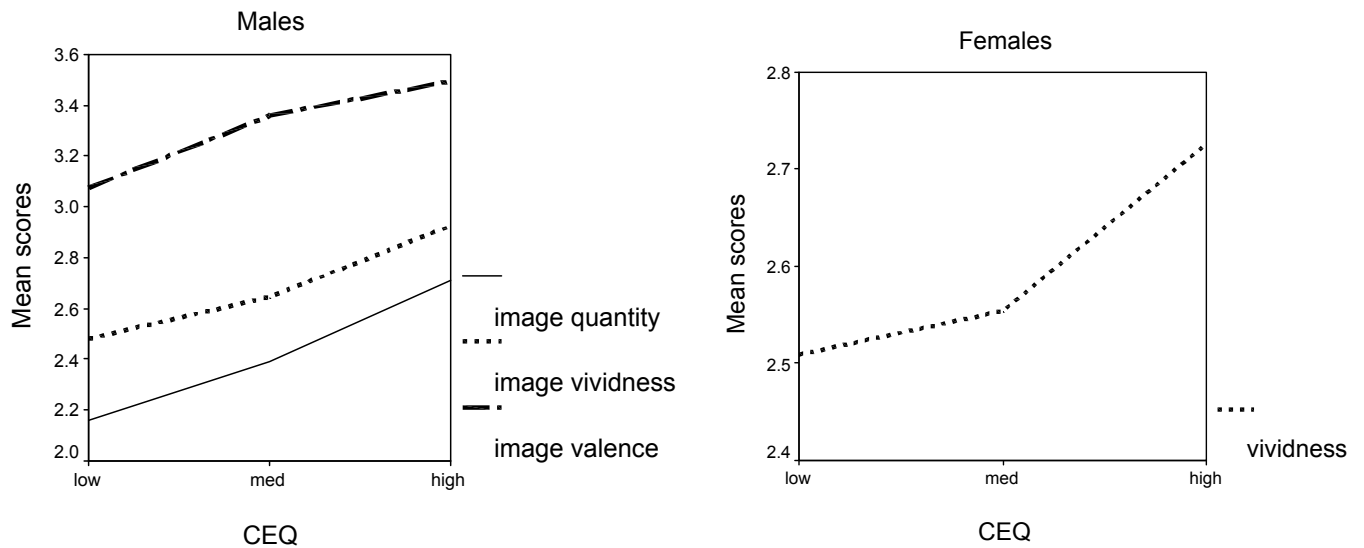
*Treatment (Ad type) Group Differences in Fantasy Proneness and Promotion*

*Proneness.*

Measure	High-Imagery		Low-Imagery		<i>df</i>	<i>T</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Fantasy Proneness	8.45	5.06	7.88	4.12	189	-0.84
Promotion Proneness	2.97	0.74	2.93	0.73	180	-0.40

*MANCOVA results*

*Fantasy-proneness main effects.* The first hypothesis (H1) proposed that fantasy proneness influences imagery processing such that higher levels of fantasy proneness lead to increased image quantity, vividness and valence for individuals. MANCOVA results (Appendix K) showed no significant fantasy proneness main effect for males (see Table K1) or females (see Table K2), thus failing to support H1. However, further inspection of the means generally suggested patterns similar to those hypothesized for males (i.e., quantity, vividness, and valence) and to a lesser-degree for females (i.e., vividness) (see Figure 6).



*Figure 6.* CEQ level by mean ad processing scores for males (left) and females (right).

The next hypothesis (H2) posited that the fantasy-proneness trait drives ad response; higher levels of fantasy proneness lead to more positive ad response ( $A_{Ad}$ ,  $A_B$ , PI and VI). Results of MANCOVA analyses (Appendix L) indicated no significant fantasy proneness effect males (see Table L1) or females (see Table L2), thus failing to support H2. Similar to the processing analysis, though, examination of the means (see Figure 7) pointed to an approximation of hypothesized relationships for both males (i.e.,  $A_{Ad}$  and  $A_B$ ) and females (i.e.,  $A_{Ad}$  and  $A_B$ ).

*Fantasy proneness x ad-type interaction effects.*

The remaining two hypotheses (H3 and H4) predicted an interaction between fantasy proneness and ad type on the dimensions of processing and response. It was posited that fantasy proneness moderates the effects of imagery-evoking ad stimuli on quantity, vividness and valence of images generated by participants (H3). MANCOVA results revealed no significant fantasy proneness x ad-type effect for either male (see Table K1) or female participants (see Table K2). As such, there was no support demonstrated for H3.

The final hypothesis (H4) considered the fantasy proneness x ad-type interaction effects on ad response ( $A_{Ad}$ ,  $A_B$ , PI and VI). Again, MANCOVA results showed no significant interaction effect for male participants (see Table L1) or female participants (see Table L2) in this study. Thus, the data did not support H4.



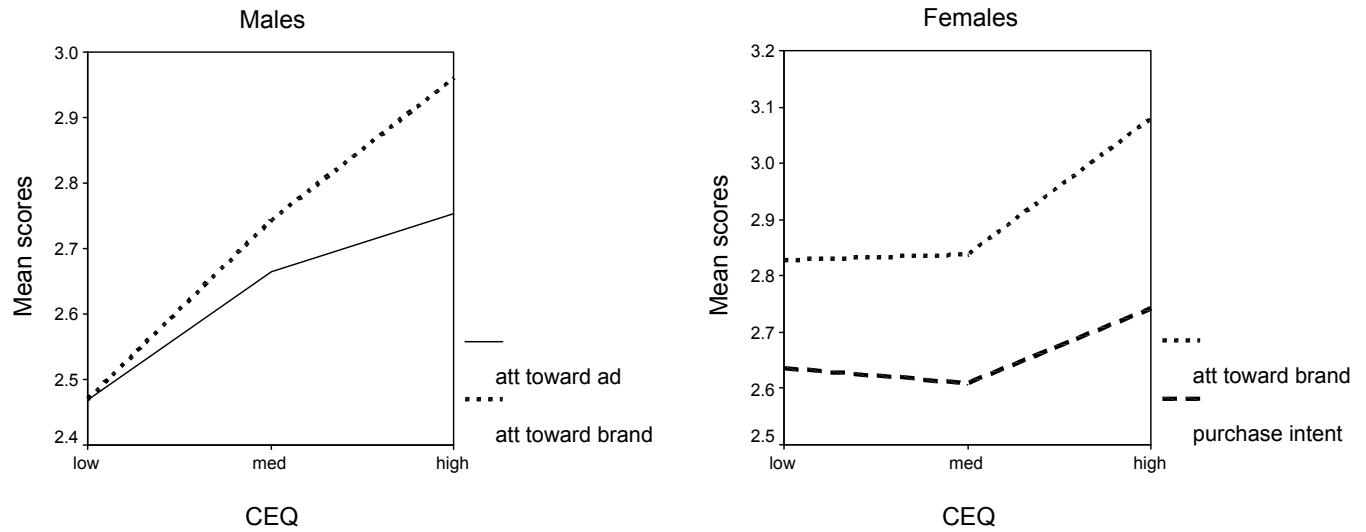
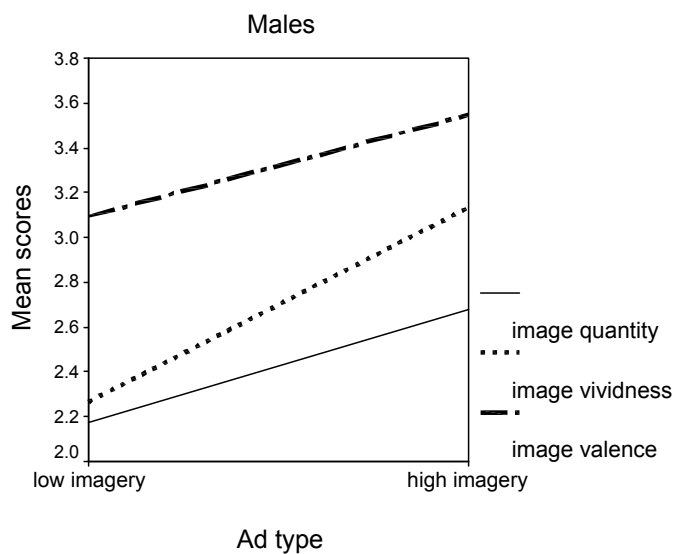


Figure 7. CEQ level by mean ad response scores for males (left) and females (right).

In two instances, these analyses produced unexpected relationships. High fantasy-prone males reported more favorable  $A_B$  in the low-imagery ad condition ( $M = 3.05$ ,  $SD = .30$ ) than in the high-imagery ad condition ( $M = 2.87$ ,  $SD = .30$ ). Similarly, high fantasy-prone males responded more favorably on PI in the low-imagery ad condition ( $M = 2.68$ ,  $SD = .29$ ) than in the high-imagery ad condition ( $M = 2.53$ ,  $SD = .28$ ).

*Ad-type main effects.* Though not included among this study's hypotheses, there were ad-type main effects found in the MANCOVA analyses. For the processing outcomes, ad-type was significant for male participants (see Table K1) in this sample. Univariate analyses (see Figure 8) revealed significant effects for quantity, vividness, and valence. Ad-type main effects on ad processing outcomes were not significant for female participants (see Table K2).

In all ad response analyses, the ad-type main effect was significant for both males (see Table L1) and females (see Table L2) in this sample. Follow-up univariate tests showed a significant main effect among male participants (see Figure 9) for  $A_{Ad}$ , PI, and VI. For female participants, univariate tests revealed a significant ad-type main effect (see Figure 9) for  $A_{Ad}$ ,  $A_B$ , PI, and VI.



*Figure 8.* Significant effects of ad type on ad processing outcomes for male participants.

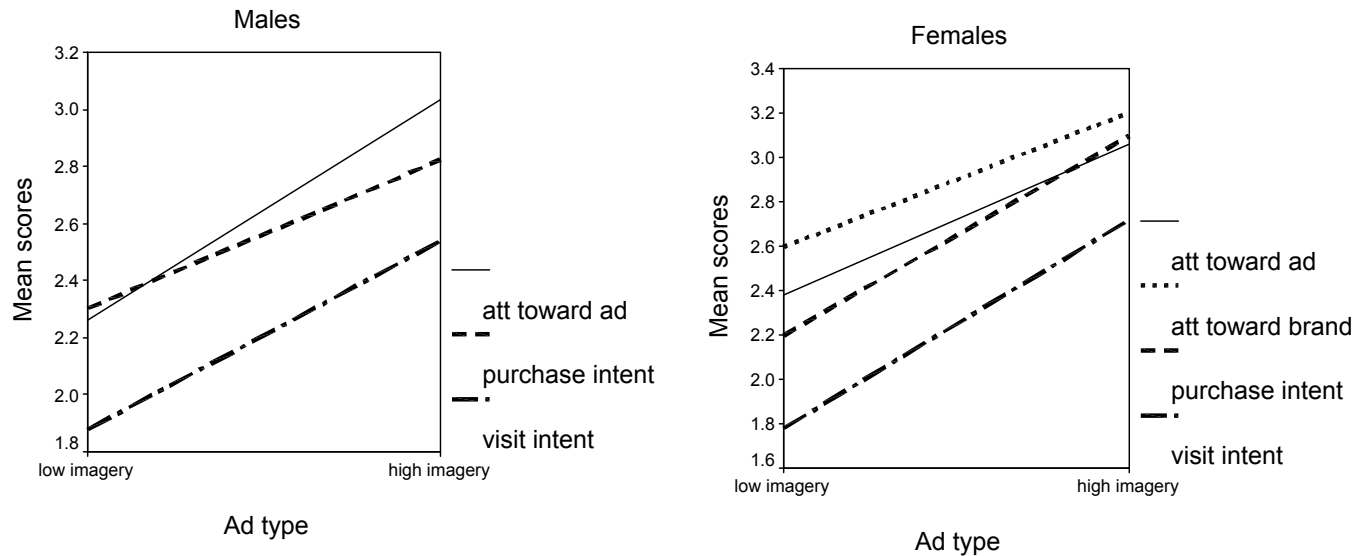


Figure 9. Significant effects of ad type on ad response outcomes for males (left) and females (right).

### Discussion

The current study explores the role of personality in the processing of, and response to, print advertisements with varying degrees of imagery-eliciting content. The design and method are in line with print advertising research (e.g., Babin & Burns, 1997; Miller & Stoica, 2003; Petrova & Cialdini, 2005; Thompson & Hamilton, 2006). Support and extension of literature in imagery processing (e.g., Babin & Burns, 1997; Petrova & Cialdini, 2005; Thompson & Hamilton, 2006) is demonstrated by employing a theoretically-grounded personality construct, fantasy

proneness, as an indicator of such individual differences. In addition, calls from sport marketing researchers for examination of how individuals process marketing communications, such as sales promotions (Cornwell et al., 2005) are undertaken here. Further, the present work represents one of the first empirical investigations into a widely-used form of sales promotion (i.e., promotional games) and, as such, responds to calls for research into their overall effectiveness (e.g., McDaniel, 2002; Ward & Hill, 1991) as well as in promoting utilitarian products in a sport marketing context (Wakefield & Barnes, 1996). The following sections will discuss the implications and limitations of these results as well as suggest directions for future research.

#### *Individual differences in processing and response*

The lack of support demonstrated for fantasy proneness main effects runs counter to hypothesized relationships (H1 and H2). These findings suggest that the fantasy-proneness construct as employed here did not significantly affect ad processing or response. While the selected instrument (i.e., CEQ) is demonstrated to be reliable and valid, it is a verbal (i.e., paper-and-pencil) measure that may not effectively tap into the affective dimensions of processing and response, such as could be related to fantasy proneness (Wang & Minor, 2008). Moreover, though the bulk of advertising research appears to rely on verbal-based instruments, there is a call for integration of psychophysiological measures in the study of marketing phenomena (Wang & Minor, 2008). One tool that is found in the recent advertising literature is infrared eye-tracking, which is used to assess the movement of an

individual's eye to the various elements (e.g., pictures or text) of print advertisements (Pieters & Wedel, 2004). Thus, additional research using psychophysiological measures could provide further insight into the role of fantasy proneness in an advertising context.

Similar to the main effect analyses, fantasy proneness x ad-type interactions (H3 and H4) did not significantly influence ad processing or response. These non-significant interactions did produce some counterintuitive results. High fantasy-prone males in the low imagery ad condition ( $M = 3.05$ ,  $SD = 0.98$ ) reported more favorable  $A_B$  than high fantasy-prone males in the high imagery condition ( $M = 2.85$ ,  $SD = 1.16$ ). The same pattern held true for the interaction effect on PI. High fantasy-prone males in the low imagery ad condition ( $M = 2.69$ ,  $SD = 1.12$ ) reported slightly greater intent to purchase than those in the high imagery condition ( $M = 2.45$ ,  $SD = 1.11$ ). These interaction effects, while contradictory to expected patterns, might fit what Thompson and Hamilton (2006) term a 'boundary condition' (p.536). That is, ad content not related to the product could interfere with an individual's ability to generate positive product- or ad-related evaluations. In the present case, the depiction of a sport (tennis) that is not related to the product category (ballpoint pens) might reduce ad effectiveness. However, more work that explores the nature of such effect is necessary to help corroborate this proposition (Thompson & Hamilton, 2006).

The failure of CEQ to significantly influence both processing and response in the current work might lead to the conclusion that fantasy proneness (as measured by CEQ) is not a factor in imagery processing. Although, non-significant MANCOVA results could be due to low power, multiple regression offers the opportunity to

examine these relationships with increased power by utilizing a continuous variable (i.e., CEQ Total Score) as opposed to a categorical variable (i.e., CEQ groups) (Hair, Anderson, Tatham & Black, 1995). Thus, post hoc hierarchical regressions analyses are employed here.

Results of these analyses (see Appendix M) suggest that both CEQ score and ad-type were significant predictors of two dimensions of imagery processing: quantity and vividness. Fantasy proneness significantly predicted image quantity and image vividness after controlling for gender and promotion proneness. Likewise, ad-type was significant in the model for both quantity and vividness. When employed as a continuous variable, fantasy proneness does appear to play a small yet significant role in imagery processing, following existing scholarly findings in advertising that personality traits can explain differences in consumer processing (e.g., LaBarbera et al., 1998; Putrevu, 2008). Thus, use of multiple regression techniques could have utility in future research examining fantasy proneness in an imagery processing context.

#### *Imagery-eliciting strategies*

This study focuses on the influence of individual differences on ad processing and response and, as such, the hypotheses do not include analyses of ad-type main effects. However, further inspection of the results reveals significant effects (see Figures 3 and 4), demonstrating limited support of existing advertising studies pointing to differences in ad processing and response as a function of imagery-evoking ad elements, such as pictures or ad copy (e.g., instructions to imagine) (e.g.,

Babin & Burns, 1997; Decrop, 2007; Petrova & Cialdini, 2005; Thompson & Hamilton, 2006; Walters et al., 2007). Print ads that contain multiple imagery-eliciting elements (e.g., picture and text) appear to have greater effects on consumer processing and response than ads with only one such element (i.e., picture) and no imagery-related text (Babin & Burns, 1997). The present findings also provide preliminary evidence for promotional games serving as imagery-eliciting ad copy. Similar to Ward and Hill's (1991) proposition, given the fantasy-inducing properties of promotional games (i.e., pictures or text), incorporating a game into a print ad seems to lead to a significantly greater degree of imagery processing (i.e., quantity, vividness, and valence) as well as significantly more favorable ad response (i.e.,  $A_{Ad}$ ,  $A_B$ , PI, and VI).

The present investigation adds to existing advertising literature in three important ways. First, this study extends existing research using pictures as an imagery-evoking ad strategy by employing a point of view (POV) perspective. In particular, the ads in the current study feature a view from the audience at a tennis match, which provides the opportunity to imagine oneself as a spectator at the match (see Appendix F). Second, the a priori selection of a low-involvement product category (i.e., ballpoint pens) represents a departure from the imagery-processing literature (cf. Thompson & Hamilton, 2006). While the majority of studies utilize a product category (e.g., cars or vacation destinations) that is highly relevant (i.e., involving) to the population of interest (e.g., undergraduate students), the current study isolates the potential effects of imagery-eliciting ad copy (i.e., promotional game) on processing or response by using a low-involvement product category (i.e.,

ballpoint pens). Third, the inclusion of a distinct response measure for intent to visit Website (VI) extends research in this domain. A search of current advertising imagery literature revealed only one study (i.e., Petrova & Cialdini, 2005) that includes a Website visitation item as part of a multi-item purchase intentions scale. Some scholars propose that advertisements that include a Web address can drive Website traffic, which is an important indicator of consumer interest and involvement with a brand (Graham & Havlena, 2007). The importance of the Web as a marketing tool is underscored in the current context as consumers must complete an entry form containing personal information (e.g., demographics) in order to participate in a promotional game (e.g., sweepstakes). Thus, marketers can utilize such information to build a consumer database, allowing more efficient and effective targeting. Moreover, Web technology enables tracking of pages visited via the use of ‘cookies’, which can provide insight into consumer browsing habits or product and/or brand preferences. Thus, gaining a better understanding of how consumers use this medium can help inform marketers’ decisions. Moreover, additional research employing a measure of Website visit intention in future advertising studies could extend the scholarly literature in this area.

This study also contributes to the body of work in sport marketing, by examining the use of sport to promote non-sport products and services (Van Hoecke, et al., 2002). Prior to the current research, the effectiveness of ‘value-added’ promotions, such as promotional games, has not been examined in the context of the sport marketing of non-sport products (Wakefield & Barnes, 1996). In addition, while sport-related images are known to be employed in sales promotions, such as



promotional games (Feinman et al., 1986), there is a lack of scholarly research on their potential effects. The present study represents one of the few empirical endeavors to explore consumer processing of promotional games and, as such, responds to calls for experimental research examining the effects of this widely-applied element of marketing strategy (Browne et al., 1993; Cornwell et al., 2005; McDaniel, 2002; Pham & Vanhuele, 1997; Ward & Hill, 1991).

#### *Limitations and future directions*

*Sampling.* Some limitations exist in the current study that should be considered when interpreting the findings. Pilot tests were conducted to validate the elements of the ad stimuli (e.g., product category and sport event) as well as the measures for use with a student sample. However, the use of a homogenous undergraduate student sample does not allow for results to be generalized to a non-student population (Walters et al., 2007). It is proposed that future research be extended to include more heterogeneous populations.

*Power.* Other limitations of this study concern power. First, data collection for the main experiment resulted in 204 participants; 13 were excluded from the analyses for various reasons, including failure to complete one or both parts of the study. Thus, the final sample consisted of 191 participants. While a power analysis following Pilot Study Two suggested a sample size of approximately 200 should yield sufficient power, this test only included main effects for ad manipulations. Thus, the introduction of an additional independent variable (i.e., three levels of fantasy proneness) likely had a deleterious effect on power in the main study.

Comparatively, post-hoc (i.e., observed) power analysis revealed levels ranging from very low ( $< .50$ ), for fantasy proneness main effects and ad-type x fantasy proneness interactions, to sufficient ( $> .90$ ) for ad-type main effects. Given that relationships between the fantasy-proneness measure and most outcome measures followed hypothesized directions, replications or extensions of this study should include larger samples to investigate similar hypotheses. Moreover, future research employing different analytic techniques, such as mediated-moderated regression, could be fruitful in examining both main- and interaction effects in this context.

Another potential limitation related to power was the use of a single, forced exposure to black-and-white print advertisements in a treatment booklet. Specifically, the ads used here align with earlier research on print advertising in that they were black-and-white (e.g., McDaniel et al., 2007; Zhang, 1996) and contained a fictitious brand (e.g., Sojka & Giese, 2006). The procedures, including use of treatment booklets (Chang, 2007; Sojka & Giese, 2006) and a single, forced exposure to ads (Decrop, 2007; Thompson & Hamilton, 2006) also followed existing studies in this domain. While this approach was adopted to help ensure internal validity, it may have had detrimental effects on power. Future replications of this study could vary procedures (e.g., longer exposure time) or methods (e.g., repeated measures) in examination of potential differences in the relationships among the variables of interest.

The a priori selection of print ads followed the bulk of the literature on the imagery processing of advertising messages (e.g., Babin & Burns, 1997; Thompson & Hamilton, 2006). Yet, there is a growing segment of research in this domain

focused on the study of ads in other media, such as radio (Allan, 2006; Bolls, 2006; Bolls & Muehling, 2007). This particular medium is of interest to researchers in this area due to the dependency on senses other than vision (Bolls & Muehling, 2007). Thus, additional examination of the role of individual differences in the processing of radio ads may prove fruitful in further unbundling the foundations of how and why consumers process and respond to messages.

Finally, the inclusion of a low-involvement product category was made in response to calls for research of the relationship between the phenomenon of interest (i.e., nonmonetary sales promotion) and low-involvement product categories (e.g., Wakefield & Barnes, 1996). While done in an attempt to control for potential confounds due to product category involvement, this choice could also have affected this study's power. This selection was made following Pilot Study One which determined personal relevance (i.e., enduring involvement) of undergraduate college students toward an a priori list of low-involvement product categories (Voss et al., 2003). To date, many advertising imagery studies have utilized ads with high-involvement content, such as automobiles, in examining differences in processing and response (e.g., Thompson & Hamilton, 2006). Future study of imagery processing could compare effects of content differing in involvement to determine how that construct factors into interpretation of messages.

Based on data from Pilot Study One, this study utilized the depiction of a promotional game with a prize connected to a particular low-involvement sport event (i.e., Wimbledon tennis tournament). Similarly, the choice of sport event was made as a result of a pilot study of reported enduring involvement levels of major

professional sport events (McDaniel, 1999). Replications of this study could vary prizes depicted, including other large-scale sport events, such as The Olympics that might differ in involvement level (cf. Gwinner & Eaton, 1999). Further, whereas this study focused on one game type (i.e., sweepstakes) additional research could explore other promotional games, such as sport-related trivia contests. Moreover, examination of different types of prize inducements could be useful in furthering the understanding of consumer processing of this popular form of sales promotion (Ward & Hill, 1991).

### *Conclusion*

In conclusion, this investigation sought to explore the effects of fantasy proneness on various dimensions of consumer processing and response toward sport marketing ads. Though the research hypotheses about fantasy proneness were not supported, there were important contributions to the advertising, consumer behavior, and sport marketing literatures. The findings follow the notion that combining imagery-eliciting strategies (i.e., use of pictures and ad copy) can generate increased processing and more favorable response to print ads (Babin & Burns, 1997; Petrova & Cialdini, 2005; Thompson & Hamilton, 2006). Moreover, results of the post hoc regression analyses provided partial support for the role of a personality construct (i.e., fantasy proneness) in processing of and response to advertising messages (Haugtvedt et al., 1992; McDaniel et al., 2007; Lichtlé, 2007; Mowen et al., 2004; Peracchio & Meyers-Levy, 2005; Putrevu, 2008). Consequently, it appears that the current study provides an initial foundation upon which the underlying structure of

individual differences (i.e., personality) in consumer imagery processing could be further explored.

## Chapter 6: Summary and Conclusion

The recent consumer behavior literature includes a re-emphasis on the application of personality theory (Baumgartner, 2002; Mowen, 2000). This dissertation seeks to explore this line of inquiry through a series of three investigations. Study one examines the psychometrics aspect of personality research by comparing validity and reliability of two measures of a trait (i.e., sensation seeking) important to the study of consumers. Study two investigates the underlying structure of consumer imagery processing using a hierarchical personality approach (Mowen & Spears, 1999). Interactions among personality traits are hypothesized and explored in an information processing context. Study three is derived from the notion that individuals differ with respect to their preferences for processing imagery-based information, such as is found in print advertisements (Babin & Burns, 1997). While studies on consumer imagery processing suggest ‘individual differences’ do exist (e.g., Petrova & Cialdini, 2005; Thompson & Hamilton, 2006), there appears to be a shortage of research that applies personality theory in explaining said differences (Baumgartner, 2002). Thus, this investigation uses an experimental design to gauge the effect of a personality trait (i.e., fantasy proneness) on consumer processing of, and response to, imagery-based sport marketing advertisements.

Study one explores the issue of psychometrics in personality measures by using several analyses, including confirmatory factor analytic (i.e., SEM) procedures. Specifically, two measures (i.e., ImpSS and SSS-V) of the sensation-seeking (SS) trait are compared and results point to ImpSS as a valid and reliable alternative to

SSS-V. The results of this study support existing research on SS measures by further highlighting psychometric weaknesses of SSS-V (cf. Deditius-Island & Caruso, 2002) and by demonstrating the strengths of ImpSS (cf. Zuckerman et al., 1993).

Additionally, the findings of study one correspond with contemporary SS theory, which posits the link between the personality dimensions of impulsivity and sensation seeking (e.g., Zuckerman & Kuhlman, 2000).

The first study extends existing personality research in several important ways. The majority of measures in this domain are validated in homogenous (undergraduate) student samples, limiting the generalizability of results and the measures themselves (Steenkamp & Baumgartner, 1995). The present analyses are performed in two distinct samples: 1) an undergraduate student sample to corroborate earlier findings and, 2) a non-student sample to estimate the validity and reliability of ImpSS in a more heterogeneous population. Moreover, while the use of SEM to investigate the factor structure of ImpSS (and SSS-V) follows existing work on the psychometrics of SS measures (e.g., Ferrando & Chico, 2001) study one represents the initial effort to compare ImpSS and SSS-V using this method. SEM results (see Figure 2) indicate a similarity in the latent SS trait estimated by both measures. As a whole, the results of the first investigation suggest that ImpSS is a psychometrically-sound measure in line with current SS theory that perhaps should be considered more readily by scholars studying sensation seeking-related phenomena.

Study two uses a hierarchical personality approach (cf. Mowen & Spears, 1999) to explore the underlying framework of processing style. This investigation represents the first known effort to examine the theoretical underpinnings of

differences in how consumers process imagery-related information and, as such, could serve as a foundation for future studies on consumer response in an advertising context. Moreover, these results followed existing research using hierarchical models in consumption contexts in demonstrating that context-specific tendencies (i.e., surface traits) may be influenced by the interplay of more abstract dimensions of personality (i.e., fundamental traits) (e.g., Harris & Mowen, 2001; Mowen & Spears, 1999).

The second investigation also provides support for the line of research suggesting that the information processing (IP) perspective may not be sufficient for explaining all types of consumer processing (Heath & Feldwick, 2008). While the IP paradigm stands out as the prevailing approach to understanding cognitive aspects of consumer response to advertising, its tenets neglect certain aspects of consumer behavior, such as fantasy (Heath & Feldwick, 2008). Given the amount of evidence indicating that imagery influences advertising response (cf. Miller et al., 2000), it would seem prudent to adopt a paradigm that accounts for the entire spectrum of consumer processing. To that end, study two identifies a potential theoretical foundation upon which future study of imagery processing can be built.

The findings of study two extend existing research on consumer processing of imagery-based information (e.g., Babin & Burns, 1998) by providing evidence of a link between a construct (i.e., visual style of processing) and theoretically-grounded personality traits. The bulk of research in this domain relies on a multitude of “less than adequate” measures (Miller et al., 2000, p.2) which scholars suggest acts as a detriment to advancing our understanding of consumer imagery processing (Babin et



al., 1992). This second investigation suggests that researchers might be able to ‘tap’ into underlying traits (e.g., fantasy proneness) to gauge behavioral tendencies rather than depend on invalid or unreliable measures.

The results of this second investigation demonstrate the utility of personality theory in exploring cognitive processes related to imagery-evoked thoughts (Mowen & Spears, 1999). The results point to an underlying framework of individual differences in consumers’ imagery processing, which is posited to be important to the study of certain types of advertising (cf. Petrova & Cialdini, 2005; Thompson & Hamilton, 2006). Moreover, given the projective nature of many ad executions (cf. Miller et al., 2000) this investigation exhibited the need for consumer research to examine traits (e.g., fantasy proneness) with face validity in the study of ad processing

SEM results in study two appear to support the existing literature on hierarchical models (e.g., Mowen & Spears, 1999) as well as extend this line of inquiry into an imagery-processing context. Following this line of research, the interplay of cardinal and central traits can be helpful in explaining variance in a surface trait (Mowen & Spears, 1999). Further, both the hypothesized and exploratory models point to the direct and indirect effects of openness to experience and fantasy proneness as explaining an individual’s preference for a visual style of processing.

Further, the results of study two indicate nonsignificant hypothesized paths between ImpSS and the central- and surface traits in the SEM. This lack of support for ImpSS in the imagery processing framework is contrary to a fundamental tenet of

this dissertation that the sensation-seeking trait is important to the study of consumer processing. Moreover, the implication that ImpSS does not play a role in fantasy-related processing counters existing personality research demonstrating a moderate relationship between the ImpSS and fantasy-proneness traits (e.g., McDaniel et al., 2001). A significant (but weak) correlation is shown between ImpSS and visual style of processing ( $r = .18, p < .05$ ) but not between ImpSS and the fantasy proneness used here (i.e., Fantasy subscale of IRI)—suggesting that ImpSS might be a factor in imagery-based processing. While SEM allows for more confirmatory examination of theoretical associations than (simple) correlations, there does appear to be conceptual (cf. Holbrook & Hirschman, 1982) and empirical (cf. McDaniel et al., 2001) substantiation for an ImpSS-fantasy proneness relationship. Given this apparent incongruity, additional research could be fruitful in unpacking the imagery processing hierarchy.

The second study provides empirical evidence of the structure of imagery processing and, as such, serves as the basis upon which study three explores how consumers process imagery-based information. This final investigation replicates and extends existing advertising literature (e.g., Babin & Burns, 1997; Petrova & Cialdini, 2005; Thompson & Hamilton, 2006) by employing a personality construct (i.e., fantasy proneness) that is shown to influence individual differences in processing. While the results of study two imply that fantasy proneness is not related to ImpSS, the trait does appear to be influenced by a fundamental personality trait from the Five Factor Model (i.e., Openness to Experience). The third study responds to calls from sport marketing researchers for examination of how individuals process marketing

communications, such as sales promotions (Cornwell et al., 2005). This research responded to calls for investigation into the effectiveness of certain forms of sales promotion (e.g., promotional games) in advertisements for utilitarian products (cf. Wakefield & Barnes, 1996). Moreover, the current study was one of the first empirical inquiries of promotional games, a popular form of sales promotion (McDaniel, 2002; Ward & Hill, 1991).

While the fantasy proneness research hypotheses are not supported, there are important contributions to the advertising, consumer behavior, and sport marketing literatures. The findings follow the notion that combining imagery-eliciting strategies (i.e., use of pictures and “instructions to imagine”) can generate increased processing and more favorable response to print ads (Babin & Burns, 1997). Moreover, results of post hoc regression analyses appear to indicate that the fantasy-prone personality may play some role in the processing of advertising messages, which aligns with existing personality research on advertising (Haugtvedt et al., 1992; McDaniel et al., 2007; Lichtlé, 2007; Mowen et al., 2004; Peracchio & Meyers-Levy, 2005; Putrevu, 2008).

In summary, the three studies contained in this dissertation explore different dimensions of personality research in consumer behavior. Overall, the findings offer support for the notion that theoretically-grounded research agendas can serve to improve the state of personality research in consumer behavior (e.g., Baumgartner, 2002). While the results presented here generally support and extend existing findings, additional investigation is warranted to further establish the importance of personality theory.

The collective findings provide a foundation upon which future research may be pursued in applying personality theory to the study of consumers. Scholars should employ psychometrically-sound personality measures and should effort to assess (and report) validity and reliability in their studies. Inclusion of more heterogeneous (i.e., non-student) samples in this line of research is also necessary in further establishing the importance of personality research. Additional application of hierarchical models could serve to better inform researchers of the underlying structure of various consumption behaviors. Extending this line of inquiry could further substantiate the importance of theoretically-grounded personality constructs in the study of consumers (Mowen & Spears, 1999). Further, it would appear that placing constructs within a larger hierarchal structure may have utility in explaining specific consumer behaviors, such as ad processing and response (e.g., Mowen et al., 2004). Adoption of such practices can only serve to bolster the presence of personality research in the consumer behavior domain.

## Appendix A

### Sensation Seeking Scale-Form V – Study 1

(SSS-V; Zuckerman, 1979)

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1. A. I like “wild” uninhibited parties.  
B. I prefer quiet parties with good conversation.
2. A. There are some movies I enjoy seeing a second or even third time.  
B. I can’t stand watching a movie that I’ve seen before.
3. A. I often wish I could be a mountain climber.  
B. I can’t understand people who risk their necks climbing mountains.
4. A. I dislike all body odors.  
B. I like some of the earthy body smells.
5. A. I get bored seeing the same old faces.  
B. I like the comfortable familiarity of everyday friends.
6. A. I like to explore a strange city or section of town by myself, even if it means getting lost.  
B. I prefer a guide when I am in a place I don’t know well.
7. A. I dislike people who do or say things just to shock or upset others.  
B. When you can predict almost everything a person will do and say he or she must be a bore.
8. A. I usually don’t enjoy a movie or play where I can predict what will happen in advance.  
B. I don’t mind watching a movie or play where I can predict what will happen in advance.
9. A. I have tried marijuana or would like to.  
B. I would never smoke marijuana.
10. A. I would not like to try any drug which might produce strange and dangerous effects on me.  
B. I would like to try some of the drugs that produce hallucinations.
11. A. A sensible person avoids activities that are dangerous.  
B. I sometimes like to do things that are a little frightening.

12. A. I dislike “swingers” (people who are uninhibited and free about sex).  
B. I enjoy the company of real “swingers.”
13. A. I find that stimulants make me uncomfortable.  
B. I often like to get high (drinking liquor or smoking marijuana)
14. A. I like to try new foods that I have never tasted before.  
B. I order the dishes with which I am familiar so as to avoid disappointment and unpleasantness.
15. A. I enjoy looking at home movies, videos, or travel slides.  
B. Looking at someone’s home movies, videos, or travel slides bores me tremendously.
16. A. I would like to take up the sport of water skiing.  
B. I would not like to take up water skiing.
17. A. I would like to try surfboard riding.  
B. I would not like to try surfboard riding.
18. A. I would like to take off on a trip with no preplanned or definite routes, or timetable.  
B. When I go on a trip I like to plan my route and timetable fairly carefully.
19. A. I prefer the “down to earth” kinds of people as friends.  
B. I would like to make friends in some of the “far-out” groups like artists or “punks.”
20. A. I would not like to learn to fly an airplane.  
B. I would like to learn to fly an airplane.
21. A. I prefer the surface of the water to the depths.  
B. I would like to go scuba diving.
22. A. I would like to meet some persons who are homosexual (men or women).  
B. I stay away from anyone I suspect of being “gay” or “lesbian”.
23. A. I would like to try parachute jumping.  
B. I would never want to try jumping out of a plane, with or without a parachute.
24. A. I prefer friends who are excitingly unpredictable.  
B. I prefer friends who are reliable and predictable.
25. A. I am not interested in experience for its own sake.  
B. I like to have new and exciting experiences and sensations even if they are a little frightening, unconventional, or illegal.

26. A. The essence of good art is in its clarity, symmetry of form, and harmony of colors.  
B. I often find beauty in the “clashing” colors and irregular forms of modern paintings.
27. A. I enjoy spending time in the familiar surroundings of home.  
B. I get very restless if I have to stay around home for any length of time.
28. A. I like to dive off the high board.  
B. I don’t like the feeling I get standing on the high board (or I don’t go near it at all).
29. A. I like to date persons who are physically exciting.  
B. I like to date persons who share my values.
30. A. Heavy drinking usually ruins a party because some people get loud and boisterous.  
B. Keeping the drinks full is the key to a good party.
31. A. The worst social sin is to be rude.  
B. The worst social sin is to be bore.
32. A. A person should have considerable sexual experience before marriage.  
B. It’s better if two married persons begin their sexual experience with each other.
33. A. Even if I had the money, I would not care to associate with flighty rich persons in the “jet set.”  
B. I could conceive of myself seeking pleasures around the world with the “jet set.”
34. A. I like people who are sharp and witty even if they do sometimes insult others.  
B. I dislike people who have their fun at the expense of hurting the feelings of others.
35. A. There is altogether too much portrayal of sex in movies.  
B. I enjoy watching many of the “sexy” scenes in movies.
36. A. I feel best after taking a couple of drinks.  
B. Something is wrong with people who need liquor to feel good.
37. A. People should dress according to some standard of taste, neatness, and style.  
B. People should dress in individual ways even if the effects are sometimes strange.
38. A. Sailing long distances in small sailing crafts is foolhardy.  
B. I would like to sail a long distance in a small but seaworthy sailing craft.

39. A. I have no patience with dull or boring persons.  
B. I find something interesting in almost every person I talk to.
40. A. Skiing down a high mountain slope is a good way to end up on crutches.  
B. I think I would enjoy the sensations of skiing very fast down a high mountain slope.



## Appendix B

### Impulsive Sensation Seeking Scale – Study 1 & 2

(ImpSS; Zuckerman et al., 1993)

---

1. I tend to change interests frequently.  
1. True                      2. False
2. I like to explore a strange city or section of town by myself, even if it means getting lost.  
1. True                      2. False
3. Before I begin a complicated job or project, I tend to make careful plans.  
1. True                      2. False
4. I prefer friends who are excitingly unpredictable.  
1. True                      2. False
5. I sometimes like to do things that are a little frightening.  
1. True                      2. False
6. I often get so carried away by new and exciting things and ideas that I never stop to consider possible complications.  
1. True                      2. False
7. I will try anything once.  
1. True                      2. False
8. I tend to start a new task or project, without much advance planning on how I will do it.  
1. True                      2. False

9. I tend to enjoy "wild" uninhibited parties.
1. True                      2. False
10. I would like the kind of life where I am on the move and traveling a lot, with lots of change and excitement.
1. True                      2. False
11. I am generally an impulsive person.
1. True                      2. False
12. I like to have new and exciting experiences and sensations even if they might be a little scary to me.
1. True                      2. False
13. I sometimes do "crazy" things just for fun.
1. True                      2. False
14. I very seldom spend much time on the details of planning ahead.
1. True                      2. False
15. I would like to take off on a trip with no preplanned or definite routes or timetable.
1. True                      2. False
16. I enjoy getting into new situations where I can't predict how things will turn out.
1. True                      2. False
17. I usually think about what I am going to do before I do it.
1. True                      2. False
18. I like to do certain things just for the thrill of it.
1. True                      2. False
19. I tend to do things on impulse.
1. True                      2. False

## Appendix C

### Openness to Experience Scale – Study 2

(John & Srivastava, 1991)

---

1. I see myself as someone who is original, comes up with new ideas  
*Disagree Strongly*   **1**   **2**   **3**   **4**   **5** *Agree Strongly*
  
2. I see myself as someone who is curious about many different things.  
*Disagree Strongly*   **1**   **2**   **3**   **4**   **5** *Agree Strongly*
  
3. I see myself as someone who is ingenious, a deep thinker.  
*Disagree Strongly*   **1**   **2**   **3**   **4**   **5** *Agree Strongly*
  
4. I see myself as someone who has an active imagination.  
*Disagree Strongly*   **1**   **2**   **3**   **4**   **5** *Agree Strongly*
  
5. I see myself as someone who is inventive.  
*Disagree Strongly*   **1**   **2**   **3**   **4**   **5** *Agree Strongly*
  
6. I see myself as someone who values artistic, aesthetic experiences.  
*Disagree Strongly*   **1**   **2**   **3**   **4**   **5** *Agree Strongly*
  
7. I see myself as someone who prefers work that is routine.  
*Disagree Strongly*   **1**   **2**   **3**   **4**   **5** *Agree Strongly*

8. I see myself as someone who likes to reflect, play with ideas.

*Disagree Strongly*   **1**   **2**   **3**   **4**   **5**   *Agree Strongly*

9. I see myself as someone who has few artistic interests.

*Disagree Strongly*   **1**   **2**   **3**   **4**   **5**   *Agree Strongly*

10. I see myself as someone who is sophisticated in art, music, or literature.

*Disagree Strongly*   **1**   **2**   **3**   **4**   **5**   *Agree Strongly*

## Appendix D

### Fantasy Subscale of Davis IRI – Study 2

(Davis, 1983)

---

1. I daydream and fantasize, with some regularity, about things that might happen to me.

*Completely True* 1 2 3 4 5 *Completely False*

2. I really get involved with the feelings of the characters in a novel.

*Completely True* 1 2 3 4 5 *Completely False*

3. I am usually objective when I watch a movie or play, and I don't often get completely caught up in it.

*Completely True* 1 2 3 4 5 *Completely False*

4. Becoming extremely involved in a good book or movie is somewhat rare for me.

*Completely True* 1 2 3 4 5 *Completely False*

5. After seeing a play or movie, I have felt as though I were one of the characters.

*Completely True* 1 2 3 4 5 *Completely False*

6. When I watch a good movie, I can very easily put myself in the place of a leading character.

*Completely True* 1 2 3 4 5 *Completely False*

7. When I am reading an interesting story or novel, I imagine how I would feel if the events in the story were happening to me.

*Completely True* 1 2 3 4 5 *Completely False*

## Appendix E

### Visual Processing subscale of Style of Processing – Study 2

(SOP; Childers et al., 1985)

---

1. There are some special times in my life that I like to relive by mentally ‘picturing’ just how everything looked

*Always True* **1**      **2**      **3**      **4** *Always False*

2. When I’m trying to learn something new, I’d rather watch a demonstration than read how to do it.

*Always True* **1**      **2**      **3**      **4** *Always False*

3. I like to picture how I could fix up my apartment or room if I could buy anything I wanted.

*Always True* **1**      **2**      **3**      **4** *Always False*

4. I like to daydream.

*Always True* **1**      **2**      **3**      **4** *Always False*

5. I generally prefer to use a diagram rather than a written set of instructions.

*Always True* **1**      **2**      **3**      **4** *Always False*

6. I like to ‘doodle’.

*Always True* **1**      **2**      **3**      **4** *Always False*

7. I find it helps to think in terms of mental pictures when doing many things.

*Always True* **1**      **2**      **3**      **4** *Always False*

8. After I meet someone for the first time, I can usually remember what they look like, but not much about them.

*Always True* **1**      **2**      **3**      **4** *Always False*

9. When I have forgotten something I frequently try to form a mental 'picture' to remember it.

*Always True* **1**      **2**      **3**      **4** *Always False*

10. I seldom daydream.

*Always True* **1**      **2**      **3**      **4** *Always False*

11. My thinking often consists of mental 'pictures' or images.

*Always True* **1**      **2**      **3**      **4** *Always False*

## Appendix F

### Treatment Ads – Study 3



High Imagery – Tennis

## *Move up...with **Write-On***



*Ink lasts longer than leading brands!  
Wide range of colors!*

*Enter the **Write-On** Sweepstakes and Win a  
Trip to the 2008 Wimbledon Championships*



**Write-On**— Our Pens Write On and On



Low Imagery -- Tennis

## ***Move up...with Write-On***



***Ink lasts longer than leading brands!  
Wide range of colors!***

Log onto [www.write-on.com](http://www.write-on.com) for more  
information



***Write-On*** Our Pens Write On and On



High Imagery—Football

## *Move up...with **PowerPak***



*Longer life than leading brands!  
Available in multi-paks!*

*Enter the **PowerPak** Sweepstakes and  
Win a Trip to Super Bowl XLIII*



**PowerPak** - Our Power Never Expires



Low Imagery—Football

## *Move up...with **PowerPak***



*Longer life than leading brands!  
Available in multi-paks!*

Log onto [www.powerpak.com](http://www.powerpak.com) for more  
information



**PowerPak** - Our Power Never Expires



## Appendix G

### Creative Experiences Questionnaire – Study 3

(CEQ; Merckelbach et al., 2001)

1. As a child, I thought that the dolls, teddy bears, and stuffed animals that I played with were living creatures.

**1. Yes**                      **2. No**

2. As a child, I strongly believed in the existence of dwarfs, elves, and other fairy tale figures.

**1. Yes**                      **2. No**

3. As a child, I had my own make believe friend or animal.

**1. Yes**                      **2. No**

4. As a child, I could very easily identify with the main character.

**1. Yes**                      **2. No**

5. As a child, I sometimes had the feeling that I was someone else (e.g., a princess, an orphan, etc.).

**1. Yes**                      **2. No**

6. As a child, I was encouraged by adults (parents, grandparents, brothers, sisters) to fully indulge myself in my fantasies and daydreams.

**1. Yes**                      **2. No**

7. As a child, I often felt lonely.

**1. Yes**                      **2. No**

8. As a child, I devoted my time to playing a musical instrument, dancing, acting, and/or drawing.

**1. Yes**                      **2. No**

9. I spend more than half the day (daytime) fantasizing or daydreaming.
1. *Yes*            2. *No*
10. Many of my friends and/or relatives do not know that I have such detailed fantasies.
1. *Yes*            2. *No*
11. Many of my fantasies have a realistic intensity.
1. *Yes*            2. *No*
12. Many of my fantasies are often just as lively as a good movie.
1. *Yes*            2. *No*
13. I often confuse fantasies with real memories.
1. *Yes*            2. *No*
14. I am never bored because I start fantasizing when things get boring.
1. *Yes*            2. *No*
15. Sometimes I act as if I am somebody else and I completely identify myself with that role.
1. *Yes*            2. *No*
16. When I recall my childhood, I have very vivid and live memories.
1. *Yes*            2. *No*
17. I can recall many occurrences before the age of three.
1. *Yes*            2. *No*
18. When I perceive violence on television, I get so into it that I get really upset.
1. *Yes*            2. *No*

19. When I think of something cold, I actually get cold.
1. *Yes*            2. *No*
20. When I imagine I have eaten rotten food, I really get nauseous.
1. *Yes*            2. *No*
21. I often have the feeling that I can predict things that are bound to happen in the future.
1. *Yes*            2. *No*
22. I often have the experience of thinking of someone and soon afterwards that particular person calls or shows up.
1. *Yes*            2. *No*
23. I sometimes feel that I have had an out of body experience.
1. *Yes*            2. *No*
24. When I sing or write something, I sometimes have the feeling that someone or something outside myself directs me.
1. *Yes*            2. *No*
25. During my life, I have had intense religious experiences which influenced me in a very strong manner.
1. *Yes*            2. *No*

## Appendix H

### Promotion Proneness Scale – Study 3

(Wakefield & Barnes, 1996)

---

1. Promotions influence when I buy more than how much I buy.

*Always False*    **1**    **2**    **3**    **4**    **5**    **6**    **7**    *Always true*

2. I would buy just as many products if there were no promotions.

*Always False*    **1**    **2**    **3**    **4**    **5**    **6**    **7**    *Always true*

3. If there's a promotion I like, I just buy that product instead of another one.

*Always False*    **1**    **2**    **3**    **4**    **5**    **6**    **7**    *Always true*

4. Promotions don't make me buy more products.

*Always False*    **1**    **2**    **3**    **4**    **5**    **6**    **7**    *Always true*

5. Promotions play a big part in my choice to buy products.

*Always False*    **1**    **2**    **3**    **4**    **5**    **6**    **7**    *Always true*

6. Promotions don't influence when I plan to buy products.

*Always False*    **1**    **2**    **3**    **4**    **5**    **6**    **7**    *Always true*



## Appendix I

### Imagery Scale – Study 3

(adapted from Miller et al., 2000)

---

#### Quantity subscale

While I viewed the ad:

many images came to my mind.

\_\_\_\_\_  
*Strongly  
agree*

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
*Strongly  
disagree*

a lot of images came to my mind.

\_\_\_\_\_  
*Strongly  
agree*

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
*Strongly  
disagree*

I experienced very few images.

\_\_\_\_\_  
*Strongly  
agree*

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
*Strongly  
disagree*

---

Vividness subscale

The images that came to mind while I viewed the ad were:

<u>      </u> vivid	<u>      </u>	<u>      </u>	<u>      </u>	<u>      </u> vague
<u>      </u> clear	<u>      </u>	<u>      </u>	<u>      </u>	<u>      </u> unclear
<u>      </u> sharp	<u>      </u>	<u>      </u>	<u>      </u>	<u>      </u> dull
<u>      </u> intense	<u>      </u>	<u>      </u>	<u>      </u>	<u>      </u> weak
<u>      </u> fuzzy	<u>      </u>	<u>      </u>	<u>      </u>	<u>      </u> well-defined

---

Valence subscale

The images that came to mind while I viewed the ad were:

<u>      </u> pleasant	<u>      </u>	<u>      </u>	<u>      </u>	<u>      </u> unpleasant
<u>      </u> bad	<u>      </u>	<u>      </u>	<u>      </u>	<u>      </u> good
<u>      </u> awful	<u>      </u>	<u>      </u>	<u>      </u>	<u>      </u> nice
<u>      </u> likeable	<u>      </u>	<u>      </u>	<u>      </u>	<u>      </u> not likeable
<u>      </u> negative	<u>      </u>	<u>      </u>	<u>      </u>	<u>      </u> positive

---

## Appendix J

### Ad Response Measures – Study 3

(adapted from McDaniel et al., 2007; Petrova & Cialdini, 2005; Sojka & Giese, 2006)

---

#### Attitude-toward-the-ad ( $A_{Ad}$ )

My attitude toward the ad I just viewed is:

<u>          </u> good	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u> bad
<u>          </u> uninteresting	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u> interesting
<u>          </u> dislike	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u> like
<u>          </u> pleasant	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u> unpleasant

---

#### Attitude-toward-the-brand ( $A_B$ )

My attitude towards the brand depicted in this ad is:

<u>          </u> unfavorable	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u> favorable
<u>          </u> good	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u> bad
<u>          </u> negative	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u> positive

---

Purchase Intentions (PI)

I would consider purchasing the product depicted in this ad.

<u>      </u> improbable	<u>      </u>	<u>      </u>	<u>      </u>	<u>      </u> probable
<u>      </u> likely	<u>      </u>	<u>      </u>	<u>      </u>	<u>      </u> unlikely
<u>      </u> impossible	<u>      </u>	<u>      </u>	<u>      </u>	<u>      </u> possible

---

Website Visit Intentions (VI)

I would consider visiting the Web site depicted in this ad.

<u>      </u> improbable	<u>      </u>	<u>      </u>	<u>      </u>	<u>      </u> probable
<u>      </u> likely	<u>      </u>	<u>      </u>	<u>      </u>	<u>      </u> unlikely
<u>      </u> impossible	<u>      </u>	<u>      </u>	<u>      </u>	<u>      </u> possible

Appendix K

Table K1.

*Multivariate and Univariate Analyses of Variance for Fantasy Proneness x Ad type effects on Ad Processing Measures for Males.*

Source	MANCOVA <i>F</i>	ANCOVA		
		Ad Quantity <i>F</i>	Ad Vividness <i>F</i>	Ad Valence <i>F</i>
Promotion Proneness <sup>a</sup>	1.17 <sup>b</sup>	0.41 <sup>d</sup>	0.77 <sup>d</sup>	0.05 <sup>d</sup>
Fantasy Proneness (FP)	0.68 <sup>c</sup>	1.49 <sup>e</sup>	0.63 <sup>e</sup>	1.49 <sup>e</sup>
Ad type (A)	5.04 <sup>b**</sup>	4.43 <sup>d*</sup>	14.89 <sup>d***</sup>	5.42 <sup>d*</sup>
FP x A	0.30 <sup>c</sup>	0.58 <sup>e</sup>	0.01 <sup>e</sup>	0.01 <sup>e</sup>

*Note.* Wilks's *F* used for multivariate analysis.

<sup>a</sup>Covariate.

<sup>b</sup>df = 3, 81. <sup>c</sup>df = 6, 162. <sup>d</sup>df = 1, 83. <sup>e</sup>df = 2, 83.

\**p* < .05. \*\**p* < .01. \*\*\**p* < .001.

Table K2.

*Multivariate and Univariate Analyses of Variance for Fantasy Proneness x Ad type effects on Ad Processing Measures for Females.*

Source	MANCOVA <i>F</i>	ANCOVA		
		Ad Quantity <i>F</i>	Ad Vividness <i>F</i>	Ad Valence <i>F</i>
Promotion Proneness <sup>a</sup>	0.90 <sup>b</sup>	1.65 <sup>d</sup>	0.07 <sup>d</sup>	0.00 <sup>d</sup>
Fantasy Proneness (FP)	1.41 <sup>c</sup>	1.93 <sup>e</sup>	0.51 <sup>e</sup>	2.00 <sup>e</sup>
Ad type (A)	2.32 <sup>b</sup>	6.54 <sup>d*</sup>	3.12 <sup>d</sup>	4.07 <sup>d*</sup>
FP x A	0.95 <sup>c</sup>	1.34 <sup>e</sup>	1.05 <sup>e</sup>	1.38 <sup>e</sup>

*Note.* Wilks's *F* used for multivariate analysis.

<sup>a</sup>Covariate.

<sup>b</sup>df = 3, 83. <sup>c</sup>df = 6, 166. <sup>d</sup>df = 1, 85. <sup>e</sup>df = 2, 85.

\**p* < .05.

Appendix L

Table L1.

*Multivariate and Univariate Analyses of Variance for Fantasy Proneness x Ad type effects on Ad Response Measures for Males.*

Source	MANCOVA <i>F</i>	ANCOVA			
		A <sub>Ad</sub> <i>F</i>	A <sub>B</sub> <i>F</i>	PI <i>F</i>	VI <i>F</i>
Promotion Proneness <sup>a</sup>	0.51 <sup>b</sup>	0.02 <sup>d</sup>	0.10 <sup>d</sup>	1.42 <sup>d</sup>	0.01 <sup>d</sup>
Fantasy Proneness (FP)	0.69 <sup>c</sup>	0.42 <sup>e</sup>	1.09 <sup>e</sup>	0.13 <sup>e</sup>	0.71 <sup>e</sup>
Ad type (A)	5.79 <sup>b***</sup>	15.09 <sup>d***</sup>	2.93 <sup>d</sup>	5.40 <sup>d*</sup>	10.74 <sup>d**</sup>
FP x A	1.48 <sup>c</sup>	0.00 <sup>e</sup>	1.54 <sup>e</sup>	2.36 <sup>e</sup>	0.15 <sup>e</sup>

*Note.* Wilks's *F* used for multivariate analysis.

<sup>a</sup>Covariate.

<sup>b</sup>df = 4, 80. <sup>c</sup>df = 8, 160. <sup>d</sup>df = 1, 83. <sup>e</sup>df = 2, 83.

\**p* < .05. \*\**p* < .01. \*\*\**p* < .001.

Table L2.

*Multivariate and Univariate Analyses of Variance for Fantasy Proneness x Ad type effects on Ad Response Measures for Females.*

Source	MANCOVA <i>F</i>	ANCOVA			
		A <sub>Ad</sub> <i>F</i>	A <sub>B</sub> <i>F</i>	PI <i>F</i>	VI <i>F</i>
Promotion Proneness <sup>a</sup>	0.60 <sup>b</sup>	0.02 <sup>d</sup>	0.03 <sup>d</sup>	0.03 <sup>d</sup>	1.62 <sup>d</sup>
Fantasy Proneness (FP)	0.47 <sup>c</sup>	0.45 <sup>e</sup>	1.00 <sup>e</sup>	0.32 <sup>e</sup>	0.27 <sup>e</sup>
Ad type (A)	4.36 <sup>b**</sup>	12.02 <sup>d**</sup>	9.28 <sup>d**</sup>	15.34 <sup>d***</sup>	13.00 <sup>d**</sup>
FP x A	1.35 <sup>c</sup>	0.89 <sup>e</sup>	0.82 <sup>e</sup>	1.27 <sup>e</sup>	1.29 <sup>e</sup>

*Note.* Wilks's *F* used for multivariate analysis.

<sup>a</sup>Covariate.

<sup>b</sup>df = 4, 82. <sup>c</sup>df = 8, 164. <sup>d</sup>df = 1, 85. <sup>e</sup>df = 2, 85.

\*\**p* < .01. \*\*\**p* < .001.



Appendix M

Table M1. *Post hoc Hierarchical Regression Summary for Predicting Image Quantity.*

Step	Variable	B	SE B	$\beta$	R <sup>2</sup>	$\Delta R^2$
1						
	Gender	-0.03	0.12	-0.01	0.00	
2						
	Gender	-0.02	0.17	-0.00		
	Promotion	-0.06	0.11	-0.04	0.00	0.00
	Proneness					
3						
	Gender	-0.10	0.17	-0.04		
	Promotion	-0.05	0.11	-0.03	0.04	0.04**
	Proneness	0.05	0.01	0.21**		
	Fantasy Proneness					
4						
	Gender	-0.11	0.17	-0.05		
	Promotion	-0.06	0.11	-0.03		
	Proneness	0.05	0.01	0.20**	0.09	0.04**
	Fantasy Proneness	0.47	0.16	0.20**		
	Ad type					

*Note.* Categorical variables were dummy-coded with the following as reference variables: male for gender, low-imagery for ad type.

\*\* $p < .01$ .

Table M2. *Post hoc Hierarchical Regression Summary for Predicting Image Vividness.*

Step	Variable	B	SE B	B	R <sup>2</sup>	ΔR <sup>2</sup>
1						
	Gender	-0.08	0.12	-0.03	0.00	
2						
	Gender	-0.05	0.17	-0.00		
	Promotion	-0.11	0.11	-0.04	0.00	0.00
	Proneness					
3						
	Gender	-0.12	0.17	-0.05		
	Promotion	-0.10	0.11	-0.06		
	Proneness	0.04	0.01	0.16*	0.03	0.02*
	Fantasy Proneness					
4						
	Gender	-0.13	0.16	-0.06		
	Promotion	-0.11	0.11	-0.07		
	Proneness	0.03	0.01	0.15*	0.10	0.07***
	Fantasy Proneness	0.61	0.16	0.26***		
	Ad type					

*Note.* Categorical variables were dummy-coded with the following as reference variables: male for gender, low-imagery for ad type.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Appendix N

Math Distracter Task – Study 3

$$\begin{array}{r} 5 \\ \times 1 \\ \hline \end{array}$$

$$\begin{array}{r} 1 \\ \times 1 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ \times 0 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ \times 1 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 1 \\ \times 1 \\ \hline \end{array}$$

$$\begin{array}{r} 10 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ \times 0 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ + 5 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ + 0 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ + 0 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ - 4 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ - 0 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ - 3 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ - 0 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ - 3 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ - 0 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ + 1 \\ \hline \end{array}$$

$$\begin{array}{r} 10 \\ - 6 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ - 3 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ + 2 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ + 0 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ - 2 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ + 1 \\ \hline \end{array}$$

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