THE CONSTRUCT OF PLAYFULNESS:
RELATIONSHIPS WITH ADAPTIVE BEHAVIORS, HUMOR, AND EARLY PLAY
ABILITY

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Dedicated in loving memory of my grandpa, Jack S. Wallace –

You taught me early on that life is all about the journey!
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The Construct of Playfulness: 
Relationships with Adaptive Behaviors, Humor, and Early Play Ability

Abstract
by

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The main purpose of this study was to develop a better understanding of the construct of playfulness in school aged children by examining associations between playfulness and adaptive behaviors, humor, and temperament. A secondary aim of this study was to explore the predictive role of early pretend play ability on current playfulness. It was hypothesized that playfulness would positively relate to the capacity to problem solve, regulate affect, and effectively communicate emotions. In addition, playfulness was expected to positively relate to humor and adaptive temperament styles. Pretend play processes were expected to predict playfulness four years later. Forty three children in fourth through sixth grades were administered validated measures of coping, emotion regulation, emotion expression, sense of humor, and temperament. Playfulness was assessed using both parent and teacher report forms of the Child Behaviors Inventory of Playfulness (CBI; Rogers, et al., 1998). Pretend play was assessed with the Affect in Play Scale (APS; Russ, 2004) four and five years prior to data collection. As hypothesized parent reported playfulness significantly related to active coping, emotion regulation, a willingness to express emotions, and the affiliation category of temperament. Inconsistent with hypotheses, teachers’ perceptions of playfulness related
to low use of coping strategies and were not associated with adaptive behaviors. The CBI teacher report form was not considered an adequate measure of playfulness for school aged children. It remains unclear how the construct of playfulness relates to early pretend play abilities. As expected, imagination and organization in early pretend play predicted current emotion regulation abilities. The best predictors of parent reported playfulness were affiliation and verbal intelligence. For teachers, the best predictors of playfulness were grade level and lack of using avoidant coping strategies. Parent and teacher ratings of playfulness were not related to one another. Teachers were not adequate reporters of playfulness among school aged children. Results support early pretend play as a predictor of later emotion regulation abilities and variables of humor. Recommendations are made to develop a self-report measure of playfulness for school aged children.
Play has been broadly defined as an activity performed for pleasure (Russ, 2004). However, play is much more than a behavior; it is also a particular way of thinking about and approaching activities. Rubin, Fein, and Vandenberg (1983) suggest that play is defined along three dimensions: disposition to play; behavior; and contexts. Play requires more than just a behavior or a space to play; one must also have the desire to play. According to Fein, pretend play can be defined as “a symbolic behavior in which one thing is playfully treated as if it were something else (Fein, 1987, p. 282).” Similarly, Ferland (1997) defined play as a subjective attitude in which pleasure, interest, and spontaneity are combined and then expressed through freely chosen behavior where no specific goal for the behavior is expected. To truly play, it is generally accepted that a child must first demonstrate an internal predisposition to perceive an activity as play (Barnett, 1990b; Bundy, 1996; Liebermann, 1965; 1977). It is the child’s playfulness that renders an activity play. As such, playfulness is recognized as the essence or “spirit” of play (Bundy, 1993; Chandler, 1997; Liebermann, 1966). Despite the claim that play behaviors and playfulness are inherently related, there has been very little research to examine whether associations between play and playfulness actually exist (Burghardt, 2005).

We are limited in our understanding of the construct of playfulness because of the lack of rigorous research support in the literature. In addition, school aged children have largely been neglected in the pursuit of understanding the construct of playfulness. Much of the research regarding playfulness has attempted to define the notion of playfulness. The most recent conceptualization of playfulness, defined the term playfulness as the capacity to “frame or reframe a situation in such a way as to provide oneself (and
possibly others) with amusement, humor, and/or entertainment” (Barnett, 2007, pp.955). Although this definition has ecological validity, it lacks the empirical support using theoretically relevant convergent and discriminant criterion measures to strengthen the construct validity of playfulness. The current state of the research suggests that playfulness may positively relate to adaptive qualities, such as having greater capacity to problem solve, regulate affect, and effectively communicate emotions, but few studies have used validated measures of adaptive functioning to investigate these associations (Barnett, 1991b; Bundy, 2001; Bundy et al., 2008; Lieberman, 1977, Okimoto, Bundy, & Hanzlik, 2000, Rogers, et al., 1998; Singer & Rummo, 1973, Singer, at al., 1980).

The purpose of the current study was to explore important research questions to create a more comprehensive understanding of the construct of playfulness in school aged children. The first aim of this study was to investigate associations between playfulness and adaptive behaviors, specifically coping behaviors, emotion regulation, and effective emotion expression using a multi-informant approach. The second aim of this study was to investigate associations between playfulness and variables of humor and temperament. Last, the current study was the first to explore the predictive role of early pretend play ability (assessed in first through third grades) on current playfulness in children in fourth through eighth grades.

The Function of Playfulness

Play has long been considered to be a window into a child’s mind (Russ, 2004; Singer & Singer, 1990). Previous researchers have studied playfulness with the broad goal of developing a comprehensive understanding of play with the intention of differentiating playfulness from play behaviors (Barnett, 1990a; 1991a; 1998; Lieberman,
1965; 1966). From the perspective of psychodynamic theory, playfulness is considered a state of mind; an unconscious, psychic process, where our urges to play and be playful are well protected human experiences (Heaton, 1978; Jenkinson, 2001). A playful state of mind involves flexible thinking and risk taking with thoughts and/or interactions with others. It also requires some level of comfort in allowing creative thoughts to emerge, some of which may be unconventional. According to Jenkinson (2001), a playful child learns to relate to others, communicate, and become an individual through the context of play. From a therapeutic perspective, Moran (1987) discussed the function of playfulness in children and parenting behaviors in fostering an effective way to deal with childhood frustrations and anxiety. In Meador’s (1992) review of literature on creativity and playfulness among preschool children, she emphasized that fostering a playful attitude among preschoolers is important to the development of creativity. Further, she posited that children who possess a playful attitude may have an advantage in discovering new solutions and thereby develop creative problem solving abilities that otherwise may not develop without a capacity to be playful. Taken together, the purposes of play and playfulness are considered vital in the development of adaptive functioning and psychological well-being. Playfulness is considered more than just a behavior or a personality trait, but rather a necessary component for human development and experience.

Observations of pretend play have suggested that there is a discernable general characteristic approach to play (Singer, Singer, & Sherod, 1980). This general characteristic is considered a playful attribute that applies to a variety of situations and contexts outside the realm of play. Playfulness is thought to be an attribute that applies
throughout the lifespan, but few have explored measuring and defining playfulness beyond early childhood (Barnett, 2007; Bundy, Nelson, Metzger, & Bingaman, 2001; Glynn & Webster, 1992; Rogers, Impara, Frary, Harris, Meeks, Semanic-Lauth, and Reynolds, 1998). Only recently has the research on playfulness moved towards understanding the function of playfulness among school aged children, adolescents, and adults (Barnett, 2007; Guitard, Ferland, & Dutil, 2005; Rogers, et al., 1998; Saunders, Sayer, & Goodale, 1999; Staempfli, 2007; Tegano, 1990). In adolescent work, playfulness is considered an aspect of leisure and well-being. For adults, much of the research on playfulness has focused on investigating workplace playfulness as it relates to productivity and intrinsic motivation (Glynn & Webster, 1992). Only one study exploring playfulness among adults has attempted to illustrate the benefits of being playful as it relates to everyday life (Tegano, 1990). Research on playfulness in early childhood has aimed to explore the associations between playfulness and personality attributes to broaden our understanding of this construct (Barnett, 1991b; Bundy, 2001; Bundy, et al., 2008; Lieberman, 1977; Okimoto, Bundy, & Hanzlik, 2000, Rogers, et al., 1998; Singer & Rummo, 1973; Singer, at al., 1980). Many have theorized that playfulness in childhood relates to adaptive functioning, but few have actually investigated whether playfulness relates to aspects of actual adaptive behaviors such as, coping, and emotional expression and regulation.

Defining and Capturing Playfulness

Playfulness is a notion that has been difficult to define and measure. Several authors have contributed to the definition and construct of playfulness in children, including Liebermann (1965, 1966, 1977), Barnett (1990; 1991a; 1991b), and Rogers and
colleagues (1998). Their research has studied playfulness as a child’s approach to play that is stable across different situations and environments. Playfulness is considered an attribute of one’s personality which is present in all children, but its intensity and nature varies among children (Barnett, 1991a; Bundy, 1993).

A pioneer in the research of playfulness, Liebermann (1965; 1966; 1977) defined a general playfulness characteristic in an effort to differentiate the concept of playfulness from play behaviors. She was one of the first to define and provide empirical support for the existence of a general playfulness factor. From her research, she delineated five components to describe a general playfulness factor: physical spontaneity, cognitive spontaneity, social spontaneity, manifest joy, and sense of humor. **Physical spontaneity** referred to the level of movement and coordination during play. **Cognitive spontaneity** described the imaginative qualities of play and a child’s willingness to assume different character roles and unconventional uses of objects. **Social spontaneity** emphasized flexibility in interactions with other children and a child’s willingness to initiate play and interact with others. **Manifest joy** described a child’s ability to express enjoyment and enthusiasm while playing. **Sense of humor** referred to a child’s ability to clown around, tease, and joke with other children.

Liebermann (1966) developed a 12-item, 5-point Likert scale to measure the five dimensions of playfulness she termed physical spontaneity, cognitive spontaneity, social spontaneity, manifest joy, and sense of humor. There are two questions included on the questionnaire that do not pertain to the construct of playfulness. These are: “How bright is the child?” (1=Not to Bright to 5= Extremely Bright) and “How attractive is the child?” (1=Somewhat homely and unattractive to 5=Beautiful). These items were included as a
soft measure for IQ and potential rater bias based on how attractive the child was perceived by the rater. Exploratory factor analysis supported a unitary construct of playfulness when controlling for IQ (Liebermann, 1965; 1966; Singer & Rummo, 1973; Barnett & Kleiber, 1982; 1984).

Lieberman also postulated that childhood playfulness was an antecedent to adult creativity (Lieberman, 1967). To study associations between playfulness and creativity she investigated the associations between divergent thinking ability and playfulness in a sample of kindergarten children (Lieberman, 1965). Divergent thinking is the ability to generate many different ideas and is related to creativity (Russ, 2004). Results of Liebermann’s study (1965) found that three measures of divergent thinking (ideational fluency, spontaneous flexibility, and originality) were significantly related to the five dimensions on her playfulness scale. Christie & Johnsen (1983) also found a positive relationship between playfulness and divergent thinking. Liebermann’s work was useful in initiating a movement towards understanding the construct of playfulness and its relationship with creativity.

Barnett continued research in the area of playfulness following her early work evaluating Liebermann’s measure of playfulness (Barnett & Kleiber, 1982; 1984). She developed a reliable and valid measure of playfulness based on Lieberman’s five dimensions of playfulness for preschool aged children, The Children’s Playfulness Scale (CPS; Barnett, 1990b, 1991a, 1991b). In validating the playfulness construct, Barnett (1991b) investigated the degree to which playfulness related to individual characteristics in a large group of preschool children. Barnett (1991b) found that playfulness related to several personality descriptions, including: confidence, imaginative, mischievous,
intensity, cheerfulness, curiosity, active, and impulsive. Barnett also found that children who lacked playfulness were considered docile, dependent, disobedient, and were less likely to seek novel situations or express themselves than playful peers (Barnett, 1991b).

In a study exploring the adaptive nature of being playful, Barnett (1998) found that playful children were more capable of regulating their distress back to their baseline anxiety levels following an anxiety induction event. Overall, Barnett’s work contributed to our perception that playfulness has an adaptive quality that is associated with more effective and efficient problem solving and management of distress.

Developing a definition of playfulness and a measure to capture playfulness has been a difficult task. While play is a behavior that can be observed and described, playfulness is nonetheless an internal quality that is difficult to capture qualitatively and quantitatively. Although reliable and valid playfulness rating scales have been developed for preschool-aged children there is a notable absence of measures to assess playfulness among school-aged children. Currently, there are two measures of playfulness that have been developed for use with school aged children, the Test of Playfulness (TOP; Bundy, Nelson, Metzger, & Bingaman, 2001) and the Child Behaviors Inventory of Playfulness (CBI; Rogers, et al., 1998). The TOP is an observational measure of children’s play and has only been validated in occupational therapy settings (see also Bundy, et al., 2001; 2008; Metzger, 1993; Okimoto, et al., 1999). After completing a thorough review of the literature, the Child Behaviors Inventory of Playfulness (CBI; Rogers, et al., 1998) emerged as the most appropriate measure of playfulness to use with a school aged children.
The CBI differs from other playfulness measures in two ways. First, it is a scale developed for use with children as young as preschool aged through the fourth grade. This is the only objective measure of playfulness designed to be used for children beyond preschool. Second, the CBI is one of the only measures derived from empirically supported criteria thought to contribute to an ability to engage in play and/or view activities in a playful way (Rubin, Fein, & Vendenberg, 1983). Rogers, et al., (1998) developed the scale to reflect factors that are thought to capture an internal predisposition to be playful. The CBI includes items that attempt to capture playfulness as a disposition “guided by internal motivation, an orientation towards process with self-imposed goals, a tendency to attribute their own meaning to objects or behaviors, a focus on pretense, a freedom from externally imposed rules, and active involvement” (Rogers, et al., 1998, p. 122). Thus, the CBI measures playfulness as a psychological construct that could be reflected in behavior outside the context of play.

Although few studies have used the CBI to understand associations among playfulness and adaptive functioning criteria, construct validity was established using a pretense task and investigating associations with temperament using the Behavioral Style Questionnaire (McDevitt & Carey, 1978). The Child Behavior Inventory for Playfulness (CBI; Rogers et al., 1998) is a promising measure of playfulness that was developed using a theoretical model and is considered a valid and reliable measure of playfulness for school aged children.

**Playfulness and Adaptive Behaviors**

**Playfulness and coping.** Coping involves thoughts and actions directed toward solving problems or reducing distress (Lazarus & Folkman, 1984). Recalling Barnett’s
(2007) definition of playfulness, a playful individual is one who has the capacity to frame a situation in a positive way in an effort to cope with adversity. This definition suggests that complex coping strategies, such as cognitive restructuring and direct problem solving, are required of playful individuals to reduce stress. Theoretically, playfulness should relate to coping because the most recent conceptualization of playfulness implies that playfulness requires high-level coping abilities. Barnett’s (1998) investigation of associations between adaptive behaviors and playfulness found that more playful children were better able to manage their distress following an anxious mood induction paradigm. In an earlier study, Barnett (1991a) found that playful children were also described as confident and creative. Both creativity and confidence have been thought to promote positive coping skills (Person, Russ, & Spannagel, 2008; Russ, 2003; Russ & Cooperberg, 2003). A child with a playful disposition may have access to sophisticated methods of coping that children who lack playfulness may have difficulty accessing.

Although previous research has suggested that playful children are more likely to utilize effective coping skills and adaptive behaviors (Hess & Bundy, 2003; Saunders, et al., 1999), a recent study did not support a positive relationship between coping behaviors and playfulness (Staempfli, 2007). Exploring whether playfulness relates to coping behaviors is necessary to clarify the role of playfulness in developing adaptive behaviors.

Saunders, Sayer, and Goodale (1999) piloted a study exploring associations between playfulness and coping in preschool children. Saunders, et al. (1999) rated children’s playfulness using the Test of Playfulness (TOP; Bundy, et al., 2001). The TOP is an observational measure that assesses the degree a child is playful over two fifteen minute play observations and is generally used in the occupational therapy field.
Children’s coping skills were rated by their teachers with the Coping Inventory (Zeitlin, 1985). The Coping Inventory (Zeitlin, 1985) is a 48-item measure that assesses the ability of a child to problem solve, adapt to adverse situations, and utilize environmental supports in an appropriate way to effectively cope. Overall, the results of the study found a positive relationship between children’s playfulness and their use of effective coping skills. Results also indicate gender differences in playfulness and coping. Girls overall were found to be more playful and had better coping skills. Playful children are more likely to use adaptive coping strategies and gender differences in playfulness may exist.

Hess and Bundy (2003) compared ratings of playfulness using the Test of Playfulness (Bundy, et al. 2001) and coping behaviors using the Coping Inventory (Zeitlin, 1985) between typically developed adolescents and adolescents diagnosed with a severe emotional disturbance. Study results supported the hypothesis that typically developed children would have higher playfulness ratings and better coping skills. This study supports the notion that playfulness may be associated with having more effective coping skills, specifically the ability to adapt and utilize a flexible approach to problems and goals.

Staempfli (2007) investigated associations between adolescent playfulness, stress perception, and coping in children aged 12-19. Unlike previous research, this study did not use a validated measure of playfulness, but rather captured playfulness using a semi-structured interview and a measure of playfulness that was created for the study and lacked previous reliability and validity testing. The overall finding from this study did not support a unique relationship between playfulness and coping. They found that playful and non-playful children did not differ in their reported use of coping strategies. Both
groups used multiple forms of coping (i.e. active, avoidance, support seeking) to handle their problems. One interesting finding was that the playful adolescents in this study participated in more leisure activities and in general reported a more positive attitude when compared to less playful adolescents. The results of this study suggest that while playfulness may not relate to effective forms of coping abilities it may have an indirect relationship with adolescents’ well-being and willingness to participate in leisure activities. It may be that as children mature, playfulness no longer holds the same relationship with effective coping abilities. For instance, older playful children may utilize distraction strategies and engage in some form of physical or entertaining activity to distract themselves from thinking about a problematic situation. Also, the measure used to assess playfulness among adolescents may not have been valid.

With mixed results in the playfulness and coping literature, it is important that more research be done to understand the associations between playfulness and coping behaviors using validated measures. In addition, missing from the literature is an examination of how playfulness relates to coping among school aged children. Using a measure of coping that captures multiple aspects of coping behavior, may better refine associations between coping and playfulness.

**Playfulness and emotion expression and regulation.** Emotion regulation has been defined as, “the extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions, especially their intensive and temporal features, to accomplish one’s goals” (Thompson, 1994, pp. 27-28). According to Cole, Michel, and Teti, (1994) a well adjusted individual is capable of decreasing the intensity and duration of affective states as well as extending and amplifying emotional states for
the purposes of behaving adaptively. Theoretically, a playful child ought to have a better understanding of their emotional state, be more capable of expressing emotions, and of coping with their emotional state. Previous research has defined a playful individual as one who has the ability to manifest a sense of joy and adapt to their environment emotionally, socially, and cognitively (Barnett (1990, 1991a, 1991b). In addition, playful youth have been characterized as children who are emotionally expressive and socially spontaneous (Singer & Rummo, 1973; Singer, et al., 1980). Playfulness may be associated with emotion regulation abilities because both emotion expressiveness and social spontaneity are also associated with a greater capacity to regulate emotions (Zeman, Shipman, & Suveg, 2002; Cole, et al., 1994; Singer & Rummo, 1973).

Current research has not focused on the specific associations between playfulness and emotion expression and emotional regulation. Nonetheless, it can be inferred based on previous research that associations between playfulness and emotional competence may exist. In an effort to better understand the construct of playfulness, it is important to examine how emotional expression relates to playfulness. In addition, attempts to explore factors associated with effective emotion regulation in typical children will help elucidate factors associated with atypical emotional development (Zeman, Shipman, & Suveg, 2002; Zeman, Shipman, & Penza-Clyve, 2001; Cole, et al., 1994).

Zeman and her colleagues (Zeman, Shipman, & Penza-Clyve, 2001; Penza-Clyve & Zeman, 2002) have done extensive research developing measures of emotion regulation to understand factors important for emotion development. From their research, they have determined three factors that are central to emotion regulation: 1. Emotional

The first factor, emotional awareness, is defined as the ability to identify one’s internal emotional state. In an extensive review of the emotional competence literature, Saarni (1999) concluded that emotional awareness is crucial to emotional functioning. The second factor, expression management, refers to both the inhibition and exaggeration of emotion expression in an effort to adapt to one’s environment. For example, inhibiting anger when asked to share a toy may be adaptive for a young child establishing and preserving social relationships. In addition, a child who is capable of exaggerating feelings of happiness when interacting with a peer may promote a sense of wellbeing as well as positive relationships with peers. Previous research has linked the construct of playfulness in children with both emotional expressiveness and the ability to express positive affect adaptively (Singer & Rummo, 1973; Singer, et al., 1980). The third factor considered important for emotion regulation is the ability to cope with negative emotions effectively. Only one study by Barnett (1998) has explored the relationship between playfulness and emotion coping.

Barnett (1998) examined relationships between playfulness and coping with anxiety following an anxiety induction paradigm. In this study, preschool children were characterized as having either high playfulness or low playfulness. Then children were randomly assigned to either the anxiety or no anxiety condition. Results indicate that all children experienced a reduction in their anxiety level following a brief play period. This finding is consistent with previous research that has investigated the role of play in reducing distress (Stayhorn, 2002; Harris, 2000; Christiano & Russ, 1996; Milos & Reiss,
Barnett, 1984; Barnett & Storm, 1981). An important finding to highlight is that children who were considered highly playful returned to their baseline anxiety level to a greater extent than children rated with low playfulness. Although this study does not directly explore the relationship between playfulness and general emotion coping, it suggests evidence that playfulness may be related to one’s abilities to manage negative emotions.

The work of Barnett (1998; 1991a, 1991b) and Singer and his colleagues (1973; 1980) supports the concept that playfulness is associated with a child’s capacity to regulate, express, and understand their emotions. However, missing from the research literature is empirical evidence investigating whether associations exist between playfulness and emotion expression and regulation using validated measures.

**Playfulness and Humor**

It is consistent with the literature that one would expect humor and playfulness to relate. Humor is defined along three domains “(1) the playful recognition, enjoyment, and/or creation of incongruity, (2) a composed and cheerful view on adversity that allows one to see its lighter side and thereby sustain a good mood, (3) the ability to make others smile or laugh” (Peterson & Seligman, 2004, pp 585). Having a good sense of humor indicates a cognitive-affective style of handling adverse situations by finding amusement. McGhee (1979) suggested that playfulness was the developmental precursor to the development of humor. Without a playful temperament, it is unlikely one could develop a flexible thinking style that could foster an ability to find humor even in adversity.
Previous work by Lieberman (1965; 1966) and Singer & Rummo (1973) have found that the sense of humor dimension on Lieberman’s playfulness scale contributed to the unitary construct of “playfulness.” Likewise, Barnett (1990; 1991a; 1991b) also found that items on the sense of humor dimension significantly contributed to a unitary construct on the Children’s Playfulness Scale. No studies have investigated playfulness as it relates to a valid measure of humor capacity. However, it has been suggested that playful children may possess a natural tendency to use humor, be expressive and be flexible in their thinking (Barnett, 2007; 1991a; 1991b; Rogers, et al., 1998; Singer, et al., 1980). In addition, different aspects of humor, such as using humor to cope and the willingness to create humor may relate more to the construct of playfulness than simply appreciating humor.

**Playfulness and Temperament**

A number of studies have found strong associations between playfulness and positive personality attributes like confidence, curiosity, imaginative thinking, (Barnett, 1990b; 1991a; 1991b), creativity, novelty seeking, (Lieberman, 1965, 1977; Singer & Rummo, 1973), greater levels of positive affect and social abilities, and an openness to communicate with others (Singer, et al., 1980). Conversely, lacking playfulness has been associated with characteristics related to disruptive behaviors (i.e. disobedience, irresponsibility, and inconsideration of others) and self-esteem problems (Barnett, 1991b; Okimoto, Bundy, & Hanzlik, 2000). Differences between temperament and personality traits are vague. Rothbart and Derrberry (1981) defined temperament as the part of one’s personality that refers to individual differences in levels of reactivity (i.e. response, arousal, excitability) and self regulation behaviors that manage these responses.
Temperament is considered to be genetically determined and is the observable manifestation of one’s personality (Matthews, Dearly, Whiteman, 2003). Given our study focuses on adaptive functioning and behaviors related to self regulation, temperament rather than personality was assessed in this study.

Few studies have identified concurrent associations between playfulness and temperament using validated measures. Rogers, et al. (1998) studied how playfulness related to concurrent temperament traits using the Behavioral Style Questionnaire (McDevitt & Carey, 1978). Their findings showed that playfulness positively correlated with positive mood, increased persistence, children’s approachability, and adaptability.

In another study investigating associations between playfulness and temperament, Tegano (1990) found that playfulness in adults positively related to an individual’s tolerance for ambiguity. Further, she found that playfulness positively related creativity. Tegano’s work mirrored the findings that playful children are creative and comfortable with novelty (Lieberman, 1965; Singer & Rummo, 1973; Barnett, 1991b).

An investigation of temperament and personality in preschool children revealed significant findings regarding playful traits (Meehl, Lykken, Schofield, & Tellegen, 1971). In defining the trait “Surgency” they found that “playful” was strongly related ($r=.72, p<.05$). Surgency is a temperament style that consists of enjoying intensely pleasurable or novel events and also includes attributes of cheerfulness, humorous, joyful, and witty characteristics. Cattell (1979) also discussed in his review of the literature on the development of personality, the importance of playfulness and associations between playful attributes and being “good natured,” finding enjoyment in spending time with others, and the development of a good sense of humor. These results support the potential
that playfulness is a factor that is significantly related to temperament. Specifically, previous research supports that playfulness may relate to temperament factors that correspond to novelty seeking behaviors, a desire to be close to others or appear approachable to others, a tendency to exhibit positive affect, and persist on tasks even when there is a tendency to avoid them (Leiberman, 1965; 1977; McDevitt & Carey, 1978; Meehl, et al., 1979; Rogers, et al., 1998; Singer & Rummo, 1973). Further, children who lack playfulness may be more likely to exhibit a behavioral inhibition response to novelty, experience anxiety in response to distress, and be less likely to exhibit positive affect (Barnett, 1991b; Okimoto, et al., 2000).

**Playfulness and pretend play behaviors.**

Though relatively little research has investigated the associations between pretend play behaviors and playfulness, there is a theoretical basis to support the hypothesis that playfulness should relate to pretend play behaviors. Playfulness has been recognized as the essence or “spirit” of play (Bundy, 1993; Chandler, 1997; Lieberman, 1966). Furthermore, the construct of playfulness, as measured in the current study, is defined by characteristics associated with an internal predisposition to play (Rubin, et al. 1983). While we do not know whether a playful disposition relates to actual play behaviors, it could be hypothesized that a playful child is more likely to be imaginative, emotionally expressive, and comfortable with pretend play.

Pretend play by definition involves escaping into make-believe, the use of symbolic thought, and fantasy (Pellegrini & Galda, 1993; Russ, 2004; Singer and Singer, 1990, Fein, 1981). In an extensive review of the literature, Russ (2004) concluded that pretend play is associated with a variety of developmentally important functions, such as:
cognitive, affective, and interpersonal processes. Through pretend play, children practice cognitive processes such as organizing thoughts into a narrative, flexible thinking, and the use of symbolism and fantasy. Pretend play also offers a medium for affective processes like expressing emotion, regulating and modulating affect in play and expressing delight in the play experience itself. Interpersonal processes, specifically developing interactions between characters, displaying themes of social relatedness, and practiced communication are also observable aspects of pretend play.

In an observational study of children’s pretend play, Pellegrini and Galda (1993) determined that pretend play behaviors involve four key processes: the expression of positive affect, symbolic thinking, flexibility in play, and an interest in the behavior itself rather than the outcome of the behavior. These key factors of pretend play have also been found to relate to playfulness in individuals (Barnett, 1990b, 1991a, 1991b, Liebermann, 1965, 1977, Rogers, et al., 1998, Singer and Rummo, 1973, Singer, et al., 1980). This suggests that pretend play behaviors ought to relate to a child’s disposition to be playful.

Singer, et al. (1980) behavioral observations of children’s play suggested that playfulness related positively to a child’s expression of affect in play, physical activity, imagination, and social interactions in play. In an earlier study, Singer and Rummo (1973) found playfulness related to imaginativeness and emotional expressiveness. Therefore, it may be possible that the degree that a child is playful also relates to imagination and emotional expression in pretend play.

Very little research has been done looking at whether specific aspects of pretend play ability relate to playfulness (Burghardt, 2005, pp.66). The proposed study will attempt to clarify whether the construct of playfulness relates to pretend play and whether
particular aspects of pretend play ability can predict a child’s playful disposition later in childhood. Russ and her colleagues have found pretend play abilities to be relatively stable over time (Russ, Robins, & Christiano, 1999; Russ & Cooperberg, 2003).

Playfulness too appears to be a stable trait. In a longitudinal study looking at playfulness over time, O’Brien and Shirley (2001) found that playfulness was stable over a period of 4 years.

It is also possible that playfulness is an internal state that may not translate to actual pretend play behaviors. Taylor and Rogers’ (2001) examined associations between playfulness and creativity in a group of Japanese preschool children. Although this study did not look directly at associations between playfulness and pretend play, it could be argued that expressed creativity is a construct similar to pretend play ability (Russ, 2004). Taylor and Rogers results were unexpected in that they found that expressed creativity did not relate to playfulness. However, qualitative data revealed that creative, non-playful children were described by their teachers to be highly imaginative and internally playful. Internal playfulness refers to children who possessed a playfulness quality in one-on-one situations, but are unable to express this imaginativeness or playfulness in group settings, like in the context of school. They conclude that while “internally playful” children possessed imaginative abilities, it is unclear if creativity relates to playfulness. Taylor and Rogers also discussed cultural factors that may affect our understanding of the associations between the construct of playfulness and creativity. Therefore, like associations with creativity, it may be the case that playfulness does not relate to actual pretend play behaviors. Nonetheless, for the purposes of this study it was hypothesized that the construct of playfulness relates to actual pretend play behaviors. Given the lack
of research in this area, it would be advantageous to explore the predictive role of early play behaviors in manifesting playfulness later in childhood. It remains unclear if and how early childhood experiences contribute to the development of playfulness in childhood through adulthood.

**Summary and General Hypotheses**

The purpose of the current study was to investigate the concurrent associations among playfulness and aspects of adaptive behavior using valid measures of coping, emotion expression, and emotion regulation. The study also examined associations of playfulness with humor and temperament to improve our understanding of the construct of playfulness. This was also the first empirical study to investigate the predictive role of early pretend play abilities on current ratings of playfulness. In addition, it was one of the few studies to investigate playfulness in a school aged population of children.

Based on theory and a review of the literature, it was hypothesized that playfulness would relate to coping abilities, willingness to express emotions, emotion regulation ability, and humor. There are reasons to expect positive associations between playfulness and adaptive behaviors. For instance, Barnett’s conceptualization of playfulness suggests that a playful child may utilize cognitive restructuring strategies to reframe a situation and handle distress (Barnett, 2007). Moreover, Barnett’s definition of playfulness also implies that a playful child may have a more mature understanding of their emotions because they are capable of reframing their thoughts and behaviors to regulate their affect. Likewise, having a good sense of humor indicates a cognitive affective style of handling adverse situations by finding amusement. Associations between playfulness and individual characteristics have suggested that playful children
are associated with being more curious, creative, adaptive, approachable, and positive
(Barnett, 1991b; Lieberman, 1965; 1977; Rogers, et al., 1998). Based on the review of the
literature, it was hypothesized that playful children would have a temperament style that
corresponds to novelty seeking behaviors, a desire to be close to others or appear
approachable to others, a tendency to exhibit positive affect, and persist on tasks even
when there is a desire to avoid them. Further, children who lack playfulness may be more
likely to exhibit behavioral inhibition in response to novelty, experience anxiety in
response to distress, and be less likely to exhibit positive affect. Finally, it was
hypothesized that early play abilities would relate to later ratings of playfulness. Early
work has described playfulness as the “spirit” of play behaviors (Bundy, 1993; Chandler,

Method

Participants

**Concurrent sample description.** Participants in the concurrent sample included a
total of 43 fourth, fifth, and sixth grade students from two local parochial elementary
schools. The sample was 69% female (30 girls and 13 boys). The average age was
approximately 10 years, 4 months (SD=1.01) with a range of 9-13 years of age. The
sample consisted of 17 (39.5%) fourth graders, 14 (32.6%) fifth graders, and 12 (27.9%) 
sixth graders (see Table 2). Although demographic information was not available for
individual children, the reported composition of the school in fourth through sixth grades
at Site 1 (n=17) was largely Caucasian (72%) with 28% African American. At Site 2
(n=26) 31% of students were Caucasian, 27% Hispanic, 22% Multiracial, 16% African
American, 3% Asian, and 1% American Indian. Socioeconomic status was determined
based on percent of children qualifying for reduced or free lunch (Site 1, 19% and Site 2, 89%). Site 2 was a more diverse population of children and had a larger percentage of children qualifying for reduced or free lunch.

Parental consent letters were mailed home to all parents with children enrolled in the fourth through sixth grades. Parental consent was obtained from the parents of all of the participants, and written consent was obtained from the children prior to starting study procedures. Of the 127 parents contacted, 51 (40%) agreed to participate in the study, 4 were unable to participate because the child no longer attended the participating school after granting consent.

**Longitudinal sample description.** Some of the children in the concurrent sample had also participated in an earlier play study while in the first, second, or third grade. Parental consent letters were mailed home to children who had a play assessment done during the 2007-2008 school year or during the 2006-2007 school year and were currently in the seventh and eighth grades. In the previous study, the Affect in Play Scale was used to evaluate processes in the child’s pretend play. The early play assessment was used in analyses to predict associations among play with current playfulness, adaptive behaviors, and humor criterion. Participants in the longitudinal sample included a total of 21 children, 18 of whom were in the concurrent sample. Three children in seventh and eighth grades were included in the longitudinal analyses but because of potential developmental differences, they were not included in concurrent data analyses. The average length of time between testing was four years for 17 of the children and five years for 4 of the children. Of the total 46 parents contacted regarding following up with their child, 23 (50%) agreed to allow their child to participate in our study. Of the 23
participants, 2 children completed the study, but had incomplete play data from the previous study and were not included in the analyses.

**Procedure**

The Institutional Review Board of Case Western Reserve University approved all study procedures and forms on October 1, 2010. An informational letter (see Appendix A), parental consent letter (see Appendix A) were mailed home to all parents with children in the fourth, fifth, and sixth grades. The children in this study were seen individually on a single occasion for approximately thirty minutes during the school day (see Appendix A for child consent). All children were administered the same measures and in the same order. First, each participant was asked to complete the Multidimensional Sense of Humor Scale-Child version. Then children were given the Coping Strategies Checklist, followed by the Children’s Sadness Management Scale, Children’s Anger Management Scale, and Emotion Expression Scale for Children. Last, each participant was given the vocabulary subtest of the Wechsler Intelligence Scale for Children (WISC-IV) as an estimate of verbal intelligence.

A parent or guardian of all of the children in this study was asked to complete the Child Behavior Inventory of Playfulness, Emotion Regulation Checklist, and the Early Adolescent Temperament Questionnaire-Revised. The primary classroom teacher of each child enrolled in the study was asked to also complete the Child Behavior Inventory of Playfulness and Emotion Regulation Checklist (see Appendix A for teacher consent form). The children and parents were compensated for their time with a $5 gift card. Participating teachers were compensated for their time at a rate of $15/hour.

**Measures**
The present study used a multi-informant approach to assess playfulness, children’s coping strategies, emotional expression, emotion regulation, sense of humor, and temperament (See Table 1 for a list of measures and relevant scores included in analyses).

**Child measures**

*Multidimensional Sense of Humor Scale for Children (MSHSC; Appendix B; Dowling & Fain, 1999).* The MSHSC is a 17-item self-report scale designed to assess school-aged children’s sense of humor. Three areas of humor: Coping Humor, Humor Appreciation, and Humor Creation are evaluated. Coping humor refers to using humor to cope when you have a problem (i.e. “Jokes and funny stories help to relax me”). Humor appreciation refers to comfort and enjoyment in finding humor (i.e. “I like a good joke”). Humor creation refers to a willingness to make jokes and share humorous thoughts (i.e. “I use jokes and funny stories to make my friends laugh”). Children are asked to rate the frequency with which they agree with a statement. Ratings are completed on a five-point Likert-type scale from 1= never, 2=almost never, 3=sometimes, 4=almost always, to 5=always. Total scores range from 17 to 85. Validity was established by relating the total score on the MSHSC with children’s reported degree of sense of humor (Dowling & Fain, 1999; Dowling, Hockenberry, & Gregory, 2003). The internal consistency for the MSHSC was 0.92. Principal component analysis produced a three-factor solution with 65.1% of the variance explained. The three factors were confirmed using factor analysis and the reported internal coefficient reliabilities for each subscale were as follows: Coping Humor (.81), Humor Appreciation (.90), and Humor Creation (.89). The total
humor score and three subscales, coping humor, humor appreciation, and humor creation, were used in this study.

*Children’s Coping Strategies Checklist-2nd Revision (CCSC-R2, Appendix B; Ayers, et al. 1996).* The CCSC is a widely used 64-item self-report measure of coping strategies for children and adolescents. The CCSC is valid for children nine to thirteen years of age. The 64 items are categorized into ten subscales. Children are provided with the following prompt to introduce the constructs of stress and coping:

“When faced with a problem, kids do different things in order to solve the problem or to make themselves feel better. Below is a list of things kids may do when faced with a problem. For each item, select the response that best describes how often you do the behavior when you have a problem. There are no right or wrong answers, just say how often you do each thing in order to solve the problem or to make yourself feel better.”

Each child then reports the frequency they use each coping strategy during stressful situations. Each item is rated using a 4-point scale (1 _ never to 4 _ most of the time). The mean is obtained for each subscale, with higher scores indicating greater use of the strategy. Results of confirmatory factor analysis of the 11 subscales have suggested that a four-factor model is the best fit for the data (Ayers et al., 1996). The four factors are Active Coping, Distraction, Avoidance, and Support-Seeking Strategies. *Active coping* is composed of items that assess problem focused coping (i.e. does something to make things better; thinks about which things are best to do to handle the problem; and tries to understand it better by thinking more about it) and positive reframing coping (i.e. tries to notice or think about only the good things in life, tells yourself that things will get better,
and tells yourself that you can handle this problem). *Distraction coping* includes efforts to physically work off feelings with exercise, play, or physical release, and avoidance of a problem by using entertainment or a hobby to distract yourself from a problem.

*Avoidance* coping refers to efforts to stay away or leave a problem, repressing thoughts about the problem, and using wishful thinking or imagine the problem was better.

*Support seeking coping* refers to the use of other people as resources to assist in seeking solutions to a problem or the involvement of others in listening to feelings or providing understanding to help the person be less upset.

Test–retest reliability coefficients (retest after 1 week) for the subscales have ranged from .49 to .73 (Program for Prevention Research, 1999). Ayers et al. (1996) reported internal consistencies as measured by Cronhach’s alpha, for the 10 subscales range from .65 to .88. The CCSC is frequently used in coping research and both active and support seeking coping behaviors have been found to positively relate to adjustment (Ayers, et al. 1996; Sandler, et al. 1994; 2000; Smith, et al. 2006). The four coping subscale scores were used in the present study.

*Children’s Emotion Management Scales-Sadness (CSMS) and Anger (CAMS)* *(Appendix B; Zeman, Shipman, & Penza-Clyve, 2001)*. The Children’s Sadness and Anger Management Scales are two self-report questionnaires that assess a child’s management of sadness (11 items) and anger (12 items). Each item is rated using a three-point Likert scale from Hardly Ever (1) to Often (3) across three subscales: Inhibition, Dysregulation-Expression, and Emotion Regulation. *Inhibition* refers to the suppression of emotional expression (i.e. “I get sad inside but don’t show it”). *Dysregulation Expression* refers to children’s culturally inappropriate emotional expression (i.e. “I say
mean things to others when I am mad”). Emotion Regulation refers to children’s adaptive methods of emotion management (i.e. “When I am feeling sad, I do something totally different until I calm down). Moderate to moderately strong reliability and validity was demonstrated in a community sample of children (ages 9 to 12 years of age) and has been used in other studies with children and adolescents 6-14 years of age (Sim & Zeman, 2006). Convergent and discriminate validity was established for both the CSMS and CAMS with measures of emotion, psychopathology, and social functioning (Suveg, et al., 2009; Suveg & Zeman, 2004; Stegall, 2003; Zeman, et al., 2002; Zeman, et al. 2001). It was reported that the internal consistency of each scale ranged from $\alpha = .62$ to $\alpha = .77$ (Zeman, et al. 2001). All subscale scores were used in this study.

*Emotion Expression Scale for Children (EESC, Appendix B; Penza-Clyve & Zeman, 2002).* The EESC is a 16-item self-report questionnaire using a 5-point Likert scale of 1 (not true at all) to 5 (extremely true). The EESC is comprised of two subscales: Poor Awareness subscale and Reluctance to Express Emotion subscale. Higher scores indicate poorer emotional awareness and greater reluctance to express negative emotion to others. The EESC was validated with a group of children aged 9 to 12 years of age. High internal consistencies were found for both the poor awareness subscale $\alpha = .83$ and expressive reluctance subscale $\alpha = .81$. Moderate test-retest reliability was found (poor awareness, $r=.59$ and expressive reluctance, $r=.56$). Convergent validity was established using other measures of emotion expression, coping with emotions, internalizing symptoms (Suveg, et al., 2009; Suveg & Zeman, 2004; Penza-Clyve & Zeman, 2002). The EESC is considered a good measure to discriminate between maladaptive and
adaptive emotion management coping strategies. Both subscales of the EESC were used in this study.

_Wechsler Intelligence Scales for Children, Fourth Edition (WISC-IV, Psychological Corporation, 2003)._ The vocabulary subtest of the WISC-IV was administered to each participant as an estimate of verbal ability. The vocabulary subtest of the WISC-IV has a mean of 10 and a standard deviation of 3. According to Sattler, (2001) the vocabulary subtest correlates more highly than other subtests with the ability to learn and to accumulate information. The vocabulary subtest provides a useful index of general mental ability. Results of the vocabulary subtest were used to control for any differences in verbal intelligence during the analyses.

**Parent and teacher measures**

Both parents and teachers were asked to complete measures pertaining to playfulness and emotion regulation. Parents were asked to complete an additional measure to assess temperament.

_Child Behavior Inventory of Playfulness (CBI, Appendix B; Rogers, et al. 1998)._ CBI is a 30-item scale designed for use by parents or teachers to measure playfulness as a trait characteristic. Factor analysis indicated two factors: a general playfulness factor and an externality factor, both of which were independent of age and gender. Playfulness factor is a 21-item subscale designed to measure overall playfulness, orientation to a task, intrinsic motivation, non-linearity, freedom from externally imposed rules, and active involvement during the task. Higher scores indicate greater playfulness. Sample items on the playfulness scale include: “Always has ideas of things to do.”, “Plays eagerly.”, “Creates own way to do things.”, and “Starts activities for own enjoyment.” Two items,
“Has a sense of humor” and “Displays exuberance much of the time,” are thought to relate to playfulness, but have not had proper validation to include in the playfulness scale. For this reason, neither item was included on the playfulness subscale for any of the analyses. Externality is a 7-item subscale that measure behaviors likely to reduce a child’s ability to play. Items are rated on a scale from 1 (very uncharacteristic) to 5 (very characteristic). The scale score is obtained by taking the sum across the items, giving a range of scores from 21 to 105 on the playfulness subscale and 7 to 35 on the externality subscale.

The CBI demonstrates excellent internal consistency on the Playfulness factor (α = .81-.94; Rogers, et al., 1998) and moderate internal consistency on the Externality factor (α = .62-.72; Rogers, et al., 1998). Strong inter-rater reliability was demonstrated among teachers rating for the same child. Low agreement was demonstrated between teacher and parent report of playfulness (Rogers, et al., 1998). Teacher ratings from this sample indicated a low negative correlation between age and externality, suggesting a developmental trend (Rogers, et al., 1998). This result corroborates a normal developmental trend that as children age they are less dependent on others and their environment to inform them what to do.

Content validity was established by a panel of experts. Construct validity was established relating behaviors from an observational study involving a pretense scenario and the CBI. Results indicated positive associations between the playfulness subscale and behaviors related to pretense, (i.e. dissimilar objects used for a hat, uses suggested for a J-shaped object, act out scenario). During the scenario, the number of reality based questions (i.e. “What’s that?”) were negatively correlated with the playfulness subscale.
and positively correlated with the externality subscale. Concurrent validity was established by exploring associations between the playfulness scale and temperament using the Behavioral Style Questionnaire (BSQ; McDevitt & Carey, 1978). Results revealed a positive correlation between playfulness and caregiver’s report of positive mood, approachability, adaptability, and persistence in their child (Rogers, et al., 1998). Only the playfulness subscale was used in this study because the externality scale needs further measure development and does not relate to playfulness.

*Emotion Regulation Checklist (ERC, Appendix B; Shields & Cicchetti, 1997).* The ERC (Shields & Cicchetti, 1997) is a widely used 24-item questionnaire appropriate for either parent or teacher report of a child’s ability to manage emotion. Each item on the scale is rated using a four-point Likert scale from Never (1) to Almost Always (4) to assess how often a child displays behaviors that are considered developmentally appropriate when experiencing positive and negative emotions. This measure yields two empirically derived subscales: (a) The emotion regulation subscale is reported to have high internal consistency \( \alpha = .83 \). Good construct validity was found in that this scale correlated with behavioral reports using the Child Behavior Checklist (Shields & Cicchetti, 1997). The Emotion Regulation subscale was used in this study.

*Early Adolescent Temperament Questionnaire-Revised Parent Report (EATQ-R, Appendix B; Ellis & Rothbart, 2001).* The EATQ-R is considered a reliable measure of temperament in adolescents aged 10-15 years (Muris & Meesters, 2009; Putnam, Ellis, & Rothbart, 2002). The parent report version was used for this study and contains 62-items designed to evaluate temperament across 8 temperament subscales (Activation Control, Affiliation, Attention, Fear, Frustration, High Intensity Pleasure/Surgency, Inhibitory
Control, and Shyness) and 2 behavioral subscales (Aggression and Depression) which were included to examine associations between temperament and socio-emotional functioning. Activation Control refers to the capacity to perform an action when there is a strong tendency to avoid it. Affiliation refers to the desire for warmth and closeness with others, independent of shyness or extraversion. Attention refers to the capacity to focus attention as well as to shift attention when desired. Fear refers to the unpleasant affect related to anticipation of distress. Frustration refers to the negative affect related to interruption of ongoing tasks or goal blocking. Surgency/High Intensity Pleasure assesses the tendency to derive pleasure from activities involving high intensity or novelty. Inhibitory Control refers to the capacity to plan, and to suppress inappropriate responses. Shyness refers to behavioral inhibition to novelty and challenge, especially social. Aggression refers to the tendency to behave in hostile or aggressive ways, including person- and object-directed physical violence, direct and indirect verbal aggression, and hostile reactivity. Depressed mood refers to the behavioral tendency to display unpleasant affect and lowered mood, loss of enjoyment and interest in activities.

Each item is rated on a 5-point Likert scale ranging from 1=almost never true to 5=almost always true. Temperament trait scores are summed across items. Subscales are internally consistent with scale alpha scores ranging from 0.65 to 0.86. Convergence validity with adolescent self report was high with the exception of Shyness and Inhibitory Control for males. Test-retest stability is moderate to good over an 8-week period (Muris & Meesters, 2009) and parent report of temperament traits remain stable over 2-year period (Rothbart, et al., 2001). Parent-child agreement is reported to be high in one study (Ellis & Rothbart, 2001) and low in another (Muris & Meesters, 2009). The relevant
subscales used in this study were Activation Control, Affiliation, Surgency, Shyness, Fear, and Depression scores.

**Early Play Assessment**

The Affect in Play Scale was used to evaluate processes in play. For the majority of the participants the Affect in Play Scale was administered during the 2007-2008 school year while participants were in the first, second, or third grades. Four participants were administered the APS when they were in second or third grade during the 2006-2007 school year.

*Affect in Play Scale (APS; Appendix B; Russ, 2004).* The APS is a measure of the amount of affect and quality of fantasy expressed in children’s play (Russ, 2004). The scale is designed to be used with children 6 to 10 years of age. The task uses a set of three blocks and two human puppets provided by the examiner. The instructions for the task were:

“I’m here to learn about how children play. I have here two puppets and would like you to play with them anyway you like for five minutes. For example, you can have the puppets do something together. I also have some blocks here that you can use. Be sure to have the puppets talk out loud. I’ll tell you when to stop. The video camera will be on so that I can remember what you say and do. I’ll tell you when to stop.”

Each child was told when there is one minute left with the instruction, “You have one minute left.” Children are prompted to continue if they stopped before the play period is complete.
A trained rater scores both the cognitive and affective aspects of the pretend play using a 1 - 5 Likert scale. The cognitive aspects that were scored are the organization, imagination, and comfort of the play. The affective scores included the total affect, frequency count of positive and negative affect, and variety of affect. A detailed scoring manual was followed to determine play processes scores.

- **Organization** measures the quality of the plot and story complexity. Specifically, organization measures how detailed events are within the play and if events are interconnected within a structured, consistent plot. Organization categories range from (1) series of unrelated events with no cause-effect to (5) integrated and complex plot with a beginning, middle, and end.

- **Imagination** measures the uniqueness of the child’s play and the number of transformations using the blocks. Imagination categories range from (1) no fantasy in the play to (5) many novel events, transformations, additional characters, or unusual plot twists.

- **Comfort** is a global rating for the child’s ability to immerse in the play and their overall enjoyment during the activity. The child’s comfort is rated based on categories that capture the child’s (1) reticence to play to (5) immersion in the play.

- **Frequency of affective expression** is the total number of units of verbal and nonverbal emotional expression during the 5 minute task. An affective unit is one emotional expression by a single puppet. For example, 1 unit of happy would be if a puppet said “I like this” and one unit of aggression would be if a puppet hit another. The total number of affective units during the 5 minute play task comprises the frequency
score. The frequency of positive affect units and negative affect units are also obtained.

- **Variety of affective categories** is the total number of categories of affect expression. This measures the range of the child’s emotional expression. There are eleven affect categories. Positive affect categories include: happiness/pleasure, nurturance/affection, oral, competition, and sexual. Negative affect categories include: anxiety/fear, sadness/hurt, frustration/displeasure, aggression, oral aggression, and anal.

The APS is a well-validated measure that has been used with many different populations and has been related to criteria of creativity, coping, emotional understanding, and interpersonal functioning (Christiano & Russ, 1996; Niec & Russ, 2002; Russ, 2004; Russ, Min, Singer, Minnes & Sacha, 2006). The APS has shown high interrater reliability, with the average scores for the interclass coefficients ranging from .80 to greater than .90. The interrater reliability from the previous study was used in the current study. For the play scores, Interclass Coefficient Correlations testing for absolute agreement fell above Cicchetti’s (1994) guidelines for excellent reliability (Organization, .79; Imagination, .77; Comfort, .92; Frequency of Total Affect Expression, .83). Most validation studies have found play to be independent of IQ.

**Specific Hypotheses**

*Hypothesis 1.* It was hypothesized that there would be significant associations between playfulness and adaptive behaviors. Specifically, it was hypothesized that
a. Playfulness scores on the CBI should positively relate to active coping strategies and distraction methods obtained from the CCSC and negatively relate to avoidance strategies on the CCSC.

b. Playfulness scores on the CBI should positively relate to the emotion regulation subscale of the ERC as reported by caregivers and teachers and to self-reported emotion coping subscales obtained from the CSMS and CAMS.

c. Playfulness scores on the CBI should negatively relate to scores on the Poor Awareness subscale and Reluctance to Express Emotion subscale of the EESC.

d. Playfulness scores on the CBI should positively relate to the total score of the MSHSC and the humor coping, and creation humor subscales.

**Hypothesis 2.** It was hypothesized that there would be associations between playfulness and temperament. Specifically, playfulness should positively relate to temperament scores Affiliation, Activation Control, and Surgency and negatively relate to Depression, Fear, Shyness scores on the EATQ-R.

**Hypothesis 3.** It was hypothesized that early pretend play abilities would significantly and positively predict playfulness. Specifically, that organization, imagination, affective expression, and comfort scores would positively relate to the playfulness four and five years later. It was also hypothesized that the playfulness score would positive relate to a composite play score.

In addition, the ability of pretend play to predict other areas of adaptive functioning was explored.

**Results**
**Data Analytic Strategy**

Analyses were conducted using the Statistical Package for the Social Sciences for Windows (SPSS, version 19, 2010). The alpha level for statistical significance was set at $p < .05$. Prior to analysis, all variables were checked for accuracy of entry, missing values, and outliers.

Missing data at the item level was infrequent. None of the items were missing for the child or teacher completed measures. For the parent measures, less than 1% (.13%) of items were missing. When items were missing, total and mean scores were computed using the available data adjusted by the item count.

Outliers were identified as scores that were two standard deviations above or below the mean. One score on the parent report playfulness measure was identified as an outlier. Results were reported both including and excluding the single outlier. Skewness and kurtosis was assessed for all variables and none of the variables required normalization using log transformation.

The primary objective of this proposed study was to examine associations between playfulness, temperament, humor, and adaptive behaviors. Pearson product-moment correlations were used to determine associations between the CBI playfulness subscale and adaptive behaviors, humor, and temperament (the total subscale scores for the CCSC, ERC, EESC, CEMS-Sadness and Anger, MSHSC, and EATQ-R). One-tailed tests of significance were used for all hypothesized associations. Partial correlations were conducted to control for verbal intelligence when exploring associations between playfulness reported by parents and study variables. The strength of the associations were determined using Cohen’s (1988) guidelines for effect size: small ($r = .10$ to $.29$), medium ($r = .30$ to $.49$), and large ($r = .50$ to $1.0$). Multiple regression analyses were also
used to better understand the hypothesized associations between playfulness reported by teachers and each of the study variables while for controlling for grade and verbal intelligence. Based on these findings, a separate hierarchical multiple regression model was conducted to determine the best predictors of playfulness reported by both parents and teachers.

The second aim of this proposed study was to examine the predictive relationship of early play scores on the APS to current playfulness. The APS was collected while participants were in the first, second, or third grades and current playfulness ratings were gathered when participants in in fourth through eighth grades. Pearson product-moment correlations were used to determine associations among play variables and playfulness. In addition to the five APS play scores, a composite play score (i.e. sum of the Organization, Imagination, Comfort, and Total Affect scores) was included this analysis.

Exploratory analyses were conducted to explore associations among concurrent measures of adaptive behavior, humor, and temperament. In addition, associations between the APS scores and current measures of adaptive behaviors and humor were also explored.

**Descriptive Statistics**

There were different numbers of participants for different measures. Forty-six participants completed the study, with 43 participants in the concurrent sample and 21 participants in the follow up sample. All of the teacher and child report measures were collected for the concurrent and longitudinal sample. Therefore, 43 teacher and child report measures were included in the concurrent sample and 21 were collected for the longitudinal sample. Twelve parents did not return the questionnaire to the examiner. The
number of parent report measures in the concurrent sample was 33 and in the longitudinal sample it was 14.

Tables 3 and 4 report the descriptive statistics for study variables for the concurrent sample and longitudinal sample. For the concurrent sample, average playfulness scores were lower for the teacher rating \((n=43, M=69.3, SD=11.8)\) than for the parent rating \((n=33, M=73.4, SD=10.2)\) which is similar to findings reported in Rogers, et al., (1998). The level of the agreement between parent-report and teacher-report on the CBI playfulness subscale was examined using Pearson bivariate correlations. Using two-tailed tests of significance, the correlation between parent reported playfulness and teacher reported playfulness was small \((r=.17)\) (see Table 5).

The Vocabulary subtest of the WISC-IV (Psychology Corporation, 2003) was administered to each participant as an estimate of verbal intelligence. The vocabulary subtest of the WISC-IV has a mean of 10 and a standard deviation of 3. This sample had a slightly higher mean score on the Vocabulary subtest \((M=12.3, SD=2.86)\).

Independent and dependent variables were examined using pearson product moment correlations, independent t-tests, and analysis of variance (ANOVA) to detect for differences in mean scores of criteria based on study subject variables (e.g. verbal intelligence, grade, age, gender, school site).

Verbal intelligence significantly correlated with parent reported playfulness \((r=.62, p<.001)\) and teacher reported playfulness \((r=.33, p=.02)\) (see Table 5). A one way between groups ANOVA tested for grade differences in playfulness. A significant difference by grade was found for teacher reported playfulness, \((F(2, 40) = 5.54, p < .01)\) with fourth grade \((M=75.7, SD=11.8)\) and fifth grade \((M=67.3, SD=8.7)\) teachers
reporting higher playfulness scores than sixth grade teachers ($M=62.7$, $SD=11.3$). Post-hoc comparisons using Tukey HSD test indicated teacher-reported playfulness was only significantly different between fourth and sixth grade children ($p<.05$). Likewise, there was a significant negative correlation between teacher reported playfulness and age ($r=-.31$, $p<.01$). Mean differences in teacher reported playfulness by grade and age reflect the developmental trend, with older children having lower playfulness scores when rated by teachers.

No significant mean differences were found by grade or age for parent reported playfulness. Gender also did not significantly relate to parent or teacher reported playfulness.

Using independent samples t-tests to compare the two school sites, a significant mean difference was found for parent reported playfulness ($p<.05$) with parents at site 1 reporting higher playfulness scores ($M=77.20$, $SD=9.61$) than parents at site 2 ($M=70.17$, $SD=9.81$). After removing the single outlier, mean differences in parent reported playfulness were no longer found between school sites ($p=ns$). Because of differences in school composition other measures were explored for differences by school site. A significant mean difference was found between school sites and the Children’s Coping Strategies Checklist. Specifically, mean differences by school site were found for avoidant coping ($p<.01$), support coping ($p<.01$), and distraction coping ($p<.001$). On average, children at site 2 reported using all three coping strategies more than children at site 1. Mean differences by school site were not observed for the other study measures.

When examining associations with parent reported playfulness, verbal intelligence was entered as a control variable. When teacher reported playfulness was a
variable of interest both verbal intelligence and grade were controlled in analyses. Grade rather than age was controlled when examining associations with teacher playfulness because there was a stronger relationship by grade. Given the small sample and the expectation that school site would not be a confounding factor in parent reported playfulness, school site was not controlled for in the analyses. School site itself should not affect parent reported playfulness ratings, but rather factors that are associated with school site. For example, a significant mean difference was found between verbal intelligence and school site with children at site 1 ($M=14.65$, $SD=2.3$) performing better on the verbal intelligence task than children at site 2 ($M=10.77$, $SD=2.05$). Also, factors such as bias in reporting may have influenced parent ratings of playfulness by school site.

**Primary Analysis**

**Associations between parent reported playfulness and adaptive behaviors, humor, and temperament**

Partial correlations were used to explore the associations between parent reported playfulness and adaptive behaviors while controlling for verbal intelligence. Reanalysis of associations were conducted after removing a single outlier. Significant and trend level findings are presented in Table 6.

**Coping.** Results showed a trend toward significance for a positive correlation between parent reported playfulness and child reported active coping strategies ($r=.24$, $p=.09$). After removing one outlier, reanalysis of the associations between playfulness and coping showed a significant associations between playfulness and active coping ($r=.34$, $p < .05$) and distraction coping ($r=.38$, $p < .05$), with medium effect sizes. It is noteworthy, that distraction coping alone was unrelated to playfulness ($r=.09$, $ns$).
finding suggests a reciprocal suppression effect as defined by Lancaster (1999). Specifically, distraction coping and verbal intelligence were negatively related to each other and verbal intelligence was positively related to playfulness. The association between parent reported playfulness and distraction coping was enhanced after controlling for verbal intelligence. Verbal intelligence functioned as a suppressor variable for distraction coping. Results support the hypothesis that playful children are more likely to utilize positive cognitive restructuring strategies and problem solving methods to cope with problems. Further, study results indicate that playful children will engage in pleasurable activities (i.e. play or participate in a hobby) to think or do something else until they feel better.

**Emotion regulation, understanding, and expression.** As predicted, results showed a positive association between parent reported emotion regulation and playfulness ($r = .43$, $p = .01$). This correlation was a medium effect size. A negative association approaching significance was found between parent reported playfulness and sadness inhibition ($r = -.26$, $p = .07$) and child reported reluctance to express emotion ($r = -.27$, $p = .06$). After removing the single outlier, associations with emotion regulation remained significant and a significant negative correlation emerged in child reported reluctance to express emotions ($r = -.38$, $p < .05$). Also trending towards significance was a positive correlation between parent reported playfulness and coping with sadness ($r = .25$, $p = .09$), coping with anger ($r = .26$, $p = .07$), and a negative correlation in children’s poor awareness of emotions ($r = -.24$, $p = .10$). These findings support that playful children have a greater ability to regulate their emotions and were more willing to express emotions than non-playful peers.
**Humor.** Results showed a trend toward significance between parent reported playfulness and child reported humor creation ($r = .25$, $p = .08$). These results were unchanged after removing the one outlier in parent reported playfulness. Overall, hypothesized positive associations between playfulness and subscales of humor were not supported however they were small in effect size and in the hypothesized direction. It is noteworthy that parents and children were not in agreement when reporting on the child’s sense of humor. A pearson product moment correlation with two-tailed test of significance was used to assess the relationship between the single item on the MSHSC that rates the child’s overall sense of humor and the sense of humor item on the CBI measure as rated by parents. Results indicated that children’s report of their overall sense of humor and parents’ perception of their child’s sense of humor was unrelated ($r= .06$, $p=ns$).

**Temperament.** As predicted a significant positive correlation was found between parent reported playfulness and affiliation ($r = .45$, $p<.05$) when controlling for verbal ability. The magnitude of this association was moderate. A negative correlation approaching significance was found between parent reported playfulness and shyness ($r = -.23$, $p=.10$) when controlling for verbal ability. Reanalysis of parent reported playfulness and temperament after removing the single outlier revealed a significant correlation with both affiliation ($r= .41$, $p=.01$) and surgency ($r=.31$, $p<.05$). As hypothesized, parents perceive that a child’s desire for warmth and closeness with others as well as an interest in novelty were related to the construct of playfulness.

**Predictors of parent reported playfulness.** A hierarchical multiple regression was used to examine predictors of parent reported playfulness while controlling for
verbal intelligence. The results of this analysis are presented in Table 7. Primary analyses using the parent report form of playfulness indicated significant positive associations with affiliation and surgency temperament subscales, active coping, and emotion regulation ability. A significant negative association was found between parent reported playfulness and a reluctance to express emotions. All of the significant correlations were medium in magnitude. Post hoc power analysis revealed that three covariates were allowed in this model to achieve a power of .80 to predict medium effects. Covariates were chosen based on the size of the magnitude of the association with playfulness in the aforementioned analyses. The analysis was conducted after removing the single outlier from the data set. Playfulness was entered as the dependent variable and verbal intelligence, affiliation, and emotion regulation were entered as predictor variables. Verbal intelligence was entered at Step 1, explaining 36% of the variance in parent reported playfulness. At Step 2 affiliation significantly predicted more variance than verbal intelligence alone, 46% ($R=.68$, $R^2=.46$, $F=(2,29)=12.56$, $p<.001$). Together, verbal intelligence and affiliation explained an additional 11% of the variance in parent reported playfulness, ($R^2$ change =.11, $F$ change (1,29)=5.70, $p<.05$). In the second model, verbal intelligence and affiliation made a statistically significant contribution to parent reported playfulness, with the beta value of verbal intelligence (beta =.51, $p=.001$) higher than affiliation (beta=.34, $p<.05$). In the final model, only verbal intelligence remained statistically significant (beta=.49, $p<.001$).

**Associations between teacher reported playfulness and adaptive behaviors, humor, and temperament**
Twenty separate multiple regression analyses were conducted to explore the associations between teacher reported playfulness and adaptive behavior, humor, and temperament while controlling for grade and verbal intelligence. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity, and homoscedasticity. Teacher reported playfulness was entered as the dependent variable and verbal intelligence and grade level were entered simultaneously in Step 1. Each criterion variable was entered separately into Step 2. Beta values and $R^2$ change values are reported for significant and trend findings in Table 8.

**Coping.** As expected, a negative association was found between playfulness and avoidant coping strategies ($\beta = -.51, p<.001$). Contrary to the hypothesis, results indicated a significant negative association between teacher reported playfulness and active coping ($\beta = -.26, p<.05$). Children rated as playful by teachers were less likely to use avoidant or active coping strategies.

**Emotion regulation, understanding, and expression.** The hypothesized associations between teacher reported playfulness and emotion coping, inhibition of emotion, poor awareness of emotion, and reluctance to express emotion were not significant. However, as hypothesized, a negative association between playfulness and sadness dysregulation ($\beta = -.23, p<.10$) approached significance. Looking at teacher reported playfulness, playful children were less likely to exaggerate their sad feelings.

**Humor.** Contrary to our hypothesis children’s report of using humor to cope with problems was negatively related to teacher’s report of children’s playfulness ($\beta = -.26, p<.05$). Children that report using humor to cope with their problems were not considered playful by their teachers.
**Temperament.** Significant associations were not observed between teacher reported playfulness and temperament. Approaching significance was a positive association between teacher reported playfulness and surgency (beta= .36, \( p<.10 \)). The degree that children enjoy novel, exciting, and intense situations may relate to teacher’s perception of playfulness.

**Predictors of teacher reported playfulness.** Primary analyses using the teacher report form of playfulness indicated significant negative associations with use of avoidance strategies, active coping strategies, and use of humor to cope. A hierarchical multiple regression was used to examine the ability of these coping strategies in predicting teacher reported levels of playfulness after controlling for verbal intelligence and grade. Post hoc power analysis revealed that five covariates were allowed in this model to achieve a power greater than .80 to predict medium effects. The results of the analysis are presented in Table 9. Teacher’s reported playfulness was entered as the dependent variable. Verbal intelligence and grade were entered in Step 1, explaining 35% of the variance in teacher reported playfulness. After entering the Avoidance coping subscale at Step 2 the total variance explained by the model as a whole was 57%, \( F (3,39)=17.50, p<.001 \). The avoidance coping subscale explained an additional 23% of the variance in teacher reported playfulness, after controlling for verbal intelligence and grade, \( R^2 \) change=.23, \( F \) change (1,39) =20.92, \( p<.001 \). Adding the active coping and humor coping subscales did not significantly contribute to the model. In the final model, only grade level (beta= -.54) and the avoidant coping subscale (beta= -.48) uniquely contributed to teacher reported playfulness. Verbal intelligence no longer significantly contributed to the model.
Longitudinal Prediction of Play

**Associations between early play processes (APS scores) and playfulness**

Pearson product correlations using one-tailed tests of significance were used to examine the associations between APS play scores and parent and teacher reported playfulness (see Table 10). Correlations were carried out for parent ratings of playfulness however; the sample size was small because only 14 parent forms were returned in the longitudinal sample. No significant associations were found between children’s performance on the APS and parent reported playfulness.

Looking next at teacher ratings of playfulness, with a sample size of 21 children, a significant positive correlation was found between the composite play score (sum of organization, imagination, comfort, and total affect scores) and teacher reported playfulness \((r=.37, p=.05)\), with a medium effect size. Examining the specific play scores, significant positive correlations were found between the teacher reported playfulness and Imagination \((r=.35, p<.05)\), Frequency of Positive Affect \((r=.46, p=.01)\), Total Affect score \((r=.35, p=.05)\). Interestingly, a negative association occurred between teacher reported playfulness and Frequency of Negative Affect \((r = -.34)\). Children that express more imaginative elements and positive affect in play were thought to be more playful four and five years later when rated by their classroom teacher.

**Exploratory Analyses**

**Associations between early play processes (APS) and adaptive behaviors**

Pearson product moment correlations using one-tailed tests of significance were used to examine the associations between APS play scores and coping strategies on the CCSC (see Table 11) and emotion regulation, emotion expression (see Tables 12 and 13).
In looking at early play processes and coping, results were in the opposite direction than what was predicted. Negative associations occurred between Organization of the play narrative and use of active coping ($r = -.48$) and Imagination expressed in play and the use of distraction coping ($r = -.42$). A significant positive association was found between Frequency of Negative expressed and use of avoidance coping strategies ($r = .36$, $p < .05$). Inconsistent with prior research, organization and imagination in play did not relate to use of active coping strategies. Interestingly, the amount of negative affect expressed in early play related to the use of avoidant coping strategies to handle problems.

Next, associations between early play and measures of emotion regulation were explored. In looking at teacher reported emotion regulation, medium to large effect sizes were found between emotion regulation abilities and Organization ($r = .54$, $p < .001$) and Imagination ($r = .42$, $p < .05$). It was not expected that a negative association would occur between teachers’ report of emotion regulation and Frequency of Negative Affect ($r = -.40$). Parent reported emotion regulation did not relate to any APS play scores. The teacher’s perception of their student’s abilities to regulate their emotions effectively was positively related to more organized and imaginative children’s play and did not relate to the amount of negative affect expressed in play. A negative association between children’s report of anger management and Frequency of Negative Affect ($r = -.36$) occurred. Children’s expression of negative affect in play was not associated with having greater abilities to cope with anger.

Associations between early play ability and children’s affect inhibition, awareness of emotion, and reluctance to express emotions were examined next. First, the association
between children’s reported inhibition of sadness was negatively related to positive affect \( (r=-.57, p<.001) \) and positively related to expression of negative affect in play \( (r=.45, p<.05) \). Also comfort in play was negatively related to sadness inhibition \( (r=-.44, p<.05) \). A negative association was found trending toward significance between positive affect expressed in play and inhibition of anger \( (r=-.31, p=.08) \) and children’s report of poor emotional awareness \( (r=-.31, p=.08) \). Children who reported that they inhibit sad feelings were less comfortable with play and expressed more negative emotions and less positive affect while they played. Similarly, children reporting having less emotional awareness and inhibiting feelings of anger expressed more positive affect in their play. No significant associations were found between children’s report reluctance to express emotions and APS scores.

**Correlations between early play processes (APS) and humor**

Pearson product correlations using one tailed tests of significance were used to examine the associations between early play ability and children’s reported sense of humor. The associations between variables on the APS and sense of humor scores are presented in Table 14. A significant negative correlation was found between the Frequency of Positive Affect and humor coping \( (r=-.45, p<.05) \). Conversely, Frequency of Negative Affect on the APS positively correlated with the Total Humor score \( (r=.43, p<.05) \) and Humor Creation subscale \( (r=.44, p=.05) \), and approaching significance Humor Coping \( (r=.36, p=.06) \). No significant associations were found between cognitive scores of the APS and Humor subscales. Overall, children who expressed more negative affect in early play reported that they have a good sense of humor and enjoy creating jokes to
make others laugh. Moreover, children that expressed more positive affect in play reported that they do not use humor to cope with they have a problem.

**Intercorrelations among humor and adaptive behaviors**

Using pearson product moment correlations with two tailed tests of significance a number of significant associations emerged between child reported sense of humor and coping, emotion regulation, and willingness to express emotions (see Table 15). First, looking at associations among humor variables and reported use of active coping strategies, a number of significant correlations found that were large in magnitude. Specifically, active coping related to the sense of humor total score ($r=.73$, $p<.001$), coping with humor ($r=.71$, $p<.001$), humor creation ($r=.58$, $p<.001$), and humor appreciation ($r=.53$, $p<.001$). In addition, use of supportive coping strategies positively related to the total humor score ($r=.42$, $p<.05$), humor coping ($r=.50$, $p<.001$), and humor appreciation ($r=.31$, $p<.05$). Distraction coping methods were found to relate to the total humor score ($r=.32$, $p<.05$) and humor appreciation ($r=.42$, $p<.001$). Avoidant coping strategies also positively related to humor coping ($r=.40$, $p<.05$). Children that reported having an overall good sense of humor, utilized humor to cope with problems, or appreciated humor reported using sophisticated methods of coping like cognitive restructuring or problem solving. They also reported utilizing peers, parents, or other adults to support them when they had a problem or engage in another activity to distract themselves until they felt better. Likewise, children that reported using avoidant coping strategies also reported using humor to cope when they felt bad.

In addition, humor was found to relate to children’s report of emotion regulation. Children that reported using humor to cope positively related to effective coping with
sadness and anger \((r=.38, p<.05)\) and \((r=.34, p<.05)\) respectively. In addition, children reporting good overall sense of humor reported more effective coping with sadness \((r=.41, p<.05)\). Children who reported higher levels of creating humor reported effective coping with sadness \((r=.33, p<.05)\) and a willingness to express emotion \((r=-.34, p<.05)\).

Associations between coping and emotion regulation and expression revealed that child reported use of Avoidant coping strategies related positively to sadness inhibition \((r=.31, p<.05)\), sadness dysregualtion \((r=.37, p<.05)\), and overall poor awareness of emotions \((r=.44, p<.05)\). Children reporting more effective coping with sadness also reported using active coping methods \((r=.56, p<.001)\) and distraction coping strategies \((r=.35, p<.05)\). Children who engage in more problem solving coping and engage in other activities to distract from their problems or unwanted feelings report more effective coping with sadness. In addition, children that report using avoidant coping strategies report having difficulties managing sadness and have difficulties understanding and labeling their emotions.

Associations between emotion regulation and expression measures revealed two significant findings. First, children reported inhibiting their sadness also reported poor awareness of emotions \((r=.35, p<.05)\) and a reluctance to express emotions \((r=.49, p=.001)\). Second, a negative association emerged between children’s coping with anger and their awareness of emotions \((r=.31, p<.05)\). Children who report inhibiting their sad feelings also reported having difficulties understanding and expressing emotions. Moreover, children that reported having difficulties coping with anger also reported having less awareness of their emotions.

**Discussion**
The main purpose of this study was to develop a better understanding of the construct of playfulness in school aged children by examining associations between playfulness and adaptive behaviors, humor, and temperament. A secondary aim of this study was to explore the predictive role of early pretend play ability on playfulness. One major finding of this study was that there were differences in the pattern of associations for teacher and for parent ratings of playfulness. Overall, teachers’ reported lower playfulness scores and systematically reported older children as less playful. Parent reported playfulness was not associated with age or grade, but was strongly related to verbal intelligence, with playful children have higher verbal intelligence scores. There were also differences in the patterns of relationships for parent and teacher perceptions of playfulness. Parents’ perception of playfulness supported a number of hypothesized relationships between playfulness and adaptive functioning. Parent rated playfulness related to parent’s report of a child’s desire to be close to others and their capacity to experience pleasure from exciting or novel situations. Further, when rated by parents, playful children were more likely to use active and distraction coping strategies, have greater emotion regulation abilities, and were more emotionally expressive. Study results did not support the hypothesis that parents’ perception of playfulness would significantly relate to children’s report of their sense of humor.

In looking at teachers’ perception of playfulness, fewer significant relationships emerged between playfulness and criterion variables. Teachers’ perception of playfulness did not associate with adaptive behaviors, but rather playful children were less likely to use avoidant or active coping strategies or use of humor to cope with problems. The CBI-teacher form may not be valid for assessing playfulness for this age range of children.
Study results suggest that the CBI-teacher form may be assessing qualities of adjustment or well-being.

Another important study finding was that cognitive and affective processes in pretend play assessed in first through third grades predicted emotion regulation and variables of sense of humor four to five years later. Also, exploratory analyses suggest positive associations between children’s report of sense of humor and children’s adaptive functioning and emotion regulation.

**Differences between Informants**

Previous studies using the CBI have found low parent-teacher agreement in their perception of children’s playfulness. Rogers, et al. (1998) found the mean correlation between mothers and teachers to be very low on the CBI playfulness scale \((r=.12, p<.05)\). In the current study, the correlation between mothers and teachers was similar \((r=.17, p=ns)\). The difference in parent and teacher perception of child playfulness, suggests a possible situational impact on playfulness ratings. It is not new to suggest that individual children may be viewed by others in different ways (Renk, 2005; Rogers, et al., 1998). Differences in the way a parent or teacher views the same child may be due to the different environment in which they know the child or the nature of the relationship they have with them. For instance, the highly structured environment that is often seen in parochial schools may not provide teachers an opportunity to view a child’s behavior in the same way a parent might in what is typically a less structured home environment.

In the current study, grade level and age impacted teacher’s perceptions of playfulness; while parents’ perception of playfulness was not affected by age or grade. Rogers, et al., (1998) found a similar finding with older children having lower
playfulness scores when rated by teachers. It is likely that children in the sixth grade have a more structured classroom setting than children in the fourth grade. As such, teachers may have fewer opportunities to adequately observe a student’s playfulness. It could also be that items on the CBI measure related to playfulness (i.e. pretends a lot; creates own way of doing things; has fun doing things without worry how well it will turn out) are not encouraged in a school setting among later grades. For teachers, children’s playfulness may be less evident given the school context in which they know the child. This is especially the case if children are more “internally playful” (Taylor & Rogers, 2001). For some children, they may be more playful in one-on-one situations and are unable to express this playfulness in group settings, like in the context of school. Therefore, differences in how children express their playfulness may lead to differences in how parents and teachers assess a child’s playfulness.

Differences in how teachers and parents report playfulness may not indicate that teachers or parents are unreliable informants, but rather that together they contribute unique information about a child. Renk (2005) discussed that although the “gold standard” for understanding children’s behavior is to use a multi-informant approach, it remains unclear how to combine discrepant information. Moreover, it is not entirely understood which informants may be more suited for particular kinds of information. It is likely that contextual factors are causing differences in parents’ and teachers’ perceptions of playfulness. It is important to try to understand the unique contribution with which playfulness is understood by both parents and teachers. For the purposes of this study, results are explained for parent reported playfulness separately from teacher reported playfulness. Differences in the pattern of study results suggest that parents are more
capable of evaluating the degree a child is playful given their relationship and understanding of their child. Teachers’ report of playfulness using the CBI measure did not capture playfulness, but rather appeared to evaluate a broader construct, such as adjustment or well-being, rather than the construct of playfulness.

**Playfulness and Associations with Intelligence**

Children’s verbal intelligence was significantly related to both parents and teachers playfulness ratings. It is important to discuss the role that verbal intelligence may have in understanding the measurement and construct of playfulness.

The CBI (Rogers, et al., 1998) measure was theoretically developed to be independent of intelligence, however the current study is the first to investigate the association between playfulness on the CBI and verbal intelligence with a school aged population. It should not be assumed that playfulness and verbal intelligence are causally related (Spector & Brannick, 2011). Intervention studies within the occupational field have found that playfulness can improve among children with developmental disabilities and communication disorders (Bundy, et al., 2008; Okimoto, Bundy, & Hanzlik, 2000; Reed, Dunbar, & Bundy, 2000). Further, there is anecdotal evidence suggesting that verbal intelligence may not contribute to the construct itself. Even at an early age, prior to developing language skills, an infant or young toddler can utilize a playful state of mind to invoke a state of pleasure, think flexibly, and develop creative thinking while learning about one’s own world. For example, an infant may use flexible thinking when exploring the different sounds a rattle makes and invoke a state of pleasure.

Prior studies using other measures of playfulness have been inconclusive in determining if intelligence is independent of the construct (Barnett & Kleiber, 1982;
Lieberman, 1965; Singer, et al., 1980; Singer & Rummo, 1973). Trait characteristics, such as “bright” and “intelligent” have been found to highly correlate with children’s playfulness (Barnett, 1991b). In a study that investigated playfulness among gifted and non-gifted preschoolers, gifted children differed from non-gifted children in that they were perceived to be more socially and cognitively playful (Barnett & Fiscella, 1985). However, Barnett and Fiscella (1985) also found that gifted and non-gifted children did not differ in the aspects of playfulness that relate to humor or manifest joy. Barnett and Fiscella (1985) posit that gifted children may appear to be more playful because they require more environmental stimulation than non-gifted children. They supported this claim by observing differences in pretend play among gifted and non-gifted children and determined gifted children engaged in more exploratory play. In a recent study investigating the relationship between playfulness and intelligence in adults, the overall finding was that playfulness did not relate to psychometric intelligence, but was associated with better academic achievement (Proyer, In Press).

Playfulness is a trait that involves a cognitive-affective style of thinking which may not be obvious to others like parents or teachers. Differences in how parents and teachers perceive playfulness may be because playfulness is more of an internal state. If playfulness is an internal state, as suggested by Taylor and Rogers (2001), then it would be difficult to adequately capture playfulness from an outsider’s perspective. Differences in the perception of playfulness based on intelligence may be due to a child’s need for more environmental stimulation. Moreover, children with higher intelligence may be perceived as more playful if they are able to withstand academic challenges and perhaps work above and beyond what is expected of them. Differences among parent and teacher
reporters suggest that playfulness may be a trait that may be enhanced or diminished depending on the context with which the informant knows the child. Taken together, the associations between verbal intelligence and playfulness are likely related to the perception of playfulness rather than to the construct itself.

Playfulness and Criteria

Understanding parents’ perception of playfulness. When investigating associations of criteria with parents’ perception of playfulness, the significant associations that emerged were with verbal intelligence, parent reported emotion regulation, and temperament, specifically affiliation and surgency. Playfulness also related to children’s reported use of active coping, distraction coping, and willingness to express emotions. These findings are important in that they indicate that parents perceive that playful children use sophisticated coping strategies, have a greater capacity to regulate their emotions and are more willing to express emotions to others. Moreover, playful children are more likely to desire closeness with others and find pleasure in novel and intense activities. These findings are consistent with previous research.

As hypothesized, playfulness related to children’s report that they use active coping strategies, which are complex coping mechanisms that include problem solving and cognitive restructuring. Consistent with other research, playfulness related to using more effective coping strategies (Hess & Bundy, 2003; Saunders, et al., 1999). Playful children may have a flexible way of thinking that allows them to think of many different ways to solve a problem. In addition, they may be more likely to feel comfortable attempting unconventional ways of solving a problem. Playful children may also have the emotional capacity to access affect in a way that gives them confidence and reassurance to problem solve more effectively. Children that are emotionally disturbed have fewer
coping resources and are less likely to be considered playful than typically developed peers (Hess & Bundy, 2003). As hypothesized, playfulness also related to use of distraction coping. Distraction coping include strategies that use activities to cognitively focus on something that is pleasurable or fun (i.e. playing or engaging in a hobby) until an individual feels better and/or has the cognitive resources to manage the problem. 

Theoretically, it is supported that playfulness is a cognitive affective style of reducing stress or solving problems by finding amusement (Barnett, 2007). Because playful children utilize sophisticated methods of managing their problems they may experience a greater sense of wellbeing than children who lack playfulness.

As hypothesized, it was found that parents’ perception of playfulness related to parent’s report of emotion regulation abilities and child’s report that they are willing to express emotions. It was also expected that playfulness would positively relate to the child’s awareness of their emotions and self-report of emotion management. The parents’ perception of playfulness was not significantly related to the children’s report that they are more aware of their emotions and are able to regulate sadness and anger. However, these relationships were approaching significance. Research has suggested that playful children are more capable of expressing emotions and being socially spontaneous, which are characteristics associated with effective emotion regulation behaviors (Cole, et al., 1994; Zeman, et al., 2002; Singer & Rummo, 1973). Playful children, who are willing to express emotions may be better able to regulate affect in an adaptive way. Prior research supports that playful children are more capable than non-playful children in regulating their distress following an anxious event (Barnett, 1998). Children who are comfortable accessing a wide range of affect states may be able to coordinate an effective response
during a stressful situation to manage emotions (Cole, et al., 2004). In general, children who can manage emotions are able to behave more adaptively. Playfulness is considered to be an adaptive trait which may be partially understood by its associations with emotion regulation, and the degree with which one is emotionally expressive.

As expected, parent’s perceptions of playfulness related to surgency, a temperament style that consists of enjoying intensely pleasurable or novel events (Barnett, 1990b; Meehl, et al., 1971). It has been suggested that playfulness in adults is related to a greater ability to tolerate ambiguity (Tegano, 1990). In addition, associations have been made between playfulness and having a temperament style that reflects being more adaptive and having a more positive mood (Rogers, et al., 1998). Our finding suggests that playful children are naturally inclined to adapt and find enjoyment in an ambiguous situation. As previously highlighted, playful children may have a greater capacity to self-regulate which in turn allows them to find enjoyment and maintain composure in times of intense or novel situations. For example, a playful child may cognitively frame that going to sleep away camp for the first time is an adventure in which they can associate positive feelings with the event that could otherwise be frightening. Playful children may have developed a pattern of appreciating novelty because they are able to maintain composure and a positive mood to appreciate what can come from new experiences.

Another key finding was that affiliation (i.e. desire warmth and closeness with others) was the best predictor of playfulness perceived by parents. There are several theoretical reasons to suspect a positive association between playfulness and affiliation. Previous work using the CBI found that playful children were perceived by parents to be
both approachable and adaptive (Rogers, et al., 1998). Also, attributes of playful children have related to having greater social abilities, an openness to communicate with others, and enjoyment in being with others (Cattell, 1979; Singer, et al., 1980). In addition, children who lacked playfulness were found to be inconsiderate of others and have self-esteem problems (Barnett, 1991; Okimoto, et al., 2000).

In distinguishing playfulness from play, Youell, (2008) asserted that there is a relational component that is required for playfulness to occur. Playfulness is considered an innate quality that is found in all individuals to some degree. Youell (2008) posited that the development of a playfulness trait requires time to be fostered within a relationship. One could conjure many examples of how playfulness may be enhanced from interacting with others. For instance, imagine an infant and mother playing a game of peek-a-boo. The playful parent is likely smiling, giggling, and using baby talk to direct the child’s attention and communicate pleasure. The baby in turn, learns that he or she can amuse one’s self and just as important, their mother, by responding back to her with giggles and smiles. These interactions could be the building blocks of learning about how to play and be playful. It may be that children who desire closeness with others, have learned over time that displaying positive affect gets their needs for affiliation met. Also, children who are playful may have had more positive interactions with others and therefore develop a natural inclination to desire close relationships.

Other aspects of temperament, fearfulness, shyness, and depressive qualities were thought to negatively relate to playfulness. It was expected that playful children would be less likely to experience anxiety in response to distress, exhibit a behavioral inhibition response to novelty (especially in social situations), and be more likely to exhibit positive
affect. Study results indicated that fearfulness, shyness, and despressive qualities did not significantly relate to parents’ perceptions of playfulness. It should be noted that relationships between parent’s perception of playfulness and these factors of temperament were in the hypothesized direction. Therefore, there may not have been sufficient power to detect significant associations between parent’s perceptions of playfulness and variables of fearfulness, shyness, or depressive qualities.

It has been suggested that playfulness is a developmental precursor to the development of humor (McGhee, 1979). Also, the definition of playfulness includes humor as an integral aspect of the nature of playfulness (Barnett, 2007). The hypothesis that playfulness would significantly relate to children’s self-report of their sense of humor was not supported. This was somewhat surprising given the theoretical support suggesting that sense of humor is inherently related to playfulness. This may be partly explained by a lack of agreement between parents and their children. It was noted that parents and children had low agreement in comparing their responses to a single question evaluating the child’s level of sense of humor. Like playfulness, the internal nature of what a child may think is humorous may be difficult for a parent to evaluate.

A multiple regression analysis found that affiliation and verbal intelligence were significant predictors of parent reported playfulness. However, adding emotion regulation or active coping to the equation did not account for significantly more variance in parent reported playfulness. This may be due to an issue of shared variance in that affiliation and emotion regulation were correlated with each other.

Understanding teachers’ perception of playfulness. Unlike parents’ perceptions of playfulness, teachers’ perceptions of playfulness were not supportive of the
hypothesized relationships between playfulness and adaptive functioning. As hypothesized, teachers’ perception of playfulness was negatively associated with children’s reported use of avoidant strategies to cope with problems. However, it was also noteworthy that contrary to the hypothesis and to parents’ perception of playfulness, children were less likely to use active coping strategies to cope with problems. Moreover, study results indicated that children’s report of using humor to cope with problems was negatively associated with teacher’s perception of playfulness.

Overall, teacher’s perception of playfulness was related to children who do not need to employ coping strategies. Children who are not emotionally struggling may be considered more playful by teachers. In effect, children who are well adjusted and are not challenged to cope may be perceived by their teachers as more playful.

The teacher report CBI may not be capturing playfulness in the same that that parents’ perceive playfulness. For example, parents’ perception of playfulness related to a number of adaptive behaviors while teachers’ perception of playfulness did not support these same relationships. Further, in one instance, teachers’ perception of playfulness contradicts parents’ perception that playfulness positively relates to use of active coping strategies. It is likely that children’s behavior will vary across school and home settings. The environment with which teachers interact with their students may not support factors that may relate to playfulness. Such that, children who reported they use humor to cope were not considered playful by their classroom teacher. Perhaps teachers do not find playfulness in the classroom to be particularly adaptive. Such that, using humor in the classroom may be considered disruptive rather than interpreted by a teacher as “playful.” Therefore playful children may restrain expression of playfulness in a school.
environment. In addition, there was a trend finding that playful children were less likely to exaggerate their sad feelings. While it may be that playful children are better at regulating sad emotions, it may also be that they are better at constricting any strong emotional reaction, whether it is positive or negative affect.

Overall, teachers’ perception of playfulness in school aged was related to children who are not actively struggling with problems and do not endorse behaviors that have the potential to be disruptive in the classroom. Given the hypothesized internal nature of playfulness, the teacher report form of the CBI measure may not adequately capture playfulness for this age range.

**The construct of playfulness.** Differences emerged in how parents and teachers understand and report children’s playfulness. Overall, parents reported that playful children demonstrate a desire to be close to others and experience pleasure from intense situations and seek out novelty. In addition parents perceptions of playfulness is consistent with prior theory and research that playful children are more emotionally expressive, have better emotion regulation abilities, and utilize active and distraction coping strategies. Even after controlling for verbal intelligence, these associations remained, indicating that these associations exist beyond intelligence alone.

Parents’ perception of playfulness did not support the hypotheses that playfulness would negatively associate with aspects of temperament that involved behavioral inhibition tendencies or depressed mood. However, these relationships were in the hypothesized direction and it is possible that this study lacked sufficient power to detect significant associations between parent’s perceptions of playfulness and variables of fearfulness, shyness, or depressive qualities. It was surprising that variables of humor did
not relate to parents’ perception of playfulness. Although, the internal nature of both playfulness and humor may explain discrepancies among parent and child perceptions of these constructs.

Conversely, study results indicate that teachers’ perceptions of playfulness did not associate playfulness with adaptive behaviors. Further, it is thought that the CBI teacher form of was not a valid measure of playfulness for this age range. Study results indicate that the teacher report form of the CBI was actually measuring a broader category of adjustment or perhaps well-being.

**Associations among Child Report Measures**

**Humor.** Children who reported having an overall good sense of humor, utilized humor to cope with problems, or appreciated humor were more likely to use sophisticated methods of coping, such as cognitive restructuring or problem solving. They also reported utilizing peers, parents, or other adults to support them when they had a problem or engaging in another activity to distract themselves until they felt better. Likewise, children who reported using avoidant coping strategies also reported using humor to cope when they felt bad. There may be different reasons for the associations between humor and coping strategies. It is consistent with the literature that positive forms of humor are related to adaptive coping strategies (Abel, 2002; Erikson & Feldstein, 2007; Martin, et al., 1993). Similar to playfulness, it could be that humor positively relates to a cognitive-affective style that allows a child to find amusement in adverse or threatening situations. The positive association between humor coping and the use of avoidant coping strategies may be due to using humor in non-adaptive ways. Such that, humor coping may also
include non-adaptive behaviors like making fun of others or using it as a form of
distraction from problems.

Several dimensions of humor were positively related to management of emotions
and expression of feelings. Specifically, children who use humor to cope with problems
also reported behaviors that indicate they are effective at coping with sad and anger
emotions. Prior studies have found that using humor as a coping strategy is associated
with lower levels of depressive symptoms in adolescents (Erikson & Feldstein, 2007). In
the current study, children that report they enjoy making up jokes and sharing funny
stories with peers also expressed effective coping with sad feelings and that they are more
willing to express emotions.

Coping and emotion management and expression. Consistent with the
literature, measures of children’s report of coping, emotion regulation and expression
were related (Cole, Martin, & Dennis, 2004; Saarni, 1999; Skinner, 2007). Emotion is a
crucial aspect of the coping process. Emotions are involved in evaluating an experience
which can then coordinate responses (i.e. coping patterns) during stressful situations
(Cole, et al., 2004). Having an awareness of one’s emotions or access to a wide range of
emotions is supportive of adaptive coping (Holodynski & Friedlmeier, 2006; Skinner,
2007). Well-adjusted children are more capable of decreasing the intensity and duration
of affective states as well as extending and amplifying emotional states for the purposes
of behaving adaptively (Cole, et al., 1994). In the current study, children who utilized
problem solving coping or engaged in other activities to distract from their problems or
unwanted feelings reported more effective coping with sadness; while children that
reported using avoidant coping strategies reported having difficulties managing sadness
and understanding or labeling their emotions. Overall, it was found that children who reported using more adaptive coping behaviors also reported having an ability to manage affect in adaptive ways.

In the current study, children who reported having less awareness of their emotions or were reluctant to express emotions also reported having difficulties managing their anger and tend to inhibit expression of their sad feelings. Our findings are consistent with previous research and theory that emotional awareness is related to regulation of negative emotions (Penza-Clyve & Zeman, 2002; Saarni, 1999). Children who were more capable of expressing or understanding their feelings were better able to cope with negative feelings such as anger and sadness. Expressing negative affect in an adaptive way is crucial for emotion regulation. Specifically, children’s management of emotions is more adaptive when they do not rely solely on positive affect to regulate affect and reduce outbursts of emotions. Rather, children who understand and express a wide range of feelings in appropriate ways may develop more sophisticated methods of coping with distress.

**Longitudinal Predictions: Play and Playfulness**

In looking in the longitudinal sample, it is cautioned that only 21 participants were included in these results. With such a small sample size, there may not be adequate power to properly investigate associations between early pretend play and later playfulness. Moreover, only 14 parents returned study packets and no associations were found between parent reported playfulness and early pretend play.

Differences in teacher and parent perceptions of playfulness indicated that teacher’s may not adequately report playfulness using the CBI for the older age range of children. The CBI teacher report of playfulness may not have been a reliable measure of
playfulness and appears to capture a broader category of adjustment or general well-being. For this reason, it remains unclear if associations between play ability and playfulness exist. Nevertheless, interesting findings emerged when looking at associations between early play processes, assessed in first, second, and third grades and the CBI teacher form four and five years later.

The main finding was that the amount of expressed imaginative elements in pretend play positively related to what is considered teacher’s perception of adjustment four and five years later. Further, the expression of positive affect in play was related to teacher’s perception of playfulness or adjustment. The magnitudes of these correlations were medium in effect size. This finding is consistent with the theory that positive affect may be associated with creative thinking and adjustment (Fredrickson, 2003; 2005). Fredrickson (2003; 2005) posits that positive emotions are crucial in broadening an individual’s intellectual, psychological, and social resources. Fredrickson’s broaden-and-build theory of positive emotions is a model to explain how positive emotions appear to broaden peoples’ momentary thought–action repertoires and build their enduring personal resources (Fredrickson 1998, 2001). Children that are capable of expressing creative thinking and positive emotions in play may be associated with what is considered good adjustment later in childhood. Also, children who are already well-adjusted may be more capable of thinking both creatively and flexibly as well as express more positive affect in play.

Overall, we were unable to properly investigate relationships between play and playfulness because we did not have a valid measure of playfulness to explore these relationships. With few parents’ responding to the playfulness measure, we did not have
adequate power to detect relationships among variables. Although, in using the teacher report of playfulness, results indicate that associations between play and adjustment may exist and further research in this domain would be worthwhile. In addition, future studies should have concurrent measures of pretend play and playfulness to better understand these associations over time. Also, a measure that captures pretend play in older school aged children could help in understanding associations between play and playfulness among older children. Although there are limitations in our longitudinal study design, promising results have emerged from this first step toward exploring associations between early pretend play and playfulness.

**Exploratory Findings: Longitudinal Associations between Play and Current Adaptive Functioning**

Associations were explored between early pretend play abilities and current measures of adaptive behaviors. Consistent with previous literature, children’s emotion regulation abilities, as rated by teachers, significantly related to the cognitive aspects in early pretend play, specifically organization and imagination (Barnett, 1984; Dillon & Russ, 2011; Grossman-McKee, 1989; Seja & Russ, 1999). It has been suggested that the imaginative aspect of pretend play is an integral factor in the resolution of the children’s distress (Barnett, 1984). Children that possess the capacity to utilize fantasy while they play may be able to develop ways to express emotions and regulate their emotional experience in adaptive ways. Also, children who are able to organize their play narrative may be able to better regulate emotions. Narrative competence is an important developmental milestone that requires a child to have the ability to represent past experiences and future expectations and do so coherently (Von Klitzing, Kelsay, Edme,
Robinson, & Schmitz, 2000). Von Klitzing, et al. (2000) found that children who had incoherent play narratives were also reported by caregivers and teachers to have behavioral problems. For instance, children that experience, express, and modulate negative affect during a play session may learn how to manage emotions and thereby self-regulate their behavior.

An interesting finding that emerged was the negative relationship between early pretend play and adaptive coping behaviors. In the current study, children who had more organized play narratives reported that they did not use active coping strategies. Likewise, imagination in children’s play was negatively associated with using active problem solving strategies and support seeking methods to cope. Contrary to our findings, Russ, Robins, & Christiano (1999), demonstrated that fantasy in play significantly predicted self-reported coping over a four year period. Thus, children who had more imagination in their earlier play could think of more things to do in stressful situations four years later. The current study’s incongruent findings between pretend play and coping behaviors may be due to sampling bias. It also cannot be ruled out that there was selection bias in the small sample that was included in our longitudinal group. Parents who can effectively manage stressors in the home, may have been more willing to have their child participate in a study that required effort on the parent’s part. It may be that the children in our small longitudinal sample were not struggling with experiences that required them to use sophisticated methods of coping. As a result, children who expressed more imaginative elements may not have reported using adaptive coping strategies. A study with a larger longitudinal group may better explain the associations between pretend play abilities and the longitudinal prediction of coping behaviors.
Interestingly, overall, children who expressed more negative affect in early play reported that they have a good sense of humor and enjoy creating jokes to make others laugh. Moreover, expression of positive affect in play predicted that children were less likely to use humor to cope with problems. In defining humor, Peterson and Seligman (2004) emphasized that humor not only related to the ability to make others smile or laugh but that also there was an appreciation of incongruity. Children who are willing to express negative affect in play may be taking a social risk. To express negative affect in play, could be considered inappropriate or an unconventional way of thinking. Early experiences with pretend play may foster a comfort in expressing oneself even when these thoughts or feelings could be perceived as unconventional. It has been supported that through play, children can learn appropriate ways of expressing emotion, gain comfort in experiencing emotions, and learn to discern subtle differences in emotional expression (Barnett, 1984; Dillon & Russ, 2011; Galyer & Evans, 2001; Grossman-McKey, 1989; Lindsey & Colwell, 2003; Seja & Russ. 1999). Further, Singer (1995) proposed that the more children feel comfortable with expressing negative affect, the more they are able to express positive affect in a way that reduces their distress. As such, pretend play may allow children a forum to practice expressing negative affect and learn to utilize positive affect in the form of humor to cope with adversity and maintain a good mood.

**Limitations**

It should be noted that this study has some limitations. The main limitation concerns the lack of a measure of playfulness developed specifically for school aged children in fifth through eighth grades. Although the CBI (Rogers, et al., 1998) was
developed to be used with children in pre-school through fourth grades, there is no history of its use with children as old as fifth, sixth, seventh, or eighth grades. Given this is the first study to use the CBI with older children it raises questions about the validity of the playfulness measure used in this study. Interestingly, parent reports of the CBI did relate significantly to a number of a priori hypothesized associations, while teacher reports did not relate to criteria. Teachers’ perception of playfulness using the CBI did not appear to be a valid measure of playfulness for older children. Teachers in later elementary school grades may not have many opportunities to observe playfulness among their students. Moreover, perceptions of playfulness among teachers may mean something different than perceived playfulness among parents.

A second limitation in this study is the small community sample size of 46 children from two different school sites. A larger sample of children would have provided increased power to enable more methods of analyzing the data. Most of the associations explored in this study utilized correlations. Because a large number of correlations were used in this study, interpretations of the results should be done with caution. Although, it should be noted that our significant findings had been predicted by a priori hypotheses and effect sizes were generally medium to large.

Another limitation in this study was the longitudinal design. It was unfortunate that we were unable to assess playfulness and pretend play during each of the two time points within the longitudinal group. Having evidence of how play and playfulness relate concurrently would help clarify how they relate over time.

We were also limited in the generalizability of the study results. Demographic information for each individual participant was not obtained. Although, the demographic
composition of each grade for each school site was collected. Having individual demographic information may have improved the generalizability of the study results.

It is important to acknowledge that method variance may have caused bias in the estimates of the true relationship among theoretical constructs. Method variance could have led to both Type I or Type II errors and led to either inflating or suppressing observed associations between criteria. Our study results found significant positive associations between parent reported playfulness and other parent reported measures. Method variance could account for some of the associations between parent reported playfulness and adaptive functioning. It could be that parents were biased in reporting positive behaviors, not only with playfulness, but also with emotion regulation and temperament. Our study attempted to account for method variance by using multiple informants including child self-report measures of emotion management and coping and measures completed by the primary classroom teacher.

**Future Directions and Implications**

This research study found that playfulness is an important individual characteristic that relates to a number of adaptive behaviors. However, the limitations addressed in this study indicate that playfulness may not be adequately captured by parents or teachers. This study highlighted that playfulness may be an internal state, one that reflects a cognitive affective style which allows one to handle adversity effectively. A largely neglected area in the research on playfulness is the development of a measure to assess playfulness from the child’s perspective. Researchers investigating playfulness with adults have been successful in developing measures to capture the construct. It could be argued that playfulness in children could be better assessed from their perspective.
Based on the current study and prior theory and research, a measure of playfulness for school aged children ought to reflect both internal and external attributes of playfulness. Internal playfulness may relate to flexible thinking to solve problems, regulating emotions, diffusing difficult interactions with others by being playful, and fostering friendships with playful interactions. External playfulness may relate to being more socially savvy, gregarious, and/or humorous. Developing a measure of playfulness that includes both internal and external criteria of playfulness may be able to capture children who utilize a playful cognitive-affective style of handing adversity as well as children who appreciate humor, tend to be spontaneous, and seek intensely pleasurable or novel situations.

Future studies ought to also include longitudinal research to better understand how associations between playfulness, adaptive behaviors, and play are maintained over the course of a child’s development. Other researchers have postulated that playfulness is a precursor to the development of adult creativity (Lieberman, 1967) and adult sense of humor (McGhee, 1979). However, there are no known studies that have investigated how playfulness relates over time to creativity or sense of humor.

This is the first study to investigate how pretend play relates to playfulness over time. Unfortunately, there were few parent reports of playfulness returned in order to adequately investigate these relationships. In looking at teachers’ perception of what may be referred to as adjustment, significant associations emerged between the APS (Russ, 2004) and playfulness. Positive affect and expression of imagination predicted adjustment four and five years later. Further, longitudinal associations between the APS and theoretically relevant criteria were also supported. Specifically, the cognitive aspects
of early play related to emotion regulation abilities four and five years later. These associations are consistent with previous findings investigating concurrent measures of play and emotion regulation (Dillon & Russ, 2011; Moore & Russ; 2008; Seja & Russ, 1999). This study contributed to the validity of using the APS in the longitudinal prediction of dimensions of child development.

Continued research with refined measures of playfulness may add to the significance that play and playfulness hold throughout a child’s development. Several play scholars have written about the disappearance of children’s pretend play and the unknown impact it may have on children’s development (Pellegrini & Galda, 1993; Russ, 2004). Children are spending more time engaged in passive forms of play (e.g. video games, using the internet), watching more hours of television per week, and participating in adult-directed activities (e.g., gym class instead of recess or sport participation). Further, approximately 25% of elementary schools no longer have regularly scheduled time for recess (McKenzie & Kahan, 2008). Despite the loss of time spent engaged in undirected free play, it is not known whether children could still potentially reap the developmental benefits of play if they approached these other activities in a playful way. Encouraging a playful disposition (e.g. reinforcing expressed joy, spontaneity, humor, and imaginative thinking) may support the development of adaptive behaviors known to relate to the capacity to play even in the absence of play opportunities. To this end, further research is necessary to clarify the associations between playfulness and variables of adaptive behavior and play behavior. Moreover, research dedicated to investigating the construct of playfulness among school aged children is necessary to grasp the developmental role of playfulness over time.
<table>
<thead>
<tr>
<th>Construct</th>
<th>Measure</th>
<th>Subscales and Scores</th>
<th>Informant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Playfulness</td>
<td>Children’s Behavior Inventory of Playfulness <em>(CBI, Rogers, et al. 1998)</em></td>
<td>Playfulness Score</td>
<td>Parent &amp; Teacher rating</td>
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<td>Coping</td>
<td>Children’s Coping Strategies Checklist-2(^{nd}) Revision <em>(CCSC-R2, Ayers, 1996)</em></td>
<td>Active Coping</td>
<td>Child rating</td>
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<td></td>
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<td>Support Seeking</td>
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<td></td>
<td>Avoidance Coping</td>
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<td>Emotion</td>
<td>Emotion Regulation Checklist <em>(ERC, Shields &amp; Cicchetti, 1997)</em></td>
<td>Emotion Regulation</td>
<td>Parent &amp; Teacher rating</td>
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<td>Regulation</td>
<td>Children’s Emotion Management Scales-Sadness <em>(CSMS)</em> and Anger <em>(CAMS)</em> <em>(Zeman, Shipman, &amp; Penza-Clyve, 2001)</em></td>
<td>Emotion Cope Inhibition</td>
<td>Child rating</td>
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<td>Dysregulation</td>
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<td>Emotion</td>
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<td>Affiliation</td>
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<td>Activation Control</td>
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<td>Depression</td>
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<td>Humor</td>
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<td>Humor Total Score</td>
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<td>Humor Coping</td>
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<td>Humor Creation</td>
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<td>Humor Appreciation</td>
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Table 1 Continued

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<td>Play Behaviors</td>
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<td>Imagination score, Organization score, Comfort score, Total Affect, Total Positive Affect, Total Negative Affect, Composite Play Score</td>
<td>Child performance</td>
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Table 2
Sample Demographics

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<th>School Site</th>
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<th>Sixth Grade</th>
<th>Seventh grade</th>
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<tr>
<td></td>
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<td>3</td>
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<td>Site 2</td>
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<td></td>
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<td>1</td>
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<td>14</td>
<td>12</td>
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N=46
Table 3

Descriptive Statistics of Study Variables for Concurrent Sample

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<th>Mean</th>
<th>SD</th>
<th>Range</th>
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<td>Age</td>
<td>43</td>
<td>10.42</td>
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<td>9-13</td>
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<td>Vocab</td>
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<td>12.30</td>
<td>2.86</td>
<td>7-19</td>
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<td>MSHSC-Humor Total</td>
<td>43</td>
<td>64.00</td>
<td>10.02</td>
<td>41-82</td>
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<td>MSHSC-Humor Creation</td>
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<td>21.88</td>
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<td>10-30</td>
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<td>MSHSC-Humor Coping</td>
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<td>32.27</td>
<td>4.51</td>
<td>22-40</td>
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<td>MSHSC-Humor Appreciation</td>
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<td>9.83</td>
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<td>3-15</td>
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<td>CSMS-Sadness Inhibition</td>
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<td>CSMS-Sadness Emotion Coping</td>
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<td>CSMS-Sadness Dysregulation</td>
<td>43</td>
<td>4.79</td>
<td>1.28</td>
<td>3-7</td>
</tr>
<tr>
<td>CAMS-Anger Inhibition</td>
<td>43</td>
<td>7.58</td>
<td>1.95</td>
<td>4-11</td>
</tr>
<tr>
<td>CAMS-Anger Emotion Coping</td>
<td>43</td>
<td>8.37</td>
<td>2.03</td>
<td>4-12</td>
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<tr>
<td>CAMS-Anger Dysregulation</td>
<td>43</td>
<td>5.16</td>
<td>1.67</td>
<td>3-9</td>
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<tr>
<td>EESC-Poor Emotion Awareness</td>
<td>43</td>
<td>21.25</td>
<td>7.02</td>
<td>8-39</td>
</tr>
<tr>
<td>EESC-Reluctance to Express Emotion</td>
<td>43</td>
<td>22.13</td>
<td>4.97</td>
<td>11-34</td>
</tr>
<tr>
<td>CBI- Playfulness Parent</td>
<td>33</td>
<td>73.36</td>
<td>10.20</td>
<td>54-95</td>
</tr>
<tr>
<td>CBI- Playfulness Teacher</td>
<td>43</td>
<td>69.32</td>
<td>11.87</td>
<td>43-91</td>
</tr>
<tr>
<td>ERC- ER subscale Parent</td>
<td>33</td>
<td>26.39</td>
<td>3.21</td>
<td>18-31</td>
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<tr>
<td>ERC- ER subscale Teacher</td>
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<td>24.72</td>
<td>3.54</td>
<td>16-31</td>
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<tr>
<td>EATQ-R-Activation Control</td>
<td>33</td>
<td>3.16</td>
<td>0.77</td>
<td>1.43-4.71</td>
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<tr>
<td>EATQ-R-Affiliation</td>
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<td>3.85</td>
<td>0.60</td>
<td>2.67-4.83</td>
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<tr>
<td>EATQ-R-Surgency</td>
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<td>0.67</td>
<td>2.22-4.89</td>
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<td>EATQ-R-Shyness</td>
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<td>2.47</td>
<td>0.77</td>
<td>1.00-3.80</td>
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<td>1.33-4.00</td>
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<tr>
<td>EATQ-R-Depressive Mood</td>
<td>33</td>
<td>2.06</td>
<td>0.41</td>
<td>1.20-3.00</td>
</tr>
</tbody>
</table>

Note: MSHSC=Multidimensional Sense of Humor Scale for Children; CCSC=Children’s Coping Strategies Checklist; CSMS=Children’s Sadness Management Scale; CAMS=Children’s Anger Management Scale; EESC=Emotion Expression Scale for Children; CBI=Child Behavior Inventory; ERC=Emotion Regulation Checklist; EATQ=Early Adolescent Temperament Questionnaire
Table 4

Descriptive Statistics of Study Variables for Longitudinal Sample

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
</tr>
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<tbody>
<tr>
<td>Age</td>
<td>21</td>
<td>10.93</td>
<td>1.56</td>
<td>9-14</td>
</tr>
<tr>
<td>Vocab</td>
<td>21</td>
<td>11.90</td>
<td>2.72</td>
<td>8-17</td>
</tr>
<tr>
<td>MSHSC-Humor Total</td>
<td>21</td>
<td>65.19</td>
<td>8.95</td>
<td>49-81</td>
</tr>
<tr>
<td>MSHSC-Humor Creation</td>
<td>21</td>
<td>21.88</td>
<td>4.68</td>
<td>15-30</td>
</tr>
<tr>
<td>MSHSC-Humor Coping</td>
<td>21</td>
<td>33.33</td>
<td>3.92</td>
<td>25-40</td>
</tr>
<tr>
<td>MSHSC-Humor Appreciation</td>
<td>21</td>
<td>9.86</td>
<td>2.90</td>
<td>3-15</td>
</tr>
<tr>
<td>CCSC-Active Coping</td>
<td>21</td>
<td>2.86</td>
<td>0.44</td>
<td>2.17-3.83</td>
</tr>
<tr>
<td>CCSC-Distraction Coping</td>
<td>21</td>
<td>2.61</td>
<td>0.69</td>
<td>1.10-3.90</td>
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<tr>
<td>CCSC-Avoidant Coping</td>
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<td>2.25-3.50</td>
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<tr>
<td>CCSC-Support Coping</td>
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<td>0.50</td>
<td>1.36-3.29</td>
</tr>
<tr>
<td>CSMS-Sadness Inhibition</td>
<td>21</td>
<td>8.47</td>
<td>2.06</td>
<td>4-12</td>
</tr>
<tr>
<td>CSMS-Sadness Emotion Cope</td>
<td>21</td>
<td>11.86</td>
<td>2.35</td>
<td>7-15</td>
</tr>
<tr>
<td>CSMS-Sadness Dysregulation</td>
<td>21</td>
<td>4.76</td>
<td>1.37</td>
<td>3-7</td>
</tr>
<tr>
<td>CAMS-Anger Inhibition</td>
<td>21</td>
<td>7.76</td>
<td>1.64</td>
<td>5-11</td>
</tr>
<tr>
<td>CAMS-Anger Emotion Cope</td>
<td>21</td>
<td>8.67</td>
<td>1.71</td>
<td>5-12</td>
</tr>
<tr>
<td>CAMS-Anger Dysregulation</td>
<td>21</td>
<td>5.04</td>
<td>1.53</td>
<td>3-8</td>
</tr>
<tr>
<td>EESC-Poor Emotion Aware</td>
<td>21</td>
<td>21.04</td>
<td>4.90</td>
<td>12-32</td>
</tr>
<tr>
<td>EESC-Reluctance to Express</td>
<td>21</td>
<td>20.86</td>
<td>4.37</td>
<td>11-30</td>
</tr>
<tr>
<td>APS-Organization</td>
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<td>2.80</td>
<td>1.29</td>
<td>1-5</td>
</tr>
<tr>
<td>APS-Imagination</td>
<td>21</td>
<td>2.76</td>
<td>0.89</td>
<td>1-5</td>
</tr>
<tr>
<td>APS-Comfort</td>
<td>21</td>
<td>3.38</td>
<td>1.20</td>
<td>1-5</td>
</tr>
<tr>
<td>APS-Total Affect Expressed</td>
<td>21</td>
<td>9.86</td>
<td>6.13</td>
<td>0-24</td>
</tr>
<tr>
<td>APS-Positive Affect Expressed</td>
<td>21</td>
<td>8.19</td>
<td>6.43</td>
<td>0-23</td>
</tr>
<tr>
<td>APS-Negative Affect Expressed</td>
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<td>1.67</td>
<td>2.39</td>
<td>0-8</td>
</tr>
<tr>
<td>APS-Composite Total Score</td>
<td>21</td>
<td>18.81</td>
<td>8.62</td>
<td>3-37</td>
</tr>
<tr>
<td>CBI-Playfulness Parent Report</td>
<td>14</td>
<td>72.00</td>
<td>7.49</td>
<td>57-82</td>
</tr>
<tr>
<td>CBI-Playfulness Teacher</td>
<td>21</td>
<td>66.71</td>
<td>12.73</td>
<td>43-91</td>
</tr>
<tr>
<td>ERC-ER subscale Parent</td>
<td>14</td>
<td>26.01</td>
<td>2.72</td>
<td>21-31</td>
</tr>
<tr>
<td>ERC-ER subscale Teacher</td>
<td>21</td>
<td>25.33</td>
<td>3.82</td>
<td>16-31</td>
</tr>
</tbody>
</table>

Note: MSHSC=Multidimensional Sense of Humor Scale for Children; CCSC=Children’s Coping Strategies Checklist; CSMS=Children’s Sadness Management Scale; CAMS=Children’s Anger Management Scale; EESC=Emotion Expression Scale for Children; APS=Affect in Play Scale; CBI=Child Behavior Inventory; ERC=Emotion Regulation Checklist.
Table 5

Pearson Product Correlations between Multiple Informants on Ratings of Playfulness and Verbal Intelligence

<table>
<thead>
<tr>
<th>Variable</th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Parent Playfulness Subscale</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Teacher Playfulness Subscale</td>
<td>.17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Vocabulary Subtest Score</td>
<td>.62**</td>
<td>.33*</td>
<td></td>
</tr>
</tbody>
</table>

**p < .001  *p < .05  † p ≤ .10
Table 6
Pearson Product Moment Correlations among Parent Reported Playfulness and Criteria Variables using One-tailed Tests of Significance

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parent Playfulness&lt;sup&gt;a,1&lt;/sup&gt;</th>
<th>Parent Playfulness&lt;sup&gt;b,1&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Original Data</td>
<td>Without single Outlier</td>
</tr>
<tr>
<td>CCSC-Active Coping</td>
<td>.19 (.24†)</td>
<td>.29† (.34*)</td>
</tr>
<tr>
<td>CCSC-Distraction Coping</td>
<td>-.03(.24†)</td>
<td>.09 (.38*)</td>
</tr>
<tr>
<td>ERC-Emotion Regulation</td>
<td>.50*(.43*)</td>
<td>.45*(.38*)</td>
</tr>
<tr>
<td>CSMS-Sadness Inhibition</td>
<td>-.14 (-.26†)</td>
<td>-.17(-.29†)</td>
</tr>
<tr>
<td>CSMS-Sadness Coping</td>
<td>.25 (.06)</td>
<td>.40*(.25†)</td>
</tr>
<tr>
<td>CAMS-Anger Coping</td>
<td>.42*(.22)</td>
<td>.44*(.26†)</td>
</tr>
<tr>
<td>EESC-Poor Awareness</td>
<td>.07(-.04)</td>
<td>-.19(-.24†)</td>
</tr>
<tr>
<td>EESC-Reluctance to Express Emotions</td>
<td>-.13(-.27†)</td>
<td>-.19(-.38*)</td>
</tr>
<tr>
<td>MSHSC-Humor Create</td>
<td>.24(.25†)</td>
<td>.24† (.23)</td>
</tr>
<tr>
<td>EATQ-Affiliation</td>
<td>.53**(.45**)</td>
<td>.48**(.41*)</td>
</tr>
<tr>
<td>EATQ-Surgency</td>
<td>.48* (.13)</td>
<td>.60**(.31*)</td>
</tr>
<tr>
<td>EATQ-Shyness</td>
<td>-.43*(-.23†)</td>
<td>-.39*(-.20)</td>
</tr>
</tbody>
</table>

<sup>a</sup>N=33  <sup>b</sup>N=32  p < .001  *p < .05  †p ≤ .10

Note: CCSC=Children’s Coping Strategies Checklist; ERC=Emotion Regulation Checklist; CSMS=Children’s Sadness Management Scale; CAMS=Children’s Anger Management Scale; EESC=Emotion Expression Scale for Children; EATQ=Early Adolescent Temperament Questionnaire

<sup>1</sup>Partial Correlations in parenthesis controlling for verbal intelligence
Table 7
Hierarchical Multiple Regression Analysis Predicting Parent-Reported Playfulness from Affiliation and Emotion Regulation while Controlling for Verbal Intelligence using Two-tailed Tests of Significance

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>R²</th>
<th>R² Δ</th>
<th>Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Verbal Intelligence</td>
<td>.36**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Verbal Intelligence</td>
<td>1.94</td>
<td>.50</td>
<td>.60**</td>
<td></td>
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<tr>
<td>EATQ-Affiliation</td>
<td>1.68</td>
<td>.46</td>
<td>.51**</td>
<td></td>
<td></td>
<td>.92</td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Verbal Intelligence</td>
<td>1.68</td>
<td>.46</td>
<td>.51**</td>
<td></td>
<td></td>
<td>.92</td>
</tr>
<tr>
<td>EATQ-Affiliation</td>
<td>5.54</td>
<td>2.32</td>
<td>.34*</td>
<td></td>
<td></td>
<td>.92</td>
</tr>
<tr>
<td>ERC-Emotion Regulation</td>
<td>3.70</td>
<td>3.05</td>
<td>.23†</td>
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<td></td>
<td>.54</td>
</tr>
</tbody>
</table>

N=32  *p < .05  **p < .001  †p ≤ .10

*Note: EATQ=Early Adolescent Temperament Questionnaire; ERC=Emotion Regulation Checklist*
Table 8

Associations between Teacher Reported Playfulness and Criteria Variables while Controlling for Grade Level and Verbal Intelligence using Two-tailed Tests of Significance

<table>
<thead>
<tr>
<th>Variable</th>
<th>$R^2$ Change</th>
<th>B</th>
<th>$\beta_{Grade\ Level}$</th>
<th>$\beta_{Verbal\ Intelligence}$</th>
<th>Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCSC-Avoidant Coping</td>
<td>.23</td>
<td>-.51**</td>
<td>-.54**</td>
<td>.22</td>
<td>.89</td>
</tr>
<tr>
<td>CCSC-Active Coping</td>
<td>.07</td>
<td>-.26*</td>
<td>-.51**</td>
<td>.37*</td>
<td>.99</td>
</tr>
<tr>
<td>CSMS-Sadness Dysregulation</td>
<td>.04</td>
<td>-.23†</td>
<td>-.47**</td>
<td>.28*</td>
<td>.86</td>
</tr>
<tr>
<td>MSHSC-Humor Cope</td>
<td>.07</td>
<td>-.26*</td>
<td>-.51**</td>
<td>.36*</td>
<td>.99</td>
</tr>
<tr>
<td>EATQ-Surgency</td>
<td>.06</td>
<td>.36†</td>
<td>-.39*</td>
<td>.13</td>
<td>.51</td>
</tr>
</tbody>
</table>

N=43 $p < .001$ *$p < .05$ †$p \leq .10$

Note: CCSC=Children’s Coping Strategies Checklist; ERC=Emotion Regulation Checklist; CSMS=Children’s Sadness Management Scale; CAMS=Children’s Anger Management Scale; EESC=Emotion Expression Scale for Children; EATQ=Early Adolescent Temperament Questionnaire
Table 9
Hierarchical Multiple Regression Analysis Predicting Teacher-Reported Playfulness from Child Reported use of Coping Strategies while Controlling for Grade level and Verbal Intelligence using Two-tailed Tests of Significance

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>( \beta )</th>
<th>( R^2 )</th>
<th>( R^2 \Delta )</th>
<th>Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
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</tr>
<tr>
<td>Grade</td>
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<td>1.85</td>
<td>-.49**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Verbal Intelligence</td>
<td>1.52</td>
<td>.53</td>
<td>.37**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td>.57**</td>
<td>.23**</td>
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<tr>
<td>Grade</td>
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<td>1.52</td>
<td>-.54**</td>
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<td>.98</td>
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<tr>
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<td>.46</td>
<td>.22</td>
<td></td>
<td>.91</td>
<td></td>
</tr>
<tr>
<td>CCSC-Avoidant Coping</td>
<td>-12.15</td>
<td>3.08</td>
<td>-.51**</td>
<td></td>
<td>.89</td>
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<tr>
<td><strong>Step 3</strong></td>
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<td>.006</td>
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</tr>
<tr>
<td>Grade</td>
<td>-7.78</td>
<td>1.55</td>
<td>-.54**</td>
<td></td>
<td>.97</td>
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<tr>
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<td>.47</td>
<td>.22</td>
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<td>.87</td>
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<tr>
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<td>3.12</td>
<td>-.48**</td>
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<td>.72</td>
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<tr>
<td>MSHSC-Humor Cope</td>
<td>-.27</td>
<td>.40</td>
<td>-.10</td>
<td></td>
<td>.40</td>
<td></td>
</tr>
<tr>
<td>CCSC-Active Coping</td>
<td>.80</td>
<td>3.25</td>
<td>.04</td>
<td></td>
<td>.38</td>
<td></td>
</tr>
</tbody>
</table>

N=43  *p < .05  **p < .001

Note: CCSC=Children’s Coping Strategies Checklist; MSHSC=Multidimensional Sense of Humor Scale for Children
Table 10

Longitudinal Prediction of Playfulness Over Four Years from APS Scores using One-tailed Tests of Significance

<table>
<thead>
<tr>
<th>Variable</th>
<th>Organization</th>
<th>Imagination</th>
<th>Comfort</th>
<th>Total Affect</th>
<th>Positive Affect</th>
<th>Negative Affect</th>
<th>Composite APS score&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent-Playfulness&lt;sup&gt;1&lt;/sup&gt;</td>
<td>-.04</td>
<td>.16</td>
<td>.29</td>
<td>.06</td>
<td>.03</td>
<td>.09</td>
<td>.09</td>
</tr>
<tr>
<td>Teacher- Playfulness&lt;sup&gt;2&lt;/sup&gt;</td>
<td>.32</td>
<td>.38*</td>
<td>.05</td>
<td>.35*</td>
<td>.46*</td>
<td>-.34</td>
<td>.37*</td>
</tr>
</tbody>
</table>

<sup>1</sup>N=14, <sup>2</sup>N=21, *p < .05 **p < .001

<sup>a</sup>Composite APS score is the sum of the Organization, Imagination, Comfort, and Total Affect scores
### Table 11

Longitudinal Prediction of Coping Strategies over Four Years from APS Scores using One-tailed Tests of Significance

<table>
<thead>
<tr>
<th>Variable</th>
<th>Organization</th>
<th>Imagination</th>
<th>Comfort</th>
<th>Positive Affect</th>
<th>Negative Affect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Coping</td>
<td>-.48*</td>
<td>-.36†</td>
<td>-.19</td>
<td>-.31</td>
<td>.01</td>
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<tr>
<td>Distraction Coping</td>
<td>-.22</td>
<td>-.42*</td>
<td>-.33†</td>
<td>-.25</td>
<td>.06</td>
</tr>
<tr>
<td>Avoidant Coping</td>
<td>-.15</td>
<td>-.18</td>
<td>-.13</td>
<td>-.35</td>
<td>.36*</td>
</tr>
<tr>
<td>Support Seeking Coping</td>
<td>-.22</td>
<td>-.35†</td>
<td>-.27</td>
<td>-.07</td>
<td>-.27</td>
</tr>
</tbody>
</table>

N=21, *p < .05  **p < .001  †p ≤ .10

*Note. Subscales are derived from the Children’s Coping Strategy Checklist*
Table 12

Longitudinal Prediction of Emotion Regulation Variables over Four Years from APS scores using One-tailed Tests of Significance

<table>
<thead>
<tr>
<th>Variable</th>
<th>Organization</th>
<th>Imagination</th>
<th>Comfort</th>
<th>Positive Affect</th>
<th>Negative Affect</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERC-Teacher(^1)</td>
<td>.54(^**)</td>
<td>.42(^*)</td>
<td>.23</td>
<td>.28</td>
<td>-.40(^*)</td>
</tr>
<tr>
<td>ERC-Parent(^2)</td>
<td>-.16</td>
<td>-.14</td>
<td>.29</td>
<td>.001</td>
<td>-.35</td>
</tr>
<tr>
<td>CSMS-Sadness Coping(^1)</td>
<td>.01</td>
<td>-.02</td>
<td>-.04</td>
<td>-.20</td>
<td>-.14</td>
</tr>
<tr>
<td>CAMS-Anger Coping(^1)</td>
<td>.11</td>
<td>.21</td>
<td>.26</td>
<td>-.11</td>
<td>.24</td>
</tr>
</tbody>
</table>

\(^1\)N=21 \(^2\)N=14 \(*p<.05\) \(**p<.001\) \(†p \leq .10\)

Note. ERC= Emotion Regulation Checklist; CSMS= Children’s Sadness Management Scale; CAMS= Children’s Anger Management Scale
Table 13

Longitudinal Prediction of Emotion Inhibition and Expression Variables over Four Years from APS Scores using One-tailed Tests of Significance

<table>
<thead>
<tr>
<th>Variable</th>
<th>Organization</th>
<th>Imagination</th>
<th>Comfort</th>
<th>Positive Affect</th>
<th>Negative Affect</th>
<th>Composite Play Score&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSMS-Sadness Inhibition</td>
<td>-.19</td>
<td>-.13</td>
<td>-.44*</td>
<td>-.57**</td>
<td>.45*</td>
<td>-.34*</td>
</tr>
<tr>
<td>CAMS-Anger Inhibition</td>
<td>-.19</td>
<td>-.11</td>
<td>-.00</td>
<td>-.31†</td>
<td>.02</td>
<td>-.27</td>
</tr>
<tr>
<td>EESC-Poor Emotion Awareness</td>
<td>-.15</td>
<td>-.22</td>
<td>-.34†</td>
<td>-.31†</td>
<td>-.03</td>
<td>-.33†</td>
</tr>
<tr>
<td>EESC-Reluctance to Express Emotion</td>
<td>.11</td>
<td>.12</td>
<td>.03</td>
<td>-.17</td>
<td>.04</td>
<td>-.08</td>
</tr>
</tbody>
</table>

<sup>a</sup>Composite APS score is the sum of the Organization, Imagination, Comfort, and Total Affect scores

*<sup>n</sup>=21 *<sup>p</sup>< .05 **<sup>p</sup>< .001 †<sup>p</sup>< .10

Note. CSMS= Children’s Sadness Management Scale; CAMS= Children’s Anger Management Scale; Emotion Expression Scale for Children
Table 14

Longitudinal Prediction of Humor over Four Years from APS Scores using One-tailed Tests of Significance

<table>
<thead>
<tr>
<th>Variable</th>
<th>Organization</th>
<th>Imagination</th>
<th>Comfort</th>
<th>Positive Affect</th>
<th>Negative Affect</th>
<th>Composite Play score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humor Total</td>
<td>-.12</td>
<td>-.08</td>
<td>-.16</td>
<td>-.34†</td>
<td>.43*</td>
<td>-.18</td>
</tr>
<tr>
<td>Humor Creation</td>
<td>-.06</td>
<td>.06</td>
<td>-.03</td>
<td>-.21</td>
<td>.44*</td>
<td>-.04</td>
</tr>
<tr>
<td>Humor Coping</td>
<td>-.29</td>
<td>-.24</td>
<td>-.29†</td>
<td>-.45*</td>
<td>.36†</td>
<td>-.35†</td>
</tr>
<tr>
<td>Humor Appreciation</td>
<td>.09</td>
<td>-.01</td>
<td>-.08</td>
<td>-.16</td>
<td>.25</td>
<td>-.05</td>
</tr>
</tbody>
</table>

N=21 *p < .05 **p < .001 †p ≤ .10

Note: Humor Subscale Scores from the Multidimensional Sense of Humor Scale for Children
Table 15: Intercorrelations among Child Report Measures using Two-tailed Tests of Significance

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<th>10</th>
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<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
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</thead>
<tbody>
<tr>
<td>1. Humor Total</td>
<td>-----</td>
<td></td>
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<tr>
<td>2. Humor Coping</td>
<td>.89*</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3. Humor Creation</td>
<td>.85*</td>
<td>.61*</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>4. Humor Appreciation</td>
<td>.73*</td>
<td>.59*</td>
<td>.41*</td>
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<td></td>
<td></td>
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<tr>
<td>5. Active Coping</td>
<td>.73*</td>
<td>.71*</td>
<td>.53*</td>
<td>.58*</td>
<td></td>
<td></td>
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<td>6. Distraction Coping</td>
<td>.32*</td>
<td>.20</td>
<td>.25</td>
<td>.42*</td>
<td>.40*</td>
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<tr>
<td>7. Support Coping</td>
<td>.42*</td>
<td>.50*</td>
<td>.23</td>
<td>.31*</td>
<td>.48*</td>
<td>.41*</td>
<td></td>
<td></td>
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<tr>
<td>8. Avoidant Coping</td>
<td>.27</td>
<td>.40*</td>
<td>.09</td>
<td>.17</td>
<td>.48*</td>
<td>.33*</td>
<td>.44*</td>
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<td></td>
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<tr>
<td>9. Sadness-Inhibition</td>
<td>.06</td>
<td>.19</td>
<td>-.09</td>
<td>.05</td>
<td>.10</td>
<td>-.10</td>
<td>.04</td>
<td>.31*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>10. Sadness-Coping</td>
<td>.41*</td>
<td>.38*</td>
<td>.33*</td>
<td>.29</td>
<td>.56*</td>
<td>.35*</td>
<td>.17</td>
<td>.05</td>
<td>.04</td>
<td></td>
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<tr>
<td>11. Sadness-Dysregulation</td>
<td>-.22</td>
<td>-.15</td>
<td>-.26</td>
<td>-.11</td>
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<tr>
<td>12. Anger-Inhibition</td>
<td>.00</td>
<td>.08</td>
<td>-.11</td>
<td>.04</td>
<td>.05</td>
<td>-.27</td>
<td>-.07</td>
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<tr>
<td>13. Anger-Coping</td>
<td>.27</td>
<td>.34*</td>
<td>.09</td>
<td>.26</td>
<td>.28</td>
<td>-.09</td>
<td>.13</td>
<td>-.23</td>
<td>-.15</td>
<td>.51*</td>
<td>-.31*</td>
<td>.32*</td>
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<td></td>
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<tr>
<td>14. Anger-Dysregulation</td>
<td>.06</td>
<td>.05</td>
<td>.10</td>
<td>-.03</td>
<td>-.08</td>
<td>.11</td>
<td>.12</td>
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<td>.07</td>
<td>.17</td>
<td>-.14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Poor Emotion Awareness</td>
<td>-.05</td>
<td>.04</td>
<td>-.19</td>
<td>.08</td>
<td>.13</td>
<td>.04</td>
<td>.22</td>
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<td>.35*</td>
<td>-.24</td>
<td>.28</td>
<td>-.19</td>
<td>-.31*</td>
<td>.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Reluctance to Express Emotions</td>
<td>-.24</td>
<td>-.15</td>
<td>-.34*</td>
<td>-.03</td>
<td>-.03</td>
<td>-.24</td>
<td>-.22</td>
<td>.15</td>
<td>.49*</td>
<td>-.25</td>
<td>.10</td>
<td>.09</td>
<td>-.27</td>
<td>.06</td>
<td>.71**</td>
<td></td>
</tr>
</tbody>
</table>

N=43  *p<.05  **p<.001  Note. MSHSC= Multidimensional Sense of Humor Scale for Children; CCSC=Children’s Coping Strategies Checklist; CSMS=Children’s Sadness Management Scale; CAMS=Children’s Anger Management Scale; and EESC= Emotion Expression Scale for Children
Appendix A

[NEW PARTICIPANTS LETTER and INFORMED CONSENT]

Dear Parent,

Researchers at Case Western Reserve University are conducting a research study about how playfulness relates to important adaptive characteristics and behaviors. Your child was selected as a possible participant because they are a fourth, fifth, or sixth grade student at (insert name) Elementary School.

You are being asked if your child can participate in a research study about how playfulness relates to a child’s sense of humor, their coping style, ability to regulate their emotions, their willingness to express emotions, and their temperament (personality style). Playfulness is the ability to frame or re-frame a situation in such a way that it provides oneself with humor or entertainment. We know that playfulness relates to some adaptive personality characteristics and we want to investigate if playfulness relates actual adaptive behaviors.

Your child’s participation in this present study is an essential part of exploring the relationships between playfulness and adaptive characteristics and behaviors. If your child does participate we would like to offer a $5 gift card for your child’s participation.

If you agree to have your child participate in this study, please sign one copy of the consent form and have your child return the full letter with your signature to their teacher. Please keep the other copy of the consent letter for your records.

You and your child’s cooperation is greatly appreciated.

Sincerely,

Kelly Christian, MA
Clinical Psychology Graduate Student
216-368-8869 ext. 1

Sandra Russ, PhD
Professor of Psychology
216-368-2814
Consent Form

Playfulness, Adaptive Behaviors, and Early Play Abilities in Children

Background Information

The purpose of this research is to explore relationships between playfulness and adaptive behaviors. Second, this study will examine whether relationships between children’s early play abilities and their adaptive behaviors hold over a three-year period.

Procedure

If you give permission for your child to participate, they will meet for one session during a time of day that their teacher agrees the child can participate. When we ask your child to participate, the teacher is asked to determine if they feel it is appropriate for the child to miss that part of school for 30 minutes. If it is not a good time for your child to leave the classroom, we will ask the child to participate at another time that is appropriate.

Your child will also be asked for their permission to be in the study. Regardless of your signed consent form, your child may refuse to participate or may discontinue at any time. This will be explained to them. If your child grants permission, they will complete several measures in one 30-minute session.

Your child will be asked to complete self-report questionnaires that will evaluate their coping ability (what they do in response to different situations), sense of humor (their self-perceived ability to create humor, appreciate humor, and use humor to cope), their ability to regulate emotions, and willingness to express emotions.

We are also asking that you, the parent, to complete three measures about your child. The measures will ask you questions about your child’s playfulness, their ability to manage emotions and control behaviors, and your child’s general temperament (personality style).

Your child’s classroom teacher will also be asked to complete a questionnaire about your child’s playfulness, and their ability to manage emotions and control behaviors.

Information regarding individual scores will be kept confidential and will not be released or discussed with the child’s parents, school, or the actual child. Group results of the study will be made available to those that participated when they are available.

Risks and Benefits of Participating in the Study

For most children there are no risks to participating in the study other than missing about 30 minutes of class time. If your child wants to discontinue at any time, the session will end. Your child will then be taken back to their class.
There are no direct benefits to your child for participating in this study. Although, this study will help the field of child psychology in that results will help clarify whether relationships exist between a child’s ability to be playful and their sense of humor, coping style, willingness to express emotions, regulate emotions, and their temperament. Also, we are hoping to find if early play ability predicts important functions in children over a three year period. Findings from this study will help us better understand these concepts and how we could possibly improve them in children.

**Compensation**

If your child participates in the study we would like to offer a $5 gift card for their time.

**Confidentiality**

Code numbers will be given instead of names on all the notes and questions regarding your child’s session. All the records of this research will be kept private. Any published report of concerning this study will not include information to make it possible to identify a participant. Research records will be kept in a locked file and access will be limited to researchers and the university review board responsible for protecting human participants and regulatory agencies.

No information about individual children will be shared with the children, parents, teachers, or other school administrators. However, if a child tells us that he/she has been abused, we must report that to the school authorities. However, if there is reasonable suspicion that a child has been abused or neglected, we must report that to the school authorities and follow Ohio state law.

**Voluntary Nature of the Study**

Your participation is voluntary. If you choose not to allow your child to participate, it will not affect your current or future relations with the University or their school. There is no penalty or loss of benefits for not participating or for discontinuing your participation. Participation or refusal to participate will not affect student grades or class standing in any way. Your child may stop at any point he/she wants.

**Results**

A report explaining the group results, not your child’s results will be sent home with your child. Individual scores will not be released to the school or to parents.

**Contacts and Questions:**

The researchers conducting this study are Sandra Russ, PhD and Kelly Christian, MA. You may contact Dr. Russ at 216-368-2814 and Ms. Christian 216-368-8869 x1 if you have any questions. Kelly Christian is an advanced graduate student at Case Western
Reserve University’s Clinical Psychology Program and is working in collaboration with Dr. Russ on this study.

The researchers must report to the authorities if they suspect that a child has suffered or faces threat of physical or mental harm, injury, disability, or condition that reasonably indicates child abuse or neglect.

If you would like to talk with someone other than the researchers about 1) concerns about this study 2) research participants rights 3) research-related injuries 4) other human subject issues, please contact Case Western Reserve University Office of Research Administration at 216-368-6925 or write: Case Institutional Review Board, Office of Research Compliance, Sears Building 657, Cleveland, OH 44106.

**Statement of Consent**

I have read the above information. I have received answers to the questions I have asked. I consent to participate in this research. I am at least 18 years of age and am a parent or legal guardian of the child. I understand that I am consenting to allow my child to participate in this study.

Please write today’s date and your child’s date of birth. Please have your child return the consent form to their teacher or return the form directly to the school’s administrative assistant.

Print Name of Child: ___________________ Child’s date of birth: ________________

Signature of Parent or Guardian: _____________ Date: ______________

Signature of Person Obtaining Consent: _______________ Date: ______________ (Co-investigator)
Dear Parent,

You are being asked if your child can participate in a research study about how pretend play behaviors relate to adaptive characteristics. You were selected as a possible participant because your child participated in a study conducted at (St. Dominic’s/St Rocco’s) elementary school three years ago. In that study we looked at pretend play behaviors. Based on other research, we know that play behaviors are related to a child’s coping style and their ability to regulate emotions. We want to see if these relationships will hold up over a three year period.

Also, a key part of our study is how playfulness relates to adaptive behaviors, temperament (personality style), and play behaviors. Playfulness is the ability to frame or re-frame a situation in such a way that it provides oneself with humor or entertainment. We want to investigate if playfulness relates to adaptive characteristics and behaviors as well as play behaviors.

We thank you for your child’s participation in the original study and ask for their participation in this longitudinal study. Your child’s participation thus far has made a valuable contribution to our understanding of play. Your child’s participation in this present study is an essential part of exploring the relationships between play and these concepts over time. If your child does participate we would like to offer a $5 gift card for your child’s participation.

If you agree to have your child participate in this study, please read further and sign one copy of the consent form. Have your child return the full letter with your signature to their teacher. Please keep the other copy of the consent letter for your records.

You and your child’s cooperation is greatly appreciated.

Sincerely,

Kelly Christian, MA
Clinical Psychology Graduate Student
216-368-8869 ext. 1

Sandra Russ, PhD
Professor of Psychology
Background Information

The purpose of this research is to explore relationships between playfulness and adaptive behaviors. Second, this study will examine whether relationships between children’s early play abilities and their adaptive behaviors hold over a three-year period.

Procedure

If you give permission for your child to participate, they will meet for one session during a time of day that their teacher agrees the child can participate. When we ask your child to participate, the teacher is asked to determine if they feel it is appropriate for the child to miss that part of school for 30 minutes. If it is not a good time for your child to leave the classroom, we will ask the child to participate at another time that is appropriate.

Your child will also be asked for their permission to be in the study. Regardless of your signed consent form, your child may refuse to participate or may discontinue at any time. This will be explained to them. If your child grants permission, they will complete several measures in one 30-minute session.

Your child will be asked to complete self-report questionnaires that will evaluate their coping ability (what they do in response to different situations), sense of humor (their self-perceived ability to create humor, appreciate humor, and use humor to cope), their ability to regulate emotions, and willingness to express emotions.

We are also asking that you, the parent, to complete three measures about your child. The measures will ask you questions about your child’s playfulness, their ability to manage emotions and control behaviors, and your child’s general temperament (personality style).

Your child’s classroom teacher will also be asked to complete a questionnaire about your child’s playfulness, and their ability to manage emotions and control behaviors.

Information regarding individual scores will be kept confidential and will not be released or discussed with the child’s parents, school, or the actual child. Group results of the study will be made available to those that participated when they are available.

Risks and Benefits of Participating in the Study

For most children there are no risks to participating in the study other that missing about 30 minutes of class time. If your child wants to discontinue at any time, the session will end. Your child will then be taken back to their class.
There are no direct benefits to your child for participating in this study. Although, this study will help the field of child psychology in that results will help clarify whether relationships exist between a child’s ability to be playful and their sense of humor, coping style, willingness to express emotions, regulate emotions, and their temperament. Also, we are hoping to find if early play ability predicts important functions in children over a three year period. Findings from this study will help us better understand these concepts and how we could possibly improve them in children.

**Compensation**

If your child participates in the study we would like to offer a $5 gift card for their effort.

**Confidentiality**

Code numbers will be given instead of names on all the notes and questions regarding your child’s session. All the records of this research will be kept private. Any published report of concerning this study will not include information to make it possible to identify a participant. Research records will be kept in a locked file and access will be limited to researchers and the university review board responsible for protecting human participants and regulatory agencies.

No information about individual children will be shared with the children, parents, teachers, or other school administrators. However, if there is reasonable suspicion that a child has been abused or neglected, we must report that to the school authorities and follow Ohio state law.

**Voluntary Nature of the Study**

Your participation is voluntary. If you choose not to allow your child to participate, it will not affect your current or future relations with the University or their school. There is no penalty or loss of benefits for not participating or for discontinuing your participation. Participation or refusal to participate will not affect student grades or class standing in any way. Your child may stop at any point he/she wants.

**Results**

A report explaining the group results, not your child’s results will be sent home with your child. Individual scores will not be released to the school or to parents.

**Contacts and Questions:**

The researchers conducting this study are Sandra Russ, PhD and Kelly Christian, MA. You may contact Dr. Russ at 216-368-2814 and Ms. Christian 216-368-8869 x1 if you have any questions. Kelly Christian is an advanced graduate student at Case Western
Reserve University’s Clinical Psychology Program and is working in collaboration with Dr. Russ on this study.

The researchers must report to the authorities if they suspect that a child has suffered or faces threat of physical or mental harm, injury, disability, or condition that reasonably indicates child abuse or neglect.

If you would like to talk with someone other than the researchers about 1) concerns about this study 2) research participants rights 3) research-related injuries 4) other human subject issues, please contact Case Western Reserve University Office of Research Administration at 216-368-6925 or write: Case Institutional Review Board, Office of Research Compliance, Sears Building 657, Cleveland, OH 44106.

**Statement of Consent**

I have read the above information. I have received answers to the questions I have asked. I consent to participate in this research. I am at least 18 years of age and am a parent or legal guardian of the child. I understand that I am consenting to allow my child to participate in this study.

Please write today’s date and your child’s date of birth. Please write your child’s name and sign the appropriate consent paragraph. The first paragraph gives permission for your child to be in the study and lets us use play behavior data obtained three years ago for a different study. The second paragraph gives permission for your child to be in the current study but does not let us use their early play behavior data. Please have your child return the consent form to their teacher or directly return to the school’s administrative assistant.

Child’s date of birth: ______________________

☐ I give permission for my child (please print) ________________________________ to participate in the research study with Dr. Sandra Russ and Kelly Christian and use play behavior data obtained from their participation in study: #20071211 - Effects of Anxious Mood Induction on Play Processes for our current analyses.

Parent Signature_________________________________________ Date: ________________

Signature of Person Obtaining Consent: ___________________________ Date: ________________

(Co-investigator)

☐ I give permission for my child (please print) ________________________________ to participate in the research study
with Dr. Sandra Russ and Kelly Christian. **However I do NOT give permission**
for my child’s play behavior data obtained from their participation in study:
#20071211 - Effects of Anxious Mood Induction on Play Processes to be
included in our current analyses.

Parent Signature_____________________________________Date: ________________

Signature of Person Obtaining Consent: __________________Date: ________________
(Co-investigator)
Hi, my name is Kelly Christian. I am learning about how kids think. I would like to ask you some different questions. It is okay if you do not want to do these things. Even if you say “yes” to do these things, you can still stop what we’re doing at any time.

I will be taking some notes so I can remember what you say. What you say and do will not be told to your parents or teachers. But you can talk to anyone you want to about what we do. Your parent(s) know that I am asking you to do these things. If it is okay for you to do this with me please say “okay” and sign your name.

Participant’s signature: ___________________________ Date: ______________

Person Obtaining consent: ___________________________ Date: ______________
[TEACHER INFORMED CONSENT]

Playfulness, Adaptive Behaviors, and Early Play Abilities in Children

You are being asked to participate in a research study about how playfulness relates to a child’s sense of humor, their coping style, ability to regulate their emotions, their willingness to express emotions, and their temperament (personality style). Playfulness is the ability to frame or re-frame a situation in such a way that it provides oneself with humor or entertainment. We know that playfulness relates to some adaptive personality characteristics and we want to investigate if playfulness relates to actual adaptive behaviors.

You were selected as a possible participant because you are the teacher of a student enrolled in the study. Your participation in this present study is an essential part of exploring the relationships between playfulness and adaptive characteristics and behaviors. Please read this form and ask any questions that you may have before agreeing to be in the research.

Sandra Russ, PhD, a professor of psychology, and Kelly Christian, MA, a clinical psychology graduate student, are the researchers from Case Western Reserve University that are conducting this study. Kelly Christian will ask each child in the study questions regarding adaptive behaviors and collect questionnaire from participating parents and teachers.

Background Information

The purpose of this research is explore relationships between playfulness and adaptive behaviors. Second, this study will examine whether relationships between children’s early play abilities and their adaptive behaviors hold over a three-year period.

Procedure

If you agree to be a participant in this research, we will ask you to do the following things: You will be asked to fill out two questionnaires about the behavior of each child in your classroom who is participating in the study. One will ask about the child’s ability to be playful and the other will ask about the child’s ability to manage their emotions. There are about 50 questions together on these two measures and it is estimated to take about 10 minutes to complete the questionnaires for each child in your class participating. Therefore, the total participation time for teachers may vary depending on how many children in their class are participating in the study. For example, if six children in the classroom participate, the teacher would spend approximately 60 minutes in total. The measures to be completed will be provided by the researchers directly to you, once you, the parents, and the student have all consented/assented to the study. Please return the
questionnaires directly to the researcher. The researcher will pick them up from your
classroom at your convenience.

Information regarding individual scores will be kept confidential and will not be released
or discussed with the child’s parents, school, or the actual child.

**Risks and Benefits of Participating in the Study**

There are no known or expected risks for individuals participating in this project. If you
wish to stop, you may stop at any time. On the questionnaires, only a code number will
be included on the questionnaires so that your name and the child’s name will not be on
the questionnaire. Only the researchers will have access to the responses and the
responses will not be shared with the school.

There are no direct benefits to participating in this study. Although, this study will help
the field of child psychology in that results will help clarify whether relationships exist
between a child’s ability to be playful and their sense of humor, coping style, willingness
to express emotions, regulate emotions, and their temperament. Also, we are hoping to
find if early play ability predicts important functions in children over a three year period.
Findings from this study will help us better understand these concepts and how we could
possibly improve them in children.

**Compensation**

We would like to compensate teachers at a rate of $15/hour for their effort in the form of
a gift certificate.

**Confidentiality**

Code numbers will be given instead of names on all the notes and questions regarding
your child’s session. All the records of this research will be kept private. Any published
report of concerning this study will not include information to make it possible to identify
a participant. Research records will be kept in a locked file and access will be limited to
researchers and the university review board responsible for protecting human participants
and regulatory agencies.

No information about individual children will be shared with the children, parents,
teachers, or other school administrators. However, if a child tells us that he/she has been
abused, we must report that to the school authorities. However, if there is reasonable
suspicion that a child has been abused or neglected, we must report that to the school
authorities and follow Ohio state law.

**Voluntary Nature of the Study**
Your participation is voluntary. If you choose not to allow your child to participate, it will not affect your current or future relations with the University or your school. There is no penalty or loss of benefits for not participating or for discontinuing your participation.

**Results**

A report explaining the group results will be sent to you and to each child’s parents informing you of the group results, not each individual child’s results. We will not be releasing individual scores to the school or to parents for individual children, only the overall group findings.

**Contacts and Questions:**

The researchers conducting this study are Sandra Russ, PhD and Kelly Christian, MA. You may contact Dr. Russ at 216-368-2814 and Ms. Christian 216-368-8869 x1 if you have any questions. Kelly Christian is an advanced graduate student at Case Western Reserve University’s Clinical Psychology Program and is working in collaboration with Dr. Russ on this study.

The researchers must report to the authorities if they suspect that a child has suffered or faces threat of physical or mental harm, injury, disability, or condition that reasonably indicates child abuse or neglect.

If you would like to talk with someone other than the researchers about 1) concerns about this study 2) research participants rights 3) research-related injuries 4) other human subject issues, please contact Case Western Reserve University Office of Research Administration at 216-368-6925 or write: Case Institutional Review Board, Office of Research Compliance, Sears Building 657, Cleveland, OH 44106.

You are receiving two copies of this form. **Please return one and keep the other copy for your records.**

**Statement of Consent**

I have read the above information. I have received answers to the questions I have asked. I consent to participate in this research. I am at least 18 years old.

Print Name of Participant: ________________________________

Signature of Participant: ________________________________ Date: ______

Signature of Person Obtaining Consent: ___________________________ Date: ______
Appendix B

Child Behaviors Inventory of Playfulness

**SUBSCALE 1: Playfulness**
1. Always has ideas of things to do
4. Explores different ways
6. Invents new games
9. Uses things in own way
11. Enjoys learning new skills
12. Works well on his/her own
13. Enjoys doing things with no purpose
14. Has fun doing things and doesn't worry how well they turn out
15. Gets involved in activity and is hard to get to quit
16. Starts activities for own enjoyment
17. Pretends a lot
19. Plays eagerly
20. Plays intently
21. Invents variations on stories
22. Displays exuberance much of the time
23. Rearranges situations to come up with novel ones
24. Creates own way to do things
25. Has a sense of humor
26. Is imaginative
27. Uses toys/objects in unusual ways
28. Finds unusual things to do with common objects
29. Identifies with many characters
30. Gets involved and forgets what is going on

**SUBSCALE 2: Externality**
2. Uses props in typical ways
3. Once goal is reached, stops
5. Needs reinforcement to continue activities
7. Asks many questions about what to do
8. Seeks approval frequently
10. Looks to others to tell him/her what to do
18. Uses toys/objects in way they were designed to be used

**Scoring**

**Scale 1: Playfulness**
Sum Items : 1, 4, 6, 9, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 26, 27, 28, 29, 30
Range of Scores = 21 to 126.
Higher Playfulness scores indicate a playful personality disposition. Research indicates that many highly creative scientists, inventors, composers and artists were playful people. They had the capacity to be serious when the situation demanded it, but they were also very flexible. They "played" with ideas in their head. Einstein is said to have finally conceptualized his theory of relativity by imagining himself riding a light beam. "All work and no play, makes us all dull."

**Scale 2: Externality**
Sum Items: 2, 3, 5, 7, 8, 10, 18
Range of Scores = 7 to 42.

Higher Externality scores indicate a tendency to be concerned with doing things "right" or "the way they're supposed to be" and to the tendency to want please others. Our world needs people who are concerned about these things. However, if one is overly concerned to the point of not being able to relax the rules and have fun occasionally, it dampens the quality of life. We must make commonsense choices about when to relax the rules. Rules that are best relaxed are those that prescribe social customs rather than rules of morality.
Early Adolescent Temperament Questionnaire - Revised

Parent Report

Directions

On the following pages you will find a series of statements that people might use to describe their child. The statements refer to a wide number of activities and attitudes.

For each statement, please circle the answer which best describes how true each statement is for your child. There are no best answers. People are very different in how they feel about these statements. Please circle the first answer that comes to you.

You will use the following scale to describe how true or false a statement is about your child:

<table>
<thead>
<tr>
<th>Circle number:</th>
<th>If the statement is:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Almost always untrue of your child</td>
</tr>
<tr>
<td>2</td>
<td>Usually untrue of your child</td>
</tr>
<tr>
<td>3</td>
<td>Sometimes true, sometimes untrue of your child</td>
</tr>
<tr>
<td>4</td>
<td>Usually true of your child</td>
</tr>
<tr>
<td>5</td>
<td>Almost always true of your child</td>
</tr>
<tr>
<td>Your son or daughter:</td>
<td>Almost always untrue</td>
</tr>
<tr>
<td>----------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>1) Worries about getting into trouble.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>2) When angry at someone, says thing s/he knows will hurt that person's feelings.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>3) Has a hard time finishing things on time.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>4) Thinks traveling to Africa or India would be exciting and fun.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>5) If having a problem with someone, usually tries to deal with it right away.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>6) Has a hard time waiting his/her turn to speak when excited.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>7) Often does not seem to enjoy things as much as his/her friends.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>8) Opens presents before s/he is supposed to.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>9) Would be frightened by the thought of skiing fast down a steep slope.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>10) Feels like crying over very little on some days.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>11) If very angry, might hit someone.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>12) Likes taking care of other people.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>13) Likes to be able to share his/her private thoughts with someone else.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>14) Usually does something fun for awhile before starting her/his homework, even though s/he is not supposed to.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td></td>
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<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>15) Finds it easy to really concentrate on a problem.</td>
<td>1</td>
</tr>
<tr>
<td>16) Thinks it would be exciting to move to a new city.</td>
<td>1</td>
</tr>
<tr>
<td>17) When asked to do something, does it right away, even if s/he doesn't want to.</td>
<td>1</td>
</tr>
<tr>
<td>18) Would like to be able to spend time with a good friend every day.</td>
<td>1</td>
</tr>
<tr>
<td>19) Tends to be rude to people s/he doesn't like.</td>
<td>1</td>
</tr>
<tr>
<td>20) Is annoyed by little things other kids do.</td>
<td>1</td>
</tr>
<tr>
<td>21) Gets very irritated when someone criticizes her/him.</td>
<td>1</td>
</tr>
<tr>
<td>22) When interrupted or distracted, forgets what s/he was about to say.</td>
<td>1</td>
</tr>
<tr>
<td>23) Is more likely to do something s/he shouldn't do the more s/he tries to stop her/himself.</td>
<td>1</td>
</tr>
<tr>
<td>24) Enjoys exchanging hugs with people s/he likes.</td>
<td>1</td>
</tr>
<tr>
<td>25) Tends to try to blame mistakes on someone else.</td>
<td>1</td>
</tr>
<tr>
<td>26) Is sad more often than other people realize.</td>
<td>1</td>
</tr>
<tr>
<td>27) Can generally think of something to say, even with strangers.</td>
<td>1</td>
</tr>
<tr>
<td>28) Wouldn't be afraid to try a risky sport like deep sea diving.</td>
<td>1</td>
</tr>
<tr>
<td>29) Expresses a desire to travel to exotic places when s/he hears about them.</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>30) Worries about our family when s/he is not with us.</td>
<td>1</td>
</tr>
<tr>
<td>31) Gets irritated when I will not take her/him someplace s/he wants to go.</td>
<td>1</td>
</tr>
<tr>
<td>32) Slams doors when angry.</td>
<td>1</td>
</tr>
<tr>
<td>33) Is hardly ever sad, even when lots of things are going wrong.</td>
<td>1</td>
</tr>
<tr>
<td>34) Would like driving a racing car.</td>
<td>1</td>
</tr>
<tr>
<td>35) Has a difficult time tuning out background noise and concentrating when trying to study.</td>
<td>1</td>
</tr>
<tr>
<td>36) Usually finishes her/his homework before it’s due.</td>
<td>1</td>
</tr>
<tr>
<td>37) Likes it when something exciting and different happens at school.</td>
<td>1</td>
</tr>
<tr>
<td>38) Usually gets started right away on difficult assignments.</td>
<td>1</td>
</tr>
<tr>
<td>39) Is good at keeping track of several different things that are happening around her/him.</td>
<td>1</td>
</tr>
<tr>
<td>40) Is energized by being in large crowds of people.</td>
<td>1</td>
</tr>
<tr>
<td>41) Makes fun of how other people look.</td>
<td>1</td>
</tr>
<tr>
<td>42) Doesn't criticize others.</td>
<td>1</td>
</tr>
<tr>
<td>43) Wants to have close relationships with other people.</td>
<td>1</td>
</tr>
<tr>
<td>44) Is shy.</td>
<td>1</td>
</tr>
<tr>
<td>45) Gets irritated when s/he has to stop doing something s/he is enjoying.</td>
<td>1</td>
</tr>
<tr>
<td>46) Usually puts off working on a project until it is due.</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>47</td>
<td>Is able to stop him/herself from laughing at inappropriate times.</td>
</tr>
<tr>
<td>48</td>
<td>Is afraid of the idea of me dying or leaving her/him.</td>
</tr>
<tr>
<td>49</td>
<td>Is often in the middle of doing one thing and then goes off to do something else without finishing it.</td>
</tr>
<tr>
<td>50</td>
<td>Is not shy.</td>
</tr>
<tr>
<td>51</td>
<td>Is quite a warm and friendly person.</td>
</tr>
<tr>
<td>52</td>
<td>Sometimes seems sad even when s/he should be enjoying her/himself like at Christmas, or on a trip.</td>
</tr>
<tr>
<td>53</td>
<td>Doesn't enjoy playing softball or baseball because s/he is afraid of the ball.</td>
</tr>
<tr>
<td>54</td>
<td>Likes meeting new people.</td>
</tr>
<tr>
<td>55</td>
<td>Feels scared when entering a darkened room at night.</td>
</tr>
<tr>
<td>56</td>
<td>Wouldn't want to go on the frightening rides at the fair.</td>
</tr>
<tr>
<td>57</td>
<td>Hates it when people don't agree with him/her.</td>
</tr>
<tr>
<td>58</td>
<td>Gets very frustrated when s/he makes a mistake in her/his school work.</td>
</tr>
<tr>
<td>59</td>
<td>Is usually able to stick with his/her plans and goals.</td>
</tr>
<tr>
<td>60</td>
<td>Pays close attention when someone tells her/him how to do something.</td>
</tr>
<tr>
<td>61</td>
<td>Is nervous being home alone.</td>
</tr>
<tr>
<td>62</td>
<td>Feels shy about meeting new people.</td>
</tr>
</tbody>
</table>
Early Adolescent Temperament Questionnaire-Revised

Scale Definitions –Parent Report Form

Temperament Scales

Activation Control: The capacity to perform an action when there is a strong tendency to avoid it.

Affiliation: The desire for warmth and closeness with others, independent of shyness or extraversion.

Attention: The capacity to focus attention as well as to shift attention when desired.

Fear: Unpleasant affect related to anticipation of distress.

Frustration: Negative affect related to interruption of ongoing tasks or goal blocking.

Surgency/High Intensity Pleasure: The pleasure derived from activities involving high intensity or novelty.

Inhibitory Control: The capacity to plan, and to suppress inappropriate responses.

Shyness: Behavioral inhibition to novelty and challenge, especially social.

Behavioral Scales

Aggression: Hostile and aggressive actions, including person- and object-directed physical violence, direct and indirect verbal aggression, and hostile reactivity.

Depressive Mood: Unpleasant affect and lowered mood, loss of enjoyment and interest in activities.

EATQ-R Scoring

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activation Control</td>
<td>3R, 5, 14R, 17, 36, 38, 46R</td>
</tr>
<tr>
<td>Affiliation</td>
<td>12, 13, 18, 24, 43, 51</td>
</tr>
<tr>
<td>Surgency</td>
<td>4, 9R, 16, 28, 29, 34, 37, 40, 56R</td>
</tr>
<tr>
<td>Shyness</td>
<td>27R, 44, 50R, 54R, 62</td>
</tr>
<tr>
<td>Fear</td>
<td>1, 30, 48, 53, 55, 61</td>
</tr>
<tr>
<td>Depressive Mood</td>
<td>7, 10, 26, 33, 52</td>
</tr>
</tbody>
</table>
**Emotion Regulation Checklist**

Please indicate how often the following statements describe your child’s behavior.

<table>
<thead>
<tr>
<th>My child...:</th>
<th>Never</th>
<th>Sometimes</th>
<th>Often</th>
<th>Almost Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Is a cheerful child.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. Exhibits wide mood swings (child’s emotional state is difficult to anticipate because s/he moves quickly from positive to negative moods).</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. Responds positively to neutral or friendly overtures by adults.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. Transitions well from one activity to another; does not become anxious, angry, distressed or overly excited when moving from one activity to another.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. Can recover quickly from episodes of upset or distress (for example, does not pout or remain sullen, anxious, or sad after emotionally distressing events).</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. Is easily frustrated.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7. Responds positively to neutral or friendly overtures by peers.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. Is prone to angry outbursts / tantrums easily.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9. Is able to delay gratification.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10. Takes pleasure in the distress of others (e.g. laughs when another person gets hurt or punished; enjoys teasing others).</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11. Can modulate excitement in emotionally arousing situations (e.g. does not get ‘carried away’ in high-energy play situations, or overly excited in inappropriate contexts).</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12. Is whiny or clingy with adults.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13. Is prone to disruptive outbursts of energy and exuberance.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14. Responds angrily to limit-setting by adults.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
Emotion Regulation Checklist Scoring

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotion Regulation</td>
<td>1, 7, 15, 16R, 18R, 21, 23</td>
</tr>
</tbody>
</table>
Multidimensional Sense of Humor Scale for Children (MSHSC)

Directions: Below are statements that describe feelings of school age children. I will be reading the questions out loud. You can follow along and afterwards tell me or point to the word that best describes how you feel. Remember there are no right or wrong answers.

1. I make up jokes or funny stories.

   Never       Almost Never       Sometimes       Almost Always       Always
   [ ]          [ ]                [ ]              [ ]                [ ]

2. I like a good joke.

   Never       Almost Never       Sometimes       Almost Always       Always
   [ ]          [ ]                [ ]              [ ]                [ ]

3. Jokes and funny stories help me get through tough times.

   Never       Almost Never       Sometimes       Almost Always       Always
   [ ]          [ ]                [ ]              [ ]                [ ]

4. I can make other people laugh.

   Never       Almost Never       Sometimes       Almost Always       Always
   [ ]          [ ]                [ ]              [ ]                [ ]

5. I like people who tell jokes.

   Never       Almost Never       Sometimes       Almost Always       Always
   [ ]          [ ]                [ ]              [ ]                [ ]

6. People tell me that I say funny things.

   Never       Almost Never       Sometimes       Almost Always       Always
   [ ]          [ ]                [ ]              [ ]                [ ]

7. I use jokes and funny stories to make my friends laugh.

   Never       Almost Never       Sometimes       Almost Always       Always
   [ ]          [ ]                [ ]              [ ]                [ ]
8. I like being around people who tell jokes and funny stories.
   Never  Almost Never  Sometimes  Almost Always  Always
   [ ]   [ ]   [ ]   [ ]   [ ]

9. I can make problems better by saying something funny.
   Never  Almost Never  Sometimes  Almost Always  Always
   [ ]   [ ]   [ ]   [ ]   [ ]

10. It bothers me when people tell jokes.
    Never  Almost Never  Sometimes  Almost Always  Always
    [ ]   [ ]   [ ]   [ ]   [ ]

11. I like to hear a funny story.
    Never  Almost Never  Sometimes  Almost Always  Always
    [ ]   [ ]   [ ]   [ ]   [ ]

12. I can make people laugh with the things I say.
    Never  Almost Never  Sometimes  Almost Always  Always
    [ ]   [ ]   [ ]   [ ]   [ ]

13. I like it when people share a joke or funny story with me.
    Never  Almost Never  Sometimes  Almost Always  Always
    [ ]   [ ]   [ ]   [ ]   [ ]

14. Jokes and funny stories are a good way to face tough times.
    Never  Almost Never  Sometimes  Almost Always  Always
    [ ]   [ ]   [ ]   [ ]   [ ]

15. I like people who make me laugh.
    Never  Almost Never  Sometimes  Almost Always  Always
    [ ]   [ ]   [ ]   [ ]   [ ]

16. My jokes and funny stories make others laugh.
    Never  Almost Never  Sometimes  Almost Always  Always
    [ ]   [ ]   [ ]   [ ]   [ ]
17. Jokes and funny stories help to relax me.

Never  Almost Never  Sometimes  Almost Always  Always

18. Using jokes and funny stories to get through tough times is a good way to go through life.

Never  Almost Never  Sometimes  Almost Always  Always

19. On a scale of 1 to 5, how would you describe your sense of humor?

Low Humor  1  2  3  4  5 High Humor

MSHSC Scoring

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humor Total Score</td>
<td>Sum of all items</td>
</tr>
<tr>
<td>Humor Cope</td>
<td>2,3,5,8,11,13,14,15</td>
</tr>
<tr>
<td>Humor Creation</td>
<td>1,4,6,7,12,16</td>
</tr>
<tr>
<td>Humor Appreciation</td>
<td>9,17,18</td>
</tr>
</tbody>
</table>
Children’s Coping Strategies Checklist (CCSC)

Instructions: When faced with a problem, kids do different things in order to solve the problem or to make themselves feel better. Below is a list of things kids may do when faced with a problem. For each item, select the response that best describes how often you do the behavior when you have a problem. There are no right or wrong answers, just say how often you do each thing in order to solve the problem or to make yourself feel better.

RESPONSES:

1: Never
2: Sometimes
3: Often
4: Most of the time

When I have a problem I…

_____1. Think about what I could do before I do something
_____2. Try to notice or thing about only the good things in life
_____3. Talk about how I am feeling with my mother or father
_____4. Go bicycle riding
_____5. Try to stay away from the problem

When I have a problem I…

_____6. Blame or say bad things about other people
_____7. Do something to make things better
_____8. Think about why it has happened
_____9. Write down my feelings
_____10. Tell myself to accept this situation the way it is

When I have a problem I…

_____11. Listen to music
_____12. Try to put it out of my mind
_____13. Figure out what I can do by talking with one of my friends
_____14. Think about what would happen before I decide what to do
_____15. Tell myself it will be over in a short time

When I have a problem I…
16. Talk about how I am feeling with some adult who is not in my family
17. Play sports
18. Try to stay away from things that make me feel upset
19. Do something bad or cause trouble
20. Try to make things better by changing what I do

When I have a problem I…

21. Ask god to help me understand it
22. Cry by myself
23. Go for a walk
24. Imagine how I would like things to be
25. Talk to my brother or sister about how to make things better

When I have a problem I…

26. Think about which things are best to do to handle the problem
27. Remind myself that things could be worse
28. Talk with my brother or sister about my feelings
29. Go skateboard riding or roller skating
30. Avoid the people that make me feel bad

When I have a problem I…

31. Get angry and threaten the people who caused the problem
32. Talk to someone who might understand how I feel
33. Do something to solve the problem
34. Try to understand it better by thinking more about it
35. Let out feelings to my pet or stuffed animal

When I have a problem I…

36. Read a book or magazine
37. Wait and hope that things will get better
38. Try to solve the problem by talking with my mother or father
39. Think about what I need to know so I can solve the problem
40. Tell myself it’s not worth getting upset about

When I have a problem I…

41. Talk with one of my friends about my feelings
42. Do some exercise
43. Avoid it by going to my room
44. Do something like video games or a hobby
45. Talk to someone who could help me make the situation better

When I have a problem I…

46. Do something in order to get the most I can out of the situation
47. Think about what I can learn from the problem
48. Let off steam by hitting my pillow or bed
49. Watch tv
50. Wish that things were better

When I have a problem I…
51. Try to figure out what I can do by talking to an adult who is not in my family
52. Try to figure out why things like this happen

Subscale Descriptions and Example Items

ACTIVE COPING STRATEGIES

Problem Focused Coping
Cognitive Decision Making: Planning or thinking about ways to solve the problem (e.g. Think about which things are best to do to handle the problem).

Direct Problem Solving: Efforts to improve the problem situation (e.g. do something to make things better).

Seeking Understanding: Efforts to find meaning in a problem situation to try to understand it better (e.g. Try to understand it better by thinking more about it).

Positive Reframing Coping
Positive thinking: Thinking about the good things that happened (e.g. Try to notice or think about only the good things in your life)

Optimistic thinking: Thinking about things in the future with a optimistic manner (e.g. Tell yourself tat things will get better).

Control: Thinking that you can handle or deal with whatever happens (e.g. Tell yourself that you can handle this problem.

DISTRACTION

Physical Release of emotions: Efforts to physically work off feelings with physical exercise, play, or efforts to physically relax (e.g. You played sports).

Distracting Actions: Efforts to avoid thinking about the problem situation by using distracting stimuli, entertainment or some distracting activity (e.g. You did something like video games or a hobby).
AVOIDANCE

Avoidant Actions: Efforts of avoiding the problem by staying away from it or leaving it (e.g., Stay away from things that make you feel upset)

Repression: Repressing thinking of problems (e.g., Try to put it out of your mind)

Wishful Thinking: Using wishful thinking or imaging the problem was better (e.g., Wish that things were better)

SUPPORT-SEEKING STRATEGIES

Support for Actions: The use of other people as resources to assist in seeking solutions to the problem situation. This includes seeking advice or information or direct task assistance (e.g., You talked to someone who could help you figure out what to do.)

Support for Feelings: The involvement of other people in listening to feelings or providing understanding to help the person be less upset (e.g., You talked about your feelings to someone who really understood.)

Children’s Coping Strategies Checklist Scoring

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active</td>
<td></td>
</tr>
<tr>
<td>Problem focused coping</td>
<td>1,6,11,16,23,28,34,39,44,49,55,59</td>
</tr>
<tr>
<td>Positive Reframing coping</td>
<td>2,8,12,17,24,29,35,40,45,50,56,60</td>
</tr>
<tr>
<td>Distraction</td>
<td>3,13,19,25,30,36,41,46,52,63</td>
</tr>
<tr>
<td>Avoidance</td>
<td>4,9,14,21,26,31,37,42,47,53,57,62</td>
</tr>
<tr>
<td>Support Seeking</td>
<td>5,10,15,20,22,27,32,38,43,48,54,58,61,64</td>
</tr>
</tbody>
</table>
Children’s Emotion Management Scale: **Sadness**

**Instructions:** Please circle the response that best describes your behavior when you are feeling sad.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Hardly Ever</th>
<th>Sometimes</th>
<th>Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>When I’m feeling sad, I can control my crying and</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>I hold my sad feelings in.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3.</td>
<td>I stay calm and don’t let sad things get to me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4.</td>
<td>I whine/fuss about what’s making me sad.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5.</td>
<td>I hide my sadness.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6.</td>
<td>When I’m sad, I do something totally different until I</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7.</td>
<td>I get sad inside but don’t show it.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8.</td>
<td>I can stop myself from losing control of my sad feelings.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9.</td>
<td>I cry and carry on when I’m sad.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10.</td>
<td>I try to calmly deal with what is making me sad.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>11.</td>
<td>I do things like mope around when I’m sad.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>12.</td>
<td>I’m afraid to show my sadness.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
Children’s Emotion Management Scale: **Anger**

**Instructions:** Please circle the response that best describes your behavior when you are feeling _angry_.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hardly-Ever</strong></td>
<td><strong>Sometimes</strong></td>
<td><strong>Often</strong></td>
</tr>
<tr>
<td>1.</td>
<td>When I am feeling mad, I control my temper.</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>I hold my anger in.</td>
<td>1</td>
</tr>
<tr>
<td>3.</td>
<td>I stay calm and keep my cool when I am feeling mad</td>
<td>1</td>
</tr>
<tr>
<td>4.</td>
<td>I do things like slam doors when I am mad.</td>
<td>1</td>
</tr>
<tr>
<td>5.</td>
<td>I hide my anger.</td>
<td>1</td>
</tr>
<tr>
<td>6.</td>
<td>I attack whatever it is that makes me mad</td>
<td>1</td>
</tr>
<tr>
<td>7.</td>
<td>I get mad inside but I don’t show it.</td>
<td>1</td>
</tr>
<tr>
<td>8.</td>
<td>I can stop myself from losing my temper.</td>
<td>1</td>
</tr>
<tr>
<td>9.</td>
<td>I say mean things to others when I am mad.</td>
<td>1</td>
</tr>
<tr>
<td>10.</td>
<td>I try to calmly deal with what is making me feel mad.</td>
<td>1</td>
</tr>
<tr>
<td>11.</td>
<td>I’m afraid to show my anger.</td>
<td>1</td>
</tr>
</tbody>
</table>
Children’s Emotion Management Scales

Scoring for Anger and Sadness

The numbers below show which items on the CEMS scales correspond to each subscale. To score, add the responses {i.e., 1 (hardly ever), 2 (sometimes), or 3 (often)} for each item included in the subscale to compute a summary subscale score.

<table>
<thead>
<tr>
<th>Emotion</th>
<th>Subscale</th>
<th>Items on CEMS associated with each subscale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anger</td>
<td>Inhibition</td>
<td>2, 5, 7, 11</td>
</tr>
<tr>
<td></td>
<td>Dysregulation</td>
<td>4, 6, 9</td>
</tr>
<tr>
<td></td>
<td>Coping</td>
<td>1, 3, 8, 10</td>
</tr>
<tr>
<td>Sadness</td>
<td>Inhibition</td>
<td>2, 5, 7, 12</td>
</tr>
<tr>
<td></td>
<td>Dysregulation</td>
<td>4, 9, 11</td>
</tr>
<tr>
<td></td>
<td>Coping</td>
<td>1, 3, 6, 8, 10</td>
</tr>
</tbody>
</table>
Emotion Expression Scale for Children

Instructions: Please circle a number form 1 – 5 that describes how often you do or think the action or thought described in the statement.

1. I prefer to keep my feelings to myself.

   1 Not at all  2 A little true  3 Somewhat true  4 Very true  5 Extremely true

2. I do not like to talk about how I feel.

   1 Not at all  2 A little true  3 Somewhat true  4 Very true  5 Extremely true

3. When something bad happens, I feel like exploding.

   1 Not at all  2 A little true  3 Somewhat true  4 Very true  5 Extremely true

4. I do not show how I really feel in order not to hurt others’ feelings.

   1 Not at all  2 A little true  3 Somewhat true  4 Very true  5 Extremely true

5. I have feelings that I can’t figure out.

   1 Not at all  2 A little true  3 Somewhat true  4 Very true  5 Extremely true

6. I usually do not talk to people until they talk to me first.

   1 Not at all  2 A little true  3 Somewhat true  4 Very true  5 Extremely true

7. When I get upset, I am afraid to show it.

   1 Not at all  2 A little true  3 Somewhat true  4 Very true  5 Extremely true
8. When I feel upset, I do not know how to talk about it.

   1  2  3  4  5
   Not at all  A little true  Somewhat true  Very true  Extremely true

9. I often do not know how I am feeling.

   1  2  3  4  5
   Not at all  A little true  Somewhat true  Very true  Extremely true

10. People tell me I should talk about my feelings more often.

     1  2  3  4  5
     Not at all  A little true  Somewhat true  Very true  Extremely true

11. Sometimes I just don’t have words to describe how I feel.

     1  2  3  4  5
     Not at all  A little true  Somewhat true  Very true  Extremely true

12. When I’m sad, I try not to show it.

     1  2  3  4  5
     Not at all  A little true  Somewhat true  Very true  Extremely true

13. Other people don’t like it when you show how you really feel.

     1  2  3  4  5
     Not at all  A little true  Somewhat true  Very true  Extremely true

14. I know I should show my feelings, but it is too hard.

     1  2  3  4  5
     Not at all  A little true  Somewhat true  Very true  Extremely true
15. I often do not know why I am angry.

1
Not at all

2
A little true

3
Somewhat true

4
Very true

5
Extremely true

16. It is hard for me to show how I feel about somebody.

1
Not at all

2
A little true

3
Somewhat true

4
Very true

5
Extremely true

EESC Scoring

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor Awareness</td>
<td>3, 5, 8, 9, 10, 11, 14, 15</td>
</tr>
<tr>
<td>Expressive Reluctance</td>
<td>1, 2, 4, 6, 7, 12, 13, 16</td>
</tr>
</tbody>
</table>

Higher scores indicate poorer emotion awareness and greater reluctance to express emotion.
Affect in Play Scale - Scoring Manual

The Affect in Play Scale consists of a standardized play task and a criterion-based rating scale. The APS-BR is appropriate for children 6-10 years of age, which includes children in grades one through three.

The APS measures the amount and quality of organization, imagination, and comfort in the child’s play. The APS also measures the frequency of positive and negative affective units as well as the variety of affect expressed in play. Play sessions are five minute standardized puppet play periods. The rating is done by the observer during the five minute task. Timing should be discreet, and a stopwatch should not be used.

The APS Play Task

The play task consists of two human puppets, one boy and one girl, and three small blocks that are laid out on a table. The puppets have neutral facial expressions. Both Caucasian and African-American puppets are used, depending upon the child population. The blocks are brightly colored and of different shapes. The play props and instruction are unstructured enough so that individual differences in play can emerge. The task is administered individually to the child. The instructions for the task are:

“I’m here to learn about how children play. I have here two puppets and would like you to play with them any way you like for five minutes. For example, you can have the puppets do something together. I also have some blocks that you can use. Be sure to have the puppets talk out loud. The video camera will be on so that I can remember what you say and do. I’ll tell you when to stop. Go ahead, put the puppets on, and start.”

The child is told when there is one minute left with the instruction, “You have one minute left.”

Prompts and Special Circumstances

If the child does not know to put on the puppets, tell the child to put them on. Let the child know when she can start and start timing from that point.

If the child does not start to play, prompt the child after 30 seconds by saying, “Go ahead, have the puppets do something together.” Two prompts of this sort can be given. After two minutes of no play, the task should be discontinued.

If the child plays but does not have the puppets talk, prompt with “Have the puppets talk out loud so I can hear” after 30 seconds. Two prompts can be give, spaced about one minute apart.
If a child has been playing, but then stops before time is up, prompt with “You still have time left, keep on playing.” Prompt a second time if needed with “Keep on playing, I’ll tell you when to stop.” Most children who already played will be able to continue with prompts. If they cannot, then discontinue after two minutes of no play.

Be sure not to give any verbal reinforcement during the child’s play. It is important however to be attentive and watch the child and be interested. After the child has finished, say “That was good” or “That was fine.”

If you cannot hear something the child said, it is appropriate to ask the child to repeat it and speak louder. It is fine to do this occasionally, but do not repeatedly ask the child to repeat or speak louder.

Be sure to stop after five minutes. A wristwatch with a second hand is adequate. Time in an unobtrusive manner.

**The APS Rating Scale**

The APS measures the amount and types of affect expression children’s fantasy play. The APS measures affect themes in the play narrative. Both emotion laden content and expression of emotion in the play are coded. The APS also measures cognitive dimensions of the play, including the quality of fantasy and organization in the play narrative. Comfort playing is also scored. Make sure to confine the scoring to the pretend play between the puppets. Verbalizations by the child not relating to the play are not scored. You may find it helpful to keep a written dialogue of the child’s play. You also want to keep track of the general plot of the play, including transformations, new characters, and events.

There are two major affect scores for the APS, the frequency of affect and variety of affect.

**FREQUENCY OF AFFECT EXPRESSION:**

Measures the frequency of affective expression by scorable units. A unit of affect expression is defined as one scorable expression by an individual puppet. In a two-puppet dialogue, expressions of each puppet are scored separately. A unit can be an expression of an affect state (e.g. “This is fun.”), an affect theme (e.g. “Here is a bomb that is going to explode.”), or a combination of the two. The expression can be verbal (e.g. “I hate you.”) or non-verbal (e.g. one puppet punching the other). If non-verbal activity, such as fighting, occurs in a continuous fashion, a new unit is scored about every five seconds (timing should be discreet - no stopwatch is necessary). The frequency of affect score is the total number of units expressed in the five minute period.

**VARIETY OF AFFECT CATEGORIES**
There are 11 possible affect categories. These include: happiness/pleasure, anxiety/fear, sadness/hurt, frustration/disappointment, nurturance/affection, aggression, competition, oral, oral aggression, sexual, and anal. The variety of affect score is the number of different categories of affect expressed in the 5-minute period. Affect categories are classified as positive affect (i.e. happiness/pleasure, nurturance/affection, competition, oral, sexual) and negative affect (i.e. anxiety/fear, sadness/hurt, frustration/disappointment, aggression, oral aggression, anal).

**AFFECT CATEGORIES:**

Aggression: Expression of anger; fighting, destruction, or harm to another character or object; or reference to destructive objects (guns, knives) or actions (breaking).

Nurturance/Affection: Expressions of empathy or sympathy with another character; affection; helping and support.

Happiness/Pleasure: Expression of positive affect that denotes pleasure, happiness, having a good time, enjoyment, and contentedness.

Anxiety/Fear: Expressions of fear and anxiety. Content such as school anxiety, doctors visits, fears, concern about punishment, and worry. Actions of fleeing and hiding, agitation.

Sadness/Hurt: Expression of illness, physical injury, pain, sadness, loneliness.

Frustration/Disappointment/Dislike: Expressions of disappointment and frustration with activities, objects, and limitations.

Competition: Expressions of wanting to win, competitive game-playing, pride in achievement, and striving for achievement.

Oral: Expressions of oral content of food, cooking, eating and drinking. Affect expressions are positive about oral content.

Oral Aggression: Expressions of oral aggressive themes such as biting or food that has negative affect associated with it.

Sexual: Expressions of sexual content.

Anal: Expression of anal content including dirt and making a mess.

**ORGANIZATION:**

*Measuring the quality of the plot and story complexity. The rating categories are not “all-or-none” categories. For example, a child does not have to have all aspects of a 3,
if one aspect is particularly salient. One aspect can compensate for deficiencies in other aspects.

5-POINT LIKERT SCALE

1. Series of unrelated events, no cause-effect; disjointed; story is very simple
2. Some cause-effect; series of somewhat related events organized; story is somewhat simple
3. Cause-effect; organized in a temporal sequence, but no overall integrated plot
4. More cause and effect, close to an integrated plot
5. Integrated plot with beginning, middle, & end; story is complex

IMAGINATION:

Measures the novelty and uniqueness of the play and the ability to use pretend and fantasy; imagination indicates the ability to use the blocks and/or puppets to pretend with them, to make up stories, and to create novel events; transformations involve pretending that the block is something else. The rater is encouraged to keep track of the number of transformations, although an exact count is not necessary. The rating categories are not “all-or-none” categories. For example, a child does not need to have all aspects of a 3, if one particular aspect is especially salient. One aspect can compensate for deficiencies in other aspects.

5-POINT LIKERT SCALE

1. No make-believe, transformations, or fantasy, or only one of these, without the context of a story
2. One or two instances of transformations. No novel events; very few fantasy events in the story
3. Three or more transformations. Some fantasy and pretend events, such as “Let’s play house. Some variety of events. No novel events or events removed from daily experience.
4. Many transformations, variety of events, some novel events; some fantasy with unusual twists or removed from daily experience, such as living in a castle or building a space ship. Other characters in addition to the two puppets are included in the story.
5. Many transformations, many novel fantasy events; Novelty of ideas is evident
   Fantasy has new twists and often has elements outside of daily experiences.

**COMFORT:**

A global rating for the child’s overall comfort while they play. It measures the
involvement of the child in the play and the enjoyment of the play The lower end of the
scale rates comfort (ability to play) more than enjoyment, while higher end of the scale
indicates involvement and pleasure (immersion in play).

**5-POINT LIKERT SCALE**

1. Reticent, distressed; stops and starts
2. Some reticence and stiffness
3. OK, but not involved or enjoying; continues to play
4. Comfortable and involved
5. Very comfortable, involved, and enjoying the play.
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Checklist and the How I Coped Under Pressure Scale.


