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**ADULT PLAYFULNESS AS A PERSONALITY TRAIT:
ITS CONCEPTUALIZATION, MEASUREMENT, AND RELATIONSHIP TO
PSYCHOLOGICAL WELL-BEING**

A Dissertation in

Recreation, Park, and Tourism Management

by

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ABSTRACT

Playfulness is more than a frivolous luxury. This is a developing consensus view among scholars who have studied play and playfulness over the past several decades. Theoretical development and empirical studies of playfulness, however, have been seriously hampered by the lack of a sound conceptualization and a valid, reliable measure of playfulness.

The purpose of this research was to examine playfulness in adults as a personality trait, including its conceptualization, measurement, and relationships to psychological well-being. An integrated interactionist approach was used to inform the entire process of theoretical development, including the conceptualization of trait as internal psychological quality that is strictly distinguished from its overt behavioral manifestations, and the proposition of studying playfulness in context in order to understand its coherent functioning in daily life.

A theory-based conceptualization of adult playfulness was first developed, which defined the trait as characterized by three interrelated, relatively stable motivational and cognitive qualities that underlie the tendency to engage in playful behavior: *fun-loving motivation*, *uninhibitedness*, and *spontaneity*. Guided by this conceptualization and following a systematic psychometric approach, a self-report instrument was developed, refined, and validated through multiple studies, including focus groups, expert review, conceptual back-translation, a scale development study, and a known group comparison study. The resultant Adult Playfulness Trait Scale (APTS) is a 19-item uni-dimensional measurement that consists of three sub-scales, each assessing one playfulness dimension.

Aside from adequate face validity and content validity established through literature reviews, logical analyses, and conceptual evaluation, supporting empirical evidence was found for the scale's internal consistency reliability, structure validity, predictive validity, convergent validity, concurrent validity, and differentiation ability.

As part of the effort to construct an interactionist theoretical framework for playfulness research, two additional measurements were developed following a similar procedure: the 6-item Psychological Situation for Play Scale (PSPS) and the 17-item Playful State Scale (PSS). Both scales displayed adequate internal consistency reliability, face validity, content validity, and structure validity.

The implication of playfulness to psychological well-being was investigated by examining how playfulness related to one's ability to entertain the self and tendency to perceive boredom during free time as well as two personality correlates: openness and positivity.

The combined results of this research offered a deeper understanding of playfulness and an integrated interactionist framework for future playfulness research. With the conceptual and measurement tools provided by this framework, researchers may start to investigate the trait effects vs. situational effects in predicting playful behavior, how relevant situational factors motivate/demotivate play, the long-term/short term effects of play and playfulness, whether individuals with different levels of playfulness interpret or approach a life situation differently, and if yes, how. Finally, practical implications were discussed in areas of personnel decisions, recreational product design, programming, and therapeutic service.

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CHAPTER 1

INTRODUCTION

Playfulness is perhaps one of the topics that have been researched least in the field of leisure studies. A Google search for “playfulness research” produced a mere 144 hits. That is almost embarrassing, considering that playfulness is such a prevalent and indispensable part of our life, as indicated by 1,310,000+ hits for the search for “playfulness” or 832,000,000+ hits for “play” on Google.

In daily life, we like playful folks; we adore people who are full of fun; and we are attracted to those who make us laugh, lift our spirit, play with us, and inspire us to play. Yet why in the academic world, do we quietly shun studying them? In his recent book “Play”, Brown (2009) spells out part of the secret to this paradox. He compares play to oxygen—“it’s all around us, yet goes mostly unnoticed or unappreciated until it is missing” (p. 5). Indeed, too easily play is taken for granted; too common it is labeled as frivolous, superfluous, unproductive, and childish; and too often we fear that time spent playing is time lost to more useful and meaningful pursuits. This view, however, is changing. During the past half-century, researchers from every point of the scientific compass, from neuroscience, developmental biology, and psychology to education, leisure studies, and computer science, have started to increasingly appreciate the value of play as a profound biological and civilizing process beyond a frivolous luxury. Children through all cultures have played and learned through play a wide range of skills for surviving in complex reality. Play shapes the brain, makes us smarter and more adaptable. It helps us heal and motivates us. In play, we derive pleasure and the “zest” for life. It

fosters creativity and innovation, and foremost, play has existed and continues to thrive as a central element of every dimension of human culture (cf., Brown, 2005; Ellis, 1973; Hellendoorn, Van Der Kooij, & Sutton-Smith, 1994; Huizinga, 1955; Lieberman, 1977; Lyons, 1987; Schwartzman, 1978; Tegano, 1990).

Let it be clear, play and playfulness research is the “scientific” study of what constitutes the essence of leisure and the purest expression of our humanity and individuality. It is a reminder that “of all animal species, humans are the biggest players of all” (Brown, 2005, p. 5). It is a call for leisure science and practice to be as concerned with celebrating “free and exalted souls” (Goodale & Godbey, 1988, p. 1) as with negotiating with constraints, coping with boredom, and compensating for loss of leisure skills; as interested in spontaneous, lighthearted expressions as in organized, competitive recreation; and as appreciative of the crucial role of casual, automatic, and pleasant micro-flow behavior in keeping us sensible and healthy throughout everyday (Csikszentmihalyi, 1975) as of the deeply fulfilling and personally satisfying value of serious leisure pursuits (Stebbins, 1982, 1992, 2001, 2007).

That being said, the increasing popularity that play and playfulness research enjoys should not delude our sense about what we actually know. Specially, those of us associated with this expanding field should take caution not to run ahead of what we know in pursuit of further popularity. It is true that the past three decades have seen a notable increase in empirical research about the benefits of playfulness. This line of functional studies have associated playfulness with tension release, increased group cohesion, boredom alleviation, and improved performance in the workplace (e.g., Bowman, 1987; Glynn & Webster, 1992, 1993; Guitard, Ferland, & Dutil, 2005;

Martocchio & Webster, 1992). Despite their cheering potential practical significance, we must point out that the majority of these studies have not moved beyond cross-sectional research designs. While providing a wealth of information about how playfulness and various indices of psychological well-being are connected with one another, these studies do not allow us to make causal inferences or provide true tests of the positive outcomes that are often claimed in our theories about play and playfulness.

Let us face it, we have a good knowledge of what characterizes play; we also have observed a number of correlates of playfulness (e.g., Barnett, 1991b; Barnett & Klitzing, 2006; Fix, 2003; Lieberman, 1977; Mixer, 2009; Schaefer & Greenburg, 1997; singer & Rummo, 1973), but we have not started to investigate the dynamic change process taking place within the individual when play occurs, nor have we reached a clear understanding about what affects the displaying of playfulness during the person-environment interaction. Most unfortunately, we still lack an agreed-upon definition and a sound measure of playfulness. This last fact has seriously hampered the theoretical development about the psychological mechanism of playfulness, a task that really should have preempted any functional studies of playfulness as described above.

Studying Playfulness as a Personality Trait

The study of playfulness as a personality trait stems from the research about play behavior. It is a response to the predicament surrounding defining the extremely heterogeneous play behavior and the call for a more parsimonious conceptualization by shifting focus from the diverse elements involved in play to the essential qualities that define play and the player (Barnett, 1990, 1991a, 1991b; Millar, 1968; Lieberman, 1965, 1966, 1977; Schwartzman, 1978).

Many psychologists have argued for the existence of a playful cognitive style or personality orientation that transcends situations and activities (e.g., Singer & Rummo, 1973; Singler, Singer, & Sherrod, 1980; Wolf & Grollman, 1982). Playfulness research explicitly focuses on the individual by investigating the internal psychological qualities or attributes that make the individual a playful person. This sole-focus approach contrasts the pan-focus method implicitly taken by many play researchers who attend to, often in a haphazard fashion, various elements of the play phenomenon at once (e.g., players, play behavior, playthings, settings, partners, and supervisors as well as the interaction among these elements, see also Barnett, 1991b). It is usually unclear how do researchers decide which to observe and which to ignore. In some cases, individual players are completely ignored. For example, Schwartzman (1978) noted that many game studies focus solely on rules and players become invisible, presumably because “games can be described and understood generally without reference to individual players” (p. 327). In more cases, the pan-focus approach creates inadvertent conceptual confusion by mixing characteristics of behavior (i.e., states) with attributes of the player (i.e., trait). An explicit sole focus on the player and his or her inner psychological qualities can help the researcher to concentrate better and maintain conceptual clarity by providing an angle to observe and an anchor for all relevant elements of playfulness, including external social-cultural environments wherein playfulness manifests itself.

Playfulness has been studied less extensively in adults than in children. Fewer than a dozen published studies of adult playfulness exist, and fewer still have attempted to define and measure playfulness in adulthood (e.g., Glynn & Webster, 1992; Guitard, et al., 2005). The paucity of research on adult playfulness may be partly because social

manifestations of playfulness are less acceptable among adults than children (Lieberman, 1977) and partly because playfulness lacks apparent practical usefulness, a presumably unappealing quality for the increasingly rational and pragmatic adult mind (Olsen, 1981; Piaget, 1951).

However, there is no evidence suggesting that playfulness disappears with children's play. On the contrary, Sutton-Smith (1966) contends that playfulness is just as ubiquitous among grow-ups as it is among the younger. Several researchers have further argued that adult playfulness warrants more academic attention as more and more evidence points to the potential benefits of playfulness in adulthood (e.g., Bowman, 1987; Guitard, Ferlan, & Dutil, 2005; Lyons, 1987; Martocchio & Webster, 1992; Tegano, 1990). Yet to this day, the play research community is still struggling on gaining a clear understanding of the concept, let alone developing a sound measure of the trait.

On a different note, some researchers have attempted to explain playful behavior using more general personality traits such as the Big Five traits (e.g., Woszczyński, Roth, & Segars, 2002). Others, however, argue that the Big Five addresses very broad personality traits and may have limited usefulness in helping understand personality qualities in very specific domains (e.g., Spielberger, 1983). This debate falls under a larger argument posited by Mannell (1982, 1984). Mannell pointed out that although many researchers in leisure studies have used general personality inventories to predict leisure behavior (e.g., Mannell, 1984; Kleiber and Dirkin, 1985; Iso-Ahola, 1995; Mannell & Kleiber, 1997) and found some of the measures (e.g., intrinsic motivation, locus of control, sensation seeking, Type A and B orientations, etc.) relevant and useful,

this field is in great need of developing leisure-specific personality traits that are germane to the study of leisure behavior and experience.

Methodologically, the less than a handful of empirical studies of adult playfulness, like many past personality studies on leisure, have been highly unsophisticated using an outmoded trait approach (see also Iso-Ahola, 1976, 1980). In the broader personality research community, this approach has been criticized for (a) the lack of explanatory power of the trait construct, which at best serves as a descriptive summary label (Harré, 1998), and (b) completely ignoring behavioral variation and the role of situation in personality functioning (e.g., Cervone & Shoda, 1999).

In fact, some researchers have gone as far as suggesting dismissing the trait concept all together because it does not distinguish between inner psychological quality and overt behavior; a construct defined as such can neither explain the underlying psychological processes nor predict behavior (Mischel & Shoda, 1998). On the other hand, as early as the 1930s, Lewin (1936) proposed to view behavior as a joint outcome of personal and environmental forces and suggests that both are required for a complete understanding of personality functioning (see also Bowers, 1973; Magnusson, 1999; Magnusson & Endler, 1977, cited in Fleeson, 2007; Pervin & Lewis, 1977). This interactionist framework has been widely accepted among personality researchers and has also been advocated as a general approach to explaining leisure behavior and experience for some time (Iso-Ahola, 1980; Mannell, 1980; Mannell & Kleiber, 1997). Unfortunately, due to methodological difficulties, the successful empirical implementation of interactionism is yet to be carried out on a large scale in both general personality research and leisure studies (Krahé, 1990; Fleeson, 2007).

Statement of Purpose

The primary goal of this research is to develop a theory-based conceptualization and a reliable, valid measure of adult playfulness as a personality trait within the interactionist framework. This is achieved through (a) delimiting the content domain of the playfulness concept by identifying its defining qualities and clearly differentiating these qualities from those non-essential characteristics or personality correlates of playfulness, (b) defining the construct structure of adult playfulness by delineating its various components and relationships among them, and (c) developing and providing initial validation for a measure of adult playfulness guided by theory-based conceptualization and following a systematic psychometric approach.

The principle of integrated interactionism is implemented throughout the conceptualization and scale development of adult playfulness. The playful trait is strictly defined in terms of a set of interrelated inner dispositional motivational or cognitive qualities that are conceptually distinct from their overt behavioral and emotional manifestations. Furthermore, I make an effort to construct an initial interactionist framework for playfulness research by developing the conceptualization and measurement of two related constructs crucial to studying persons in context, namely playful states and situations for play. The essential characteristics of playful states and situational factors relevant to the displaying of playfulness will be identified and used to guide the corresponding measurement development. The conceptualization and measurement of the playful trait, playful states, and situations for play provide three building blocks for an interactionist framework of playfulness research that can be used by future studies examining the playful trait-environment interactions.

Finally, in order to gain a better understanding of adult playfulness's implications and relevance to daily living, I explore adult playfulness's personality correlates and how the trait relates to variables important to psychological well-being such as leisure boredom and self-as-entertainment. Since some of these variables also constitute part of the nomological network of adult playfulness, examining their relationships to playfulness serves as steps of validating the new measure's construct validity.

CHAPTER 2

LITERATURE REVIEW

Over three decades ago Weisler and McCall (1976) noted that reviewing the play literature was difficult because of a lack of conceptual clarity and consistency. Their observation unfortunately remains largely true today. Despite a significant increase in the absolute amount of play/playfulness literature since the 1970s, there is little uniformity in how play or playfulness is conceptualized, nor is there much agreement on a systematic theoretical framework for delineating the wide range of parameters proposed or identified by different researchers.

Because most published play/playfulness work does not make a clear behavior-trait distinction, I will draw upon literature related to both play behavior and the playful trait in this review. While combing through various characteristics that have been associated with play or playfulness, I make a point to distinguish to which conceptual level—behavior or trait—each characteristic logically belongs. I begin by introducing the theoretical backdrop of playfulness research from a historical and developmental perspective, followed by a review of the conceptualization and measurement of playfulness as a personality trait. I also provide a review about situations relevant to the displaying of playfulness guided by a theory-based categorization framework. Finally, I describe three major paradigms of personality research (i.e., the trait approach, the social-cognitive approach, and the interactionist approach), based on which I propose the approach to studying playfulness in the current research.

Theoretical Background of Playfulness Research

From Play to Playfulness: A Historical Perspective

The notion of *playfulness* as a personality characteristic emerged out of a long history of research about *play* as an overt behavior. Ellis (1973) noted that, “play ... has puzzled man [and woman] since antiquity” (p. xii) and “theorizing on play has proceeded sporadically since times of Classical Greece” (p. 4). Beginning in the 1940s, efforts to define play diverged into three distinct schools (Ellis, 1973). The first examines causes or motivations for play; the second focuses on play behavior; and the third looks into the internal quality of play, i.e. playfulness as a psychological predisposition or personality trait.

Causal or motivational theories of play address the question of why people play. This school embraces perhaps the largest number of theories about play, which can be further grouped into two types: general cause theories and motivation theories. General cause theories concern the fundamental issue of why human play behavior exists, featuring Surplus-energy Theory (Schiller, 1954, cited in Neumann, 1971; Schiller, 1875; Spencer, 1855, cited in Ellis, 1973), Play as Instinct Theory (Groos, 1898; McDougall, 1908, cited in Weisler & McCall, 1976), Recapitulation Theory (Hall, 1904, 1906, cited in Weisler & McCall, 1976), Play as Arousal-seeking Theory (Ellis, 1973), and Play as a Signal Theory (Chick, 2001). By focusing on the universal, innate nature of humans in an attempt to offer ultimate explanations for human play, most general cause theories (with the exception of Play as a Signal Theory, Chick, July 13, 2010, personal communication), do not address individual differences. In contrast, motivation theorists conceive of play as

rooted in individuals' life experience. For example, two complementary motivation theories of play, namely the Task Generalization/Spill-over Theory and the Compensation Theory both propose that play behavior is closely related to how one's work meets his or her needs. The former suggests when work experience is satisfying, people tend to generalize behaviors/activities from their work to the leisure domain; the latter argues if work experience is frustrating, people seek to satisfy their unmet needs through leisure activities that are different from their work tasks (e.g., Hagedorn & Labowitz, 1968). As another example, the Catharsis Theory and the Psychoanalytic Theory treat play as a coping strategy for handling negative emotions or experiences (e.g., Erikson, 1959; Freud, 1961). The Learning Theory of play (e.g., Roberts & Sutton-Smith, 1962) emphasizes the impact of environment and views play as a learned behavior directed by feedback from the outside environment with an aim to enlarge pleasant effects. Learning theory in particular dispenses completely with the effect of genetic inheritance and therefore sharply contrasts with general cause theories (see also Ellis, 1973).

The second school of play theories takes an ethological approach and defines play by its behavioral characteristics. This approach employs prolonged observations and careful classification of observable features (preferably in anatomical terms) of human, mostly children's play behavior. The rich, objective anatomical descriptions of play behavior generated by ethological studies (e.g., Hutt, 1966; Leach, 1972) allow for interspecies comparison (Schwartzman, 1978). However, these highly descriptive studies often have difficulties in reducing highly specific data to generalizable statements or constructs. Sometimes, this approach ignores the social meaning of behavior by viewing children as

if they are monkeys and treating their behavior as directly comparable to that of nonhuman primates. For example, Schwartzman noted that many researchers merely attend to the frequency but ignore the content when analyzing children's talk. The neglect of behavior's social meanings in earlier ethological studies is rectified in more recent behavioral ecological work by some anthropologists, who paid more attention to the social environment wherein play takes place as well as its content and dynamics (e.g., Bock, 2005).

The third approach claims play is indefinable and proposes to switch focus from the form of play to the quality of play, i.e., playfulness. This view stems from the recognition of the heterogeneous nature of play behavior and the limitation of exclusively focusing on play activities, which have persistently eluded an articulate system of inclusive principles. As an alternative, Millar (1968) proposed to use play as "an adverb; not as a name of a class of activities" (p. 21) and define behavior in terms of how playful it is rather than whether it is play or non-play (e.g., work). Ferland (1997) also maintained that play "cannot be defined exclusively in terms of *doing* but must also include *being*". By shifting the emphasis from play as a distinct behavior to *playfulness* as a way of behaving, this approach defies the traditional artificial distinction of play vs. work and refocuses attention on the quality of the play behavior or the playing individual. The latter (i.e., the approach that focuses on the quality of the player) has driven a cluster of studies that conceptualize playfulness as a psychological predisposition or personality trait (e.g., Barnett, 1990, 1991a, 1991b, 2007; Bundy, 1993, 1997; Bundy, Nelson, Metzger, & Bingaman, 2001; Glynn & Webster, 1992; Guitard et al., 2005; Lieberman, 1977; Neumann, 1971; O'Connell, Gerkovich, Bott, Cook, & Shiffman, 2000; Olsen,

1981; Schaefer & Greenberg, 1997; Staempfli, 2005). The current study falls under this category by conceptualizing playfulness as a personality trait. However, different than previous studies that adopted a typical trait approach, this research employs an integrated interactionist framework in the conceptualization and measurement development of the playful trait.

Playfulness vs. Play: A Terminological Clarification

The two words *play* and *playfulness* have been referred to as a mental propensity to engage in play and used interchangeably in many researchers' writing. For instance, Schwartzman (1978) states "play is an orientation or framing and defining context that players adopt toward something (an object, a person, a role, an activity, an event, etc.)" (p. 330), echoing Huizinga's (1955) view of play as mind, not matter. Ferland (1997) also notes that play implies "a particular state of mind" and "an internal predisposition" (p. 19). Play defined in this sense does not differ substantially from playfulness (Chick, personal communication, October, 2006). Confusion, however, can still arise mainly because the word play has been used to denote other than the playful trait. As Ellis (1973, see also Weistler & McCall, 1976; Schwartzman, 1978) notes, play has been used in common parlance to describe various activities that are "usually pleasant and voluntary" (p. 9), which are not necessarily carried out playfully (e.g., gardening as a hobby, eating favorite foods, touring as a tourist).

When many play theorists (e.g., Chick, 2001; Ellis, 1973; Schwartzman, 1978) speak of play, they are concerned with a subset of play activities that are "not serious" or "indulged in a playful manner" (Ellis, p. 9). This careful conceptual distinction, however, is lost among some researchers who use play so broadly that the term covers almost every

conceivable leisure activity (for a two-page-long list, see Sutton-Smith, 1997). Equating play (defined as playful behavior, excluding non-playful “play”) with leisure activities is a recurrent fallacy, evidenced by the frequent practice of investigating playfulness in leisure context (e.g., Martocchio & Webster, 1992; Maxwell, Reed, Saker, & Story, 2005). Defining play broadly as leisure activities jeopardizes the usefulness of play as a unique concept because such a conceptualization results in the inclusion of non-playful leisure behaviors (e.g., representing the school to attend a competitive racquetball tournament) and the exclusion of playful behaviors in non-leisure context (e.g., teasing a colleague playfully at work).

For the sake of conceptual and terminological clarity, in this research I use playfulness to denote the playful trait, a dispositional quality that resides within the individual but transcends a wide variety of situations, and play to denote the overt behavioral manifestation of playfulness in specific situations. The extent to which a behavior can be viewed as play is not dependent on the context (e.g., leisure vs. work setting), but is dependent on the degree to which the behavior reflects playful qualities.

Adult Playfulness vs. Child Playfulness: Differences and Similarities

There are mixed perspectives about the extent to which playfulness exists in adults and children and how the two differ (cf., Barnett, 1990; Glynn & Webster, 1992; Guitard et al., 2005; Lieberman, 1977). In his cognitive developmental theory of play, Piaget (1951) proposes that two cognitive processes operate together in human’s progressive adaptation to environment: *assimilation* wherein the individual actively constructs or interprets the reality and *accommodation* wherein the individual modifies own behavior

and thoughts to meet the requirement of reality. Piaget argues that play occurs when there is “primacy of assimilation over accommodation” and play decreases with age because adult behavior became increasingly adapted to reality. Sutton-Smith (1966), on the other hand, argues that rationality does not necessarily replace symbolism in adult behavior and playfulness remains to be a ubiquitous quality among adults.

Still, Csikszentmihalyi (1981) proposes that awareness of alternative goals and the ability to freely choose among different sets of goals or rules defines playfulness. The notion of actively constructing reality during play in Csikszentmihalyi’s proposition (see also Rubin, Fein, & Vendenberg, 1983) echoes the concept of assimilation suggested by Piaget (1951). But, interestingly, Csikszentmihalyi draws an opposite conclusion about the relationship between playfulness and life stage. He argues that adults are more capable of engaging in playful behavior due to their greater awareness of and ability to subordinate reality. By contrast, many children may not have learned and accepted the goals and rules of their culture, let alone freely choosing between alternative goals and rules, hence the “deviations from the going norms” in children’s so-called play behavior “is not, strictly speaking, play” (Csikszentmihalyi, p. 20). Csikszentmihalyi’s argument is partially supported by Colarusso (1993), who notes that adults are less likely to see their social and playing selves disconnected. Schwartzman (1976), on the other hand, disagrees that children are necessarily less aware of reality. He observed that children at play also define themselves simultaneously as players and as actual persons in a social context.

To make the matter more complicated, the *conscious free choice* notion proposed by Csikszentmihalyi (1981) may be debatable. Huizinga (1955) similarly emphasizes the consciously “not serious” nature of play for adults:

“...for adult and responsible human being play is a function which *he could equally well leave alone*, Play is superfluous, the need for it is only urgent to the extent that the enjoyment of it makes it a need. *Play can be deferred or suspended at any time*. It is never imposed by physical necessity or moral duty. It is never a task.” (p. 8, emphasis added by author)

However, Huizinga (1955) also suggests that freedom should be understood in “the wider sense that leaves untouched the philosophical problem of determinism” (p. 7).

Particularly, for children (and animals), freedom does not have to be a result of conscious choice: “child and animal play because they enjoy playing, and therein precisely lies their freedom” (Huizinga, p. 8).

On the developmental scale, there is evidence that playfulness becomes an increasingly penetrating quality as the child grows older: (a) The forms of playful behavior expand from predominantly sensorimotor play to more frequent social, imaginative, and cognitive play (Lieberman, 1977; Weisler & McCall, 1976), and (b) the expression of playfulness increasingly crosses the boundaries of leisure and work (or required school activities, King, 1987) and “extends to all life situations” (Guitard et al., 2005, p. 19). Few studies, however, have directly compared adult and child playfulness, though some researchers identify components of adult playfulness comparable to those of child playfulness (e.g., Guitard et al., 2005; Barnett & Chick, 1986). The fact that the two have been traditionally studied separately seems to have more to do with the different characteristics of the two populations, their distinctive trait manifestations, and corresponding research implications than with presumed qualitative differences in the trait per se. Indeed, both scholarly documentation and layperson observations suggest

tremendous individual differences in playfulness and its expressions. Life stage is merely one of the many dimensions (e.g., age, gender, culture, etc.) along which a potentially wide spectrum of playful expressions exist. It would be imprudent to suggest developing a distinct concept of playfulness for each and every individual/group of people defined by the above parameters. In this research, I acknowledge that adults and children differ significantly in both the forms and content of their play, but assume that their play behavior are driven by the same underlying trait (i.e., the playful trait), whose functioning follows the same psychological mechanism (e.g., being intrinsically motivated). In the next section, I draw on play/playfulness literature pertaining to both children and adults in my review of the conceptualization of playfulness.

Conceptualization of Playfulness

As mentioned earlier, a shortcoming of the play/playfulness literature is the absence of a coherent, universally accepted definition. Among studies that explicitly examined playfulness as a disposition or personality trait, playfulness has been diversely conceptualized in terms of its phenomenological concomitants, situational antecedents, and behavioral consequences. Glynn and Webster (1992), for example, define playfulness as “a propensity to define (or redefine) an activity in an imaginative, non-serious or metaphoric manner so as to enhance intrinsic enjoyment, involvement, and satisfaction” (p. 85). Ferland (1997) define playfulness as “a subjective attitude in which pleasure, interest, and spontaneity are combined, and which is expressed through freely chosen behavior in which no specific performance is expected” (p. 20). More researchers define playfulness in terms of several components believed to characterize the trait. Lieberman

(1977), for instance, identifies five dimensions of child playfulness: physical spontaneity, social spontaneity, cognitive spontaneity, manifest joy, and sense of human. Henriot (1969, cited in Guitard et al., 2005) suggests that uncertainty, illusion, unpredictability, and often certain mimicking characterize playfulness. Still, Rubin et al. (1983) noted that playfulness is characterized by intrinsic motivation, active construction of reality and involvement, pretense/nonliterality, and freedom from externally imposed rules.

Much of the difficulty surrounding defining playfulness as indicated by the lack of consensus can be attributed to the failure to clearly distinguish the trait from its behavioral manifestations (i.e., play behavior) on the conceptual level. Oftentimes, discussions of playfulness as a trait confuse state-level variables or overt behavior (e.g., laughing and joking) and trait-level variables or inner psychological quality (e. g., fun-loving), and treating them as equivalent characteristics of playfulness. In this section, I pay special consideration to the trait-state distinction when reviewing and delineating characteristics that have been associated with play or playfulness.

Intrinsic Motivation: The Driving Force of Playfulness

Huizinga (1955) states that play is “a free activity standing quite consciously outside ordinary life as being ‘not serious’, but at the same time absorbing the player intensely and utterly. It is an activity connected with no material interest, and no profit can be gained by it” (p. 13). This statement captures “the layman’s definition (of play)” (Ellis, 1973, p. 14) and serves as a good starting point for discussing the concept of playfulness. The intrinsic motivation emphasized by Huizinga is perhaps the most frequently identified quality of playfulness. Numerous researchers concur that play is performed for

its own sake rather than external rewards or goals and that players are self-motivated, concerned solely with the process and purpose inherent in the activity (e.g., Berlyne, 1960; Caillois, 1980; Groos, 1916, cited in Neumann, 1971; Hutt, 1970; Rubin, et al., 1983; Weisler & McCall, 1976; see Sabora & Mitchell, 1961 for more examples of play definitions that capture this characteristic).

Fun-loving: The intrinsic motivation in play.

Despite general agreement on intrinsic motivation as an essential property of playfulness, Ellis (1973) is discontent to conclude that players are merely intrinsically motivated. He maintains that it is important to ask what is intrinsically motivating the player because many unplayful behaviors can be intrinsically motivated as well. Ellis acknowledges that his own theory of *Play as Arousal-seeking* does not answer this question because the need for optimal arousal is too general and can be used to explain many behaviors other than play (e.g., learning, exploration, competition, and work)¹.

In their review of play/playfulness literature, Guitard et al. (2005) suggest an answer to Ellis' question by identifying joy or pleasure as the "motor" and "inner drive" of play (p. 10, also see Bishop & Chace, 1971; Ferland, 1997; Knox, 1996; Lieberman, 1977; Olsen, 1981). Schaefer & Greenberg (1997) suggest a slightly different word, *fun*, to capture the unique motivational element common to various play behaviors. Compared to enjoyment, fun is more active and intense (Podilchak, 1991), capturing the very characteristic of playful states. Other authors agree on fun "characterizing the essence of

¹ Chick (personal communication, July 2010), on the other hand, questions the usefulness of the concept of optimal arousal in explaining any behavior. He argues that because arousal is context dependent, it is empirically impossible to determine the "optimal" level of arousal.

play" (Lieberman, 1977, p. 18, see also Glynn & Webster, 1992; O'Connell et al., 2000) and *fun-loving* as the underlying motivational force that drives the individual to approach daily activities, from work to recreation, from solitary activities to social interactions, in a playful manner.

On a related note, some authors insist that fun, joy or pleasure should be considered as a manifestation of playfulness (e.g., Henriot, 1969, cited in Guitard et al., 2009). Others identify this element in its manifested form but labeled it as an attribute of the player (e.g., Lieberman, 1977, identifies "manifest joy" as a component of playfulness). Still, more researchers are unclear about on what level—the internal motivational level (i.e., trait level) or the overt behavioral level (i.e., state level)—positive affects are discussed. I argue that positive affects can both motivate playful behavior and be experienced as an outcome of the latter and it is important to distinguish them at the conceptual level. As far as defining the dispositional quality of playfulness is concerned, positive affects at the motivational level (e.g., the motivation to pursue fun) is most relevant. As a dispositional quality, fun-loving motivation belongs within the individual whether a playful behavior is taking place or not; whereas manifest positive affects are a possible outcome of playful behavior, often an indicator of successful execution of the underlying fun-loving motive.

Relation to usefulness and consequences.

Related to the notion of intrinsic motivation, Schwartzman (1978) cautions against concluding that, because external rewards or purpose is not in the concern of the player, play must be unproductive or without real consequence in life (as indicated by Huizinga's definition, see also Bundy, 1993). According to Schwartzman (see also Olsen, 1981), "if

play is an orientation, mode, context, or frame that can be adopted for marking behavior in any situation, ... then it is possible for play to occur in the presumably productive sphere of ‘work’” (p. 328).

Granted that play frequently takes place in an experimental context free of real consequences, which is especially true for children’s play (e.g., play as buffered learning, Miller, 1973, cited in Csikszentmihalyi, 1981), it does not rule out that play may fall out of the play space into reality (e.g., foes from friends when play turns sour, Schwartzman, 1978), mingle with reality (e.g., academic play) or take place right within the reality (e.g., businessmen play stock market in a purely ludic spirit for the goal of winning points in a highly competitive game instead of winning profits).

In fact, Csikszentmihalyi (1981) challenges the generally accepted view on the existence of an external reality in play and argues that play creates its own reality that “parallels and needs not necessarily be subordinated to the one we ordinarily choose to consider as our basic reference point or ‘paramount reality’” (p. 17). He further states that human versatility in “changing goals and therefore restructuring reality” (p. 17) gives rise to various forms of play in which one may risk the things that matter seriously in ordinary life for a set of different goals. The value of Csikszentmihalyi’s argument rests not as much on apparently dissolving the notion of reality, but on clarifying that reality as consequences is more crucial than reality as contexts to defining play. In this sense, Csikszentmihalyi’s perspective is consistent with Hinzinga’s: both emphasize the absence of concerns for “serious” real-life outcomes in the player’s mind. By the same token, playfulness cannot be understood with reference to mere the forms of behavior (e.g., exaggerated body language). Instead, the individual’s subjective mindset (i.e., whether it

is intrinsically motivated or occupied with worries about external ends) constitutes a more essential characteristic. To be precise, play is never completely divorced from reality; it is, however, undoubtedly devoid of the concern of real-life consequences.

Relation to goal-attainment.

Some researchers note a low commitment to goal-attainment during play (e.g., Ellis, 1973; Huizinga, 1955; Sutton-Smith, 1977). Harris (1981), for instance, states that a lack of concern for reaching goals distinguishes playful behavior from non-playful ones. Confusion, however, may arise if one lacks a clear understanding of the nature of the goal being discussed here. As Apter (1991) points out, “in most playful activities there is a goal of some kind, and often there is a clear-cut goal which does act as the focus for the activity... a goal which does in some sense dominate consciousness” (p. 16). Apter continues to note that, when behavior is carried out in a playful state, the goal “is being used *in the service of* the activity” to enhance “the enjoyment of the activity by encouraging the players to behave energetically and to exercise their skills to the full” (p. 16). Harris (1981) concurs that players can be “momentarily rather intensely goal-directed” (p. 27), but in a truly playful mind, the only goal being pursued is the one that constitutes part of the play, the one that facilitates the enjoyment of the process rather than defines consequences beyond the process. Using playing sport as an example, Asper makes this distinction even clearer:

The fact that the goal is not the real reason for playing becomes clear if one considers how one feels if one loses. Naturally, one prefers to win, and this provides extra pleasure; but losing does not mean that one feels that one has wasted one’s time or that the game was not worth playing. Indeed, if one does feel this way on losing, this

implies that one has been playing in the serious telic frame of mind... This is another way of saying that if the result matters beyond the game, then... the spirit of the encounter is no longer playful. (pp. 16-17)

Freedom: The Uninhibited Quality of Playfulness

Recall Huizinga (1955) states that play is a free activity. Freedom is another notion frequently used to characterize play (e.g., Bishop & Chace, 1971; Csikszentmihalyi, 1975; Ellis, 1973; Ferland, 1997; Neumann, 1971; Olsen, 1981; Rubin et al., 1983; Schwartzman, 1978). The freedom during play is the freedom from extraneous factors or concerns about serious consequences (Biesty, 1987) and the “freedom to suspend reality” (Bundy, 1993). In this sense, freedom conveys the same process-centered orientation as intrinsic motivation does. The two qualities, however, are not identical concepts. Instead, they complement each other like two sides of a coin: intrinsic motivation *points toward* what is desired within the activity (i.e., the fun); freedom stems from the *disregard for* consequences or constraints external to the activity. Accordingly, the functioning of the two aspects follows slightly different mechanisms. Intrinsic motivation can be corroded if the fun source is removed, weakened, or superseded by external goals (e.g., external rewards designed to elicit high performance) such that the activity is no longer perceived as fun or as much fun. The perception of freedom may be breached if constraints, with the exception of goals/rules designed as part of the play, are imposed and cannot be successfully negotiated (e.g., negative expectations from others, expectant punishment for poor performance etc.).

Relation to internal control and efficacy.

Freedom is often accompanied by *internal control* (Bundy, 1993; Neumann, 1971), which refers to perceived control of the environment, including the process of play and some aspects of outcomes. One common source of risks for internal control is *efficacy*-related (Lyons, 1987) concerns, which becomes most salient when play involves certain skill or ability (e.g., sports, cognitive play). Zigler, Levine, and Gould (1967, in Lieberman, 1977), for example, suggest that a sense of mastery and competence preceded enjoyment in both the appreciation and the comprehension of humor. Lieberman (1977) also postulates that young children would be more playful after mastering play skills.

The underlying dispositional quality of freedom.

Unlike positive affects, freedom has been discussed primarily at the state level, referring to the free mental state or uninhibited cognitive context that allows one's playfulness to freely spark or flow out in a given situation. Existing play/playfulness literature rarely discusses possible underlying dispositional qualities that account for the tendency to perceive freedom or feel uninhibited across situations. I propose that there is a relatively stable cognitive quality underlying the observed individual differences in perceived freedom in daily situations which gives rise to people's tendency to feel uninhibited by potential constraining factors and to negotiate with these factors. The proposed uninhibited cognitive quality, or *uninhibitedness*, closely relates to the concept of self-determination (Deci & Ryan, 2002)², though with a different focus.

Self-determination emphasizes the awareness of the self and a sense of choice to act out

² The authors developed a Self-determination Scale that measures two aspects: (a) the degree to which people feel a sense of choice in their lives, and (b) the degree to which they feel like themselves, that their emotions feel like an integral part of them.

own will, while uninhibitedness highlights a disregard for potential constraining factors (e.g., social norms) without a clear intent to act out certain will. Self-determination is more relevant to planned or intentional actions than to spontaneous playful behavior.

The other theory proposed in Deci and Ryan's Self-determination Theory (SDT) framework, namely the Causality Orientations Theory (COT) provides perhaps a more useful reference. The COT examines individual differences in people's tendencies to orient toward environments and regulate behavior in various ways. One of the tendencies addressed by the COT is the *control orientation*, which refers to the tendency to focus on rewards, gains, and approval. The control orientation appears to measure, at least partly, the opposite of uninhibitedness, although its behavior regulation component may counter the spontaneous aspect of playfulness.

Another construct closely related to uninhibitedness is *self-monitoring* (Snyder, 1974), which refers to one's ability and desire to regulate his or her public expressiveness to fit the clues/requirements of the situation. According to Michener, Delamater, and Schwartz (1986), people are generally motivated to behave appropriately in social settings. Compared to people who are high in self-monitoring, low self-monitors seem less aware of or less concerned with their environments and their impact on others. They are less likely to adjust their behavior in a new context in order to produce positive reactions in others (Baron & Greenberg, 1990). Uninhibitedness overlaps with low self-monitoring in the notion of a disregard for negative environmental cues, but bears a more explicit emphasis on subduing potential constraining factors that may come from both *outside* (e.g., expectation of others) and *inside* (e.g., negative self-evaluation of skills). Moreover, uninhibitedness does not predict high or low self-monitoring in

situations with only positive cues. An uninhibited person can be high in self-monitoring in such a context by showing a willingness to act in the way that pleases others. It is intrinsic motivation that predicts low monitoring in contexts with positive cues.

Spontaneity: The Essence of Pure Playfulness

Lieberman (1977), among others, identifies *spontaneity* as a critical defining quality of child playfulness and suggests that it exists on three dimensions: cognitively, physically, and socially. Players (i.e., people playing) are like “random generators” (Sutton-Smith, 1976, p. 9). They give response of great variability (Ellis, 1973; Sutton-Smith, 1972, Cited in Harris, 1981), and sometimes use rather inefficient means to accomplish goals, if it produces more enjoyment than following rules (Miller, 1973, 1974, cited in Harris, 1981). Other authors have discussed the same quality under different terms, such as informal (e.g., Shaefer & Greenberg, 1997), uncertainty and unpredictability (Henriot, 1969, cited in Guitard et al. 2005), social and verbal flexibility (Knox, 1996), and liberty (Bishop & Chace, 1971).

The apparent impulsive characteristic of playful behavior seems to stem from the previously discussed low commitment to goal-attainment during play. As Harris (1981) notes, “within the cognitive context involving relatively weak concern for goals, individuals may be rather free to shift from one activity to another as frequently as desired; they may have the option to begin, to continue, and to end activities at will ... they would appear to be relatively free to change the goals which they pursue as well as alter the means by which they pursue the goals” (p. 29). Harris’ perspective echoes Csikszentmihalyi’s (1981) view of play as an attitude toward reality that allows for

ambiguity and goals to be changed at any time. Uninhibitedness contributes to spontaneity by creating a free cognitive context necessary for the expression of spontaneity, though one should not expect a one-to-one relation between the two qualities (i.e., a person being spontaneous must be uninhibited in the meanwhile, but an uninhibited person is not necessarily spontaneous).

It seems that spontaneity is more likely to be observed in lighthearted, less structured forms of activities, a type of experience that Blanche (2002) termed *ludos*. Blanche notes that *ludos* typically appears to be fun, has no formal structures, and often occurred spontaneously as “an interlude within other occupations”. Examples of this type of diversion include “teasing, joking, gossiping, flirting, and “horsing around” (Blanche, p. 261). Blanche further notes that *ludos* is often described in the literature as play.

The concept of *ludos* compares to the notion of *pure playfulness*, a term carved by Huizinga (1955) to denote relatively primitive forms of play. Huizinga notes that pure playfulness has a non-reducible quality thus is not amenable to further analysis, while *higher forms of play*, such as contests and races, games, dancing and music, performances and exhibitions, pageants, masquerades, and tournaments, are distinct and articulate in the forms with more various and conspicuous features. Clearly, pure playfulness and higher forms of play share the same process-oriented quality and corresponding subjective detachment from materialistic concerns or real-life consequences. Both forms can be considered as leisure. However, the degree to which a leisure behavior is also a playful one is largely affected by the extent to which the form and structure of the activity, as a context, allows for active construction of subjective reality (Csikszentmihalyi, 1981) and spontaneous expression of individuality. Indeed,

depending on the existence of an articulate form and structure (e.g., clearly defined goals and rules) in a given activity, the behavioral expression may range from spontaneous, casual, and light-hearted as in spur-of-the-moment joking and teasing, to highly controlled, precise, and earnest as in elaborated games and various forms of deep play or serious leisure (Stebbins, 1982, 1992, 1997, 2001).

Finally, although cognitive spontaneity, social spontaneity, and physical spontaneity have been conceived as equivalent components (e.g., Barnett, 1990; Lieberman, 1977), I argue that the cognitive level of spontaneity constitutes the fundamental quality that remains relatively stable and drives the other two levels' of spontaneity during play because, as Piaget (1962, cited in Ellis, 1973) pointed out, play essentially takes place in mind.

Other Characteristics of Playfulness

A number of other characteristics of playful behavior have been identified, though with less consensus, including frivolous (e.g., Maxwell et al., 2005; O'Connell et al., 2000, Schaefer & Greenberg, 1997), silly (e.g., Glynn & Webster, 1992; Shaefer & Greenberg, 1997), fanciful (e.g., Glynn & Webster, 1992), exaggerating (Loizos, 1977; Hutt, 1977, cited in Schwartzman, 1978), a focus on pretense and nonliterality (Rubin et al., 1983), and novel (Olsen, 1981), just to name a few. These expressive features variously relate to, and in some cases, result from the three core characteristics of playfulness discussed earlier (i.e., intrinsic motivation, uninhibitedness, and spontaneity). It appears that when intrinsically motivated, free of assorted concerns, and acting

spontaneously, the player is able to express his or her individuality to its fullest degree by doing or saying things that he/she normally would not and appearing extraordinary.

It is worth noting that some characteristics identified in play/playfulness literature seem to be associated with specific types of behavior, such as metaphoric (Glynn & Webster, 1992) as in verbal play that involves metaphors, imaginative (e.g., Knox, 1996) as in fantasy, day-dreaming, and role-playing, and curious, investigative and explorative (Ellis, 1973, Ferland, 1997; Knox, 1996; Guitard et al., 2005) as in investigation and exploration.³ Particularly, humor or sense of humor has been identified as a component of playfulness by many researchers (e.g., Ferland, 1997; Guitard et al., 2005; Lieberman, 1977; Olsen, 1981; Shaefer & Greenberg, 1997). Humor Research per se constitutes an independent multidisciplinary field that has attracted scholarly attention from psychology, philosophy, linguistics, sociology, history, etc. Theorization about humor has focused on the functions or purposes of humor (e.g., releasing stress, repressed sexual or aggressive feelings, demonstrating superiority), the mechanism of humor (e.g., incongruity theories that emphasize the cognitive structure of humor and explain what makes humor funny), and evolutionary explanations which emphasize the possible adaptive characteristics of humor. Like research on play and playfulness, “no single humor theory has been completely satisfactory and thus clinched universal acceptance” due to the multilayered nature of humor (Polimeni & Reiss, 2006, p. 349). Some degree of agreement, however, has emerged with regard to the relationship between human and play. It is suggested that humor can be conceived as a specific form of play that comprises “a social context, a cognitive process, and an emotional response expressed through amusement, mirth, and

³ Although some authors argue that investigation and exploration may not be considered as play (cf., Ellis, 1973; Olsen, 1981; Schwartzman, 1978; Weisler & McCall, 1976).

laughter” (Guilmette, 2008, p. 267). Bundy (1993) also stated, humor essentially “amounts to verbal and cognitive play” (p. 217). However, humor as a form of cognitive play that involves the experience of incongruity is complex and dependent on a myriad of subjective associations (Polimeni & Reiss, 2006), analyzing its specific makeup goes beyond the scope of this research. One notion warrants mentioning before I leave this topic. There is a need to distinguish humor comprehension from humor creation (also see Guilmette, 2008), the two of which do not always go hand in hand. The former is determined by the individual’s mental experience or cognitive configuration because what is humorous, which can be a spontaneous verbal expression, a purposely created joke or cartoon, or a random life experience perceived as humorous in retrospection (e.g., “it wasn’t funny at the time” or misunderstandings that is laughable at a later “getting it” point), is completely open to subjective interpretation. Humor at this level is reactive, capturing the individual’s ability to perceive fun stimuli, which again, is subjectively defined. The later, humor creation, while often reflects the playfulness on the part of the creator when humor is spontaneously generated, can also be planned or professionally crafted (e.g., by professional comedian), in which case, its relationship with playfulness is open to questions due to the apparent lack of intrinsic motivation and spontaneity.

Schwartzman (1978) notes one frequently overlooked characteristic of playful behavior—*activeness*. An individual being playful is highly active and responsive in initiating or maintaining a playful episode (Rubin, et al., 1983), either physically or cognitively (cf., Liebermann, 1977; Knox, 1996; Olsen, 1981; Piaget, 1962, in Ellis, 1973). Particularly, Knox (1996) observed that more playful children often set up play situations or elaborated on games or episodes started by others and gradually took them

over as their own. In contrast, less playful children often displayed a lack of “spontaneity and flexibility to go with the flow of a play episode”, negative affect, physical or emotional withdrawal, and a lack of control over a situation (Knox, p. 83). It seems that the active state of play is a logical indicator of spontaneity (Ferland, 1997; Guitard et al., 2005; Lieberman, 1977; Olsen, 1981) and intrinsic motivation, which drives the player’s deeply absorbed mental state (Huizinga, 1955).

Creativity is another characteristic that has been frequently identified among playful individuals (e.g., Bishop & Chace, 1971; Ferland, 1997; Knox, 1996; Lieberman, 1977; Truhon, 1983). Many researchers, however, argue that instead of being a dimension of playfulness, creativity may be more properly considered as a personality correlate of the playful trait. Bishop and Chace (1971) noted that creativity and playfulness may share some similarities in the cognitive and behavioral processes. Their opinion is in line with Meador’s (1992) argument that playing with ideas often sparks inspirations that lead to creative solutions. Apter and Kerr (1991) elaborated such a process: in a playful state of mind, the individual, free of the pressure to solve important problems, “can play around with ideas...go beyond the bounds of ‘reality’ by envisaging imaginative and even fantastic possibilities, ...transcend the socially acceptable by asking questions about subjects which are normally taboo and by thinking the unthinkable, reexamine the assumptions on which serious telic thinking in some area is based” (p. 171). Martin (2006) suggested the link between play and creative thinking in the context of humor: processing incongruities in a humor experience involves flexible thought processes and the activation of multiple schemas, which in turn may facilitate the elastic and divergent thinking required for creativity. As echoed by Murgatroyd (1991), “synergistic humor is

often a source of new ideas” (p. 120). On the other hand, Isen, Daubman, and Nowicki (1987, in Martin, 2006) suggested that the positive affect (e.g., laughter) associated with humor may reduce anxiety or tension thus result in less rigid thinking and enhanced ability to relate and integrate divergent materials. Consequently, creativity is suggested to be a function or consequence of playfulness (e.g., Lieberman, 1977; Truhon, 1983; Pepler, 1982, cited in Ferland, 1997).

While acknowledging the possible overlap in the cognitive and behavioral processes involved in creativity and playfulness, I maintain that the two qualities differ fundamentally in their underlying motivations—playfulness is primarily motivated by fun whereas creativity by originality-seeking. Moreover, although the initial meaning of creativity broadly refers to the ability to think non-conventionally, the concept entails a significant notion of usefulness since creativity “is actively encouraged in attempts to train people in creative problem solving” (Bishop & Chace, 1971, p. 321, also see Glynn & Webster, 1992). Compared to playful behavior, which is initiated and pursued as an end in itself, creativity is embraced more for its instrumental values and is often exercised in response to external needs. This fun vs. novelty, process-oriented vs. problem-solving contrast may account for the absence of a one-to-one relationship between playfulness and creativity (i.e., the exercise of one does not necessarily lead to the other and the two do not always occur simultaneously). As Guitard et al. (2005) point out, although creativity is included in their conceptualization of playfulness, the “relative weight” of this component may be small compared to other dimensions because an individual can be playful without being creative. Knox (1996), on the other hand, found that children playing solitary activities might be creative but not playful (also see Schaefer &

Greenberg, 1997). Finally, Fix and Schaefer (2005) reported a weak association between playfulness and creativity.

Similar to creativity, many personality characteristics have been questionably labeled as defining qualities of playfulness (e.g., outgoing, sociable, friendly, emotional, cooperative, etc.). When analyzing a myriad of characteristics observed in play or playful people, it is important that researchers carefully distinguish qualities essential to playfulness from those individual attributes variously correlated with the trait by delineating the logical relationships between them. As illustrated in the following review sections, many constructs that have been linked to playfulness may not be legitimately considered as the constitutional components of playfulness.

Table 2.1 summarizes various characteristics of playfulness identified by multiple authors and the relationships between them. From this review, it is clear that a strong consensus exists about intrinsic motivation being one of the defining qualities of playfulness. Sense of freedom, a state manifestation of the underlying uninhibited cognitive quality, is frequently retained, capturing the free mental state of the player. There is also considerable agreement on spontaneity as a trademark characteristic of playful individuals. Less agreement, however, exists regarding other characteristics that have been associated with playfulness.

Table 2.1

Characteristics of Playfulness Identified by Different Authors

Dimension	Huizinga (1955)	Ellis (1973)	Neumann (1971); Bundy et al.(2001)	Weisler & McCall (1976)	Lieberman (1977)	Olsen (1981)	Glynn & Webster (1992) ^a	Schaefer & Greenberg (1997)	Ferland (1997)	O’Connell et al. (2000)	Guitard et al. (2005)
Intrinsic Motivation	Intrinsic motivation	Arousal-seeking (novelty, complexity, dissonance)	Intrinsic motivation	Intrinsic motivation	Manifest joy	Intrinsically pleasurable, Voluntary	Intrinsic enjoyment, Satisfaction	Fun-loving	Pleasure, Interest, Enjoyment of challenge	Fun seeking	Pleasure
Uninhibitedness	Free		Freedom to suspend reality, Internal control	Relaxed		Uncon-strained by Reality			Free choice, No expectation		
Spontaneity					Cognitive Spontaneity	Spontaneity		Whimsical, Informal	Spontaneity, Initiative		Spontaneity
Behavioral /Affective Manifestation	Absorbed	Pleasant, Investigative, Explorative	Frame	Positive affect, Relaxed, Feel safe, Basic needs satisfied	Manifest joy, Physical/social spontaneity, Sense of humor	Active, Novel, Humorous	Non-serious, Imaginative, Metaphoric	Silly, Sense of humor	Curiosity, Sense of humor	Non-serious, Frivolous	Creativity, Curiosity, Sense of humor

^a Based on Glynn & Webster’s (1992) conceptual definition of adult playfulness, which is inconsistent with their operational definition or measurement of adult playfulness.

Adult Playfulness and Important Psychological Well-being Variables

Examining constructs theoretically related to playfulness can sharpen our understanding of the concept and help developing a theory-based nomological network for playfulness that can be tested in scale validation. Aside from goal-attainment and creativity reviewed previously, a number of constructs have been related to playfulness, including humor (Schaefer & Greenberg, 1997), imagination (Bundy, 1993, 1997), personal orderliness (Glynn & Wester, 1992), Flow (Csikszentmihalyi, 1981; Woszczyński et al., 2002), instrumentality and expressiveness (Coleman, 2009), overall well-being (Yessick, 1990), the Big Five personality traits (Alexandra, 2009; FitzMedrud, 2008; Woszczyński et al.) and a variety of individual attributes such as bright, active, aggressive, cheerful, confident, curious, dependent, impulsive, mischievous, and responsible (measured with single adjective descriptors, Barnett, 1991b). Several functional studies of adult playfulness relate the trait with a set of workplace-related variables including quantitative orientation (Glynn & Wester), sales representatives' adaptive selling, job satisfaction and sales performance (Maxwell, Reed, Saker, & Story, 2005), microcomputer training performance (Martocchio & Wester, 1992), task evaluation, task perceptions, task involvement, and task performance (Glynn & Wester), worker's job satisfaction and job performance in four fields: art and media, education, hitech, and agriculture (Yu, Wu, Chen, & Lin, 2007).

In this section I briefly review the relationships between adult playfulness and two psychological well-being constructs of particular interest in leisure studies, namely

leisure boredom (Iso-Ahola & Weissinger, 1990) and *self-as-entertainment* (Mannell, 1984)

Playfulness and leisure boredom.

The psychological construct of boredom has been extensively studied over the past three decades (Vodanovich, 2003). It has been defined as “a state of low arousal and dissatisfaction” (Mikulas & Vodanovich, 1993, p. 1) due to a sense of inadequate stimulation from the environment (Dechenne & Moody, 1988; Vodanovich, 2003) or participation in subjectively monotonous, repetitive activities (Hill & Perkins, 1987). The concept of *leisure boredom* addresses boredom in the context of free time use and perception (Barnett, 2005; Caldwell, Darling, Payne, & Dowdy, 1999; Weissinger, Caldwell, & Bandalos, 1992).

Leisure boredom has been conceived as reflecting a disposition toward leisure. Bernstein (1975, in Iso-Ahola & Weissinger, 1990), for instance, proposes the concept of *chronic boredom*, an internal disposition, as opposed to *response boredom* which is caused by external situational factors. Iso-Ahola and Weissinger (1990) note that although there is tentative empirical evidence supporting individual differences in perceptions of leisure boredom, the psychological characteristics involved in leisure boredom are still unclear. Most extent empirical studies consider leisure boredom as a result of perceived unfulfilled free time (Iso-Ahola & Weissinger, 1990) and operationalized it as a reaction to task-specific situations. Significant negative relationships were found between leisure boredom and intrinsic motivation, leisure satisfaction, self-esteem, frequency of leisure participation, and satisfaction with physical and mental health (cf., Iso-Ahola & Weissinger, 1987, 1990; Weissinger et al., 1992).

Few empirical studies have examined the relationship between playfulness and leisure boredom. Although an obvious link between the two constructs can be speculated based on their respective relationship with intrinsic motivation, the nature of the link remains unclear for several reasons. First, because little is known about how leisure boredom relates to other essential qualities of playfulness (e.g., spontaneity and uninhibitedness), it is hard to conjecture how leisure boredom relates to playfulness as a whole. Second, Vodanovich & Watt (1999) find that increased boredom is associated with poor time structure and organization, but little is known about whether people who differ in their levels of playfulness use time differently. Finally, some researchers argue that playfulness may help reduce boredom (i.e., a negative relationship) because people who are more playful tend to engage in play more, which may function like a coping mechanism in face of leisure boredom (e.g., Bowman, 1987). However, an argument for a reverse relationship seems equally plausible: people who are more prone to leisure boredom may engage in play more as a way to cope with boredom, in which case, these people may appear more playful (i.e., a positive relationship, Caldwell, personal communication, March, 2010).

Playfulness and self-as-entertainment.

The construct of self-as-entertainment (SAE) was developed by Mannell (1984) to characterize individual differences in the ability to fill one's free time with personally satisfying (mental, physical or social) activities. Mannell identified three aspects of SAE: *mind play*, which addresses one's capacity to turn inward and use imagination and fantasy to fill his or her free time, *environment mode*, referring to one's capacity to seek external resources (e.g., environment and other people) to create interesting and

enjoyable pursuits during free time, and *self mode*, referring to one's physical and/or cognitive skills and ability to find/create challenging and interesting pursuits to fill his or her free time,

Mannell and Kleiber (1997) suggest that SAE may negatively relate to perceptions of boredom in free time (e.g., individuals low on SAE would perceive too much free time and little to do). This proposition was met with mixed findings. Barnett & Klitzing (2006) reported that the tendency to perceive leisure boredom negatively related to self mode but positively related to mind play. Several studies reported a positive relationship between SAE and intrinsic leisure motivation (Ellis & Yessick, 1989; Hoff & Ellis, 1992; Morris, 1992, cited in Weissinger & Bandalos, 1995). Barnett (2006) notes that environmental mode predicts involvement in social leisure but individuals who typically turn inward are less likely to seek social leisure outlets.

Few empirical studies have examined the relationship between SAE and playfulness. The two constructs can be distinguished in several ways on the conceptual level. First, although Mannell (1999) suggests that SAE may interact with many life and social circumstances, the construct is deliberately carved to capture people's free time use. By contrast, playfulness is believed to be a personality trait that functions across the boundary of free time, work, and other non-work obligations. In this sense, SAE applies to a smaller domain than playfulness. Second, SAE addresses one's overall ability to entertain the self, with an explicit emphasis on relatively conspicuous, non-ludos type of behavior (e.g., playing bridge with friends at a regular basis); while playfulness is solely concerned with spontaneous behavior, though it is suggested that playful people may to some degree consciously choose to be in certain types of setting (Glynn & Webster,

1992). Third, SAE has an explicit focus on one's ability and skills to entertain the self. This emphasis on leisure aptitude is absent from the concept of playfulness. Nevertheless, a positive relationship between playfulness and SAE may be speculated due to their common focus on individual differences in the tendency to entertain the self.

Existing Measures of Playfulness

The lack of an agreed-upon definition of playfulness not only has limited the theoretical development of playfulness, but also is responsible for the existence of diverse measurements of playfulness. Three instruments assessing adult playfulness exist, all employing self-report scales but each guided by a very different conceptual model (Glynn & Webster, 1992; O'Connell et al., 2000; Schaefer & Greenberg, 1997). Three child playfulness instruments are identified, all using observational scales: two developed in the psychology discipline and guided by the same conceptual model (Barnett, 1990; Lieberman, 1977), one developed in the occupational therapy discipline using still a different conceptualization (Bundy, et al., 2001). The purpose of this section is to review each of these measures of playfulness. Given the focus of my research, I discuss the three adult playfulness instruments first and in relatively greater detail than those measurements of child playfulness.

Measurements of Playfulness in Adulthood

Adult Playfulness Scale.

The Adult Playfulness Scale (APS) developed by Glynn and Webster (1992) consists of 32 items on a 7-point semantic differential scale (e.g., “adventurous-purposeful”, “carefree-careful”, and “frivolous-productive”). The original sample in the scale development consisted of a total of 147 people as a result of combining two samples from

separate studies. Glynn and Webster proposed a “theory-based” conceptualization that defines playfulness as “an individual trait, a propensity to define (or redefine) an activity in an imaginative, non-serious or metaphoric manner so as to enhance intrinsic enjoyment, involvement, and satisfaction” (p. 85). A close look at the scale items, however, suggests a lack of connection between the scale (i.e., operational definition) and the above definition. For example, many items on the APS (e.g., “calm-agitated”, “empty-full”, “fast-slow”, “emotional-intellectual”, “bright-dark”, and “competitive-cooperative”) lack face validity and appear to tap different constructs that may or may not relate to playfulness. Still some other items (e.g., “bright-dull”, “exciting-dull”, and “fun-boring”) pose social desirability concerns.

Indeed, although Glynn and Webster (1992, 1993) and a few subsequent studies reported “supporting evidence” for the scale’s validity (e.g. Fix, 2003; Fix & Schaefer, 2005), the APS is widely criticized for its questionable construct validity (Guitard, et al., 2005). The scale’s validity is further jeopardized by a series of methodological problems. The developers reported that the APS comprises five factors, but the 5-dimension solution is based on a subset of 25 items of the 32 items. Unfortunately, Glynn and Webster (1992) did not explain why 32 instead of 25 items were retained in the final scale. Consequently, the construct structure of the 32-item scale is unclear. Subsequent studies failed to replicate the five-factor structure (e.g., Maxwell et al., 2005). Other methodological problems associated with the APS include inadequate sample size and inappropriate specification in factor analysis and arguably treating the 32 items as uni-dimensional in related correlational analysis and scale reliability estimation.

Playfulness Scale for Adults.

The Playfulness Scale for Adults (PSA, Schaefer & Greenberg, 1997) consists of 28 items in a 7-point Likert scale. The measurement is based on a conceptualization that centralizes the notion of fun as the “primary characteristic of play” (Schaefer and Greenberg, p. 22). Designed to measure only the fun aspect of playfulness, the PSA items were generated by listing “specific behaviors in adults that reflect the tendency to engage in fun behaviors” (p. 23). Despite the authors’ sole focus on “fun”, five dimensions emerged from their original data provided by 104 college students: *Fun-Loving*, *Sense of Humor*, *Enjoys Silliness*, *Informal*, and *Whimsical*.

Validity evidence was provided by significant positive correlations with humor (Schaefer & Greenburg, 1997), creativity (Fix, 2003), extraversion, and agreeableness, and negative correlations with neuroticism and conscientiousness (Mixer, 2009). High internal consistency for the whole scale (Schaefer & Greenberg, 1997) and test-retest reliability (Fix, 2003) were also reported. However, caution is warranted when interpreting these results because the five-dimensional scale was arguably treated as uni-dimensional in the analyses of above-mentioned studies. As Brown (2006) noted, it is appropriate and meaningful to consider a scale consisting of several sub-scales as uni-dimensional only if there is evidence supporting the existence of a general underlying factor that explains the multiple dimensions (i.e., in SEM terms, the second-order model that includes an overarching factor holds). Unfortunately, the authors did not provide such evidence.

Schaefer and Greenburg deliberately use overt behavior to indicate playfulness.

However, their inclusion of highly situation-specific behaviors (e.g. “I would like a nerf

basketball hoop in my bedroom”, “I like to give and receive cartoon or joke books as gifts”, “I would rather go to Toys ‘R’ Us than browse the mall”, “I enjoy playing charades”) may limit the scale’s content validity (i.e., to what extent the sampled behavior indicators are representative of the whole content domain of the construct being measured) and generalizability (i.e., to what extent the scale applies to people whose behavioral expression of playfulness differ from those covered by the scale). Finally, a few items may bear the problem of dubious face validity (e.g., “I would never leave work early to do fun activities” questionably pits work against fun activities).

Playfulness Scale.

The Playfulness Scale (PS, O’Connell et al., 2000) is made up of three items in a 4-point bipolar scale (“feeling serious” vs. “feeling playful”, “wanting to do something important” vs. “wanting to do something frivolous”, and “trying to accomplish something” vs. “trying to have fun”). The three items were adapted from items on the Telic-Paratelic scale (Cook, Gerkovich, Potocky, & O’Connell, 1993) and developed as a sub-scale of the more global measure of telic/paratelic states⁴. O’Connell et al. reported acceptable internal consistency reliability of the three items (Cronbach's $\alpha = .73$).

Although the PS is developed as a state measure, technically, its three items can be reworded to resemble a trait measure (e.g., change the instruction from “at this moment” to “in general”). Nevertheless, the revised measure will need further validation. Indeed, the construct validity of the PSA is far from clear due to the absence of an articulated

⁴ The pair of states represents one of the four motivational domains identified in reversal theory. The theory proposes that human experience is structurally organized into metamotivational domains, each consisting of a pair of opposing values or motives (i.e. states). According to Apter (2001), an individual regularly reverses between the two opposing states, reflecting their motivational style and the meaning they attach to a given event. Telic or Serious state refers to whether one is motivated by achievement and future goals; Paratelic or Playful state refers to whether one is motivated by the enjoyment of process in the moment.

theoretical definition of playfulness and limited empirical validation. The scale's limited number of items may also raise concerns about the scale's reliability and content validity.

Measurements of Playfulness in Childhood

There is a wealth of research about play and playfulness in childhood (e.g., Ferland, 1997; Rubin, 1977, 1982). In this section, I review three instruments that explicitly measure child playfulness as a personality trait, including the Playfulness Scale (PS, Lieberman, 1977), the Child Playfulness Scale (CPS, Barnett, 1990), and the Test of Playfulness (ToP, Bundy et al., 2001).

Playfulness Scale (for Children).

Lieberman (1965, 1977) was among the first to measure playfulness in young children. She hypothesizes the existence of five components of playfulness (i.e., *physical spontaneity, cognitive spontaneity, social spontaneity, manifest joy, and sense of humor*) and developed a 10-item observational instrument using a 5-point rating scale (endpoints variously labeled, e.g., “very high”-“little”/“low”, “excellent”-“poor”). Each of the five hypothesized components is assessed by two items, one that assesses the quantitative aspect (e.g., frequency, intensity) of children's behavior and one the qualitative aspect.

The five components proposed by Lieberman were generally replicated in several studies by Barnett and Kleiber (1982, 1984), but the original 10-item scale was criticized for its difficulty in administration, confusing format, confounding with other factors (e.g., intelligence, divergent thinking ability, etc.) and low inter-rater reliability (cf. Barnett, 1990, 1991a; Bundy & Clifton, 1998). Moreover, Bundy & Clifton (2001, cited in Bundy

et al., 2001) note that the scale may not apply to children with disabilities due to its emphasis on physical activeness.

Child Playfulness Scale.

Using Lieberman's (1965, 1977) original five-component model of playfulness, Barnett (1990, 1991a) developed a refined version of the PS, namely the Children's Playfulness Scale (CPS). The CPS is a 23-item observational instrument using a 5-point Likert-type scale (response categories labeled as "sounds exactly like the child", "sounds a lot like the child", "sounds somewhat like the child", "sounds a little like the child", and "doesn't sound at all like the child"). The scale is designed to be used by an adult who knows the child well or who becomes familiar with the general playful style of the child across situations by spending a minimum of 30 hours (Barnett, 1990).

Barnett (1990) reported that the CPS replicated Lieberman's (1977) five-dimension model and its increased number of items provided further explication for each dimension. Supporting evidence is also found for the scale's inter-rater and intra-rater reliabilities, internal consistency reliability, test-retest reliability (Barnett, 1990, 1991a, 1991b, 1998; Zachopoulou, 2002) and uni-dimensionality (Trevlas, Grammatikopoulos, Tsigilis, & Zachopoulou, 2003). Of note, mixed findings regarding the scale's psychometric properties are reported in studies using alternative statistical techniques⁵, suggesting that the psychometric properties of the CPS may not be as satisfactory as originally reported (Muys, Rodger, & Bundy, 2006). Finally, the CPS shares the same problem associated with Lieberman's original model: by including physical activeness in the assessment, the

⁵ E.g., The Rasch Measurement Model involves logarithmic conversion of ordinal data to an equal-interval linear scale. Fischer & Molenaar (1995, Muys, et al., 2006) noted that this method provides a more detailed analysis of item difficulty.

CPS tends to penalize children with physical disabilities (Bundy, 1997). As Ferland (1997) observed, disabled children were often playful but unable to display that playfulness with high levels of physical activity.

Test of Playfulness.

Bundy and colleagues (Bundy, 1997; Bundy et al., 2001) developed the Test of Playfulness (ToP) based on Neumann's (1971) conceptualization of play as "a transaction between the child and the environment that is intrinsically motivated, internally controlled, and not bound by objective reality" (p. 277) and Bateson's (1971) original idea of "framing" (i.e., the ability of a player to give and read social cues and interact with others). Several editions of the assessment have been produced. The ToP version 4 is a 32-item observational scale designed to assess the extent, intensity, or skill of four elements of playfulness (*intrinsic motivation, suspension of reality, internal control, and framing*) during children's free play in familiar environments.

The ToP explicitly excludes physical activeness from its assessment of child playfulness and has been applied with both typically developing children and children with a range of difficulties (e.g., children with autistic disorder, attention-deficit hyperactivity disorder, cerebral palsy, and developmental delay, Muys et al., 2006). Supporting evidence was found for the scale's inter-rater reliability and concurrent validity (Bundy et al. 2001; Hamm, 2003; Muys et al., 2006; Okimoto, Bundy, & Hanzlik, 2000; Reed, Dunbar, & Bundy, 2000).

A major criticism of the ToP is its reliance on snapshot observations of play behavior (e.g., 15-20 minute observation of the child's play with peers at a structured play session), and being a state measure used to draw conclusions about the playful trait (e.g., Cameron,

et al., 2001; Smith, Takhvar, Gore, & Vollstedt, 1986). Some researchers suggest that assessing the child in different physical, social, or temporal environments (e.g., home vs. child care center, free play vs. structured play, solo play vs. social play) using the ToP may generate different results (e.g., Chandler, 1997).

Mixed findings were reported in studies that compared the CPS and ToP. High ($r = .80$ to $.81$, $p < .05$), modest ($r = .46$, $p < .001$), and small, non-significant correlations ($r = -.01$, n. s.) were observed between the two scales (cf., Bundy et al., 2001; Muys et al., 2006; Porter & Bundy, 2006). It is unclear whether the variation was due to the difference in conceptual models (i.e., the two scales may measure two constructs that do not overlap completely) or different raters (i.e., different views/rating from parents, teachers, day care providers, therapists, etc.).

Table 2.2 summarizes the characteristics of the six playfulness instruments reviewed here. In summary, the measurement of playfulness, in children and adults, has been unsophisticated in that most studies merely packaged playfulness and playfulness-related characteristics to form a “multi-faceted” construct of playfulness. Little effort has been made to delineate those identified components, which, again, may be largely attributed to the absence of a clear, sound conceptualization of playfulness and an adequate understanding of its construct structure.

Also note that most playfulness instruments rely heavily on behavioral indicators (particularly for child population) or a mix of behavioral and psychological indicators (more often for adult population). Such a practice is legitimate as long as “the inferential leap from the observed score to the unobserved construct is justified” (Seun, in press). It is important, however, to clearly distinguish internal psychological qualities from their

overt behavioral manifestations at the conceptual level, because only by differentiating the two types of constructs can one examine and test the relationship between them in subsequent “so what” studies (e.g., developing interventions that target some psychological variables to induce certain behavioral changes). Unfortunately, most existing playfulness research fails to make such a distinction, which is consistent with the typical trait approach taken by these studies. Such an approach also does not pay sufficient attention to the role of situations in shaping the expression of playfulness (Iso-Ahola, 1976; 1980). Instead, most trait studies are content at conducting descriptive analyses of the trait and average behavioral tendencies without delving deeper to investigate how behavior may vary across contexts, how a trait may interact with situations in producing behavior, or what are the psychodynamics during play. I will review research on situations for play and various approaches to personality research in the next two sections.

Table 2.2

A Summary of Six Playfulness Instruments

Instrument	<u>Child Playfulness</u>			<u>Adult Playfulness</u>		
	Playfulness Scale (Lieberman, 1977)	Children's Playfulness Scale (Barnett, 1990, 1991a, b)	Test of Playfulness Version 2 (Bundy et al., 2001)	Playfulness Scale (O'Connell et al., 2000)	Playfulness Scale for Adults (Schaefer & Greenberg, 1997)	Adult Playfulness Scale (Glynn & Webster, 1992)
Components	<ul style="list-style-type: none"> • Manifest Joy • Physical Spontaneity • Social Spontaneity • Cognitive Spontaneity • Sense of Humor 	<ul style="list-style-type: none"> • Manifest Joy • Physical Spontaneity • Social Spontaneity • Cognitive Spontaneity • Sense of Humor 	<ul style="list-style-type: none"> • Intrinsic Motivation • Freedom to Suspend Reality • Internal Control • Frame 	<ul style="list-style-type: none"> • Have Fun • Frivolous • Playful 	<ul style="list-style-type: none"> • Fun-Loving • Sense of Humor • Enjoys Silliness • Informal • Whimsical 	<ul style="list-style-type: none"> • Fun • Spontaneous • Expressive • Creative • Silly
Item Make-up	10 items, ^a Two for each component	23 items, 4-5 for each component	32 items, ^b uneven number (4-12) of items for each component	Three items	28 items, 4-7 for each component	32 items, 3-6 for each component ^c
Scale Format	Five-point bipolar observational scale with endpoints labeled	Five-point Likert-type observational scale labeled as "sounds a lot like the child", "sounds a little like the child", etc.	Six-point observational scale indicating frequency of behavior from "rarely or never" to "almost always"	Four-point bipolar self-report scale with endpoints labeled	Seven-point Likert Scale	Seven-point semantic differential scale
Trait or State Measure	Trait	Trait	State measure used to infer trait	State	Trait	Trait

^a There were two other questions appended to Lieberman's (1977) instrument asking about perceived intelligence and attractiveness of the child.

^b Each of these items were administered twice, once indoors, the other time outdoors.

^c The five factors/components were derived from a subset (25 items) of the 32 items included in the final version of APS.

Situations Relevant to the Expression of Playfulness

In their review of controversies surrounding trait theories, Ten Berge and De Raad (1999) argue against an exclusive focus on the trait per se and average behavior tendencies. They propose that trait researchers should systematically account for situation in order for trait theories to be more useful and predictive. Indeed, a thorough knowledge about situations relevant to the expression of a trait is critical for understanding how a trait functions in real life and why, besides remaining relatively consistent, behavior varies across situations.

The issue of behavioral variation is perhaps more perplexing for play researchers than for scholars in any other field. “Play behaviors are incredibly diverse and occur under a wide variety of circumstances” (Weisler & McCall, 1976, p. 497). The extreme diversity of play is largely responsible for why an agreed-upon definition of play continues to evade play researchers. The proposition of playfulness as a personality trait can be viewed as a response to the unwieldy heterogeneity issue surrounding the forms of play through shifting attention to the attributes of the player. This switch of focus helps shed light on the person side of the environment-person transaction during play (Neumann, 1971) and brings some order to the heterogeneous puzzle through revealing the relative consistent aspect of play behavior, but it does not completely solve the puzzle. The knowledge about the environment wherein play takes place holds the key to the rest of the answer, because it will facilitate understanding about what situations encourage and what conditions inhibit the displaying of playfulness, why behavior varies across situations, and what is the psychodynamic process during the trait-environment interaction.

For a long time, the field of playfulness research has pursued a narrow focus on the trait and ignored the role of situation as well as corresponding behavioral variations. However, we must study persons in context and assess situations along with the playful trait in order to fully understand how playfulness functions and manifests itself in real life. This review puts playfulness and play in context by surveying research on situations for play.

A Categorization of Situational Factors for Play

Sutton-Smith (2001) notes that “almost anything can allow play to occur within its boundaries” (p. 3). This statement on the one hand acknowledges the ubiquity of playfulness, and on the other hand, implies the environment’s unlimited potential for play opportunities. This part of review focuses on what about an environment that makes it a potential play context.

A review of play/playfulness literature suggests that although systematic investigation of the play environment is rare, speculation and observations about contextual factors that may invite or inhibit the expression of playfulness are sprinkled through published work. Ellis (1973) suggests that Neumann’s (1971) conceptualization of playfulness can be used to guide the examination of situations for play. He proposes that an environment can be assessed in terms of the extent to which its various elements (e.g., playthings, physical features, and other players) promote intrinsic motivation, internal control, and sense of freedom in the potential player. Although the specific criteria for evaluating the environment can be argued, I concur with the principle suggested by Ellis. That is, the evaluation of play environment should be closely tied to the conceptualization of playfulness, i.e., its essential qualities, in order to identify

situational factors relevant to the trait's functioning. Guided by this principle, it seems useful and imperative to distinguish two types of situational factors for play:

(1) Factors or elements of a situation that directly motivate playful behavior by stimulating interest, increase and sustain intrinsic motivation or discourage playful behavior by failing to arouse interest, thwarting and diminishing intrinsic motivation for play. I term this type of factors *central situational factors* because they impact the core motivation component of playfulness. Examples of central situational factors include play objects or facilities (e.g., ideas, toys, and playgrounds), games, and playmates.

(2) Factors or elements of a situation or the broader environment that support/inhibit free, spontaneous displaying of playfulness by providing a liberating setting that promotes a sense of freedom or a constraining environment that diminishes a sense of freedom. I call this type of factors *background situational factors*. Examples of background situational factors include friendly, loving companions; open-minded supervisors; an equal, free conversation dynamic; or simply the absence of stress or anxiety-causing tasks.

Note that this situation categorization framework intimately corresponds to the three identified defining qualities of playfulness (i.e., intrinsic motivation, uninhibitedness, and spontaneity). Central situational factors affect the manifestation of playfulness by activating or deactivating intrinsic motivation, whereas background situational factors impact the expression of the playful trait by influencing the individual's perception of freedom which, in turn, affects the expression of spontaneity. I use this framework to organize the following review of literature about situations for play.

Central Situational Factors

In his Play as Arousal-seeking Theory, Ellis (1973) proposes that situations that offer proper amount of novelty, complexity, and responsiveness encourage exploration, investigation, and manipulation, respectively. His proposition is supported by Boyatzis (1987) who observed that traditional playgrounds that offered low levels of complexity appeared redundant and boring to children and failed to keep them for long. Similarly, Knox (1996) find that play materials that can be used in diverse ways (e.g., bristle blocks) often invoke more playful responses than those that require more structured manipulation (e.g., puzzles, pegboards).

Chick (personal communication, July, 2010) proposed a more sophisticated mechanism regarding the environment's role during play by introducing the notion of a match between the environmental stimuli and the player's cognitive capacity. He noted that "for play to occur, context complexity must match the individual's cognitive complexity. For example, many children play tick-tack-toe but few adults do because, as a game of strategy, it is extremely simple. However, few young children play chess or wei chi because they are far too complex". Chick's view resonates with the notion of a sense of mastery or competency preempting play (Lieberman, 1977; Zigler, Levine, & Gould, 1967) as reviewed earlier.

Of note, rules and structures that are integral part of the play may serve as central situational factors. Gump and Sutton-Smith (1955, cited in Bishop & Chace, 1971), for instance, note that the structure of games encourage certain types of play behaviors. Likewise, Boyatzis (1987) suggests the notion "form determines function" (p. 106),

stating that the design of playground equipment dictates children's play to some degree (e.g., a swing promotes more sensorimotor play than social play).

Background Situational Factors

Weisler and McCall (1976) observe that “play does not tend to occur when the organism is in a state of high subjective uncertainty or fear” (p. 494) and “play is likely to occur only in contexts in which the organism feels safe and sated with respect to basic needs” (p. 495). This view echoes Ellis's (1973) proposition that “unsatisfied primary and acquired drives can preempt playful behavior” (p. 123). These notions seem to delimit a fairly reliable low bound background condition for playful behavior to occur, though they do not rule out exceptions wherein people demonstrate extraordinary adaptability and ability to negotiate with constraints when the basic biological and security needs are barely met (e.g., Eisen, 1987; Zinsser, 1987),

When the basic needs are satisfied, inhibiting background factors for playful behavior are more likely to be introduced by conditions that impose “restrictiveness, control, or a moral or functional ‘oughtness’” (Bishop and Chace, 1971, p. 322). As Colarusso (1993) suggests, adult play is bound with rules, regulations, and the expectations of others, which regulate whether an intended play behavior is judged as appropriate. The same notion holds true for children. Knox (1996) observed that children displayed more playfulness in self-initiated and directed activities. In a study wherein children were asked to label play and non-play activities, King (1987) reported that children categorized only those activities that they thought were voluntary and free of teachers' direct supervision as play.

It is worth noting that the boundary set by the nature of a situation is not absolute. Different individuals may interpret the same situation differently. Sometimes, people may even create a play space by negotiating with or adapting to the socially defined boundary. For example, Zinsser (1987) found that, in a department store, a public place calling for public demeanor, children developed a fine sense of what would be allowed and managed to play without disrupting the overall social organization of public behavior. On a different note, at times central and background factors may come from a single source. For example, a playmate may be perceived as fun to play with thus encourages playful responses on the one hand; the same playmate's attitude about what behavior is likable or dislikable may be perceived as discouraging and thus inhibits spontaneous play on the other hand.

Very occasionally play context has taken center-stage as the primary focus of inquiry. Bundy (1999, cited in Bronson & Bundy, 2001) recognizes the important role of environment in children's play and developed the Test of Environmental Supportiveness (TOES) to evaluate the extent to which various environmental properties inhibit or facilitate play. The TOES is designed to evaluate 17 aspects of a play environment, including the sensory characteristics (e.g., colors, noise, and temperature), play opportunities provided by caregivers, responsiveness of playmates and whether they play as equals, amount and supportiveness of play objects, safety and accessibility of play space, etc. When administered in conjunction with the ToP, researchers found a significant positive relationship between the TOES scores and the ToP scores ($r = .40$

and .72 in Bundy, 1997, and Bundy et al., 2001, respectively), providing some supporting evidence for the scale's validity.⁶

Granted the pioneer contribution made by the TOES to the assessment of play environment, the usefulness of this instrument demands further validation for two reasons. First, the TOES scores are assigned by researchers and do not tap children, i.e., the players' perception of the environment. Whether the TOE scores accurately reflect what players think of the environment still needs to be validated. Second, the instrument covers a variety of physical features of the environment, which may be perceived differently by different children (Bronson & Bundy, 2001). It is unclear whether some characteristics are more relevant than others to the manifestation of playfulness. Indeed, the notion of physical vs. psychological (or objective vs. subjective) situations is well debated in the broader psychology community, but it is yet to receive adequately attention among play researchers.

Finally, there have been propositions that playful people perceive and approach situations differently than less playful people (Glynn & Webster, 1992; Staempfli, 2005). Few empirical studies have examined how the playful trait may affect how situations are perceived. Despite the many observations and speculations on this topic, I have to conclude that our knowledge about play context is at best unsystematic. Table 2.3 presents a summary of various situational factors relevant to the displaying of playfulness using the categorization framework proposed at the beginning of this section.

⁶ The scale uses a four-point scale. Bronson and Bundy (2001) and Hamm (2006) provided evidence for the reliability and validity of the TOES using Rasch analysis.

Table 2.3

A Central-Background Classification Framework for Situational Factors for Play

	Central Factors	Background Factors
Fostering factors	<ul style="list-style-type: none"> • Novelty, complexity, responsiveness • Enriched environment 	<ul style="list-style-type: none"> • Basic biological and safety needs satisfied • Free, equal environment
Inhibiting Factors	<ul style="list-style-type: none"> • Structured, rigid activity • Redundancy • Monotonous, boring environment 	<ul style="list-style-type: none"> • Uncertainty, threat to safety • Constraints, rules external to the activity • Moral or functional “oughtness”
Mechanism	<ul style="list-style-type: none"> • Stimulating or diminishing interest • Increasing/sustaining or decreasing/diminishing intrinsic motivation • Providing or devoid of source of fun 	<ul style="list-style-type: none"> • Supporting or threatening sense of freedom • Increasing or decreasing internal control • Lowering or raising guard in relation to the threshold of releasing spontaneity
Source	Playthings, play facilities, playmates, games, inherent rules or structure of the play activity	Perceived social norms, external rules and regulations, attitudes and expectations of others

Approach to Studying Playfulness as a Personality Trait

In this section, I put the playfulness research in perspective by taking a step back and review several major personality research paradigms, based on which I propose the theoretical approach that guides the current research.

Personality Research Paradigms

It is well established that individuals are characterized by a set of relatively stable and unique traits that give both consistency and individuality to the person’s behavior, wherein lies the concept of personality (J. Feist & J. G. Feist, 2006). Understanding the coherence of personality functioning has been recognized and accepted by the field of personality psychology as its central and unique charge since its inception (Allport, 1937; Cervone & Mischel, 2002). For a century, however, personality psychology has experienced deep divisions about how to conceptualize and measure personality

constructs, an issue that lies at the center of the long-standing trait-state or person vs. situation debate. In this section, I provide a review of various issues and challenges involved in personality research by summarizing three major paradigms, namely the trait approach, the social-cognitive approach, and the interactionist approach.

The trait approach.

The trait approach is perhaps the earliest established personality paradigm (S. Kreitler & H. Kreitler, 1990). The core assumption of this approach is that individuals possess relatively stable dispositions that manifest themselves consistently across situations (e.g., McCrae & Costa, 1999). This assumption has led trait theorists to focus on developing reliable and valid measures of personality traits (Cervone & Shoda, 1999). Two different views exist on how to define the very construct of trait. Early trait theorists (e.g., Allport, 1931, 1961, 1966; Cattell, 1950; Guilford, 1959) strictly view traits as latent dispositions that reside within the individual and “initiate and guide behavior” (Allport, 1961, p. 373). This conceptualization is overshadowed by the more recent summary view (Harré, 1990), which defines traits as “individual differences in tendencies to show consistent patterns of thoughts, feelings, and actions” (McCrae & Costa, 1995, p. 235). The above two perspectives assign the trait construct different causal status in the chain of explanation: traits defined as inner qualities can be logically used to predict and explain observed patterns of behavior; traits defined as average tendency of thoughts, affects, and behavior serve more like descriptive, summary labels and can not provide causal explanations for behavior (Harré, 1998).

The trait approach that adopts the summary view has guided the development of many trait inventories (Kreitler & Kreitler, 1990), including most playfulness studies

(e.g., Barnett, 1990; Glynn & Webster, 1992; Lieberman, 1977). It is also responsible for the well-known five-factor or Big Five model, which uncovered five remarkably consistent personality dimensions (i.e., extraversion, agreeableness, conscientiousness, openness, and emotional stability) across a variety of assessment methods, languages, and cultures (John & Srivastava, 1999; McCrae & Costa, 1999).⁷ Despite some evidence for the stability of traits over time and their ability to predict some behaviors without reference to situations, this approach has been widely criticized on two levels. First, as mentioned above, because the summary view of traits refer simultaneously to the internal dispositional qualities and overt behavioral tendencies, some researchers claim that traits defined as such have no predictive values and, if used to explain behavior, inevitably invoke circular reasoning (Cervone & Mischel, 2002; Cervone, Shadel, & Jencius, 2001; Harré, 1998). Second, as early as the 1920s, there have been questions about the core assumption of the trait approach, i.e., cross-situational consistency of behavior (e.g., Hartshorne & May, 1928; Newcomb, 1929, cited in Mischel, 1999). Mischel's (1968) well-known review confirmed the lack of empirical evidence for behavioral consistency (cross-situational correlations ranged from .01 to .71, with an average near .30) and set off the extensive debates surrounding the "consistency paradox" (i.e., the discrepancy between the intuitive belief about the behavioral consistency and the lack of empirical evidence for it) that led to critical re-examination of the trait approach. It is now generally accepted that by focusing on a global, decontextualized assessment of personality that averages tendencies across time and contexts (i.e., the trait), the trait approach completely

⁷ The model is developed by factor analyzing the words people use in everyday language to describe personalities⁷(e.g., Allport, 1937).

ignores the impacts of situations⁸ and (within-individual) cross-situational variations of behavior (i.e., the state, Endler, 1993).

The social-cognitive approach.

The social-cognitive approach emerged out of a line of research starting with behaviorism. For a short period of time during the 1960s the behaviorist's stimulus-response model provided a conceptual counterpart to the trait approach by assigning primacy to situation and assuming behavior to be highly situation-specific rather than cross-situationally consistent (Allport, 1966; Krahe, 1990). The predominance of situation was soon downplayed by social learning theorists (e.g., Bandura, 1969; Beck, 1976, cited in Miller, Shoda, & Hurley, 1996), who looked inside the black box between situations and behavior that was ignored by the radical behaviorists (e.g., Skinner, 1963) and suggested that internal cognitive variables mediate behavioral responses to situation stimuli. The mediating role of internal cognitive variables was greatly elaborated by ensuing social-cognitive theories (e.g., Bandura, 1986; Mischel, 1973), which, by the early 1970s, have replaced behaviorism as the primary counterpart of the trait approach (Cervone & Shoda, 1999; Mischel, 1979) and driven voluminous research (e.g., Bandura, 1977a, 1977b, 1986; Dodge, 1986; Foa & Kozak, 1986; Mischel, 1973, 1990; Mischel & Shoda, 1995, 1998).

Corresponding to their emphasis on psychological mediating processes, a group of social-cognitive theorists propose a comprehensive cognitive-affective system, namely

⁸ In response to assertions that the trait approach ignores situations, several researchers argued that situational effects were implied, more or less, in the notion of relative consistency (e.g., Johnson, 1997; Ten Berge & De Raad, 1999). Nevertheless, there seem to be a consensus that situational or contextual factors are never explicitly assessed in the trait approach (Ten Berge & De Raad, 1999). Krahe (1990) made a note about the concept of "relative consistency" (p.23) implied by the dispositional perspective of trait, which suggested consistency should be conceptualized in relation to trait-relevant situations. This perspective is resonated by the situation-behavior configurations proposed by social cognitive theories. Unfortunately, the dispositional view has not received much attention from either trait psychologists or social-cognitive theorists.

the cognitive-affective personality system (CAPS) to account for the functioning of personality (Mischel & Shoda, 1995, 1998). They suggest that the CAPS contains five types of person variables (*construal of self, people, events, and situations; expectancies and beliefs; goals and values; affects; and self-regulatory strategies and plans*) that allow the individual to categorize and encode situations cognitively and emotionally, then transform these internal cognitions and affects into meaningful social actions (Mischel, 1973; Mischel & Shoda, 1995). The main assumption of the CAPS is that the activation levels of and relationships among a person's cognitions and affects remain relatively stable over time (Cervone & Shoda, 1999; Mischel, 1973, 1999; Mischel & Shoda, 1995, 1998). Cervone et al. (2001) argue that it is the distinctive pattern of intercorrelations among the “dynamically interacting social-cognitive and affective processes” that constitutes the basic structure of personality (p. 35).

Similar to its antecedent behaviorism, the social-cognitive theories explicitly emphasize the role of situation in the function of personality: situational factors⁹ activate a given mediating unit through the encoding process, which in turn activates specific subsets of other mediating units through a stable network of pathways and generate distinctive cognitions, affects, and behaviors. Personality coherence is not embodied in cross-situational consistency of behavior, but in stable patterns of behavioral variability in relation to situations, i.e., the *if...then...* situation-behavior profiles that distinctively characterize each individual¹⁰ (Cervone et al., 2001; Cervone & Mischel, 2002; Shoda, 2004).

⁹ With the exceptions of fantasy, day-dreaming, and planning wherein the individual initiates actions via internal cognitive and affective activities (Mischel, Cantor, & Feldman, 1996, in Mischel & Shoda, 1998).

¹⁰ Typically, researchers taking this approach illustrate the “behavioral signature” on a behavior (the vertical axis) by situation (the horizontal axis) coordinate diagram, i.e., drawing each individual's standardized behavioral scores (e.g., friendly behavior subjectively rated by researchers) across multiple situations (e.g., situation 1—when teased by peers,

The social cognitive theories contribute to personality research in important ways by (a) advocating a clear distinction between internal psychological qualities and overt behavior such that the relationship between the two can be examined (Cervern et al., 2001) and (b) calling attention to the need to study person in context and the within-individual behavioral variability, which is previously treated as statistical error variance by the trait approach (Mischel & Shoda, 1995; Shoda, Mischel, & Wright, 1994).

Nevertheless, this approach is not free of limitations. Firstly, researchers have reported the challenge of mapping the CAPS empirically due to methodological difficulties in simultaneously assessing multiple mediators and sometimes reciprocal mediation pathways. To date, the cognitive-affective mediation processes proposed in the CAPS remains a largely unexplored black box and the best empirical evidence offered by studies taking this approach is limited to the observable *if...then...* situation-behavior profiles. Social-cognitive theorists, like trait theorists, still rely on observed behavior data to describe and categorize individuals, and to infer underlying motivations (Shoda et al., 1994; see also Mischel & Shoda, 1995; Shoda & Mischel, 1993). Suffice it to say, as long as the components of the cognitive-affective network remain untestable, social-cognitive theorists do not exceed trait researchers much except for providing a more meticulous depiction of individuals' behavior by adding an adverb, i.e., the situational modifier *ifs*, to behavioral profiles.

Secondly, despite their focus on the idiographic intrapersonal variances, social cognitive theorists recognize the need of nomothetic ways to categorize individual

situation 2—when praised by parents, etc.). Such a “behavioral signature” diagram is drawn for each study subject. So far, the research of children’s summer camp behavior conducted by Shoda et al. (1994) is the most frequently cited empirical study that illustrates the social-cognitive approach. Mischel & Shoda (1995) also used computer simulated data to illustrate situation-behavior profiles of hypothetical individuals.

differences, which remains at the core of personality research (Mischel & Shoda, 1998; Shoda, 2004). Mischel and Shoda (1995) claim that dispositional exemplars can be identified by comparing the observed situation-behavior profiles and average frequencies of prototype-relevant behaviors. Unfortunately, this proposition has not met with much empirical success. Shoda et al. (1994), for instance, reported that “profiles from different individuals” had an average similarity coefficient of zero (p. 683).

A large part of the failure in capturing generalizable individual differences in situation-behavior patterns can be attributed to the difficulty in defining and measuring situations in a meaningful and relevant way. Specifically, many studies of situation-behavior patterns focus on the objective or quasi-objective (i.e., consensual) characteristics of situations and fail to realize that only psychological features of a situation are personally meaningful to the individual (Shoda et al., 1994). It is the latter that the individual reads into his or her social-affective system and reacts to, which ultimately determines the configuration of the behavior variation in relation to situations (Mischel & Shoda, 1995, 1998). By contrast, physical, objective situations and their interpretations are highly idiographic and are less likely to generalize beyond themselves (Mischel & Shoda, 1998). Unfortunately, despite the fact that social cognitive theorists clearly recognize the central role of subjective situation in determining behavioral signatures, this understanding has not been successfully translated into empirical studies (cf., Krahé, 1990; Magnusson, 1981, Shoda et al., 1994; Ten Berge & De Raad, 1999). I provide further review on the concept of psychological situation in the next section. For now, suffice it to say that the social cognitive approach is yet to prove adequate in

explaining broad, observed, between-individual differences in average behavioral patterns.

Finally, studies that examined behavior profile stability using the social cognitive approach reported modest stability coefficients (.19 to .47, e.g., Mischel & Shoda, 1995; Shoda et. al., 1994), a finding roughly comparable to reported cross-situational consistencies in trait studies (.01 to .71, with an average near .30, Mischel, 1968). The converging findings seem to provide some evidence for the merit of both approaches, despite the apparent differences in their conceptual frameworks and methodology.

The interactionist approach

The interactionist approach stems from the understanding that both cross-situational consistency (i.e., trait) and (within-individual) cross-situational variation (i.e., states) are important, integral aspects of personality coherence. This approach views behavior as the result of traits interacting with situational specifics and suggests that a comprehensive personality research framework should account for person and environment as well as the interaction between the two in order to understand the coherent functioning of personality (Bowers, 1973; Lewin, 1936; Magnusson, 1999).

The value of the interactionist paradigm is widely endorsed by the contemporary personality research community. Unfortunately, the empirical application of this approach remains limited for two reasons (Krahe, 1990). First, the interactionist framework remains relatively unsophisticated due to a lack of articulate, well-integrated theories on how to address the specific conceptual and methodological challenges posed by the trait approach and the social cognitive approach (e.g., the conceptualization and measurement of trait and psychological situation). Second, although the methodological tools and

statistical techniques that allow empirical implementation of the interactionist approach¹¹ have become available in the past a couple of decades, these methods are yet to be widely employed by the personality research community (Fleeson, 2007; Reis & Gable, 2000).

An Interactionist Framework for Playfulness Research

In this research, I adopt the interactionist general viewpoint to guide constructing a theoretical framework for playfulness research. I begin by describing the definitions of three fundamental concepts—*personality*, *trait*, and *situation*—adopted in this research and related conceptual issues. I then propose an interactionist framework for playfulness research, including the conceptualizations of playfulness, playful states, and situations for play based on the previous synthetic literature review and three research objectives that guide this research.

The conceptualization of personality.

I adopt Ryckman's (2004) broad conceptualization of personality and define it as a dynamic and organized set of characteristics possessed by a person, including his or her unique cognitions, affects, behaviors, and distinctive organizations of cognitions and affects.

The conceptualization of trait.

I conceptualize a trait as a small set of interrelated, relatively stable dispositional motivational and cognitive qualities underlying a specific aspect of personality. As latent, essential qualities of an individual, the existence of a trait is independent of contexts and behavior. The motivational or cognitive qualities that make up a trait are assumed to be

¹¹ For example, ecological assessment or experience sampling methods that allow researchers to collect intensive person-in-context information, and hierarchical linear modeling or multi-level modeling that allow researchers to conduct simultaneous analyses of individual differences and within-individual variations

interconnected in a relatively stable network. I view trait and behavior as conceptually distinctive constructs. A trait is responsible for the relatively consistent pattern of trait-related behaviors. A trait-related behavior is the manifestation of the trait in a given situation as a result of the trait interacting with relevant situational factors. The trait and corresponding behavior patterns together define the specific aspect of personality. This proposed trait conceptualization integrates the early view of traits as latent inner qualities (e.g., Allport, 1931) and the social cognitive theories' assumption about intercorrelated cognitions and affects with relatively stable activation levels (Mischel & Shoda, 1995, 1998).

The conceptualization of situation.

I adopted Endler's (1981, cited in Ten Berge & De Raad, 1999) conceptualization of situation and refer it to the momentary transient background wherein behavior occurs. According to Endler, situation is different from environment and stimuli: environment is the general and persistent background; stimuli refer to the elements within a situation that serve as the incentive for behavior. During the process of personality functioning, situation provides a setting and often stimuli for behavior. Two issues warrant attention:

1. The need to study situation in context. Some researchers studied how far specific situations allow the expression of various traits and found that some traits can be observed in a greater variety of situations than others and some situations are more appropriate than others for manifesting certain traits (Kenrick, McCreath, Govern, King, & Bordin, 1990). This finding suggests that not all situations are relevant to the expression of a given trait. In fact, Endler (1983, cited in Krahe, 1990) suggests that identifying relevant situational factors per se constitutes an important part of the

substantive theory development surrounding a trait. Not only should traits be studied in context, situations should also be examined within a specific theoretical context. Any effort of looking for universal taxonomies of situations merely on empirical grounds (e.g., Forgas, 1976; Krause, 1970; Magnusson, 1974; Moos, 1973; Pervin, 1976; Price, 1974; Van Heck, 1984, 1989) is destined to be ill-advised and of limited usefulness.

2. The importance of studying psychological situations. Ten Berge and De Raad (1999) note that currently great interest is given to the perception and cognitive representation of situations or *psychological situations*. This focus on the subjective meaning of situations stems from the recognition that a physical or objective situation may be perceived differently by different individuals. Only by virtue of being mentally represented by the individual in a personally meaningful way can a situation exert its influence on the individual. As Gadlin and Rubin (1979) state:

People do not act in situations; they act in specific historical circumstances that they interpret in certain ways and that constrain and compel them in certain ways; and it is the particular features of those circumstances we must understand to understand why they act as they do (cited in Krahé, 1990, p. 69).

The approach to current research of adult playfulness.

The primary goal of this research is to develop a sound conceptualization and measure of adult playfulness while constructing an integrated interactionist framework for playfulness research. To achieve this goal, I propose a theory-based conceptualization of adult playfulness based on my earlier synthetic review of play/playfulness literature, which is also informed by an integrated understanding of existing personality research theories. In constructing the theoretical framework for playfulness research, I make an

effort to address important conceptual and methodological challenges as described heretofore. Particularly, I maintain that instead of taking a context-free trait approach, the study of the playful trait will greatly benefit from understanding the trait's functioning in real life situations. Following this line of thinking, I propose that, in addition to examining the conceptualization and characteristics of playfulness, it is also important to investigate situational factors relevant to the displaying of playfulness and characteristics of playful states and incorporate them as an integral part of an interactionist study of playfulness.

I will first describe the proposed theory-based conceptualization of adult playfulness, followed by the conceptualizations of situations for play and playful states. I then outline three specific research objectives.

Definitions of adult playfulness, situations for play, and playful states

1. A theory-based conceptualization of adult playfulness. Consistent with my proposed trait concept, I conceptualize adult playfulness as a personality trait that consists of a set of interrelated latent motivational and cognitive qualities. These qualities remain relatively stable and underlie the tendency to engage in playful behavior across a wide range of situations. More specifically, the playful trait is driven by *fun-loving motivation* and characterized by two cognitive qualities: *spontaneity*, a readiness to act or respond, and *uninhibitedness*, an ability to subdue potential constraining situational factors and create an uninhibited mental state for free expression of playfulness. A playful person tends to have a strong fun-loving orientation that motivates him/her to actively derive fun from both the internal and external environment through initiating playful behavior or reacting to subjectively perceived fun stimuli. A playful person also

often enjoys a free and open mental state which allows for ambiguities, experiments, and random responses, as well as accepting these qualities in others.

Of note, the above conceptualization of adult playfulness proposes a hierarchical construct structure. The three (lower level) dimensions of adult playfulness, fun-loving motivation, spontaneity, and uninhibitedness are hypothesized to interconnect with one another, forming a relatively stable network that defines the individual's degree of playfulness (a higher level quality).

2. Situations for play. Situations for play are defined in terms of their psychological characteristics relevant to the manifestation of playfulness, including (a) personally stimulating or interesting features that motivate the individual to initiate play or react accordingly, and (b) factors that help create a free, uninhibited subjective mental state or cognitive context in the individual, which is conducive to spontaneous actions or reactions.

3. Characteristics of playful States. I assume that playful behavior is a result of the playful trait interacting with relevant situational specifics. As manifestations of playfulness in specific contexts, playful states are characterized by positive affects, internal control, activeness, and immersion.

Research objectives

The main objective of this research is to develop and validate a self-report measure of adult playfulness, namely Adult Playfulness Trait Scale (APTS) guided by the proposed theory-based conceptualization. This goal is achieved through three steps following a systematic psychometric approach:

1. Developing items with basic face validity and content validity to measure each dimension/sub-dimension of adult playfulness as defined in the proposed conceptualization.

2. Examining the psychometric properties of the APTS, including its reliability and internal structure. Particularly, the proposed hierarchical construct structure will be tested, which leads to the first hypothesis of this research:

H1: The three hypothesized dimensions of adult playfulness, i.e., fun-loving motivation, spontaneity, and uninhibitedness are interconnected and fall under an overarching factor (i.e., adult playfulness) such that the whole scale can be considered as uni-dimensional.

3. Validating the APTS. Primary validity evidence is collected through examining whether adult playfulness as measured by the APTS relates to measures of theoretically related constructs as expected by theories (predictive validity, convergent validity, concurrent validity) and whether the APTS can successfully distinguish more playful individuals from less playful ones (differentiation ability). Five specific hypotheses will be tested at this step:

H2: The playful trait predicts average tendency to engage in playful behavior. More playful people tend to engage in playful behavior more.

H3: Adult playfulness and its dimensions as measured by the APTS positively correlating with alternative measures of adult playfulness or its dimensions, including global measures of adult playfulness, the Playfulness Scale (O'Connell et al., 2000), and alternative single-item measures of playfulness dimensions.

H4: Fun-loving motivation negatively relates to (external) goal-attainment or positively relates to low goal-attainment. Specifically, in competitive games or sports, people who have a stronger motivation to seek fun will display a low commitment to goal-attainment than less playful people.

H5: Adult playfulness positively relates to SAE (Mannell, 1984). Specifically, more playful people will be more capable to create interesting activities, to use mind play, and to seek external resources to entertain oneself. Because playfulness and SAE are related but distinct constructs, I hypothesize that the correlation between them will be small or moderate.

H6: The APTS can successfully differentiate people known to be more playful from those known to be less playful. Specifically, more playful people will score higher on the APTS than their less playful counterpart.

The second objective of this research is to develop measurements of two other constructs that form the basis of an integrated interactionist framework for playfulness research: psychological situations for play and playful states. The measurement development of each of these two constructs will be guided by the corresponding proposed theory-based conceptualization as described above.

The third objective of this research is to understand some of the real life implications of adult playfulness by exploring its relationship with leisure boredom and other personality characteristics relevant to psychological well-being.

Note that interactionism is not actually tested in this research, but it is of ultimate importance because the approach guided through the entire process of constructing the theoretical framework and developing measurements.

CHAPTER 3

METHODS

The primary goal of this research was to develop a reliable and valid self-report measurement of adult playfulness guided by a theory-based conceptualization. I took a systematic psychometric approach to the scale development. The flow chart presented in Figure 3.1 summarizes the multiple steps and methods I employed to develop the adult playfulness trait scale (APTS). This section describes the research design of five studies (highlighted in bold in Figure 3.1) in the process of scale development: (a) a focus group study that helped generate an initial pool of items tapping various aspects of the playfulness construct, (b) expert review wherein a panel of experts evaluated the definition of the playfulness construct and the face validity and content validity of initial items, (c) conceptual back-translation wherein the face validity of initial items were further reviewed in relation to corresponding dimensions, (d) survey study 1, a scale development evaluation study that collected empirical data to evaluate the quality of items, select best-performing items, examine psychometric properties of the final scale, and explore the relationship between adult playfulness and relevant psychological well-being variables, and (e) survey study 2, a known-group comparison study that examined the differentiation ability of the APTS.

Additionally, two supplemental scales assessing psychological situations for play (the Psychological Situations for Play Scale or PPS) and playful states (i.e., the Playful State Scale or PSS) were developed following a similar procedure. The measurement development of these two constructs was incorporated into the focus groups, expert

review, and on-line survey as described above. Due to the scope of this research, extensive validity evidence was not collected for these two scales.

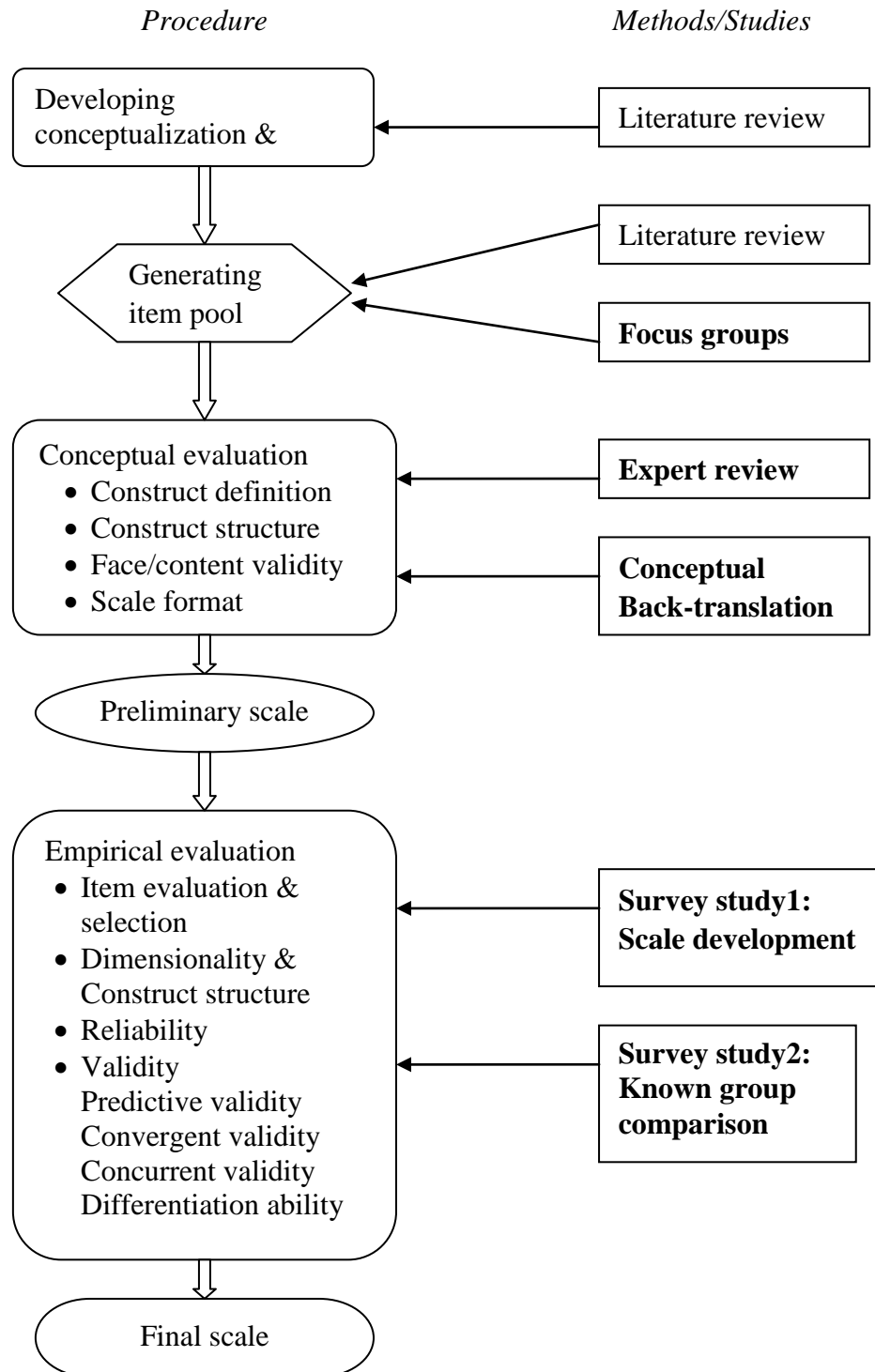


Figure 3.1 Research Design for Adult Playfulness Trait Scale Development

Focus Group Study

The purpose of the focus group (FG) study was to explore the concept and characteristics of adult playfulness from lay people's perspective and collect part of the data that would facilitate generating initial scale items. The existing literature on playfulness has primarily centered on scholars' theoretical reasoning or personal insights. More input from outside academia and empirical studies are needed. This FG study was useful in filling the blank. Moreover, the unique group dynamic afforded by focus groups made it possible to create a cueing context that helps extract opinions/emotions that people do not express or articulate frequently (Crabtree, Yanoshik, Miller, & O'Connor, 1993). People typically do not analyze their own psychological state during spontaneous playful behavior. In a group discussion, however, hearing others talk about playful experiences may trigger people's memory and make them more aware about their own thoughts and feelings during play (Morgan & Krueger, 1993).

Four aspects of information were collected: (a) people's thoughts about the defining qualities of the playful trait, (b) observable and psychological characteristics of playful states, (c) psychological situations for play, and (d) personality correlates of adult playfulness and long term and/or short term personal effects of playful behavior.

Procedures and Participants

Participants were recruited from graduate students at a large institution in the Northeastern United States. A recruitment email (Appendix A) was sent through a social science department graduate student mail-list, announcing the general nature of the study and how to participate. Several visiting scholars from the same department and one graduate student from another department learned about the study via word of mouth and

volunteered to participate. Two FGs were conducted. Nine and five people (aged 22-35 years) participated in the first and second FG sessions, respectively.

The two sessions took place in two consecutive days in a conference room on campus, with free lunch (pizza, snack foods, and soft drinks) provided. To accommodate different schedules/availabilities of graduate participants, the FG sessions assumed an informal format: interested participants were invited to freely drop in during the scheduled two-hour meeting time around noon (11:30a to 1:30p). At both focus groups, the majority of participants came in slightly after 11:30a and stayed for most of the session (about 90 minutes).

Each participant received a handout with warm-up questions when he or she first arrived. These warm-up questions proved to be helpful in engaging people in relevant thinking while waiting for more participants. In each session, the moderator, i.e. the principal investigator, started the discussion after most participants arrived and completed the warm-up questions. Both sessions were tape recorded and signed informed consent forms (Appendix B) collected. A semi-structured FG study protocol (Appendix C) was followed to guide both FG sessions, including three parts: introduction, discussion of five open-ended questions, and summary.

Data Analysis

Shortly after each FG session, I developed tape-based abridged notes, which amounted to a total of eight single-spaced pages. I then content analyzed the notes by deriving themes/categories within each discussion topic, each theme/category substantiated with examples or detailed descriptions from discussants. Special attention was paid to overlaps or connections among themes (e.g., the psychological characteristics

“stress-free”, “happy” and “careless” of playful states corresponded to observable behavioral characteristics “smiling”, “relaxed posture”, and “open body language”). I started to observe reoccurring notions/concepts and stabilization of categories in the notes from the second FG session, indicating theoretical saturation (Bluff, 1997; Krueger, 1994; Morse 1995).

In summary, the data from FG discussions fleshed out the proposed three-dimensional conceptualization of playfulness and help identify a set of personality characteristics that may closely relate to adult playfulness. A dialectical examination of the FG data and existing literature led to the elaboration of four sub-dimensions under the fun-loving motivation dimension, including *fun belief*, beliefs in the value of fun in life; *initiative*, actively creating fun activities; *reactivity*, responsiveness to fun stimuli; and *consciousness*, knowingly choosing a light-hearted approach to life events.

The refined multi-dimensional conceptualization of playfulness then served as the operational definition and guided the generation of initial items of the APTS. A total of 73 items/statements were developed with careful considerations paid to three aspects: (a) basic face validity (i.e., each item appeared to assess the dimension/sub-dimension it purported to measure), (b) adequate content validity (i.e., there were adequate breadth of items that properly covered the content domain of each dimension or sub-dimension), and (c) sufficient length (i.e., there were multiple versions for each item, providing a comfortable margin for selecting an optimum combination of items in subsequent scale development steps).

Additionally, 45 items were developed to assess related constructs, including psychological situations for play (4 items), playful states (15 items), global measures of

playfulness (5 items), goal-attainment in sports/games (8 items), and general personality correlates of adult playfulness (13 items). The 73 initial items assessing adult playfulness and the above 45 items were submitted for expert review in the following conceptual evaluation.

Conceptual Evaluation

Expert Review

The primary purpose of expert review was to have an independent panel of experts in play/playfulness research and/or scale development to rate the quality of initial items developed from the FG study following the general procedure suggested by Morey (2003). Expert opinions were collected via email exchange. This method has the advantages of being flexible (e.g., experts can respond at their own convenience) and cost-efficient compared to other group communication techniques (e.g., face-to-face panel discussion, conference telephone call). Anonymity was assured when structuring the communication process (i.e., responses from individual experts were summarized, sources not revealed, before shared with the group) in order to reserve greatest individuality and avoid domination by quantity or strength of personality (e.g., bandwagon effect, Linston & Turoff, 2010).

A total of 11 experts were identified through referral (by advisors) or snowball recommendation. Each expert was individually contacted via an invitation email that explained the study purpose. Eight experts consented to participate and performed the following tasks: (a) evaluating the definition of adult playfulness, (b) evaluating the initial items created for various scales in terms of face validity and content validity as

well as appropriateness of language, and (c) providing feedback regarding scale format, ordering of items, and theoretically related constructs to be considered for validity check.

Two months were allocated for expert participants to respond. Correspondence between individual experts and the author was exchanged when needed or desired (e.g. clarifications, in-depth discussions). Revisions were made based on compiled expert feedback, including removing items deemed redundant or lacking face validity, rewording items to better reflect the underlying construct being assessed, and adding more items to provide adequate content validity for certain constructs.

A total of 32 items assessing adult playfulness were retained, each dimension/sub-dimension assessed by 5-7 items. The revision also resulted in nine items assessing situations for play (i.e., the PSPS), 22 items assessing playful states (i.e., the PSS), six items assessing goal-attainment in sports/games, five items assessing average tendency of playful behavior, two items assessing global measure of playfulness, and 21 items assessing potential personality correlates of playfulness. Furthermore, based on suggestions from experts, it was determined that all items would be randomly ordered and use Likert-type scales. Expert review was concluded by a thank-you email that summarized the above results.

Conceptual Back-translation

The purpose of conceptual back-translation was to further evaluate the 32 adult playfulness items resulted from the previous expert review. Back-translation or retranslation in scale construction (Smith & Kendall, 1963) shares a similar idea and procedures with back-translation in cross-cultural study wherein translated materials are retranslated into the original language by independent translator(s) to ensure accuracy. In

this research, back-translation was performed by asking independent judges to assign items back to the conceptual category they purported to assess to ensure face validity.

Two graduate students who were familiar with play theories but not involved in item writing were recruited for back-translation. They were provided with two documents: one containing the 32 items, randomly ordered, each written on a card (item card), the other containing definitions of adult playfulness and its dimensions/sub-dimensions, each, too, written on a card (dimension card). The two judges were asked to assign each item to its corresponding dimension (i.e., the definition from which it was created) by placing the item card under the dimension card. Only items that survived the back-translation were retained as they were. Where “misallocation” occurred, judges were queried about their reasons, followed by a discussion about ways to clarify or rephrase the misallocated items.

Overall, the majority of initial items were correctly assigned back to the dimension/sub-dimension they belonged. A few ambiguous items were reworded or reallocated. No item was eliminated. The revised 32 items formed the preliminary adult playfulness trait scale (APTS) and was retained for the subsequent empirical evaluation.

Survey Study 1: Scale Development Empirical Evaluation

The purpose of this study was three-fold: (a) collecting quantitative data for evaluating preliminary items and selecting best-performing items for the APTS, (b) evaluating the psychometric properties of the APTS, including its dimensionality, reliabilities, and validity, and (c) evaluating and refining the PSPS and the PSS.

Study Sample and Data Collection

A 15-25 minute on-line survey (Appendix E) was set up using SurveyMonkey, a commercial Internet survey service provider. In order to avoid hypothesis guessing, the survey was described as a study of personality traits in adulthood. Participants were recruited from three sources: (a) subscribers of the Staff/Faculty Newswire at a large sized institution in the Northeastern United States, (b) members of a local historical society in central Pennsylvania, and (c) people on the author's private mail-list. All participants were required to be older than 18 years. The first source was reached by a solicitation (Appendix D) published on the above-mentioned Newswire; the latter two sources were reached by a recruitment email (Appendix D) sent through the corresponding mail-list.

The survey remained open for five weeks. A total of 473 people responded to the survey. Note that the effective sample size for different sets of variables varied due to missing responses (e.g., attrition, skipping).

Instrument

The on-line survey questionnaire consisted of five sections. The first section presented the 32-item preliminary APTS, including 20, 7, and 5 items assessing the three dimensions, namely fun-loving motivation, uninhibitedness, and spontaneity, respectively. The four sub-dimensions of fun-loving motivation—fun belief, initiative, reactivity, and consciousness—were assessed by 5, 6, 4, and 5 items, respectively (Table 3. 1). All items were randomly ordered, using a seven-point Likert scale with all points labeled (“strongly disagree”, “moderately disagree”, “slightly disagree”, “neither agree nor disagree”, “slightly agree”, “moderately agree”, and “strongly agree”).

Table 3.1

32-item Preliminary Adult Playfulness Trait Scale

Dimension	Sub-scale/Items (order of appearance on the questionnaire)
Fun-loving	<i>Fun Belief</i>
Motivation	<ol style="list-style-type: none"> 1. I am a fun-loving person (19) 2. I think having fun is more important than earning money (15) 3. I believe in having a good time (17) 4. I think fun is a very important part in life (25) 5. I think having fun is more important than being a high achiever (12)
	<i>Initiative</i>
	<ol style="list-style-type: none"> 1. I try to have fun no matter what I am doing(2) 2. I often do things just for the fun of it (14) 3. I can find fun in most situations (31) 4. I often look for fun things to do (10) 5. I am often the person who starts fun things in a situation (21) 6. I can make almost any activity fun for me to do (27)
	<i>Reactivity</i>
	<ol style="list-style-type: none"> 1. I enjoy fun things that other people initiate (22) 2. I like to hang out with fun people (32) 3. I appreciate fun things started by other people (11) 4. When someone else starts something that is fun, I'm happy to follow along (5)
	<i>Consciousness</i>
	<ol style="list-style-type: none"> 1. Among all the ways of doing things, I often choose the way that is more fun (26) 2. I believe work can be done in a fun manner (24) 3. I believe we don't have to be serious all the time even if we are doing something serious (16) 4. Work can be fun, if you want it to be (6) 5. We should combine work and play (8)
Uninhibitedness	<ol style="list-style-type: none"> 1. I don't always follow rules (4) 2. Sometimes I can do things without worrying about consequences (7) 3. I don't fear losing anything by being silly (30) 4. I understand social rules but most of the time I am not restricted by them (20) 5. I don't often feel constrained by my environment (9) 6. If I want to do something, I usually don't let what other people may think stop me (13) 7. I usually try to avoid doing things that may make others think negatively of me^r (28)
Spontaneity	<ol style="list-style-type: none"> 1. I often act upon my impulses (18) 2. I often do things on the spur of the moment (3) 3. I often pursue my spur-of-the-moment thoughts (23) 4. I often do unplanned things (1) 5. I often follow my spur-of-the-moment feelings (29)

^r Reverse coded

The second section consisted of the 22-item preliminary PSS (Table 3.2, Section B2 on the questionnaire) and the 9-item preliminary PSPS (Table 3.3, Section B3). Both

instruments used 7-point response scales with endpoints labeled as “not at all” and “extremely” and were preceded by a short open-ended priming question about relevant experiences (e.g., a playful experience or situation). The second section also included two sets of questions designed to examine the APTS’ predictive validity and concurrent validity, respectively: five questions assessing the average tendency to engage in playful behavior (Section B1, seven-point Likert scales with all points labeled) and six questions about respondents’ goal-attainment in competitive sports/games (Section B4, seven-point Likert scales with endpoints labeled as “Strongly Disagree” and “Strongly Agree”).

Table 3.2

22-Item Preliminary Playful State Scale

Dimension	Items (order of appearance on the questionnaire)
Immersion	1.I was deeply absorbed in whatever I was doing (1) 2.I lost track of time (22) 3.I forgot about the things going on around me (15) 4.I was not concerned with how I look (13) 5.I was not self-conscious (3)
Positive Affect	1.I was happy (16) 2.I was in high spirits (10) 3.I had lots of fun (18) 4.I felt pleasure (21) 5.I was amused (11)
Activeness	1.I felt excited (14) 2.I felt energetic (19) 3.My mind was active (12) 4.I was physically animated (20)
Sense of Mastery	1.I knew how to have fun in an appropriate way (9) 2.I had keen senses (2) 3.I was good at creating fun situations (6) 4.I felt in control (4) 5.I knew how to add my own fun to the situation (8) 6.I knew what to say or do to make people laugh (7) 7.I felt clumsy ^r (5) 8.I felt awkward ^r (17)

^r Reverse coded

Table 3.3

9-item Preliminary Psychological Situation for Play Scale

Dimension	Items (order of appearance on the questionnaire)
Secured	1. I feel uncomfortable ^r (9) 2. I felt constrained ^r (3) 3. I felt insecure ^r (7) 4. I felt relaxed (1) 5. When I'm with other people, I feel well liked (8) 6. I felt child-like (2) 7. I felt anxious ^r (4)
Aroused	1. I feel like exploring (6) 2. I am interested (5)

^r Reverse coded

The third section included the two-item global measure of playfulness and the three-item Playfulness Scale (PS, O' Connell et al., 2000, Section C3, seven-point semantic differential scales) for convergent validity check, 19 questions about potential personality correlates of adult playfulness (Section C1, seven-point Likert scales with endpoints labeled as “strongly disagree” and “strongly agree”), and the 10-item short form social desirability scale (SDS, Strahan & Gerbasi, 1972) for social desirability bias check (Section C2, true/false response scales). Fischer and Fick (1993) reported that the short form SDS is a significant improvement over the standard 33-item Marlowe-Crowne SDS (Crowne & Marlowe, 1960). It has high internal consistency and is strongly correlated with the standard original scale.

The fourth section included two measures tapping free time use experience: the 28-item Self-as-Entertainment Scale (SAE, Mannell, 1984, items randomly ordered) and the six-item Boredom in Free Time Scale (BFTS, Caldwell, Smith, & Weissinger, 1992). Both measurements used 7-point Likert scales (endpoints labeled as “strongly disagree” and “strongly agree”).

The last section collected demographic information, including age, sex, schooling, income, and ethnic background.

Data Analysis

Data were analyzed in three stages. First, the sample was examined for any unexpected characteristics that might bias estimation. Second, a dataset that contained the 32 preliminary APTS items was created and analyzed through examining qualities of items, selecting best-performing items, and testing the hypothesized hierarchical APTS model. Third, a dataset that contained the final APTS items and all other measures included for validity check was created and analyzed to evaluate the APTS' validity. Sample characteristics were reported in the Results. This section describes detailed analysis strategies for the second and third stages.

Data preparation: Handling missing data.

A dataset that contained the 32 preliminary APTS items was created. A quick inspection of the dataset indicated that the data did not follow a normal distribution, an issue common to ordinal data. There was a small to moderate number (here 1 to 56) of missing responses for different variables. I adopted the imputation by matching method (Jöreskog, 2002) to handle missing data using a data processing function in LISREL 8.72, namely PRELIS2. This procedure imputed values on specified variables based on the missing pattern of matching variables. It can be used with ordinal or continuous variables with any distribution (i.e., it does not assume multivariate normality) and does not require missing at random (MAR) assumed by many other missing data methods (e.g., case-deletion, most multiple imputation methods, and full-information maximum likelihood or FIML). The number of missing values per variable ranged from 1 to 18 after

imputation. The imputed dataset was used in the following analysis pertaining to the APTS refinement and model testing.

APTS item selection.

Responses to the 32 preliminary APTS items were first subject to explorative factor analysis (EFA, oblique rotation, principal axis factoring¹²) using SPSS 16.0. The purpose of EFA was to uncover the number and nature of latent factors underlying the 32 preliminary items and select best-performing items. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity were used for the initial diagnostics of dataset (i.e., if data are likely to factor well based on the correlation matrix). Items were selected based on information such as factor loadings, correlations, and reliability estimates. Ambiguous items with high cross-loadings ($> .30$) or a small loading ($< .40$) on the primary factor were removed (Brown, 2006). Additionally, evaluation of items was assisted by inspecting (internal consistency) reliability estimates of each dimension/sub-dimension and item-total correlations. The number of factors was determined using a combination of three criteria: (a) comprehensibility, i.e., limiting the number of factors to those with clearly comprehensible meaning; (b) Kaiser criterion, i.e., keep only factors with an eigenvalue above 1.0; and (c) reasonable residual correlation matrix, i.e., the differences between the reproduced correlations and actual correlations are reasonably small (Brown, 2006).

¹² Principal axis factoring, a.k.a. principal factor analysis or common factor analysis was chosen because this method is a correlation-focused approach seeking to reproduce the intercorrelation among the variables. It is generally preferred when the research purpose is detecting data structure or causal modeling. The other commonly used method principal components analysis is a variance-focused approach, which is more appropriate for the purposes of data reduction but not when researchers wish to detect the latent construct or factors (Brown, 2006).

APTS model testing.

The resultant APTS with retained items and factors was further evaluated through confirmatory factor analyses (CFA) using LISREL 8.72. The purpose of CFA was to test if the hypothesized construct structure would be supported by the data. The proposed hierarchical construct structure of adult playfulness (hypothesis 1) is recapitulated in structural equation modeling (SEM) terms as below: The adult playfulness trait is an over-arching factor (i.e., third-order factor) that drives three dimensions (i.e., second-order factors), namely fun-loving motivation, uninhibitedness, and spontaneity. Fun-loving motivation overarches four sub-dimensions (i.e., first-order factors), namely fun belief, initiative, reactivity, and consciousness.

In order to test the hypothesized hierarchical factor model, I conducted higher-order factor analysis, “a theory-driven procedure in which the researcher imposes a more parsimonious structure to account for the interrelationships among factors established by CFA” (Brown, 2006, p. 320). I followed the procedure suggested by Brown (2006): (1) develop a well-behaved (e.g., good-fitting, conceptually valid) first-order CFA solution that allows the correlations among the factors to be freely estimated (Figure 3.2); (2) inspect the magnitude and pattern of correlations among factors in the first-order solution for evidence of the empirical feasibility of the higher-order model (e.g., the factors accounted for by a common overarching factor are more highly interrelated than any of them is with other factors); (3) fit the second-order factor model (Figure 3.3) as justified on conceptual and empirical grounds; and (4) proceed to the third order (Figure 3.4) and beyond if it is desired.

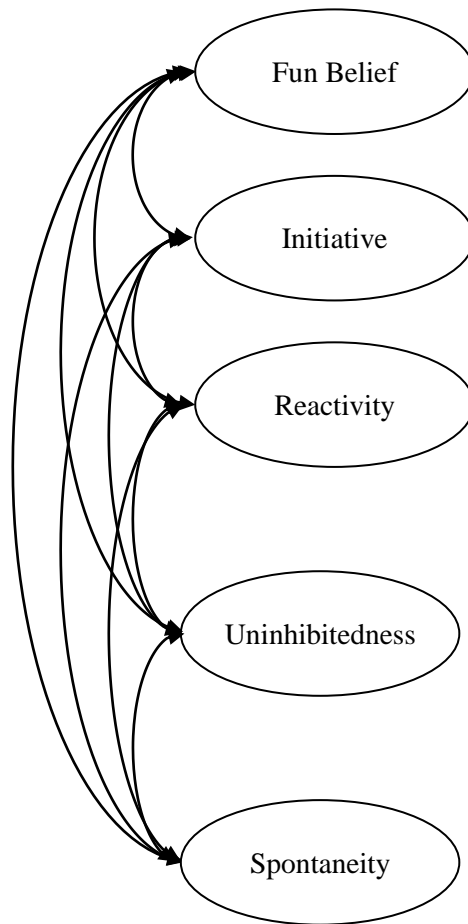


Figure 3.2 First-order APTS Conceptual Model

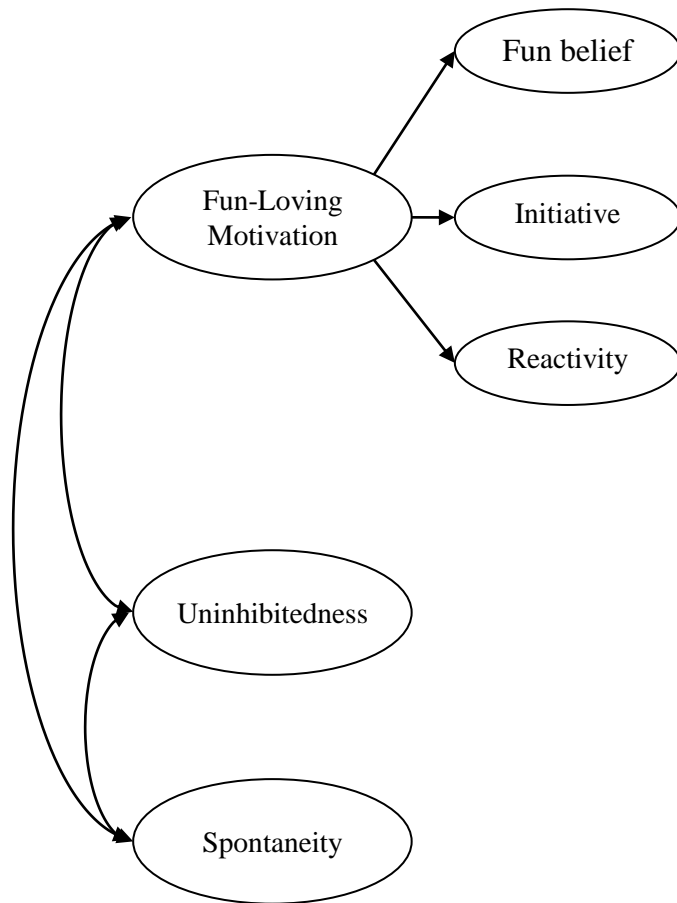


Figure 3.3 Second-order APTS Conceptual Model

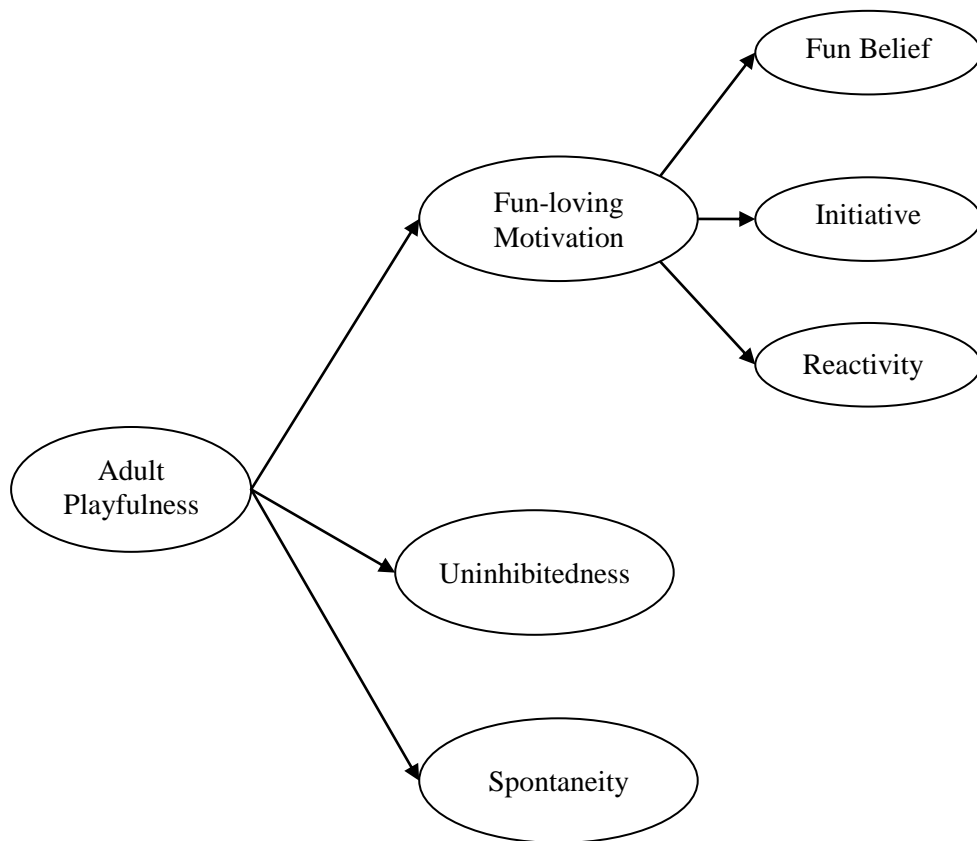


Figure 3.4 Third-order APTS Conceptual Model

All CFA models were evaluated with a combination of absolute fit indices and incremental fit indices. The former measures the extent to which the specified model of interest reproduces the sample covariance matrix; the latter measures the increase in fit relative to a baseline model (wherein all observed variables are specified as uncorrelated). Following Hu and Bentler's (1999) two-index strategy (i.e., reporting SRMR along with one of the fit indices) and suggestions from others (e.g., Brown, 2006; Lei & Wu, 2007; Kline, 2005), I used the following four fit indices for model fit evaluation: Satorra-Bentler Scaled χ^2 or S-B scaled χ^2 , SRMR/RMSEA, NFI, and CFI. Lei & Wu (2007) noted that high values (in the .90s or more recently $\geq .95$) of NFI and CFI as

well as low values of SRMR ($< .08$ or more liberal $< .1$) and RMSEA ($< .06$) are generally accepted as indications of good fit. Note that S-B scaled χ^2 instead of the more common-reported χ^2 fit index was selected because the latter is sensitive to violations of the multivariate normality assumption while the former adjusts model chi-square for non-normality. A preliminary data screening suggested that the current data did not follow normal distribution. Reliabilities (internal consistency) of the entire APTS and its sub-scales were estimated using the Cronbach's α .

Similarly, I conducted EFA then CFA for the item selection and evaluation of the PSPS and the PSS. Since both scales assumed a one-level structure (i.e., no sub-dimensions), only first-order CFA models were analyzed.

Correlational analysis of the APTS and theoretically related variables.

A dataset that contained the final APTS items resulted from the previous step and items of theoretically related constructs was created. I took four steps to analyze the relationships between the APTS and measures proposed to relate to adult playfulness.

1. Handling missing data. Because many variables involved in this part of analysis were asked in the later sections of the questionnaire, the attrition effect rendered a large number of missing responses for many variables (missing values per variable ranged from 55 or 11.6% to 166 or 35.0%). The imputation by matching method (Jöreskog, 2002) used in the APTS model analysis does not work well when the missing rate is too high ($>10\%$). I chose an alternative imputation method, namely the multiple imputation method (Rubin, 1976; 1987), to handle missing data using SAS PROC MI and PROC MIANALYSIS procedure. This method is preferred when there is a large number of missing responses. Instead of filling in a single value for each missing value, this strategy

replaces each missing value with a set of plausible values that represent the uncertainty about the right value to impute (i.e., the MI procedure). “These multiply imputed data sets are then analyzed by using standard procedures for complete data and combining the results from these analyses (i.e., the MIANALYZE procedure, added by author) ... This results in valid statistical inferences that properly reflect the uncertainty due to missing values” (Yuan, n.d.). Markov chain Monte Carlo (MCMC) method was used in the MI procedure.¹³ A total of 20 imputed datasets were produced and analyzed, which should ensure high efficiency of estimation (Schafer, n. d., refer to the same source for discussions about efficiency achieved for various numbers of imputations).

Moreover, in order to provide estimation triangulation, the initial unimputed dataset was also analyzed using pairwise deletion (i.e., using all cases with nonmissing values) which is the default missing data method in SAS 9.2 PROC CORR procedure. The result would be compared to that from the above-described multiply imputed dataset. Converging results would ensure stronger confidence in the estimates.

2. Social desirability bias analysis. Composite scores were created to indicate social desirability by summing across the ten items of the short form SDS (Strahan & Gerbasi, 1972). Composite scores of the APTS (if it applied) and its sub-scales were also calculated. The correlation between the APTS scores and the SDS scores was estimated to determine whether to control for social desirability bias in the subsequent correlational analysis.

¹³ MCMC is one of the major methods for generating MI. This method assumes multivariate normality and is preferred when variables are continuous and the missing data pattern is arbitrary. The multivariate normality and continuous data assumptions were not met in this dataset (as often seen in most applications). Experienced experts, however, noted that “experience has repeatedly shown that MI tends to be quite forgiving of departures from the imputation model. For example, when working with binary or ordered categorical variables, it is often acceptable to impute under a normality assumption and then round off the continuous imputed values to the nearest category” (Schafer, n.d. “MCMC”).

3. Evaluating the seven multi-indicator measures theoretically related to adult playfulness: the three-item PS (O'Connell et al., 2000), the two-item global measure of playfulness, the 5-item measure of average tendency to engage in playful behavior, the 6-item goal-attainment in sports/games, the 6-item BFTS (Caldwell et al., 1992), the 28-item SAE scale (Mannell, 1984), and the 19-item measure of general personality characteristics. The first five measures were one-dimensional and their composite scores were directly calculated by averaging across items within each scale. The SAE scale was three-dimensional (Mannell, 1984) and I conducted higher-order factor analysis (in LISREL 8.72) to test its factor structure.¹⁴ The result helped determine whether it would be appropriate to treat the whole SAE scale as uni-dimensional (i.e., consider the three SAE dimensions as caused by one general factor rather than three distinct constructs). The dimensionality of the 19 general personality characteristic items was unclear and I performed EFA (in SPSS16.0) and CFA (in LISREL 8.72) to explore and evaluate their dimensionality. Composite scores were estimated accordingly for these two measures. Internal consistency reliabilities (Cronbach's α) were estimated for all the seven measures.

4. Correlational analysis. The main purpose of this step was to examine whether the APTS correlated with theoretically related constructs in the hypothesized ways.¹⁵ Three forms of validity were investigated. First, I evaluated the APTS' predictive validity (i.e., the extent to which the measure can predict or correlate with proposed consequences) by

¹⁴ The first-order model consisted of three dimensions, Mental Play, Environmental Mode, and Self Mode. The second-order model had an overarching Self-as-Entertainment factor (i.e., second-order factor) added to the first-order model.

¹⁵ Theoretically it is possible to develop a SEM that includes all the manifest and latent variables involved in the correlational analysis and use factor scores instead of mean composite scores to estimate correlations. Although this option is statistically superb (e.g., model error terms), this task was empirically implausible due to the complexity of the analytical model (i.e., the sample size was too small relative to model complexity).

testing the second hypothesis: APTS scores positively correlated with average tendency to engage in playful behavior. Second, I evaluated the APTS' convergent validity (i.e., the extent to which the measure of interest correlates with alternative measures of the construct)¹⁶ by testing the third hypothesis: APTS scores positively correlated with the PS (O'Connell et al., 2000) and the global measure of playfulness. Third, I evaluated the APTS' concurrent validity (i.e., the extent to which the measure of interest correlates with theoretically, but not causally, related measures that are assessed simultaneously) by testing hypothesis 4, fun-loving motivation scores negatively correlated with goal-attainment in sports/games, and hypothesis 5, APTS scores positively and weakly or moderately correlated with the SAE scores.¹⁷ Finally I examined the relationship between the APTS and the BFTS (Caldwell et al., 1992) and other general personality characteristics identified during the FG study. Person product-moment correlation coefficients were used in all correlation estimates.

Survey Study 2: Known Group Comparison

The purpose of this study was to examine the differentiation ability of the final APTS to determine whether the scale could effectively detect between-group differences. I employed a known-group comparison or group differentiation design. "This strategy involves identifying two groups of people for which there is a strong basis to assume differences on the construct of interest" (Wegener & Fabrigar, 2004, p. 152), followed by

¹⁶ Sometimes people use this term for correlations between the construct of interest and theoretically related constructs (Wegener & Fabrigar, 2004), which is termed as criterion validity by other people.

¹⁷ The last two forms, i.e., predictive validity and concurrent validity, are considered as two specific forms of criterion validity, which refers to the extent to which the measure of interest correlates with other theoretically related measures (American Educational Research Association, Psychological Association, & National Council on Measurement in Education, 1999).

statistical tests for mean differences across groups. Additional validity evidence for the APTS was also collected.

Study Sample and Data Collection

I identified two groups of people through targeting nominations. Two solicitations for nominations (Appendix F), one calling for nominations of the most playful individuals (high playful or HP group), the other of the least playful ones (low playful or LP group), were published separately (with a two-month interval) on the newswire of a large sized institution in Northeastern United States. Additional solicitations that provided brief sample invitations for target individuals (Appendix F) were sent through the author's private mail-lists. All solicitations excluded (a) nominating people younger than 18 years and (b) self-nomination out of precaution that self-perceptions might be confounded by social desirability concerns.¹⁸ Because the playful trait and playful behavior are easily recognizable by lay people (e.g., Ellis, 1973), this method allows for reasonable reliability in identifying a priori two groups with different levels of playfulness.

An on-line survey that contained the final APTS was set up using SurveyMonkey. The link to the survey was provided in all solicitations and could be forwarded to nominated participants. HP and LP participants accessed the same survey through different links, which allowed the web server to record their corresponding group membership.

¹⁸ Note that in the previous scale development survey which was described as a study of personality traits, the result suggested that the APTS scores did not correlate with the SDS scores significantly. But this result does not rule out socially desirable bias in people's responses when the research was explicitly described as a study of playfulness.

The minimum required sample size for this study was estimated using the information from survey study 1. To estimate possible mean differences between HP group and LP group, respondents were sorted into the two groups based on their responses on the two global playfulness questions, respectively (Q7 “I am playful no matter where I am and who I am with”; Q12 “I am a playful person” in Section C1, Appendix E). Respondents who scored one standard deviation below the midpoint of the scale (i.e. 4) were categorized into the LP group; respondents who scored one standard deviation above the midpoint were sorted into the HP group. Using the data associated with Q7, it was estimated that a minimum of 17 participants per group was required to achieve a .80 statistical power ($sd1 = .70$, $sd2 = .6$, $mean\ diff. = .65$, $\alpha = .05$). Using the data associated with Q12, it was estimated that a minimum of 40 participants per group was required to achieve a .80 statistical power ($sd1 = .61$, $sd2 = .59$, $mean\ diff. = .40$, $\alpha = .05$).

The data collection process was closely monitored. A preliminary analysis of returned data suggested that the effect size estimate using Q7 was more accurate: a minimum of 15 participants per group sufficed for the purpose of examining the scale’s differentiation ability. Correspondingly, the survey was concluded after three months when adequate sample size was achieved (25 and 33 for LP and HP group, respectively).

Instrument

The survey questionnaire (Appendix G) consisted of four sections of questions started with a filter question designed to screen participants. Technically all people who read the solicitation could volunteer (i.e., self-nominated) to fill out the survey despite the instruction about self-exclusion. The screening question differentiated self-nominated

respondents from other-nominated ones and directed the former to a thank-you page, which explained the qualification criteria and offered the option to exit the survey. Self-nominated respondents could choose to continue with the survey, but they were informed that their responses might not be included in the analysis.

The first section consisted of the 19-item final APTS developed from the previous steps.

The second section was designed to collect additional convergent validity evidence for the APTS. Three alternative single-item measures, each assessing one dimension of the playfulness construct, were presented in an imaginary activity design task wherein people were asked to facilitate designing a leisure activity catered to their individual needs. The first question asked participants to identify the most desirable outcome of the activity (multiple choice format, the four choices corresponding to “social outcome”, “economic outcome”, “fun outcome”, and “educational outcome”, respectively). This question was designed to provide an alternative measure of the fun-motivation dimension of playfulness. People with a strong fun-motivation supposedly desire a fun outcome. The second question asked participants to indicate their preference for the structure/format of the activity (two-choice format, the two choices corresponding to the preference for “highly structured, rule-bound” tasks and that for “improvisation”). This question was designed to provide an alternative measure of the spontaneity dimension of playfulness. People with a high level of spontaneity supposedly prefer more improvisation. The third question asked participants to provide ideas about the content of the activity by free listing constraining situations that had prevented them from doing desired activities (free-listing format, 10 entries plus one comment box for additional listing). This

question is designed to provide an alternative measure of the uninhibitedness dimension of playfulness. People who are less inhibited supposedly find themselves in constraining situations less often.

The third section included the 10-item SDS (Strahan & Gerbasi, 1972) and two global measures of playfulness (9-point semantic differential scales with end points labeled “not at all playful” and “extremely playful”). The first global measure asked about self-rating (“I think I am”); the second asked about presumed friends’ rating of self (“my friends think I am”).

The last section asked about demographics including age, sex, level of school, field of study/work, income, and ethnic background.

Data Analysis

A preliminary inspection of the data indicated very few missing responses (< 5%) for all the variables of substantive interest, therefore pairwise deletion was used in all analyses with SPSS 16.0.

Social desirability bias.

Composite scores for the APTS (and its sub-scales) and the SDS were calculated using the same method employed to compute the composite scores in survey study 1. Correlations (Person product-moment correlation coefficient) between the APTS and the SDS were then estimated for both the self-referred sample and other-referred sample.

Group differences in APTS scores.

A preliminary inspection of the dataset suggested that group sizes were unequal and data did not follow a normal distribution. Therefore I conducted Welch Robust testing to examine differences on the APTS scores between the HP group and LP group (hypothesis

6). Compared to F statistics used in ANOVA, the Welch statistic corrects for unequal group size and non-normality and provides unbiased estimates of parameters. Bonferroni correction was applied for multiple comparisons. Furthermore, Cohen's d, a measure independent of sample size (Cohen, 1988), was calculated to examine the effect size of group differences.

Additional validity evidence for the APTS.

Additional convergent validity evidence for the three APTS sub-scales (i.e., fun-loving motivation, spontaneity, and uninhibitedness) was evaluated by examining the correlation between each sub-scale and its corresponding alternative single-item measure (hypothesis 3) tapped in the game design task for the entire sample.

1. Convergent validity of fun-loving motivation sub-scale. Supporting evidence would be people who desired a fun outcome also scored high on the fun-loving motivation sub-scale. Welch robust test was performed to compare mean scores on the fun-loving motivation sub-scale across the four "desired outcome" groups. If the Welch test revealed significant group difference(s), post-hoc multiple comparisons (Bonferroni test) were conducted to determine which group means differed significantly from others.

2. Convergent validity of the spontaneity sub-scale. Supporting evidence would be people who preferred improvisation also scored high on the spontaneity sub-scale. Welch robust test was performed to compare mean scores on the spontaneity sub-scale across the "improvisation" group and the "highly structured" group.

3. Convergent validity of the uninhibitedness sub-scale. Supporting evidence would be the number of listed constraining situations negatively correlated with scores on the uninhibitedness sub-scale. An index called perceived constrainedness was created to by

summing the number of valid open-ended responses to the “content” question (score ranges from 1 to 11 with additional listing in the comment box counted as one entry) and correlated with the Uninhibitedness scores (Pearson product-moment correlation).

Additional convergent validity evidence for the APTS was examined by estimating correlations (Pearson product-moment correlation) between the APTS scores and the two global measures of playfulness (hypothesis 3) using data from the entire sample.

CHAPTER 4

RESULTS

This chapter presents results from survey study 1 (scale development empirical evaluation) and survey study 2 (known-group comparison).

Results of Survey Study 1

Survey study 1 provided information for refining three preliminary scales—the APTS, the PSPS, and the PSS—developed from previous steps (i.e., literature review, focus groups, and conceptual evaluation) and particularly, empirical data for evaluating the validity of the APTS. I present results of this study in the sequence of (a) sample characteristics, (b) the APTS item selection and model testing, (c) the APTS and theoretically related variables, (d) the PSPS item selection and model testing, and (e) the PSS item selection and model testing.

Sample Characteristics

A total of 473 people participated in survey study 1. Table 4.1 presents the socio-demographic characteristics of the study sample. Based on available data, the majority of respondents were white and educated (over half had a bachelors or higher degree), with an average age of 40.7 years and household income between \$15,000 and \$74,999.

Due to attrition, high rates of missing responses existed for socio-demographic variables which were surveyed at the end of the questionnaire. Particularly, significantly more females (49.6% vs. 15.2% males) provided sex information. It would be imprudent, however, to suggest a strong sex bias of the entire sample since little is known about the sex composition of the 35.2% missing responses. Existing research demonstrates that the

sex composition of on-line survey samples is relatively balanced and compares favorably to traditional paper-and-pencil personality research which shows a strong female bias (Fraleigh, 2007). In light of this, I assumed that there was no serious sample bias in sex composition and proceeded to subsequent data analyses.

Table 4.1

Socio-demographic Characteristics of Survey Study1 Sample

Characteristics	Measurements	Sample Value
Age ^a	Mean years	40.7
	Range	20-84
Gender	% Female	49.6
	% Male	15.2
	% Missing	35.2
Education	% High school	3.6
	% Some college	6.8
	% Associate degree	3.2
	% Bachelor's degree	21.3
	% Master's degree	22.8
	% Doctoral degree	7.8
	% Missing	34.6
Household Income	% Less than \$15,000	4.2
	% \$15,000-\$34,999	12.2
	% \$35,000-\$54,999	11.6
	% \$55,000-\$74,999	11.2
	% \$75,000-\$94,999	6.5
	% \$95,000-\$114,999	7.0
	% \$115,000-\$134,999	3.0
	% \$135,000-\$154,999	2.7
	% \$155,000 or more	4.0
% Missing	37.6	
Ethnicity	% Caucasian	57.4
	% African American	1.1
	% Asian	3.6
	% Hispanic/Latino	1.7
	% American Indian/Alaska Native	.2
	% Inter-Racial	1.3
	% Other	.2
	% Missing	34.6

^a 65.3% or 305 respondents provided age information

The APTS Item Selection and Model Testing

An explorative factor analysis (EFA) was first performed with the imputed 32-item dataset ($n = 437$, effective sample size after imputation) to identify and retain items that performed best. The KMO measure (.85) and Bartlett's tests (Chi-Square = 3443.632, $p < .001$) indicated sample adequacy. Inspection of factor loadings, correlations (item-total correlations and residual correlation matrix), and reliability estimates provided support for the retention of 19 items, explained by five clearly interpretable factors corresponding to five of the six proposed dimensions/sub-dimensions: fun belief, initiative, reactivity, uninhibitedness, and spontaneity. Each factor was assessed by two to five items (Table 4.2). The proposed sub-dimension consciousness failed to emerge because the preliminary items purported to measure this dimension were not retained due to high cross-loadings ($>.3$).

The subsequent higher-order factor analysis of the resultant 19-item APTS suggested that the first-order CFA model (Figure 3.2, p. 86) fit the data well (Table 4.3). An inspection of the factor correlation matrix (Table 4.4) supported empirical feasibility of higher-order models because the three factors—fun belief, initiative, and reactivity—hypothesized to fall under fun-loving motivation correlated with each other stronger ($r = 0.51$ to 0.68 , highlighted in Table 4.4) than any of them correlated with the other two factors (i.e., uninhibitedness and spontaneity, $r = 0.34$ to 0.45). The second-order model (Figure 3.3, p. 87) and the third-order model (Figure 3.4, p. 88) fit the data well (Table 4.3). The third-order model was the most parsimonious and did not significantly degrade the model fit (compared to the first-order model, S-B scaled $\Delta\chi^2 = .005$, $p > .5$). Table 4.5 presents parameter estimates of the third-order factor model.

Figure 4.1 and 4.2 provide corresponding the path diagram with standardized and unstandardized factor loading estimates, respectively.

Table 4.2

Basic Descriptive Information of the 19-Item Adult Playfulness Trait Scale

Dimension ^a	Items	Min.	Max.	Mean	SD
Fun belief	Funblf1. I believe in having a good time	1	7	6.15	0.90
	Funblf2. I think fun is a very important part in life	1	7	6.32	0.83
Initiative	Initia1. I try to have fun no matter what I am doing	1	7	5.68	1.15
	Initia2. I am often the person who starts fun things in a situation	1	7	4.27	1.40
	Initia3. I can make almost any activity fun for me to do	1	7	4.71	1.32
	Initia4. I can find fun in most situations	1	7	5.19	1.10
Reactivity	React1. I appreciate fun things started by other people	1	7	5.75	1.03
	React2. When someone else starts something that is fun, I'm happy to follow along	1	7	5.49	1.04
	React3. I enjoy fun things that other people initiate	1	7	5.64	0.97
Uninhibited -ness	Uninhib1. I understand social rules but most of the time I am not restricted by them	1	7	3.85	1.59
	Uninhib2. I don't always follow rules	1	7	4.24	1.71
	Uninhib3. Sometimes I can do things without worrying about consequences	1	7	3.88	1.74
	Uninhib4. If I want to do something, I usually don't let what other people may think stop me	1	7	4.81	1.49
	Uninhib5. I don't fear losing anything by being silly	1	7	4.37	1.60
Spontaneity	Sponta1. I often do things on the spur of the moment	1	7	4.48	1.56
	Sponta2. I often do unplanned things	1	7	4.65	1.63
	Sponta3. I often act upon my impulses	1	7	4.45	1.43
	Sponta4. I often pursue my spur-of-the-moment thoughts	1	7	4.53	1.39
	Sponta5. I often follow my spur-of-the-moment feelings	1	7	4.30	1.40

Note. Min., minimum value; Max., maximum value; SD, standard deviation. The basic descriptive information was based on the original unimputed data. The effective sample sizes for different variables ranged from 419 to 473.

^aFun-loving motivation is proposed to be an overarching dimension that encompasses fun belief, initiative, and reactivity. This dimension was not present in the EFA solution because only the first-order model was analyzed in the EFA.

Table 4.3

Goodness-of-fit of Three APTS Hierarchical Models

Model	Normal theory		<i>df</i>	S-B scaled			
	WLR χ^2	S-B scaled χ^2		$\Delta\chi^2$ ^a	SRMR	NFI	CFI
1 st order model	974.926 ^{***}	5.465	142	--	.077	.999	1.000
2 nd order model	997.701 ^{***}	5.207	147	.040	.097	.999	1.000
3 rd order model	978.318 ^{***}	5.111	146	.005	.087	.999	1.000

Note: Normal theory WLR χ^2 , Normal Theory Weighted Least Squares Chi-Square; S-B scaled χ^2 , Satorra-Bentler Scaled Chi-Square; *df*, degree of freedom; SRMR, standardized root mean square residual; NFI, Normed Fit Index; CFI, Comparative Fit Index

^a Calculated manually following the procedures suggested by Satorra & Bentler (2001).

p < .001

Table 4.4

Correlation Matrix of First-Order APTS Factors

	Fun Belief	Initiative	Reactivity	Uninhibitedness	Spontaneity
Fun Belief	1.00				
Initiative	0.65	1.00			
Reactivity	0.68	0.51	1.00		
Uninhibitedness	0.45	0.34	0.35	1.00	
Spontaneity	0.45	0.34	0.35	0.74	1.00

Note: All correlations are significant at the .01 level.

Table 4.5

Parameter Estimates from the Third-Order APTS Model

		Estimates	S. E.	Est./S.E.	Std.	R ²	Cronbach's α
<u>1st Level</u>							
Fun Belief by							0.69
	Funblf1	1.00	0.00	0.00	0.80	0.64	
	Funblf2	0.29	0.06	5.29	0.78	0.61	
Initiative by							0.76
	Initia1	1.02	0.15	6.71	0.70	0.49	
	Initia2	0.39	0.13	3.13	0.55	0.31	
	Initia3	0.54	0.24	2.23	0.78	0.60	
	Initia4	1.00	0.00	0.00	0.85	0.73	
Reactivity by							0.84
	react1	1.56	1.44	1.09	0.91	0.84	
	react2	3.06	1.23	3.06	0.77	0.59	
	react3	1.00	0.00	0.00	0.84	0.71	
Uninhibitedness by							0.68
	uninhib1	1.28	2.23	0.57	0.68	0.47	
	uninhib2	1.00	0.00	0.00	0.54	0.29	
	uninhib3	1.33	0.50	2.66	0.54	0.30	
	uninhib4	0.91	0.35	2.61	0.52	0.27	
	uninhib5	0.69	0.64	1.07	0.50	0.25	
Spontaneity by							0.87
	sponta1	1.00	0.00	0.00	0.72	0.52	
	sponta2	1.05	1.59	0.66	0.70	0.50	
	sponta3	1.65	0.49	3.37	0.77	0.60	
	sponta4	1.86	0.46	4.03	0.85	0.72	
	sponta5	1.20	0.59	2.02	0.80	0.64	
<u>2nd Level</u>							
Fun-loving Motivation by							0.83
	Fun Belief	4.10	4.71	0.87	0.93	0.87	
	Initiative	1.01	0.76	1.31	0.70	0.49	
	Reactivity	1.00	0.00	0.00	0.72	0.52	
<u>3rd Level</u>							
Adult Playfulness by							0.87
	Fun-loving Motivation	1.29	1.73	0.75	0.56	0.31	
	Uninhibitedness	1.00	0.00	0.00	0.86	0.73	
	Spontaneity	1.14	0.72	1.58	0.87	0.75	

Note. Estimates, unstandardized estimates of factor loadings; S.E., standard error; Est./S.E., test statistic (z value); Std., completely standardized estimates of factor loadings; R², multiple regression coefficient (i.e., explained variance)

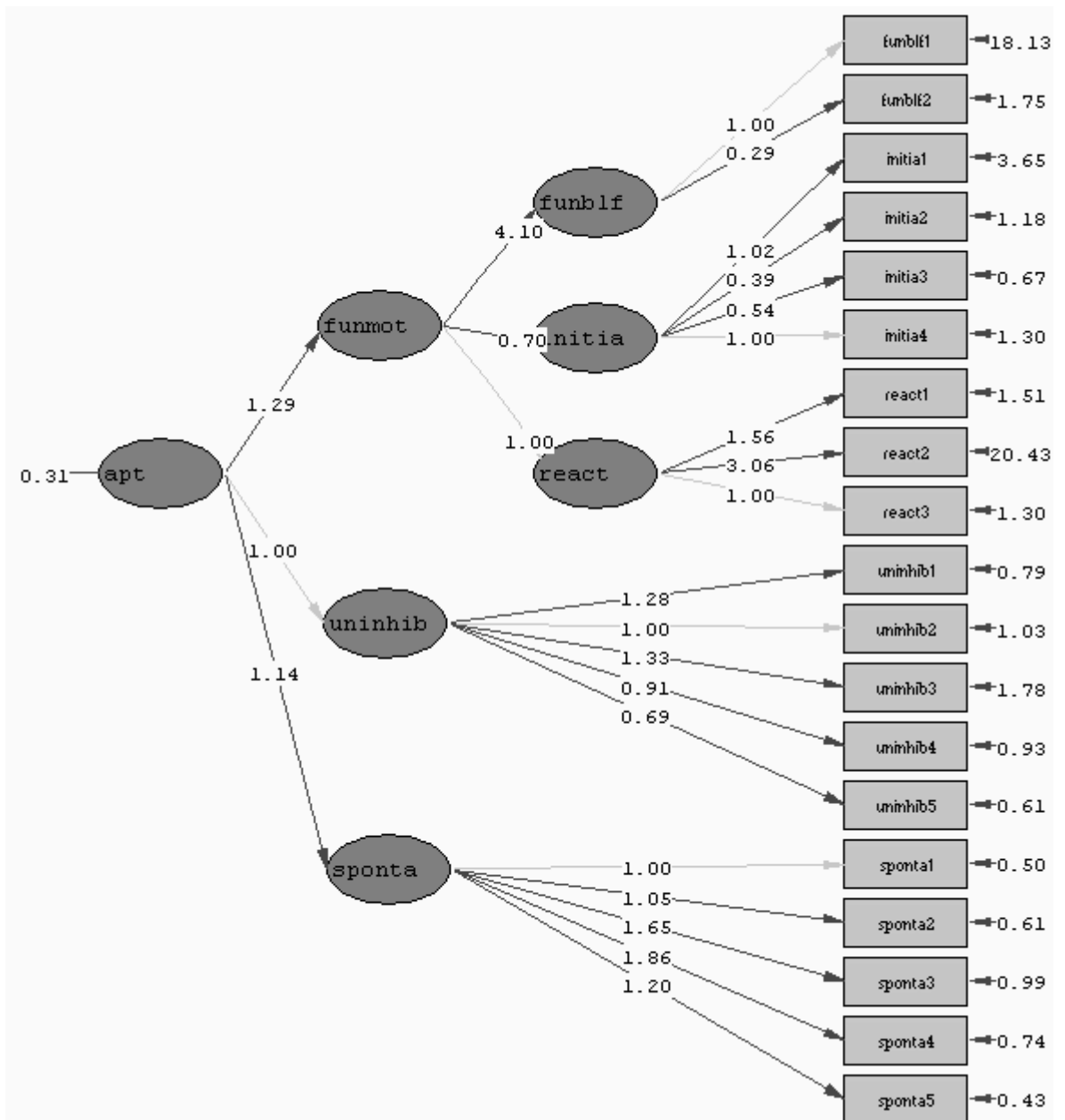


Figure 4.1 Path Diagram of the Third-Order APTS Model (Unstandardized Solution)

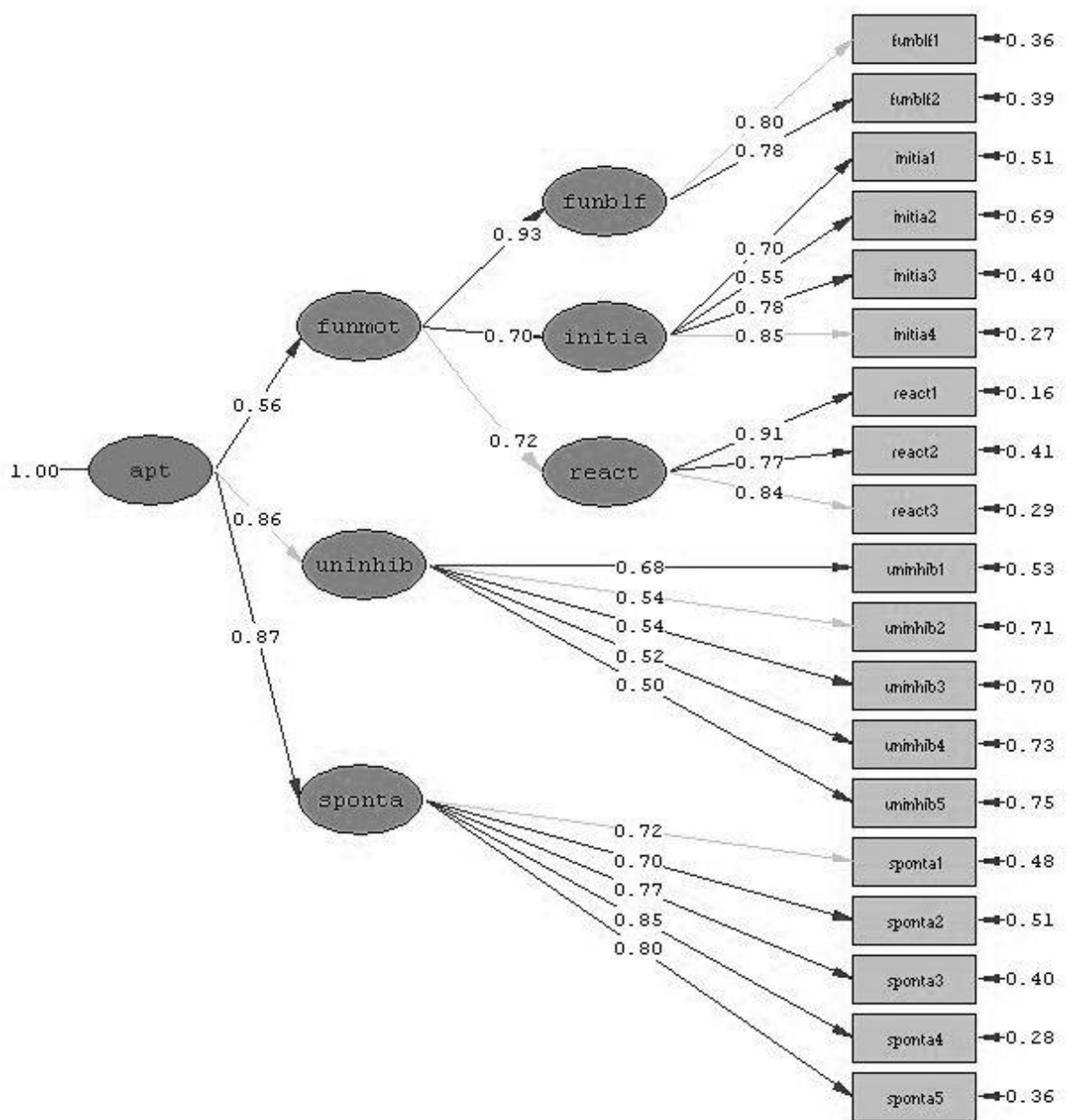


Figure 4.2 Path Diagram of the Third-Order APTS Model
(Completely Standardized Solution)

The APTS and Theoretically Related Variables

Social desirability bias analysis.

No significant correlations were found between the APTS scores and the SDS scores for both the pair-wise deleted dataset (Table 4.7, $r = -.08$ to $.02$, ns) and multiply imputed dataset (Tables 4.8, $r = -.06$ to $.02$, ns). Therefore the SDS scores were not controlled for

in the subsequent analysis of correlations between the APTS and theoretically related constructs.

Properties of multi-index measures.

Table 4.6 presents the descriptive information and reliability of all proposed measures theoretically related to playfulness. Described in details below are the properties of two multi-dimensional sets of items, i.e., the SAE (Mannell, 1984) and the 19 items measuring personality correlates of playfulness.

1. Construct structure of SAE. The first-order three-dimensional CFA model of the SAE scale (Mannell, 1984) was confirmed (S-B scaled $\chi^2 = 386.122$, $df = 347$, SRMR = 0.114, RMSEA = 0.020, NFI = 0.960, CFI = 0.996). However, the second-order SAE model that included an overarching self-as-entertainment factor was not identified and could not be tested. This suggests that, at least with the current dataset, the three SAE dimensions (i.e., mental play, environmental mode, and self mode) may not be considered as caused by one general dimension, therefore it is inappropriate to compute composite scores by averaging across items of the three dimensions (Devellis, 2003). Separate composite scores were computed for each of the three SAE dimensions by averaging across items within each dimension.

2. Construct structure of the 19-item personality correlates. The result of EFA supported the retention of 13 items explained by two clearly interpretable factors: *openness* (five items), indicating an orientation/attitude open to new experiences/experimenting and feeling comfortable with the unexpected, and *positivity* (eight items), capturing a positive outlook of the self, other people, and the world. CFA of the resultant 13-item two-factor model suggested good model fit (S-B scaled $\chi^2 = 0.870$,

$df = 64$, SRMR = 0.077, RMSEA = 0, NFI = 1.000, CFI = 1.000). Composite scores for each factor were computed by averaging across items within the factor.

Table 4.6

Basic Descriptive Information of Multi-index Measures related to the APTS

Measure	Min.	Max.	Mean	SD	Cronbach's α
Playfulness Scale (O'Connell et al., 2000)	1.00	7.00	3.45	1.04	0.70
Global Playfulness	1.00	7.00	4.54	1.12	0.65
Behavior Tendency	1.80	7.00	5.16	0.89	0.75
Goal-attainment	1.33	7.00	5.00	1.20	0.83
SAE_Mental Play	1.40	7.00	4.64	1.01	0.72
SAE_Environment	1.88	7.00	4.71	0.90	0.79
SAE_Self Mode	2.67	6.87	5.43	0.83	0.89
Free Time Boredom	1.00	4.83	2.05	0.91	0.83
Openness	2.20	7.00	5.22	0.90	0.80
Positivity	1.30	7.00	4.81	0.95	0.86

Results of correlational analysis.

Table 4.7 and 4.8 respectively presents the multiple imputation solution and the pair-wise solution for the correlation matrix of the APTS and various measures of theoretically related constructs. The two solutions converged: results of significance tests were largely the same and the sizes of correlation coefficients were very similar (differences < .04). To avoid redundancy, detailed interpretations are provided for the multiple imputation solution.

As showed in Table 4.7, the APTS strongly correlated with two alternative measures, namely the Playfulness Scale (O'Connell et al., 2000, $r = .45$, $p < .01$) and the two-item global measure of playfulness ($r = .59$, $p < .01$), providing supporting evidence for the new scale's convergent validity. Note that the Initiative sub-scale correlated with global playfulness most strongly ($r = .63$, $p < .01$), indicating the importance of this dimension in defining an individual's overall playfulness.

The APTS correlated with the playful behavior tendency strongly ($r = .55, p < .01$), suggesting more playful people tended to engage in playful behavior more.

As predicted, the APTS correlated with Self-as-entertainment modestly (correlations with the three SAE sub-scales = .18 to .30, $p < .01$), supporting the APTS' concurrent validity. Particularly, the APTS correlated with the environmental mode of SAE most strongly ($r = .30$), indicating that more playful people were more likely to seek external sources to entertain themselves in free time. The result also suggested that people with a strongly fun-loving motivation, particularly those with a strong initiative were better at using their skills to create interesting activities to entertain themselves in free time. As hypothesized, goal attainment negatively correlated with fun-loving motivation ($r = -.16, p < .01$), though no significant relationship was found between goal-attainment and the entire APTS scale ($r = -.08, ns$) and its other two sub-scales ($r = .00, -.06, ns$). The result on the one hand attested to the concurrent validity of the fun-loving motivation, and on the other hand, suggested that goal attainment concerns an individual's motivational style more, and his/her spontaneity or uninhibitedness less. A similar pattern emerged regarding the relationship between free-time boredom and playfulness: an individual with a strong fun-loving motivation had a slight tendency to perceive less boredom during free time ($r = -.20, p < .01$). However, it seemed that the tendency to feel bored had little to do with a person's spontaneity ($r = .06, ns$) and uninhibitedness ($r = .00, ns$).

Finally, the results suggested a positive relationship between playfulness and the two personality traits identified in focus groups, namely openness ($r = .46, p < .01$) and positivity ($r = .34, p < .01$).

Table 4.7

Correlation Matrix of the APTS and Theoretically Related Constructs (Imputed dataset)

Constructs	APTS	Spontaneity	Uninhibitedness	Fun-loving Motivation	Fun Belief	Initiative	Reactivity
Social desirability	-.01	-.01	-.02	-.04	-.06	.02	-.06
Playfulness Scale (O'Connell et al., 2000)	.45**	.32**	.39**	.39**	.28**	.36**	.25**
Global playfulness	.59**	.43**	.46**	.59**	.38**	.63**	.37**
Behavior tendency	.55**	.38**	.43**	.59**	.50**	.56**	.36**
Low goal-attainment ^a	.08	.00	.06	.16**	.10	.20**	.08
SAE_Mental Play	.20**	.13*	.21**	.12	.12	.12*	.03
SAE_Environment	.30**	.27**	.18**	.29**	.21**	.24**	.24**
SAE_Self Mode	.18**	.04	.15**	.33**	.23**	.40**	.16**
Free time boredom	-.03	.06	.00	-.20**	-.18**	-.17**	-.14*
Openness	.46**	.39**	.32**	.42**	.25**	.46**	.26**
Positivity	.34**	.19**	.25**	.46**	.27**	.54**	.25**

Note: Cohen (1988) gives the following guidelines for interpreting the effect size of correlations in social sciences: small, $r = 0.1$ to 0.23 ; medium, $r = 0.24$ to 0.36 ; large, $r = 0.37$ or larger (also see Rosnow & Rosenthal, 1996)

^a Goal-attainment reverse coded

** $p < .01$; * $p < .05$

Table 4.8

Correlation Matrix of the APTS and Theoretically Related Constructs (Pair-wise deletion)

Constructs	APTS	Spontaneity	Uninhibitedness	Fun-loving Motivation	Fun Belief	Initiative	Reactivity
Social desirability	-.02	.01	-.02	-.05	-.08	.02	-.06
Playfulness Scale	.48**	.35**	.42**	.40**	.28**	.39**	.27**
Global playfulness	.61**	.45**	.46**	.60**	.37**	.63**	.39**
Behavior tendency	.56**	.39**	.44**	.60**	.50**	.57**	.37**
Low goal-attainment ^a	.07	.00	.06	.16**	.10	.21**	.07
SAE_Mental Play	.19**	.13*	.22**	.09	.09	.10	.01
SAE_Environment	.33**	.30**	.21**	.31**	.22**	.25**	.27**
SAE_Self Mode	.19**	.05	.16**	.35**	.22**	.41**	.16**
Free time boredom	-.02	.07	.00	-.20**	-.17**	-.17**	-.14*
Openness	.47**	.40**	.32**	.43**	.24**	.48**	.27**
Positivity	.36**	.21**	.26**	.48**	.27**	.56**	.28**

^a Goal-attainment reverse coded

** $p < .01$; * $p < .05$

The PSPS Item Selection and Model Testing

The nine initial items assessing psychological situations for play were first analyzed with EFA. Inspection of factor loadings, correlations, and reliability estimates supported the retention of six items under two clearly interpretable factors corresponding to the two proposed dimensions (i.e., secured and aroused). Table 4.9 presents the descriptive information of the six retained items. The means of all six items (M = 5.10 to 6.24) skewed toward the high end of the scale (i.e., > 4.0). This is expected because these items measure the perception of situations during playful episodes wherein positive rather than neutral perceptions are more likely.

CFA of the 6-item 2-factor model suggested that the model fit the data very well (S-B scaled $\chi^2 = 11.921$, $df = 8$, SRMR = 0.032, RMSEA = 0.040, NFI = 0.988, CFI = 0.996), providing supporting evidence for the proposed two-dimensional conception of psychological situations for play. Table 4.10 presents estimates from the two-factor PSPS Model. Both factors showed an acceptable reliability (Cronbach's $\alpha > .6$).

Table 4.9

Basic Descriptive Information of the 6-Item Psychological Situation for Play Scale

Dimension	Items	Min.	Max.	Mean	SD
Secured ^a	S1. Comfortable	1	7	6.24	0.98
	S2. Unconstraining	2	7	5.91	1.04
	S3. Not causing anxiety	2	7	5.81	1.31
	S4. Safe	1	7	6.02	1.14
Arousing	A1. Interesting	1	7	5.59	1.05
	A2. Inviting exploration	1	7	5.10	1.51

Note. Based on the original unimputed data. Effective sample sizes for different variables ranged from 303-313. Min., minimum value; Max., maximum value

^a All items of this dimension were reverse coded

Table 4.10

Parameter Estimates from the Two-Factor PSPS Model

	Estimates	S.E.	Est./S.E.	Std	R ²	Cronbach's α
Secured by						0.82
S1	1.00	0.00	0.00	0.90	0.82	
S2	1.12	0.27	4.15	0.68	0.47	
S3	1.12	0.23	4.82	0.74	0.55	
S4	4.47	0.71	6.31	0.91	0.83	
Arousing by						0.62
S1	1.00	0.00	0.00	0.92	0.85	
S2	0.46	0.34	1.35	0.59	0.35	

Note. Estimates, unstandardized estimates of factor loadings; S.E., standard error; Est./S.E., test statistic (z value); Std, completely standardized estimates of factor loadings; R², multiple regression coefficient (i.e., explained variance)

The PSS Item Selection and Model Testing

The 22 initial items assessing playful states were first analyzed with EFA. Inspection of factor loadings, correlations, and reliability estimates supported the retention of 17 items under four clearly interpretable factors corresponding to the four proposed dimensions (i.e., immersion, positive affect, activeness, and sense of mastery). Table 4.11 presents the descriptive information for the retained 17 items. Again, the means of all items (M = 4.51 to 5.98) skewed toward the high end of the scale (i.e., > 4.0). This is expected because this scale measures the psychological characteristics of playful states, which are likely to be positive instead of neutral.

CFA of the 17-item 4-factor model suggested that the model fit the data well (S-B scaled $\chi^2 = 242.405$, $df = 113$, SRMR = 0.074, RMSEA = 0.061, NFI = 0.978, CFI = 0.988), providing supporting evidence for the proposed four-dimensional conception of play state. Table 4.12 presents estimates from the 4-factor PSS model. All the four factors showed an acceptable reliability (Cronbach's $\alpha > .6$).

Table 4.11

Basic Descriptive Information of the 17-Item Playful State Scale

Dimension	Items	Min.	Max.	Mean	SD
Immersion	I1. Deeply absorbed	1	7	4.80	1.43
	I2. Keen senses	1	7	4.89	1.26
	I3. forget things going on around	1	7	4.51	1.65
	I4. Forget time	1	7	5.16	1.54
Sense of Mastery	SM1. Good at creating fun	1	7	5.11	1.29
	SM2. Know what to do to make people laugh	1	7	5.31	1.28
	SM3. Know how to add own fun to the situation	2	7	5.58	1.03
	SM4. Know how to create fun appropriately	1	7	5.52	1.11
Activeness	A1. Excited	2	7	5.65	1.12
	A2. Energetic	2	7	5.89	1.06
	A3. Physically animated	1	7	5.78	1.18
	A4. Active mind	1	7	5.95	0.97
Positive Affect	PA1. High spirits	1	7	5.98	1.01
	PA2. Feeling amused	1	7	5.96	0.97
	PA3. Happy	1	7	5.79	1.08
	PA4. Having lots of fun	1		5.91	1.04
	PA5. Experiencing pleasure	1	7	5.85	1.07

Note. Based on the original unimputed data. Effective sample sizes for different variables ranged from 305-322. Min., minimum value; Max., maximum value

Table 4.12

Parameter Estimates from the Four-Factor PSS Model

	Estimates	S. E.	Est./S.E.	Std	R ²	Cronbach's α
Immersion by						0.68
I1	1.00	0.00	0.00	0.77	0.59	
I2	0.55	0.22	2.49	0.71	0.50	
I3	0.55	0.25	2.17	0.52	0.27	
I4	0.63	0.33	1.91	0.51	0.26	
Sense of Mastery by						0.87
SM1	1.00	0.00	0.00	0.82	0.68	
SM2	1.53	0.30	5.01	0.82	0.67	
SM3	1.14	0.27	4.19	0.89	0.79	
SM4	1.86	0.41	4.57	0.77	0.60	
Activeness by						0.85
A1	1.00	0.00	0.00	0.90	0.81	
A2	1.13	0.16	6.86	0.92	0.85	
A3	0.74	0.17	4.33	0.82	0.67	
A4	0.61	0.23	2.68	0.67	0.45	
Positive Affect by						0.89
PA1	1.00	0.00	0.00	0.86	0.74	
PA2	1.55	0.26	5.92	0.82	0.67	
PA3	0.64	0.13	4.85	0.83	0.68	
PA4	1.03	0.20	5.19	0.88	0.78	
PA5	3.36	0.68	4.95	0.82	0.67	

Note. Estimates, unstandardized estimates of factor loadings; S.E., standard error; Est./S.E., test statistic (z value); Std, completely standardized estimates of factor loadings

Results of Survey Study 2

Survey study 2 provided data for evaluating the APTS' differentiation ability and additional forms of validity. I present results of this study in the sequence of (a) sample characteristics, (b) social desirability bias analysis, (c) differentiation ability evidence for the APTS, and (d) additional validity evidence for the APTS.

Sample Characteristics

A total of 287 people participated in survey study 2 and 209 provided valid responses (i.e., answered at least one question other than the filter question). Among the 209

respondents who provided valid responses, 160 were self-referred and 49 referred by others. Table 4.13 presents the information on reference status in relation to group membership (i.e. HP vs. LP).

Table 4.14 presents the social demographic information of the entire sample (N = 209). Significant age difference was found between the HP group (M = 36.0) and the LP group (M = 40.5), indicating more playful people tended to be younger. No significant group differences were found in the other four socio-demographic characteristics, suggesting that more playful people did not seem to differ from their less playful counterparts in education levels, income, and ethnic backgrounds.

Table 4.13

Reference Status and Group Membership Information of Survey Study2 Sample

	LP	HP	Total
Self-referred	99	61	160
Other-referred	20	29	49
Total	119	90	209

Table 4.14

Socio-demographic Characteristics of Survey Study 2 Sample

Characteristic	Measurement	Sample value	Test for diff. between HP & LP group
Age	Mean years	38.6	Welch (1, 143.6) = 4.257; p = .041 ^a
	Range	19.0-67.0	
Gender	% Female	56.5	χ^2 (1) = 0.948; p = .330
	% Male	23.0	
	% Missing	20.6	
Education	% High school	5.3	χ^2 (5) = 9.333; p = .096
	% Some college	18.2	
	% Associate degree	4.8	
	% Bachelor's degree	27.3	
	% Master's degree	14.8	
	% Doctoral degree	8.6	
	% Missing	21.1	
Household Income	% Less than \$15,000	10.0	χ^2 (9) = 8.530; p = .482
	% \$15,000-\$34,999	13.9	
	% \$35,000-\$54,999	14.4	
	% \$55,000-\$74,999	9.1	
	% \$75,000-\$94,999	11.0	
	% \$95,000-\$114,999	8.1	
	% \$115,000-\$134,999	1.9	
	% \$135,000-\$154,999	2.9	
	% \$155,000 or more	3.8	
% Missing	24.9		
Ethnicity	% Caucasian	64.1	χ^2 (5) = 5.916; p = .315
	% African American	1.0	
	% Asian	8.1	
	% Hispanic/Latino	0.5	
	% American Indian/Alaska Native	0	
	% Inter-Racial	1.4	
	% Other	3.3	
	% Missing	21.5	

^a Mean age_{hp} = 36.0, Mean age_{lp} = 40.5

Social Desirability Bias Analysis

Correlations between the APTS scores and the SDS scores were estimated for both the self-referred sample and the other-referred sample. The results suggested no significant correlations ($p > .05$ before and after Bonferroni correction) for both samples. Correlations in the other-referred sample were slightly stronger (-.13 to -.26, ns) than

those in the self-referred sample (-.09 to -.16, ns). In light of this result, I decided to analyze group differences using data from the entire sample. For the purpose of estimation triangulation, I also conducted the same analysis using data from other-referred sample as initially proposed.

Differentiation Ability Evidence for the APTS

Tables 4.15 and 4.16 present Welch Robust tests result and corresponding effect sizes for the entire sample and the other-referred sample, respectively. The two sets of results largely converged. Overall, significant and large differences were found in the APTS scores between the HP group and the LP group. The entire sample result showed more significant group differences due to stronger statistical power associated with the larger sample size ($n_{lp} = 119$, $n_{hp} = 90$), but in both samples, similar large effect sizes were observed (Cohen's d near or greater than 0.8). These results suggested that the APTS, including the entire scale and its sub-scales, could effectively differentiate people of different levels of playfulness. For the sake of brevity, detailed interpretations are made for the entire sample results.

Table 4.15 suggested that high playful group ($M = 5.59$) scored over 1 point higher than low playful group ($M = 4.56$) on the APTS. More specifically, large mean differences between the two groups were observed in all the three playfulness sub-scale scores ($\Delta M = 0.89$ to 1.33), indicating good differentiation ability of each sub-scale of the APTS. The same conclusion holds true for the three sub-dimensions of fun-loving motivation.

Table 4.15

Welch Robust Test of Group Differences in Mean Playfulness Scores (entire sample)

Dimension	Mean (s.d.)		Welch Statistics (df1, df2)	p	Effect Size (Cohen's d)	% Nonoverlap
	LP	HP				
APTS	4.56 (0.97)	5.59 (0.71)	77.201 (1, 206.7)	.000***	1.21	62.2
Fun-loving Motivation	4.98 (0.88)	5.99 (0.70)	86.420 (1, 205.7)	.000***	1.27	65.3
Fun Belief	5.86 (0.99)	6.57 (0.68)	37.108 (1, 203.0)	.000***	0.84	47.4
Initiative	4.38 (1.18)	5.54 (1.11)	52.459 (1, 196.8)	.000***	1.01	55.4
Reactivity	5.16 (1.06)	6.23 (0.66)	79.602 (1, 198.2)	.000***	1.21	62.2
Uninhibitedness	4.15 (1.31)	5.04 (0.95)	32.241 (1, 206.7)	.000***	0.78	47.4
Spontaneity	4.22 (1.37)	5.42 (1.02)	52.183 (1, 205.9)	.000***	0.99	55.4

Note: Cohen (1988) provided a rule of thumb for interpreting effect size: small, $d = 0.2$; medium, $d = 0.5$; and large, $d = 0.8$

*** $p < .001$; ** $p < .01$; * $p < .1$ The p-values showed here were values before Bonferroni correction, but only results that remained significant after Bonferroni correction were flagged.

Table 4.16

Welch Robust Test of Group Differences in Mean Playfulness Scores (other-referred sample)

Dimension	Mean (s.d.)		Welch Statistics (df1, df2)	p	Effect Size (Cohen's d)	% Nonoverlap
	LP	HP				
APTS	4.45 (1.01)	5.38 (.80)	11.770 (1, 34.4)	.002**	1.30	65.3
Fun-loving Motivation	4.80 (1.01)	5.71 (.70)	12.303 (1, 31.2)	.001**	1.52	70.7
Fun Belief	5.65 (1.16)	6.48 (.80)	7.784 (1, 31.1)	.009*	0.83	47.4
Initiative	4.25 (1.31)	5.11 (1.21)	5.407 (1, 38.7)	.025	0.68	43.0
Reactivity	4.97 (1.09)	6.03 (.64)	15.607 (1, 28.0)	.000***	1.19	62.2
Uninhibitedness	4.09 (1.17)	4.98 (1.07)	7.485 (1, 38.5)	.009*	0.80	47.4
Spontaneity	4.20 (1.27)	5.17 (1.14)	7.510 (1, 37.8)	.009*	0.81	47.4

Note: Cohen (1988) provided a rule of thumb for interpreting effect size: small, $d = .2$; medium, $d = .5$; and large, $d = .8$

*** $p < .001$; ** $p < .01$; * $p < .1$ The p-values showed here were values before Bonferroni correction, but only results that remained significant after Bonferroni correction were flagged.

Additional Convergent Validity Evidence for the APTS

The APTS sub-scales and corresponding alternative single-item measures.

1. Convergent validity of the fun-loving motivation sub-scale. Welch robust test of differences in mean fun-loving motivation scores across the four “desired outcome” groups indicated that at least one difference existed (Welch statistic = 4.251, $df1 = 4$, $df2 = 58.5$, $p = .004$). The “fun outcome” group scored highest ($M = 5.75$), followed by the “social outcome” group ($M = 5.63$), the “educational outcome” group ($M = 5.15$) and the “economic outcome” group ($M = 4.98$). Post-hoc multiple comparison tests suggested that the “fun outcome” group scored significantly higher than the “educational group” ($p = .023$) and the “economic outcome” group ($p = .007$).

2. Convergent validity of the spontaneity sub-scale. Welch test of group differences in spontaneity scores indicated that the “improvisation” group ($M = 5.11$) scored significantly higher than the “highly structured” group ($M = 4.13$, Welch statistic = 4.13, $df1 = 1$, $df2 = 118.9$, $p = .000$).

3. Convergent validity of the uninhibitedness sub-scale. No significant correlation was found between the uninhibitedness sub-scale scores and the perceived constrainedness index ($r = -.01$, ns).

The APTS and global measures of adult playfulness.

The APTS scores significantly correlated with the two single-item global measures of playfulness (Table 4. 17), with slightly stronger correlations observed between the APTS scores and presumed friends’ rating of one’s playfulness. These results provided additional supporting evidence for the APTS’ convergent validity.

Table 4.17

Correlation Matrix of the APTS and Global Measures

	APTS	Spontaneity	Uninhi- bitedness	Fun-loving Motivation	Fun Belief	Initiative	Reactivity
Presumed friends' rating	.69**	.69**	.54**	.58**	.48**	.68**	.46**
Self-rating	.64**	.64**	.49**	.55**	.46**	.61**	.48**

** p < .01; * p < .05

CHAPTER 5

DISCUSSIONS

This research was designed to study adult playfulness as a personality trait guided by interactionist perspective. The first objective was to develop and validate a measurement of adult playfulness guided by a theory-based conceptualization. The second objective was to develop measurements of two constructs, namely psychological situations for play and playful states as part of constructing an interactionist framework for playfulness research. The third objective was to explore adult playfulness' personality correlates and its relationship to several variables relevant to people's psychological well-being.

Summary of Results

Following a systematic psychometric approach, the Adult Playfulness Trait Scale (APTS), a 19-item self-report instrument was developed to assess adult playfulness as defined by a theory-based conceptualization (pp. 67-68). The entire scale, including its constituent items and internal structure underwent careful conceptual and empirical evaluation. Supporting evidence was found for the APTS' internal consistency reliability and various forms of validity, including face validity, content validity, structure validity, predictive validity, convergent validity, concurrent validity, and differentiation ability.

The first hypothesis of this research stated that the construct of adult playfulness assumes a hierarchical structure with the overarching factor adult playfulness consisting of three interconnected dimensions: fun-loving motivation, uninhibitedness, and spontaneity. The result of higher-order confirmatory factor analysis in survey study 1 supported this hypothesis. The three dimensions were found to be correlated and could be explained by a common underlying factor, i.e., adult playfulness. The data also supported

the existence of three sub-dimensions under fun-loving motivation, namely fun belief, initiative, and reactivity. Note that the correlations between the five first-order factors are smaller than .80, indicating good discriminant validity of these latent factors (i.e., each factor measuring a distinct aspect of the playfulness construct, Brown, 2006). Overall, the results suggested that the APTS can be considered as a uni-dimensional scale. In other words, a composite score that summarizes the 19 APTS items is meaningful and can be used to indicate a general level of playfulness. Finally, good or acceptable internal consistency reliabilities (Cronbach's $\alpha > .6$) were found for the APTS and its sub-scales.

The second hypothesis posited that the playful trait would predict the average tendency to engage in playful behavior. This hypothesis was confirmed. Results from survey study 1 (imputed dataset) showed that people who scored high on the APTS (and its sub-scales) also scored high on playful behavior tendency ($r = .55, p < .01$). This result provided supporting evidence for the predictive validity of the APTS.

The third hypothesis was designed to examine the convergent validity of the APTS: the scale should positively correlate with various alternative measures of adult playfulness. This hypothesis was largely supported. Results from survey study 1 (imputed dataset) suggested that the APTS strongly and positively correlated with the global measure of adult playfulness ($r = .59, p < .01$), and the PS (O'Connell, et al., 2000) scores ($r = .45, p < .01$).

Results from survey study 2 suggested that the APTS strongly and positively correlated with the global self-rating of playfulness ($r = .64, p < .01$) and presumed friends' rating of playfulness ($r = .69, p < .01$). More evidence for the convergent validity of each APTS sub-scale came from the results of the imaginary leisure activity design

task. First, the result about the “desired outcome” supported the convergent validity of the fun-loving motivation sub-scale. People who desired a “fun” outcome scored highest on this sub-scale (significantly higher than people who desired an “economic” outcome or an “educational” outcome). Second, the result about the “desired forms” supported the convergent validity of the spontaneity sub-scale. People who preferred a game that allowed for lots of improvisation scored significantly higher on this sub-scale than those who preferred a highly structured one. Finally, the result about the free-listing constraining life situations question did not provide supporting evidence for the convergent validity of the uninhibitedness sub-scale. No significant relationship was found between the perceived constrainedness index and the uninhibitedness scores: people who scored higher on uninhibitedness did not necessarily report more constraining situations in daily life. This last finding may raise a question about the validity of the uninhibitedness sub-scale. This is unlikely, however, given the remaining findings wherein uninhibitedness consistently correlated with other theoretically related constructs as expected. It seems more plausible to attribute the above observed lack of correlation to possible confounding factors associated with the alternative single-item measure, such as the respondent’s memory accessibility, degree of expressiveness, and willingness to elaborate on the open-ended question.

The fourth hypothesis that fun-loving motivation would negatively relate to goal-attainment was supported. Results from survey study 1 (imputed dataset) suggested a small but significant negative correlation ($r = -.16, p < .01$) between the two constructs. A closer look revealed that this correlation could largely be attributed to initiative, the only sub-dimension that significantly related to goal-attainment ($r = -.20, p < .01$). Of

note, no significant correlations were found between the other two APTS sub-scales (i.e., uninhibitedness and spontaneity) or the entire APTS scale and low goal-attainment.

The fifth hypothesis stated that adult playfulness would positively relate to one's ability to entertain the self in free time. This hypothesis was supported. Results from survey study 1 (imputed dataset) showed significant, positive relationships between the APTS and the three SAE sub-scales (Mannell, 1984). Specifically, people who scored higher on the APTS also reported to be more capable of seeking external resources ($r = .30, p < .01$), engaging in mental play ($r = .20, p < .01$), and creating interesting activities ($r = .18, p < .01$) to entertain oneself during free time. Moreover, as hypothesized, the sizes of the above correlations are small or moderate, supporting the argument that, despite their shared interest in "entertaining self", there is a considerable non-overlap between playfulness and SAE due to their different domains of interest (all life situations vs. free time use) and emphases (spontaneous behavior vs. conspicuous leisure behavior; mental orientation vs. leisure skill/ability). These results further confirmed the concurrent validity of the APTS.

The sixth hypothesis was designed to examine the differentiation ability of the APTS. Strong supporting evidence was provided by the results of survey study 2. The APTS effectively differentiated more playful individuals from their less playful counterparts (Cohen's $d = 1.21$). A closer look at the results further suggested that all APTS sub-scales performed well in differentiating people of different levels of playfulness (Cohen's d near or greater than 0.8 for all sub-scales).

In addition to the APTS, two other measurements, namely the Psychological Situations for Play Scale (PSPS) and the Playful State Scale (PSS) were developed

following a similar procedure. Both scales showed basic face validity, content validity, and good or acceptable internal consistency reliabilities (Cronbach's $\alpha > .6$). Specifically, the proposed two-dimension conceptualization of psychological situations for play was supported: the emergent and confirmed two factors of the PSPS, namely secured and arousing, captured the proposed background and central factors relevant to the displaying of playfulness, respectively. The proposed four-dimension conceptualization of playful states was also confirmed. The four factors that characterized playful states were immersion, sense of mastery, activeness, and positive affect.

With respect to third objective, results from survey study 1 (imputed dataset) showed that no significant relationship was found between the APTS and leisure boredom ($r = -.03$, ns). However, leisure boredom was found to moderately and negatively related to one APTS sub-scale, the fun-loving motivation ($r = -.20$, $p < .01$) and its three sub-dimensions ($r = -.14$ to $-.18$, $p < .05$). This finding is consistent with past findings about the negative relationship between leisure boredom and intrinsic motivation (e.g., Weisinger et al., 1992).

Positive relationships were found between the APTS and two general personality characteristics identified during the FG study: openness ($r = .46$, $p < .01$) and positivity ($r = .34$, $p < .01$). It seemed that more playful people tended to be more open to new experiences, be more willing to experiment with different ways of doing things, and feel more comfortable with the unexpected. It also appeared that playful people tend to have a more positive outlook about themselves, other people and this world than those who were less playful.

Study Limitations

The generalizability of results from this research may be limited by the use of college participants (university faculty, staff, and students) as one of the primary sources of study sample. Particularly, the education levels of participants in both survey studies (over 50% had a bachelor's or higher degree) are notably higher than that of the general adult population. However, it is unclear how the different demographic characteristics of the study sample may affect the applicability of the APTS in another population. Past research has reported mixed findings regarding the relationship between adult playfulness and age or gender. Mixer (2009), for example, found a negative correlation between adult playfulness and age, as observed in this research (survey study 2), but more researchers found no significant relationships between adult playfulness and age (Glynn & Webster, 1992, 1993) or gender (Fix & Schaefer, 2005; Glynn & Webster, 1992, 1993).

The second limitation is that, given this research's primary focus on the playful trait and corresponding psychological characteristics of playful states and situations, it was beyond the scope of my study to investigate specific forms of playful behavior. Past research has attempted to categorize play into subtypes using different criteria, such as solitary play, parallel play, associative play, and cooperative play based on the degree of social engagement (Parten, 1933); practice play, symbolic play, and games with rules according to stages of cognitive development (Piaget, 1951); pretend play and locomotor play (Pellegrini & Smith, 1998), but to name a few. Examining the behavioral and cognitive characteristics of different types of play can be useful in illustrating the dynamics of the interaction between the player and environment. In the future, researchers may investigate how playfulness is expressed in different types of play while

interacting with situational specifics and, as proposed later in this chapter, the individual attributes that determine or help shape people's preference for different forms of playful expression (i.e., playful styles). On a closely related note, investigations about the specific forms of playful behavior may also help shed light on possible different motivational basis for playful behavior. An important notion in the conceptualization of playfulness in this research is that fun-loving constitutes the primary motivational quality of the playful trait. However, this idea should by no means imply that fun is the only motivational force of playful behavior. Instead, play may be motivated by reasons other than or more than just fun (e.g., competition), although it can be argued that the ultimate motivation still boils down to fun and it is just a matter of how is fun defined or where is fun derived by different individuals, in which case, the real question should be how and why people differ in their sources of fun.

Thirdly, the correlational design for testing the APTS' predictive validity is not strong. Ideally, the consequence measures (here, the tendency to engage in playful behavior) should be assessed at a later time (e.g., future judgment or behavior). Although in practice, correlational evidence is sometimes used by examining the correlations between the construct of interest and consequence measures assessed at the same time (Wegener & Fabrigar, 2004), this nevertheless constitutes a limitation that should be addressed in future studies.

Finally, due to the scope of this research, extensive validity evidence was not collected for the PSPS and the PSS. Although conceptual evaluation indicated good face validity and content validity and empirical testing provided supporting evidence for the

structure validity for both scales, more research is warranted in order to validate other forms of validity for both scales.

Conclusions

One of the most important results from this multi-phase multi-study research is a theory-based conceptualization of playfulness and a measurement of adult playfulness. Three defining qualities of playfulness— fun-loving motivation (a specific form of intrinsic motivation), uninhibitedness, and spontaneity—were identified, each clearly differentiated from those closely related but non-essential characteristics associated with the playful trait or playful behavior. Moreover, a deeper understanding of the construct is gained through delineating the hierarchical relationships among the constituent dimensions/sub-dimensions of playfulness. The new instrument APTS demonstrated adequate reliability with initial corroborative validity evidence. It not only provides a good measure for each proposed dimension of playfulness, but also accurately reflects the interconnected relationships among them and, as a uni-dimensional scale, offers a meaningful and parsimonious measure of the underlying general playful trait.

Notably, the notion of consciousness (Csikszentmihalyi, 1981) failed to emerge from the data as a dimension of adult playfulness. Csikszentmihalyi proposes that knowingly choosing a playful approach to life events is a defining quality of adult playfulness. In this research, the EFA results from survey study 1 showed that the preliminary items designed to assess consciousness spread across several factors and did not load highly on any single factor. There are two plausible explanations for this. First, assuming that the basic face validity and content validity of the preliminary consciousness items had been properly established through literature review and conceptual evaluation, the high

cross-loadings displayed by these items may suggest that (a) consciousness conceptually overlaps or tangles with other factors (e.g., fun belief, initiative) to a large degree, or (b) this factor measures a higher level of construct that encompass several emergent factors. In either case, it would be extremely difficult to tease out the factor. The second explanation is that this part of conceptual model might not be valid to begin with. One of the key assumptions of factor analysis is that the underlying dimensions truly exist (Brown, 2006; Garson, n.d.). Factor analysis cannot create valid dimensions if none exist in the input data. Our literature review and data suggest that whether consciousness constitutes a logical component of adult playfulness remains debatable. Future in-depth investigation is needed on both the conceptual level and empirical ground.

Another important finding was the lack of significant relationship between adult playfulness and goal-attainment. Although the observed negative relationship between goal-attainment and fun-loving motivation was consistent with several authors' propositions (e.g., Ellis, 1973; Harris, 1981; Huizinga, 1955; Sutton-Smith, 1977), the rest of the results did not support a close relationship between goal-attainment and the whole playful trait as predicted by these researchers. It may be argued that during competitive games/sports, playful people may be more fun-oriented thus less concerned about external goals, but low commitment to goal-attainment does not necessarily predict playfulness. The main reason may be because goal-attainment does not correlate with spontaneity or uninhibitedness, the other two essential qualities of playfulness.

Similarly, leisure boredom was found to relate with only fun-loving motivation but not with the whole APTS scale. The observed non-significant relationship between leisure boredom and playfulness partly confirmed researchers' speculations about the

complicated nature of the relationship (cf. Bowman, 1987; Caldwell, personal communication, March, 2010; Chick, personal communication, September, 2009). The overall pattern of correlations suggested that the tendency to experience boredom during free time did not relate to spontaneity and uninhibitedness. It seems fair to conclude that, countering many people's intuition and some researchers' arguments (e.g., Bowman, 1987; Glynn & Webster, 1992), playful people do not necessarily feel bored less. A more thorough knowledge about the mechanism underlying boredom and how it relates to play or playfulness is warranted before large-scale investigations about playfulness's presumed "function" on alleviating boredom should be launched. Put together, the above two results suggest the need for a more accurate understanding of the interconnected yet distinct aspects of adult playfulness. They brought to light that different dimensions of playfulness may relate to a construct differently and researchers should take great caution when generalizing a conclusion pertaining to one dimension to the entire playful trait.

The finding about two personality correlates of playfulness is worth noting. The observed strong, positive relationship between adult playfulness and openness is consistent with previous findings by Alexandra (2009), who reported a positive relationship between adult playfulness as measured by PSA (Schaefer & Greenburg, 1997) and openness as measured by the NEO Personality Inventory (Costa & McCrae, 1985). This result also suggested a possible explanation for the proposed link between playfulness and creativity put forward by several authors (e.g., Bishop and Chace, 1971; Meador, 1992). It seems that openness (e.g., taking pleasure in new experiences, being willing to experiment with alternatives, and feeling comfortable with surprises) may

represent the cognitive and behavioral processes shared by both playfulness and creativity.

Positivity is another personality correlate of adult playfulness identified through this research. This result echoes Barnett's (1991b) finding about the positive relationship between (child) playfulness and confident, cheerful individual attributes. A more detailed knowledge about this correlation can be gained by a closer look at the pattern of correlations between positivity and various dimensions of playfulness (survey study 1): a large portion of the link may be attributed to the strong correlation between positivity and fun-loving motivation ($r = .48, p < .01$, imputed dataset), particularly initiative in fun-making ($r = .56, p < .01$, imputed dataset). It appears that actively seeking fun, interesting activities goes hand in hand with a positive belief of life in general, though it is unclear whether a causal link can be inferred between the two, and if yes, what is the direction of the causality.

The development of a theory-based conceptualization of psychological situations for play and that of playful states is another important result of this research. Although many observations about the two aspects have been documented and discussed in literature, there had been few systematic attempts to define and assess them. The corresponding measurements for the two constructs, i.e., the PSPS and the PSS developed from this research displayed adequate reliability, face validity, content validity, and structure validity. Together, they offer good initial measurement tools for studies that examine situational effects and the state of play.

Theoretical Implications

About three decades ago, Iso-Ahola (1976, 1980) and Mannell (1982, 1984) advocated adopting interactionism in personality research on leisure. This call has not received sufficient empirical attention for two reasons. First, empirical studies of interactionism per se have been “thin theoretically” (Fleeson, 2007, p. 503) and impeded by the fact that the methods required to examine the complex human-environment interaction can be dauntingly difficult, costly, or otherwise impractical (Fleeson). Second, the community of leisure studies has been reluctant to invest in developing personality constructs tailored to the study of leisure. Rather, leisure researchers often overly rely on borrowing concepts from the general personality research (Mannell, 1984), particularly those from the trait theories (e.g., Lawton, 1994; Lin, Chen, Wang, & Cheng, 2007; Weissinger & Iso-Ahola, 1984). This research can be considered as a response to Iso-Ahola and Mannell’s call. It is a systematic effort to develop a personality construct germane to the study of leisure within an integrated interactionist framework.

Conceptualization of the trait construct.

Despite its explicit focus on a personality trait, here, adult playfulness, this research does not take a pure trait approach. Instead, the principles of interactionism were instantiated throughout the entire process of theory development. Particularly, trait was redefined to address the controversies surrounding the construct posted by the social-cognitive theorists, a conceptual challenge that had eluded the existing theorization of interactionism. Adult playfulness is defined as an internal trait characterized by a set of interrelated, relatively stable motivational and cognitive qualities that underlie the tendency to engage in playful behavior. This conceptualization strictly distinguishes the

two aspects of personality, i.e., the inner dispositional qualities and their overt behavioral manifestations, and makes it theoretically viable to (a) examine the relationship between the two aspects (e.g., how the trait predicts behavior), and (b) introduce the role of situation and study the trait-situation or person-environment interactions.

Conceptualization and categorization of situations for play.

The role of situation in the functioning of playfulness is to provide both the stimuli and a background for play behavior to occur. A good knowledge of situational factors relevant to the displaying of playfulness is critical to understanding how the trait operates in real life. An interactionist approach to playfulness research demands that we should study the trait in context. On the other hand, I maintain that not only the trait should be studied in context, but also situations should be studied within a specific theoretical context in order to be relevant. When examining situational factors that may affect the manifestation of playfulness, I emphasized the psychological features of a situation, a notion proposed several decades ago by researchers who study situation taxonomies but yet to receive sufficient empirical attention among both interactionists and social-cognitive theorists (Ten Berge & De Raad, 1999).

An integration of the above two ideas gave rise to the proposed two-dimension categorization of psychological situations for play which distinguishes two types of factors: central situational factors that directly motivate play behavior and background situational factors that help create or inhibit a free cognitive context necessary for spontaneous expression of playfulness. Consistent with this conceptualization, the resulting PSPS focuses on assessing the subjective (e.g., “relaxing”, “constraining”, “stimulating”) rather than the objective features (e.g., “playground”, “workplace”,

“talking to someone”) of a situation. It assesses both (a) features that actively interact with the player and enter the play process (i.e., the arousing dimension) and (b) background factors that indirectly affect the person’s sense of freedom to play (i.e., the secure dimension). Although much research work needs to be done before we eventually connect the subjective characteristics of a situation and its objective features, the conceptual framework and corresponding measurement developed in this research may serve as a good starting point for systematic studies of situational factors that are both meaningful and relevant for the functioning of playfulness.

Put together, although trait-situation interaction was not part of this research, the conceptual and measurement development surrounding the three essential components of the player-environment exchange—playful trait, situations for play, and playful states—offers an initial interactionist framework for playfulness study. This framework provides a good foundation for future research aimed to answer not only descriptive but also predictive and causal questions about trait effects and situational effects in predicting behavior as well as interactions between them.

A theory-based conceptualization of playfulness.

Last but far from the least, the above charges were carried out in a topic area that is loaded with many conceptual and methodological challenges of its own. Rather than building on each other, earlier playfulness studies have tended to be driven by diverse empirical and theoretical perspectives. The understanding of the playful trait has been burdened by the historical predicament surrounding its precedent concept: play, the defining of which has notoriously defied empirical attempts of all sorts (Barnett, 1990). As Barnett pointed out, while efforts to validate play’s construct structure and assess its

defining characteristics “have consistently failed” (p. 321), the conceptualization of playfulness as a personality trait remained difficult and slippery, despite its switched focus from observable behaviors to the internal dispositional quality. Moreover, as indicated by its continuous usage of an outmoded trait approach, personality research in leisure studies seems to lag behind and remain relatively isolated from the broader personality research community. This lack of connection has prevented playfulness researchers from taking advantage of the theoretical and methodological development collectively advanced by numerous personality researchers.

In this research, I combed through the play and playfulness literature on both children and adults and developed a theory-based conceptualization of adult playfulness. Guided by the proposed trait concept, I identified three essential motivational and cognitive qualities that define the playful trait and logically distinguished them from state variables and a number of non-essential characteristics or personality correlates that have been associated with the construct. Furthermore, the understanding of the construct was further sharpened and enriched by an examination of the trait’s relationship with various theoretically related constructs, including behavioral tendency, goal-attainment, self-as-entertainment, leisure boredom, openness, and positivity.

Practical Implications

Implications for personnel decisions.

The three scales developed from this research can be readily used in combination or separately by various agencies that are interested in play or playfulness. For example, in areas or occupations wherein playfulness is deemed as a desirable trait that would contribute significantly to the success on the job (e.g., kindergarten teacher, computer

game designer, sales representative, community recreation center manager, leadership programmer, etc.), the employer(s) or HR manager(s) may include the APTS in the personnel assessment batteries to assist selecting highly playful candidates.

Implications for play product design.

The results of psychological situational factors for play offer implications for providers of play programs and manufactures of play facilities or materials. An environment needs to be stimulating, secure and free in order for play behavior to thrive in it. Recreation programmers can use this finding to inform their design, such as providing rich (physical and cognitive) elements that encourage exploration and allow manipulation, creating a set of rules and using culturally-sensitive language to cultivate a free and equal environment, minimizing externally imposed goals in forms of expectation or coercive rewards, and carefully avoiding conveying undue “moral oughtness”. Similarly, playground and toy manufacturers can design their products to reflect the same features.

Implications for therapeutic practice.

Clinical psychologists and recreation therapists have been using play as an important aspect of therapeutic alliance for its role in fostering a positive relationship between therapist and client (Schaefer & Greenberg, 1997). Other therapeutic efforts have focused on developing interventional programs to promote play (e.g., Bundy, 1997; Bundy et al., 2001) or using play to improve social relationships between parent/teacher and children (e.g., Helker, Schottelkorb, & Ray, 2007; Ray, 2008) or long-term couple relationships (e.g., Casado-Kehoe, Vanderbleek, & Thanasiu, 2007).

No matter if play is used as a context or promoted as an end in itself, play therapists can utilize the three scales developed from this research to further their goals. Specifically, the APTS can be a useful instrument to help play therapists to diagnose the overall playfulness of the clients and design counseling plans accordingly. During a play counseling session, a recreation therapist can also mentally gauge the client's state during in terms of the four aspects assessed by the PSS (i.e., immersion, mastery, activeness, and positive affects) to determine whether the client is fully engaged in a playful state and make adjustment accordingly. The 16-item PSS can also be quickly administered during the break of a session or at the end of each session in a multi-session program so the therapist can collect information to inform his or her decisions about whether (and how) to adjust strategies for subsequent meetings. Finally, the therapist or the developer of play intervention programs can use the PSPS to evaluate how play-friendly is the therapeutic environment or program, with a focus on relevant psychological features.

Directions for Future Research

Put in perspective, I would conclude that this research created more questions than it answered. The creating, however, is in the sense of opening up the opportunities for asking and examining a wide range of important and interesting questions that would lead to a more comprehensive and deeper understanding of playfulness. At least three areas stand out as promising directions for future research.

Validating the APTS, the PSPS, and the PSS.

The process of measurement validation is never complete and collecting validity evidence amounts to an accumulative process often extended through the collective effort of the research community that uses the measurement across diverse times, contexts, and

populations. In this research, I have developed and provided initial reliability and validity evidence for three scales—the APTS, the PSPS, and the PSS—based on literature reviews, logical analyses, and empirical testing. Particularly, relatively extensive validity (e.g., face validity, content validity, structure validity, predictive validity, convergent validity, concurrent validity, differentiation ability etc.) evidence was provided for the APTS. Nevertheless, more work is needed to further validate the three instruments.

Future researchers may collect additional validity evidence for each scale from various sources based on content, on internal structure, on process, on consequences, and on relations with other variables (Seun, in press). Moreover, in this research, I examined only one form of reliability, i.e., internal consistency, as measured by the Cronbach's alpha within the Classical Theory (Seun, in press). Future researchers may examine other forms of reliability using the same or different approach (e.g., the Item Response Theory approach, or the Generalizability Theory). Particularly, future researchers may investigate the test-retest reliability of the APTS to validate that the scale is indeed measuring a relatively stable personality trait.

On a related note, researchers interested in the external validity or generalizability of any or all of the three scales may apply the scale(s) to a different population, such as an adult group outside of the North America, children, people with mental, learning or physical disabilities, etc. However, necessary modifications to the scale(s) and/or the measurement procedure may be warranted depending on the need for special accommodations by the population using the scale(s). The modification may be as straightforward (though not necessarily simple) as translating the measurement(s) into another language, or as elaborated as developing an alternative form that provides an

equivalent measure of the construct as proposed (e.g., replacing statements with pictures or developing observational scales for children and specially challenged participants). Of note, the modification may introduce extraneous factors that jeopardize validity and researchers will need to take great caution and make a note to verify that such is not a concern.

Theoretical development surrounding playfulness.

Attempting to measure a construct provides a meaningful and productive way to explore the adequacy and defensibility of theoretical concepts (Anderson & Sauser, 1995). In this research, the proposed concept of adult playfulness has generally been confirmed, with one exception: the hypothesized component of consciousness was not supported by the data. The initial inclusion of the component in the playfulness definition was based on Csikszentmihalyi's (1981) proposition that adults actively construct reality during play. Future studies should investigate if consciousness actually constitutes a defining quality of adult playfulness that is also distinct from other dimensions of the playful trait and, if yes, develop a better measure for this dimension.

Another dimension worth further exploration is uninhibitedness. The results from this research suggested that items designed to assess uninhibitedness displayed relatively low factor loadings (.50 to .68) and the whole sub-scale exhibited comparatively low internal consistency reliability (Cronbach's $\alpha = .68$). It is likely that the above item performances resulted from the inadequate number of items in relation to the broad content domain of the construct (i.e., too few items scattered over a large content area and not strongly correlated with one another). Future research may try to refine the current items or develop additional items. Item generation may be enlightened by examining the sources

of uninhibitedness. A person may be uninhibited (a) out of unawareness of factors which otherwise would be constraining (i.e., the “blessed ignorance”), or (b) as a result of conscious subduing and/or successful negotiating with perceived constraining factors. In this research, the majority of items that survived various steps of evaluation measure the second level of uninhibitedness. Future researcher may develop items that assess the first level of uninhibitedness as a sub-dimension. Of note, a number of interesting questions may follow: are the two forms of uninhibitedness complementary, mutually exclusive, or independent (i.e., which form takes the primacy will depend on the domain of life)? Is the uninhibitedness due to unawareness a stable quality or it may change as the individual progresses through life? And do adults and children differ on the two levels of uninhibitedness?

Fun-loving motivation constitutes a significant component of the concept of adult playfulness as defined in this research. The internal structure of this component was relatively well defined as indicated by its elaborated sub-dimensions. However, as mentioned in the limitation section, this research did not explore people’s potentially diverse definitions of fun. Every individual may have his or her own idea about what is fun. It is possible that a person’s genetic makeup, previous experience, faculty/ability/skills, or most likely the combination of the above three help cultivate his or her “fun map”. Studies that examine individual differences in where and how do people derive fun in daily life will provide tremendously rich information about the different personal styles of playful behavior, including its forms (e.g., physical play, cognitive play), content (e.g., playing with words, rules, ideas, objects, people, etc.), and contextual triggers (e.g., specific images, actions, or materials).

Finally, this research identified two close personality correlates of adult personality: openness and positivity. Because of the cross-sectional nature of the study, no causal links could be drawn between playfulness and these qualities. Future research may employ longitudinal design to investigate the nature of the correlation and the potential long-term effects of playfulness. On the other hand, studies of the immediate or short-term consequences of play behavior on people's health and psychological well-being offer an equally profitable avenue for future research. Sutton-Smith (1997) states that the individual most likely to prevail in this world is the one who always looks at the bright side, who believes in possibilities, who thinks creatively, and who has a sense of power and control, and play creates just such a person. Or does it? Research in the above directions will shed light on this question.

Examining playful trait-situation interaction using an interactionist approach.

Provided that all the conceptualizations and measurements included in the proposed interactionist framework for playfulness research have received adequate validation, researchers may start to use it to facilitate investigations of the playful trait-environment interaction. This line of research can expand in two main directions:

1. The interaction between the person and the situation is one of the key assumptions of interactionism. There are several ways by which the interaction can take place: situational variables affect the person by providing motivating or demotivating factors; the person affects situations by choosing which situation to enter, interpreting situations in his or her own idiosyncratic way, and even changing the situation during the interactive process (Fleeson, 2007). Every aspect described above invites diligent investigations and offers the potential for a full-bloomed line of research.

Particularly, the situation side of the interaction has been the predominant focus of psychology research (Shoda, 2004). In play/playfulness research, however, situational effects have been largely ignored. Built on the two-dimensional framework of psychological situations for play, researchers can start to collect information about the physical features of play situations and search for systematic relations to the psychological characteristics (i.e., what kind of situations will provide which type of psychological features?) More accurate and detailed physical-psychological situation profiles can be developed by including moderating personal variables that may be the determining factors of individual differences in situation encoding styles. Findings from this line of research will provide immediate implications for environmental design, activity planning, and delivery of individual-centered play intervention programs.

2. The relative role of the trait and the situation in shaping behavior lies at the core of the controversy surrounding the “consistency paradox” (Mischel, 1968). Over the years, an accumulative and increasingly clear understanding on this issue has led to the consensus that trait gives rise to the cross-situation consistency of behavior at the individual level (i.e., the individual difference part), whereas situational effects produce cross-situational behavioral variations within the individual (Fleeson, 2007; Reis & Gable, 2000). With this understanding, researchers who are interested in the relative role of trait and situation in predicting play behavior can employ appropriate methods (e.g., experience sampling) and statistical techniques (e.g., multi-level modeling) to examine how individuals differ in levels of behavioral consistency/variation and/or how the playful trait predicts play behavior in daily life above and beyond situational effects. By including personal variables and situational variables in the same model and assessing

individual differences and within-individual variances simultaneously, researchers can gain a complete understanding about the stability and dynamics of the coherent functioning of playfulness.

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Publishers, Inc.

APPENDIX A. Recruitment Email for Focus Group Study

Dear Department of Recreation, Park, and Tourism Management Graduate Students:

I am seeking research volunteers to participate in a focus group discussion on the topic of adult playfulness and play. Sessions would be held on the dates shown below.

Wednesday (April 30) and/or Thursday (May 1)

Come both days if you like...lunch is still my treat!

Anytime between 11:30a and 1:30p

701E Ford Building

You are welcome to drop in anytime from 11:30a to 1:30p on these two days and free to leave as you need. This project is part of my Penn State dissertation research and I cordially invite you to join the research and share your playful stories and thoughts about adult play. Your input will be invaluable to help me understand this intriguing topic.

All graduate students are invited. If you plan to come, please drop me an email, but surprise show-up is equally welcome. A pizza lunch shall be provided to those who attend.

I look forward to seeing you on Wednesday and/or Thursday at 701E!

Sharon X. Shen, Ph.D Candidate
Penn State University
Recreation, Park & Tourism Management
801 Ford Building
University Park, PA 16802

APPENDIX B: Informed Consent Form for Focus Group Study



Informed Consent Form for Social Science Research

The Pennsylvania State University

ORP USE ONLY: **IRB#27141**
Doc. #4
The Pennsylvania State
University
Office for Research Protections
Approval Date: 04-29-2008 D.
Maney
Expiration Date: 12-10-2008 D.
Maney
Social Science Institutional

Title of Project: Personality Trait in Adulthood-Focus Group Study

Principal Investigator: Xiangyou Shen, Ph. D Candidate
801 Ford Building
University Park, PA 16802
(814) 574-6362; sshen@psu.edu

Co-Advisors: Dr. Harry C. Zinn
801 Ford Building
University Park, PA 16802
(814) 863-7849; hzinn@psu.edu
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801 Ford Building
University Park, PA 16802
(814) 863-1941; gchick@psu.edu

1. **Purpose of the Study:** This study is part of research about personality trait in adulthood. The general goal of the research is to examine the coherent functioning of personality in adulthood and important psychological processes involved in it. The purpose of this particular study is to explore the conceptualization of adult playfulness as a personality trait. Also of interest are situations that may encourage or thwart expressions of adult playfulness.
2. **Procedures to be followed:** You will be asked to participate in a group discussion with other recruited participants. You will be asked to answer several short questions in writing prior to the discussion. The discussion will focus on the cognitions, affects, and behaviors involved in the process of being playful and what/how situational factors affect the expression of adult playfulness. The group discussion will be audio-recorded.
3. **Discomforts and Risks:** There are no risks in participating in this research beyond those experienced in everyday life.
4. **Benefits:** You might learn more about yourself by participating in this study. You might have a better understanding of how environment/situation affects you in terms of playfulness. You might realize that others have had similar experiences as you have.

This research might provide a better understanding of what APF is and how it is expressed in everyday life situations. This information, combined with the results from other studies of this research, might help develop trait-related programs aiming to improve people's psychological wellbeing.

5. **Duration:** The group discussion will last no more than 2 hours.
6. **Statement of Confidentiality:** Your participation in this research is confidential. No names will be attached to any report. If you speak about the contents of the focus group outside the group, it is expected that you will not tell others what individual participants said. The data, including a master list linked to pseudonyms, will be stored and secured at the office of the principal investigator (PI) in a locked file cabinet. Only the PI and co-investigators have

access to the data. The tapes will be destroyed in 2012. Penn State's Office for Research Protections, the Social Science Institutional Review Board and the Office for Human Research Protections in the Department of Health and Human Services may review records related to this research study. In the event of a publication or presentation resulting from the research, no personally identifiable information will be shared.

7. **Payment for Participation:** Research participants will be served pizza and soda during the group discussion.
8. **Right to Ask Questions:** Please contact Xiangyou (Sharon) Shen at (814) 574-6362 or sshen@psu.edu with questions, complaints or concerns about this research. You can also call this number if you feel this study has harmed you. Questions about your rights as a research participant may be directed to Penn State University's Office for Research Protections at (814) 865-1775. You may also call this number if you cannot reach the research team or wish to talk to someone else.
9. **Voluntary Participation:** Your decision to be in this research is voluntary. You can stop at any time. You do not have to answer any questions you do not want to answer. Refusal to take part in or withdrawing from this study will involve no penalty or loss of benefits you would receive otherwise.

Option for Voice Record Release: *May the researchers use your voice records for future research? Circle two options:*

- 1) I do not give permission for my recordings to be archived for future research projects. The recordings will be destroyed by 2012.
- 2) I do not give permission for my recordings to be archived for educational and training purposes. The recordings will be destroyed by 2012.
- 3) I give permission for my recordings to be archived for use in future research reports and publications.
- 4) I give permission for my recordings to be archived for educational and training purposes.

You must be 18 years of age or older to take part in this research study. If you agree to take part in this research study and the information outlined above, please sign your name and indicate the date below.

You will be given a copy of this consent form for your records.

Participant Signature

Date

Person Obtaining Consent

Date

APPENDIX C: Protocol for Focus Group Study

Protocol for focus group discussion: Characteristics and defining qualities of adult playfulness

Greetings, welcome

Each participant receives a handout of several warm-up questions (see below) and a copy of informed consent form (Appendix B) when he/she first arrives.

Warm-up questions:

- (1) I becomes playful when _____.
- (2) When I am playful, I (do)_____.
- (3) When I am playful, I (feel)_____.
- (4) The most playful person that I know of is _____. He/she is playful because_____.

The moderator i.e., the Principal Investigator starts the discussion when most participants have completed the warm-up questions.

1. Introduction

The moderator (a) introduces the purpose and topics of the FG study, (b) assure confidentiality and collect signed informed consent form, (c) clarify possible conceptual ambiguity surrounding play and playfulness, and (d) ask participants to spend two minutes to jot down their thoughts in response to the warm-up questions on the handout.

To start, the moderator asks a factual question that will get everybody begin to talk (recording starts here).

Moderator: Please tell me one of the things you do most often when you find yourself being playful?

If there is a white/black board in the room, reproduce the responses on the board.

2. Discussion on key questions

Moderator: We know that people have different styles when it comes to playfulness (or we see lots of different styles here, let's talk a little more about this); some are very expressive, others are not that obvious, at least not in their behavior/appearance. Tell us when you are being playful, how is it showed or how people tell you are playing?

Probing [if needed]:

Is there anybody who is playful in a different way?

A and B are really quite different in your playful expressions. But is there anything you two share when being playful?

Moderator: Now let's talk about the feelings or thoughts when you are being playful. How do you feel inside? You may think about a playful experience of yours and tell us what was going on in your mind then?

Probing [if needed]:

Tell us why you felt like to play!

Compared to other experiences that are more serious, such as taking an exam, how differently you feel or think?

Moderator: Think of a time you felt playful recently. How would you describe the situation you were in when you became playful?

Probing [if needed]:

Could you talk about this more specifically? What do you feel when you are ...?

What about ... (the situation in the participant's words) makes you feel playful?

Are there any (other) words you might use to describe that situation that would also describe lots of other situations that might make a person playful?

Now how about you tell us some situations when you do NOT feel playful?

Moderator: Now please think of a most playful person that you know of (it can be yourself), and tell us what's the very quality of the person that makes you think he or she is playful.

Probing for deeper understanding if participants come up with a long list of qualities or other personality traits (e.g., sociable, energetic, friendly, and outgoing, etc):

So among all these qualities we mentioned about a playful person, which one you think is the defining quality?

Can an introversive person also be a playful person?

Moderator: The last question I want you to help me understand is the possible personal effects that follow from being playful. We know that a playful person often makes us

laugh, and we usually feel pleasant around a playful person. How about the playful person him or herself? For instance, in the long run, being playful can bring about what kind of effects for the person. You may also talk about the effect in short terms.

3. Summary and ending questions

10 minutes before the end of the focus group session, the moderator starts to summarize the major themes and critical ideas emerged from the discussion. If there are important unanticipated questions, the moderator will spend 2-3 minute to discuss them. After the summary, the moderator will invite participants to amend or add.

Moderator: Am I accurate?

Are we missing anything here?

Is there anything important you like to add?

If we have a second discussion, what do you like to have more time to talk about?

New ideas offered by participants will again be confirmed or corrected by the whole group.

APPENDIX D. Solicitations for Survey Study 1

- Newswire Solicitation for APTS scale development On-line Survey

Xiangyou (Sharon) Shen, a doctoral student in Recreation, Park & Tourism Management, is conducting a survey on "Perceptions on Personality Trait in Adulthood" and needs volunteers to take the survey. Those interested in taking the 15-minute survey should visit http://www.surveymonkey.com/s.aspx?sm=e0RkV0IUauwdvWxP0dhpJA_3d_3d on line. For more information, contact Sharon at sshen@psu.edu.

- On-line Survey Recruitment Email

Dear friend,

I am Xiangyou Shen, a doctoral student in the Recreation, Park & Tourism Management Department at the Pennsylvania State University. I would like to invite you to participate in a 15-minute online survey about how people perceive their own personality. This is part of my dissertation research on adult personality trait. The results from this study will facilitate developing a personality trait instrument and contribute to the understanding of trait-related psychological wellbeing issues. You must be at least 18 years old in order to participate.

If you are interested in taking the survey, please follow the link below:

http://www.surveymonkey.com/s.aspx?sm=7zy6_2bz4Ts_2bSx7qLIC9TyXQ_3d_3d

If you have any questions or want to know more about this survey, please feel free to contact me. Thank you very much for your time! Your help is much appreciated!

Sincerely,

Xiangyou (Sharon) Shen, Ph.D Candidate
Penn State University
Recreation, Park & Tourism Management
801 Ford Building
University Park, PA 16802
Phone: 814-574-6362
E-mail: sshen@psu.edu

APPENDIX E: Survey Study 1 Questionnaire

Adult Personality Trait Survey

About this study

This is a study about how people perceive some aspects of their own personality. Since we are interested in personality traits in adulthood, you must be at least 18 years old in order to participate. Completing the survey will take 15-20 minutes.

Your responses will be kept strictly confidential. No name or identifying information will be asked in the survey. Your email address will NOT be saved in the survey results unless you provide it voluntarily.

Your participation in this survey is completely voluntary. You may choose not to participate. You may skip any question, and you may quit at any time.

This research is being conducted by Xiangyou (Sharon) Shen in the Department of Recreation, Park and Tourism Management at Penn State University. If you have any questions or want to know more about this survey, please feel free to contact Sharon at Penn State:

Xiangyou (Sharon) Shen, Ph.D Candidate
Penn State University
Recreation, Park & Tourism Management
801 Ford Building
University Park, PA 16802
Phone: 814-574-6362
E-mail: sshen@psu.edu

Completion of the survey implies that you have read the information on this page and consent to take part in the research. Please print and keep a copy of this form for your records or future reference.

SECTION A: Below are a number of statements that can be used to describe people and their beliefs in general. Please indicate how well each statement represents you or your opinions.

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1. I often do unplanned things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I try to have fun no matter what I am doing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I often do things on the spur of the moment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I don't always follow rules	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. When someone else starts something that is fun, I'm happy to follow along	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Work can be fun, if you want it to be	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Sometimes I can do things without worrying about consequences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. We should combine work and play	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I don't often feel constrained by my environment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I often look for fun things to do	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. I appreciate fun things started by other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. I think having fun is more important than being a high achiever	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Moderately Agree	Strongly Agree
13. If I want to do something, I usually don't let what other people may think stop me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. I often do things just for the fun of it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. I think having fun is more important than earning money	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. I believe we don't have to be serious all the time even if we are doing something serious	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. I believe in having a good time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. I often act upon my impulses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. I am a fun-loving person	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. I understand social rules but most of the time I am not restricted by them	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. I am often the person who starts fun things in a situation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. I enjoy fun things that other people initiate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. I often pursue my spur-of-the-moment thoughts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Moderately Agree	Strongly Agree
24. I believe work can be done in a fun manner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. I think fun is a very important part in life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Among all the ways of doing things, I often choose the way that is more fun	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. I can make almost any activity fun for me to do	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. I usually try to avoid doing things that may make others think negatively of me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29. I often follow my spur-of-the-moment feelings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. I don't fear losing anything by being silly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. I can find fun in most situations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. I like to hang out with fun people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SECTION B: Playful Behavior and Playful Situations

B1. Please indicate how well each of the following statement describes you:

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1. I often do playful things when I am with other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Moderately Agree	Strongly Agree
2. I often do playful things when I am by myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I like to play in my mind	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I don't often engage in playful behavior	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I like to be playful even if I am doing something serious	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

B2. Different people do different things when they are feeling playful. Some, for example, tell jokes, tease/mock those around, invent games, or say puns/interesting metaphors/witty comments. Still some people talk or sing to themselves, indulge in random thoughts or play with ideas in their own minds.

Now please reflect on your own playful experiences and briefly describe what you did in one of your most playful behaviors:

Sorry, I can't think of a specific one right now (That's OK, you can come back if you think of one later!)

Please keep your playful experience in mind OR think of your playful experiences in general and indicate how well each of the following statements describes you:

<i>When I was engaged in playful behavior,</i>	<i>Not at all</i>							<i>Extremely</i>
1. I was deeply absorbed in whatever I was doing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I had keen senses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I was not self-conscious	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I felt in control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I felt clumsy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I was good at creating fun situations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<i>When I was engaged in playful behavior,</i>	Not at all							Extremely
7. I knew what to say or do to make people laugh	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I knew how to add my own fun to the situation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I knew how to create fun in an appropriate way	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I was in high spirits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. I was amused	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. my mind was active	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. I was not concerned with how I look	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. I felt excited	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. I forgot about the things going on around me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. I was very happy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. I felt awkward	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. I had lots of fun	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. I felt energetic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. I was physically animated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. I felt pleasure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. I lost track of time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

B3. Now, please briefly describe the situation in which you became playful:

(e.g., having lunch with friends, chatting with colleagues at my workplace, at home by myself, in a public place with strangers)

Or **I can't think of a specific situation, but in general I become playful**

when _____

Please indicate the extent to which each of the following statements describes how you feel in the situation(s):

<i>In the situation(s) when I was playful, I felt</i>	Not at all						Extremely
1. relaxed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. child-like	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. constrained	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. anxious	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. interested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. like exploring	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. insecure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. well liked if I was with other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. uncomfortable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

B4. Now please think about the situations when you played competitive games/sports, and indicate to what extent each of the following statements describes you:

<i>When playing competitive sports/games,</i>	Strongly Disagree						Strongly Agree
1. winning is good but I care more about having fun	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. having fun is more important to me than playing well	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I seldom care if I lose	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I feel frustrated if I lose	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I feel my time has been wasted if I lose	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I feel a game is not worth playing if I cannot win it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SECTION C: General Personality Characteristics

C1. The following are statements describing people's general personality characteristics. Please indicate to what extent each of the following statements represents you:

	Strongly Disagree					Strongly Agree	
1. I am rarely negative about things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I am generally a confident person	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I generally think the world is a wonderful place	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I often feel sad	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. People who always stick to their plans must lead very boring lives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I have much stress in my life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I am playful no matter where I am and who I am with	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I am generally a happy person	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I often worry about things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I am uncomfortable with uncertain situations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. I find interesting things in almost every situation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. I am a playful person	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. I don't like surprises	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. There is very little in life that depresses me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. I like to try different ways of doing things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. I am almost always open to new experiences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. I am an optimistic person	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Even though it might not work out, I enjoy experimenting with new ways of doing things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. I don't like it when unexpected things happen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. I often feel discontent with how things are going	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. I generally think the world is filled with wonderful people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

C2. Listed below are ten statements concerning personal attitudes and traits. Please read each statement and decide whether the statement is true (T) or false (F) as it pertains to you personally:

- | | | |
|---|---|---|
| T | F | 1. I never resent being asked to return a favor |
| T | F | 2. I always try to practice what I preach |
| T | F | 3. I like to gossip at times |
| T | F | 4. I have never been irked when people expressed ideas very different from my own |
| T | F | 5. There have been occasions when I took advantage of someone |
| T | F | 6. There have been occasions when I felt like smashing things. |
| T | F | 7. I sometimes try to get even rather than forgive and forget |
| T | F | 8. I am always willing to admit it when I make a mistake |
| T | F | 9. I have never deliberately said something that hurt someone's feelings |
| T | F | 10. At times I have really insisted on having things my own way |

C3. Below are three pairs of adjectives with the adjectives in each pair referring to more or less opposite characteristics. Please describe yourself by placing a check mark in the space that you think best represent your standing. Note that the closer a check is near an adjective, the more you feel the adjective describes you:

I often

- | | | | | | | | | |
|--|---|---|---|---|---|---|---|--------------------------------|
| <input type="radio"/> feel serious | — | — | — | — | — | — | — | feel playful |
| <input type="radio"/> want to do something important | — | — | — | — | — | — | — | want to do something frivolous |
| <input type="radio"/> try to accomplish something | — | — | — | — | — | — | — | try to have fun |

SECTION D: Free Time Use

Most people have periods of free time ranging from a few moments during the course of their daily activities to large amounts of vacation time. The following statements reflect how different people feel about their free time and how they use it. Please indicate the extent to which each of the statements describes you:

- | | | | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | Strongly Disagree | | | | | | Strongly Agree |
| 1. I have an active imagination | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. I like to go places where there is lots to do | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. I can make almost anything fun for myself | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

	Strongly Disagree						Strongly Agree
4. I find at this stage of my life that there is not enough to occupy my free time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. When I have to wait for something I usually get so engrossed in my thoughts that I fail to notice the time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. My most enjoyable vacations are those where I go some place new	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Filling my free time is a problem for me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. If something I have planned is cancelled, I have difficulty finding an enjoyable substitute	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I am good at entertaining myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I like to go out a great deal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. I enjoy relaxing and letting my mind wander	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. If I have a day free, I prefer to go somewhere away from home	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. When I have time on my hands, I usually find someone to spend it with	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. I am a person who likes to go to new places	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. I am never at a loss for something to do	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. I am good at thinking of things to do with my free time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. I often have a difficult time deciding what to do with my free time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. I am good at thinking of fun things to do	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. I remember my good times by the places I've been	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. My life would be dull without my daydreams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. I often use my imagination to entertain myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Strongly Disagree						Strongly Agree
22. I have too much time on my hands	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. I am good at making up games	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. My favorite activities require me to use my knowledge and skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. When I am bored I go some place where there are things happening	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. I like teaching myself to do new activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. I often feel there is nothing to do	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. It doesn't matter where I am, I enjoy myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29. For me, free time just drags on and on	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. Free time is boring	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. In my free time I usually don't like what I'm doing but I don't know what else to do	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. During my free time I almost always have something to do	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. My friends and I often talk about how bored we are	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. I usually become very absorbed by what I do in my free time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SECTION E: Please answer the following questions about your background.

1. In what year you were born? 19_____
2. Your gender is Male Female
3. What is the highest level of school that you have completed? *Please check only one box*
 - High School Bachelors Degree
 - Some College Masters Degree

- Associate Degree Doctoral Degree

4. Approximately what was your total household income before taxes for 2007?
Please check only one box

- Less than \$15,000 \$95,000-114,999
 \$15,000-\$34,999 \$115,000-\$134,999
 \$35,000-\$54,999 \$135,000-\$154,999
 \$55,000-\$74,999 \$155,000-\$174,999
 \$75,000-\$94,999 \$175,000 or more

5. Which ethnic groups do you identify with? *Please check only one box*

- Caucasian (White) Black/African American Asian
 Hispanic/Latino American Indian/ Alaska Native
 Pacific Islander or Native Hawaiian Inter-Racial
 Other (please specify _____)

This concludes our questionnaire. Thank you very much for your help!

APPENDIX F. Solicitations for Survey Study 2

- Solicitations published on the Newswire

Solicitation for highly playful research volunteers

Xiangyou (Sharon) Shen, a doctoral student in the Department of Recreation, is seeking participants for an online survey regarding "adult playfulness." Think of the most playful person you know, excluding yourself, and have them take the eight to 10 minute survey at

http://www.surveymonkey.com/s.aspx?sm=c_2bWcKQ5JngjAhzZntNFzxQ_3d_3d

online. The password for the survey is 'hg'. For more information, contact Shen via e-mail at sshen@psu.edu.

Solicitations for non-playful research volunteers

Xiangyou (Sharon) Shen, a doctoral student in the Department of Recreation, is seeking participants for an online survey regarding "adult playfulness." Think of the least playful person you know, excluding yourself, and have them take the eight to 10 minute survey at

http://www.surveymonkey.com/s.aspx?sm=LJKvBJeZDnFqNgyAMhu6Eg_3d_3d online.

The password for the survey is 'lg'. For more information, contact Shen via e-mail at sshen@psu.edu.

- Solicitations sent through mail-lists:

My friend Xiangyou (Sharon) Shen, a doctoral student in Recreation, Park & Tourism Management at Penn State is conducting a survey about "adult playfulness" and seeking participants to take an 8-10 minute survey. To help her, Please think of two individuals you know (excluding yourself), one being the Most playful and the other the LEAST playful, and forward the following invitations to them:

Invitation to the MOST playful individual:

This Penn State study is looking for participants for playfulness research. I recommend you to participate in their on-line survey (Please click on the following link or paste the address

http://www.surveymonkey.com/s.aspx?sm=c_2bWcKQ5JngjAhzZntNFzxQ_3d_3d). The password for this survey is 'hg'. Thanks for your time!

Invitation to the LEAST playful individual:

This Penn State study is looking for participants for playfulness research. I recommend you to participate in their on-line survey (please click on the following link or paste the address http://www.surveymonkey.com/s.aspx?sm=LJKvBJeZDnFqNgyAMhu6Eg_3d_3d). The password for this survey is 'lg'. Thanks for your time!

APPENDIX G: Survey Study 2 Questionnaire



Adult Playfulness Research On-Line Survey Questionnaire

Conducted by

Pennsylvania State University

Adult Playfulness Survey

This is a study about playfulness in adulthood. This questionnaire is designed to measure your average tendency to be playful across everyday life situations. You must be at least 18 years old in order to participate. You will be asked to answer four short sections of questions on a survey. The whole survey will take about 8-10 minutes to complete.

There are no risks in participating in this research beyond those experienced in everyday life. You might learn more about yourself by participating in this study.

Your responses will be kept strictly confidential. No name or identifying information will be asked in the survey. Your confidentiality will be kept to the degree permitted by the technology used. No guarantees can be made regarding the interception of data sent via the Internet by any third parties. Penn State's Office for Research Protections, the Social Science Institutional Review Board, and the Office for Human Research Protections in the Department of Health and Human Services may review records related to this project.

Your participation in this survey is completely voluntary. You may choose not to participate. You may skip any question, and you may quit at any time. Refusal or withdrawal in the research study will involve no penalty or loss of benefits to participants.

This research is being conducted by Xiangyou (Sharon) Shen in the Department of Recreation, Park and Tourism Management at Penn State University. Please contact Sharon Shen at (814) 574-6362 with questions, complaints or concerns about this research. You can also call this number if you feel this study has harmed you. If you have any questions, concerns, problems about your rights as a research participant or would like to offer input, please contact The Pennsylvania State University's Office for Research Protections (ORP) at (814) 865-1775. The ORP cannot answer questions about research procedures. All questions about research procedures can only be answered by the principal investigator.

Completion of the survey implies that you have read the information on this page and consent to take part in the research. Please print and keep a copy of this form for your records or future reference. To start taking this survey, please click the "next" button. Otherwise, you may close the window to exit this survey.

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You may have learned about this survey from the Penn State Newswire or the solicitation email sent/forwarded to you. Please tell us you are filling out this survey because:

- A. I was recommended to take this survey by someone who I know.
- B. I read about this survey on Penn State Student or Faculty/Staff Newswire and volunteer to participate.
- C. I received an email that asked me to recommend participants and I volunteer to participate.
- D. Other (please Specify)

Note that if the respondent answered B or C or D, he/she will be presented with a Thank You page shown as below:

Thank you for your interest in this survey! However, at this point we are looking for participants who are referred by others. You can help us by forwarding the respective survey link to people who you know are

(a) very playful

(http://www.surveymonkey.com/s.aspx?sm=c_2bWcKQ5JngjAhzZntNFzxQ_3d_3d;password:'hg')

OR

(b) not playful

(http://www.surveymonkey.com/s.aspx?sm=LJKvBJeZDnFqNgyAMhu6Eg_3d_3d;password:'lg')

Please note that it is essential NOT to let people know which type of participants they are recommended as. Your recommendations will be deeply appreciated. Now if you still wish to take the survey, you may continue by clicking on "Next". Your responses will not be included in this study, though we equally appreciate your input. You may also choose to exit this survey by closing the window.

SECTION A: Below are a number of statements that can be used to describe people and their beliefs in general. Please indicate how well each statement represents you or your opinions.

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1. I don't always follow rules	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. When someone else starts something that is fun, I'm happy to follow along	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Moderately Agree	Strongly Agree
3. Sometimes I can do things without worrying about consequences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I try to have fun no matter what I am doing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I often do unplanned things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I can find fun in most situations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I appreciate fun things started by other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I often do things on the spur of the moment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. If I want to do something, I usually don't let what other people may think stop me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I believe in having a good time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. I often act upon my impulses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. I understand social rules but most of the time I am not restricted by them	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. I am often the person who starts fun things in a situation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. I enjoy fun things that other people initiate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. I often pursue my spur-of-the-moment THOUGHTS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. I often follow my spur-of-the-moment FEELINGS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Moderately Agree	Strongly Agree
17. I think fun is a very important part in life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. I don't fear losing anything by being silly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. I can make almost any activity fun for me to do	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SECTION B: Leisure Activity Design. This is an experimental Task. Suppose we are looking to develop a customized activity that caters to YOUR individual needs/interests. Please facilitate the activity design by providing input in the following three aspects of the activity.

1. The outcome that you desire--among the following possible outcomes of this new activity individually designed for you, please choose the one that you desire most:
 - A. Providing abundant opportunities for you to meet new people and make friends
 - B. Offering your chances to make some pocket money
 - C. Giving your great fun every time you play the game
 - D. Providing valuable learning experiences in areas of your interest
 - E. Other (please specify _____)
2. The structure/format that you prefer--please tell us which format you prefer of this new activity:
 - A. Highly structured, characterized by a number of carefully designed rules
 - B. Open-structured, allowing a large room for improvisation
3. The Content of your choice--the last stage is designing the content for your customized activity. Please think about all the things that you would like to do and could have done but didn't do in your everyday life for some personal concerns (e.g., worried about what others might think of you; worried about

what if you fail; worried about rules or social norms; worried that it might make you look silly, stupid or simply bad...). Supposing that we can design the activity that allows you to do all these things, please list as many of these things as you can:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

If there are more, please list here:

SECTION C: General Personality Characteristics

C1. For the following two statements, please place a check mark in the space that you think best represents your or your friends' thought about you. Note that the closer a check is near an adjective, the more you feel the adjective describes the case.

1. My friends think I am
 Not at all playful ___ ___ ___ ___ ___ ___ ___ ___ ___ Extremely playful

2. I think I am
 Not at all playful ___ ___ ___ ___ ___ ___ ___ ___ ___ Extremely playful

C2. Listed below are ten statements concerning personal attitudes and traits. Please read each statement and decide whether the statement is true (T) or false (F) as it pertains to you personally.

- | | | |
|---|---|---|
| 1. I never resent being asked to return a favor | T | F |
| 2. I always try to practice what I preach | T | F |
| 3. I like to gossip at times | T | F |
| 4. I have never been irked when people expressed ideas very different from my own | T | F |
| 5. There have been occasions when I took advantage of someone | T | F |
| 6. There have been occasions when I felt like smashing things. | T | F |
| 7. I sometimes try to get even rather than forgive and forget | T | F |

8. I am always willing to admit it when I make a mistake	T	F
9. I have never deliberately said something that hurt someone's feelings	T	F
10. At times I have really insisted on having things my own way	T	F

SECTION D: Please answer the following questions about your background.

- In what year you were born? 19_____
- Your gender is Male Female
- What is the highest level of school that you have completed? *Please check only one box*
 - High School Bachelors Degree
 - Some College Masters Degree
 - Associate Degree Doctoral Degree
- What is your current field of study/work: _____
- Approximately what was your total household income before taxes for 2008? *Please check only one box*
 - Less than \$15,000 \$95,000-114,999
 - \$15,000-\$34,999 \$115,000-\$134,999
 - \$35,000-\$54,999 \$135,000-\$154,999
 - \$55,000-\$74,999 \$155,000-\$174,999
 - \$75,000-\$94,999 \$175,000 or more
- Which ethnic groups do you identify with? *Please check only one box*
 - Caucasian (White) Black/African American Asian
 - Hispanic/Latino American Indian/ Alaska Native
 - Pacific Islander or Native Hawaiian Inter-Racial
 - Other (please specify _____)

This concludes our questionnaire. Thank you very much for your help!

VITA

Xiangyou (Sharon) Shen

Xiangyou (Sharon) Shen received a Bachelor of Science degree in Civil Engineering and Architecture from the Central South (Zhongnan) University, Changsha, China in 1996 as an honor graduate. Her interest in leisure behavior grew stronger during her summer job at a motel and led to her decision to continue her education in the social science field. Upon graduation, Shen entered the Master of Science program in Tourism Management at Sun Yat-Sen University, Guangzhou, China. Her coursework and thesis concentrated on marketing, service quality, and tourist satisfaction.

After completing her Master's degree, Shen joined the Shenzhen University as a faculty member in 1999. While there she taught courses on commercial aspects of recreation, mentored senior undergraduate students in the Marketing option, and worked as an assistant to the college Executive Director.

Shen entered the doctoral program in Recreation, Park, and Tourism Management at Penn State University, State College, U. S. in 2003 on a Graduate Fellowship. As a Ph. D candidate, Shen completed dual concentrations in Social Psychology and Applied Statistics and her research interest expanded to include psychology of leisure, leisure and health, and psychometrics. Aside from her dissertation, Shen conducted research about leisure constraints, serious/casual leisure, older adult leisure, health risk behavior prevention, cross-cultural research on free time use, and environmental values. Understanding important factors that affect people's health and wellness in the context of leisure involvement has been a common thread of her diverse research. Shen completed this dissertation in the summer of 2010, and graduated in December of the same year.