PRETEND PLAY, COPING, AND SUBJECTIVE WELL-BEING IN CHILDREN:
A FOLLOW-UP STUDY

by

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Abstract

The present study is a follow-up to a previous study designed to assess the effectiveness of a play intervention for children in kindergarten through fourth grade. The present study examined the concurrent relationships among play skills, subjective well-being as conceptualized as positive affect and life satisfaction, and coping ability, in addition to exploring the stability and predictive power of play over an eighteen-months period.

Results yielded several important findings. As hypothesized, the frequency affect in play was significantly, positively related to self-ratings of positive mood. Concurrently, organization and imagination in play were significantly correlated with effective coping responses. Additionally, imagination in play was significantly related to the frequency of effective coping responses over an eighteen-month period. Results also support the stability of organization and imagination in play over an eighteen-month period. The clinical implications and limitations of this study are addressed.

Pretend Play, Coping, and Subjective Well-Being in Children: A Follow-up Study

The benefits of play have been consistently demonstrated. Play helps a child's cognitive development by facilitating divergent thinking, problem-solving skills, and imagination (Dansky, 1980; Sylva, Bruner, & Genova, 1976). Also through play, children develop important affective processes, such as learning to regulate their emotions and finding pleasure in challenging tasks (Gavler & Evans, 2001; Lieberman, 1977). Further, it is thought that as children learn to problem-solve and think creatively, they demonstrate better coping strategies and improved adjustment (Christiano & Russ, 1996). Therefore, play skills should also relate to subjective well-being, which is conceptualized as the combination of life satisfaction and positive affect. Because play relates to cognitive and affective processes important for adaptive functioning, it was theorized that play should also relate to satisfaction with life and positive affect. Further, coping ability should relate to subjective well-being, as a child better able to cope is likely to be more satisfied with life and demonstrate more positive affect overall.

The purpose of the present study was threefold. First, the primary focus was to assess the concurrent relationships among play, the subjective well-being constructs of life satisfaction and positive affect, and coping ability. Second, the study examined the predictive power of play by evaluating the relationships between play ability at baseline and subjective well-being and coping ability measured eighteen months later. Finally, the study contributed to the important longitudinal research on play by assessing the stability of specific play skills over an eighteen-month period.

Play

Play is a multidimensional construct that varies in meaning across contexts (Cohen, 2006). Play can be characterized by a variety of behaviors and features. It can be unstructured, make-believe, fantasy-oriented, functional, or a structured game with rules. For this reason, even play theorists struggle to define play by a single construct. Researchers have been interested in changes in play behavior, with factors like developmental changes, individual differences, and environmental factors often examined (Fein, 1981). Other researchers have focused on understanding play by examining the differences in play as a function of activity characteristics, including its lack of imposed rules (Rubin, Fein, & Vandenberg, 1983), need for structure (Fromberg, 2002), or social interactivity (Bateson, 1955). Finally, play is also studied in the context of the child's characteristics, such as self-motivation, positive affect, and flexibility (Dansky, 1999).

This study examines pretend play, also referred to as imaginative play, make-believe play, fantasy play, or dramatic play. This type of play involves the use of fantasy, make-believe, and symbolism. (Fein, 1981). Pretend play possesses an “as if” component, in which something is treated as if it was something else (Fein, 1987) and is defined by factors such as the ability to engage in play, to transform objects, and to use make-believe action (Udwin, 1983).

Russ (2004) identified a number of cognitive and affective processes involved in play. Through play, children develop cognitive skills such as the ability to organize their thoughts into a sequence with cause and effect relationships. Also, children improve their ability to generate new ideas, problem-solve, and use symbolism. Piaget (1962) emphasized play as important for children's ability to make sense of and integrate new

experiences into their conceptualization of the world. Cognitive effects of play also include creativity (Russ et al, 1999), enhanced abstract thought (Saltz, Dixon, & Johnson, 1977), and perspective-taking (Youngblade & Dunn, 1995; Fisher, 1992).

Also relevant to the purposes of this study are the affective processes developed in play. Specifically, Russ (2004) noted two broad affective processes—access to affect-laden thoughts and openness to affect states. Through play, children are able to develop these abilities to both think about thoughts involving emotion and actually experience the affect. Play allows children to practice thinking, feeling, and expressing positive and negative emotion. Children learn to regulate emotion, control affect, and find pleasure and enjoyment in play and its creative nature. Empirical evidence suggests an important relationship between play, affect, and creativity. For example, children who demonstrated greater affect in play performed better on divergent thinking tasks (Lieberman, 1977). In addition, Russ and colleagues have continued to provide evidence of the link between affect in play and divergent thinking (Russ & Grossman-McKee, 1990; Russ & Schafer, 2006).

Further, theory suggests that the expression of both positive and negative affect in a controlled manner facilitates creativity (Richards, 1990; Russ, 1993). It is thought that when a child experiences a sense of control over the amount and pace of affect expression as in the context of play, both positive and negative affect expression may be adaptive. In other words, negative affect expression does not necessarily correspond to negative emotion and solely positive affect does not necessarily suggest improved adaptive functioning. It is thought that through play, children are able to develop these affective processes that lead to more adaptive functioning.

Subjective Well-Being

Well-being is thought to be subjective because it depends on the individual's assessment of the quality of his or her own life (Lee & Browne, 2008). Subjective well-being is most commonly conceptualized as consisting of three components: global life satisfaction, positive affect, and negative affect (Land, Lamb, Meadows, & Taylor, 2007; Diener, Suh, Lucas, & Smith, 1999). In this conceptualization, global life satisfaction refers to a person's evaluation of his or her life as a whole. Researchers suggest that this is beyond judgments about family, friends, and school (Huebner, 1991) and other findings reveal that individuals differ in which elements associated with life satisfaction are most important to them (Cummins, 1996). This evaluative judgment about the quality of life is considered the cognitive component of subjective well-being. There also exists an affective component, which includes the pleasant and unpleasant emotions an individual attaches to different experiences (Lee & Browne, 2008). More specifically, it involves the frequency of positive emotions, such as joy and pride, and frequency of negative emotions, such as anger and sadness. For example, a widely accepted scale of the affective component of subjective well-being is the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). The scale is based on a model of the affective component that defines positive affect as "high energy, full concentration, and pleasurable engagement," and negative affect as "sadness and lethargy and includes emotions, such as anger, contempt, disgust, guilt, fear, and nervousness" (Watson, Clark, & Tellegen, 1988: p. 1063), so that a lack of negative affect would be associated with greater subjective well-being. Positive affect is associated with energy, enthusiasm, and excitement, while negative affect provides an indication of subjective distress, and has

been related to both anxiety and depression (Watson, Clark, & Tellegen, 1988).

Although some theorists suggest the affective component is best characterized by a single construct, most argue that positive and negative affect are two distinct domains and should be measured separately (Diener, et al, 1999). Both forms of affect have been differentially linked to different coping styles, life experiences, and health concerns (Watson & Pennebaker, 1989). Further, Lucas, Diener, and Suh (1996) conclude that although the three components of life satisfaction, positive affect, and negative affect relate to one another, their multitrait-multimethod analysis demonstrated the utility of retaining three distinct constructs.

Subjective well-being in adults has been well researched in recent decades, whereas it has not been widely studied in children (Moore & Russ, 2008). However, through a series of factor analyses of life satisfaction and positive and negative affect measures, Huebner and colleagues found the same three of components of subjective well-being (life satisfaction, positive and negative affect) to exist in children (Huebner, 1991) and adolescents (Huebner & Dew, 1996). Only recently have standardized measures of these constructs for children been developed (Huebner, 1991, 1994).

Play and Subjective Well-Being

Although few studies have directly examined the relationship between pretend play and subjective well-being, the two constructs are assumed to be related. For the purpose of this study, hypotheses will be formulated regarding only two components of subjective well-being, life satisfaction and positive affect, as theory and recent literature only suggest a relationship with play for these two constructs. Because evidence suggests negative affect expressed in play does not necessarily correspond to negative emotion

(Richards, 1990; Russ, 1993), the construct of negative affect and its relation to play will not be a major focus, but will be examined in an exploratory fashion.

First, it is thought that life satisfaction relates to pretend play, although only one study has empirically examined this relationship. Russ, Moore, and Pearson (2004; 2007) studied the effects of a play intervention on children's play skills and their relationships with components of adaptive functioning, such as life satisfaction. Children in the playgroups scored higher on the life satisfaction measure, which suggests a relationship between life satisfaction and play that is worth further investigation.

Second, pretend play has been shown to relate to positive affect (Udwin, 1983). It is theorized that more positive affect in play is associated with greater positive affect overall, and subsequently related to subjective well-being. Grossman-McKee (1990) found that first- and second-grade boys who expressed greater affect in their play had fewer pain complaints and were less anxious than those children with less affect in their play. Although few studies have focused specifically on the positive aspects of well-being, several studies have demonstrated the relationship between play ability and lack of negative symptoms, including lack of distress following surgery (Burstein & Meichenbaum, 1979) and lack of distress during a dental procedure (Christiano & Russ, 1996).

Play and Coping

Several researchers have linked pretend play and coping. The assumption is that the cognitive processes involved in play, such as divergent thinking, transformational abilities, and the organization of narratives, mediate this relationship between play and coping (Singer & Singer, 1990; Russ, 2004). Divergent thinking, or the ability to

generate ideas (Guilford, 1968), is thought to be an important part of creative problem-solving and can be improved through play (Pepler & Ross, 1981). Further, divergent thinking has been linked to the conceptualization of coping (Christiano & Russ, 1996). Lazarus and colleagues devised a widely accepted definition of coping. They suggest coping refers to the “cognitive and behavioral efforts made by individuals to master, tolerate, or reduce” (Folkman & Lazarus, 1980, p. 223) stressful demands, when “a routine or automatic response is not available” (Monat & Lazarus, 1977, p.8). In other words, coping can be thought of as an active process of generating solutions to real-life problems, or as a real-world application of a divergent thinking ability. Russ (1988) demonstrated this link between divergent thinking and coping, finding a relationship between divergent thinking and teachers’ rating of coping in fifth-grade boys. Using data obtained from teacher ratings, Carson, Bittner, Cameron, Brown, and Meyer (1994) also found a significant relationship between divergent thinking and children’s coping ability.

Curry and Russ (1985) further emphasized the importance of cognitive development in their assessment of the cognitive and behavioral coping strategies used by children in preparation for and during a restorative dental treatment. Typical children tended to use several different forms of coping, which supports Murphy’s observation (1962) that coping strategies are the actual efforts individuals think or do to deal with a problem (Curry & Russ, 1985). Further, older children used more cognitive and less behavioral strategies, (Curry & Russ, 1985) suggesting the importance of adequate cognitive development for successful coping (Singer & Singer, 1990).

The complex cognitive structures developed in play facilitate a child’s engagement in active coping and emotion expression. Through play, a child is able to

make sense of the threatening or anxiety-provoking experience (Freedheim & Russ, 1992) and experiment with potential solutions (Hartley, Frank, & Goldenson, 1952). Haight, Black, Ostler, and Sheridan (2006) demonstrated how children learn about emotions through play through a pilot study. Children who were traumatized used pretend play with their mothers to work through the effects of stress.

Several empirical studies demonstrate the direct link between coping skills and puppet play, as measured by the Affect in Play Scale (APS; Russ, 2004), which involves puppet play. In a longitudinal study, Russ, Robins, and Christiano (1999) found several scores on the Affect in Play Scale predicted the number and quality of coping responses on the School Coping Scale, a measure designed to assess a child's coping skills. Christiano and Russ (1996) found a positive relationship between play and coping and a negative relationship between play and distress among children undergoing an invasive dental procedure. Children who were considered good players (i.e. expressed affect and fantasy in their play) were also good at cognitive coping. These children frequently used better coping strategies and flexibly shifted among such strategies both on another coping measure and during the dental procedure relative to those who expressed less affect and fantasy in their play. (Christiano & Russ, 1996)

Goldstein and Russ (2000-2001) found that pretend play and fantasy abilities were related to coping strategies. Those who demonstrated more imagination and fantasy in their play generated a greater number and variety of coping strategies (Goldstein & Russ, 2000-2001). Finally, in a longitudinal study, Russ, et al (1999) found that children with high fantasy in their play demonstrated a greater number of coping strategies in stressful situations four years later.

Other studies suggest fantasy in play is related to key components of child adjustment related to coping ability, such as positive social behavior and functioning. Children who demonstrate greater fantasy in play tend to be less aggressive in social interactions (Singer & Singer, 1990), are more able to delay gratification and be more reflective (Freyberg, 1973), tend to perform better in school, and are overall less aggressive and more joyful than their less imaginative peers (Singer & Rummo, 1973).

Pretend play has also been linked to anxiety. In a study of 4- to 8-year-olds, Burstein and Meichenbaum (1979) found that those who actively played with stress-related toys prior to hospitalization demonstrated less distress and anxiety following surgery than those who avoided playing with the same stress-related toys. Finally, it is thought that coping may contribute to a child's subjective well-being, more specifically relating to life satisfaction and positive affect.

Original Study

The present study follows up an original study designed to examine the effectiveness of a four-session intervention to improve play skills (Russ, Burck, Dillon, & Fiorelli, 2009). The participants were 61 students from a private school for girls, in Kindergarten through fourth grade. Baseline play skills were assessed using the Affect in Play Scale-Brief Rating (APS-BR). In addition, coping skills, emotion regulation, and adjustment were assessed at baseline. At baseline as measured by the School Coping Scale, coping skills were found to significantly relate to play ability. Specifically, Imagination scores in play related to total number of effective coping responses ($r = 0.25$, $p < .05$), quality of effective coping ($r = 0.49$, $p < .001$), and number of active coping responses ($r = 0.27$, $p < .05$). Organization scores in play related to total number of

effective responses ($r = 0.49, p < .05$), quality of effective coping ($r = 0.49, p < .001$), and number of active coping responses ($r = 0.29, p < .05$). Children with greater imagination and organization within their play also demonstrated more effective coping skills. Finally, comfort in play was related to the quality of effective coping ($r = 0.27, p < .05$). These findings suggest relationships between play and coping that should theoretically be maintained over time.

Summary

Previous research has found significant relationships between play ability and other constructs important for adaptive functioning, including the cognitive and affective processes of divergent thinking and emotion regulation. Evidence suggests that children who are better players tend to more effectively cope and problem solve and are generally better adjusted and more creative than children who are less effective players. It is further theorized that children who play better and possess these skills important for adaptive functioning are also likely more satisfied with life and demonstrate greater positive affect. The present body of literature suggests important relationships between play ability, subjective well-being, as conceptualized as life satisfaction and positive affect, and coping skills, that are worthy of further investigation. The present study is the first to directly examine the interrelationships among these variables. In addition, research also suggests a need to explore the predictive power of play by examining its stability and relation to subjective well-being and coping over time. The present study will also add to the minimal amount of longitudinal research on play ability and its related constructs.

General Hypotheses

First, it was hypothesized that current play skills would significantly relate to measures of subjective well-being and coping ability. Second, it was theorized that baseline play scores would predict performance on the current measures of subjective well-being and coping measures. Finally, it was predicted that play ability would be stable over time, so that play scores at baseline would significantly relate to their respective play scores assessed eighteen months later.

Methods

Participants of Original Sample

Sixty-one students from Laurel School, a private, predominately Caucasian school for girls, in Kindergarten through fourth grade, whose parents signed consent forms participated in the original study.

Participants of Follow-up Sample

Recruitment letters were sent to parents of all girls who participated in the original sample. The participants for the follow-up sample were 30 students from Laurel School in the first through fourth grade whose parents consented to the study. Of the original participants, 49% participated in the present study.

Procedure of the Original Study

Baseline. Prior to randomization, each child was administered the Affect in Play Scale, Brief Rating Version (APS-BR) and the School Coping Scale, in addition to other baseline measures. The Vocabulary subtest of the Wechsler Intelligence Scale for

Children (WISC-IV) was administered to assess verbal ability. Baseline WISC-IV Vocabulary scores were also used as a measure of verbal ability in the present study.

Intervention. Each child in the play intervention group participated in four 20-minute individual sessions, in which each child was encouraged to play out stories. The examiners followed scripts and utilized standardized toys, storylines, and prompts to encourage imagination and affect in play. Children in the control group put together puzzles and colored pictures for four 20-minutes sessions to ensure the same level of contact with the examiners. Examiners attempted to keep interaction in the control group focused on the coloring and puzzles so as to limit the presence of affect and imagination.

Procedure of the Follow-up: The Present Study

The follow-up assessment occurred in the Spring of 2010, approximately eighteen months following the baseline assessment. Each child met with the examiner for one 25-minute session. The assessment included two of the original baseline measures, the APS-BR and the School Coping Scale (SCS), in addition to the Multidimensional Student Life Satisfaction Scale for Children (MSLSS-C) and the Positive and Negative Affect Schedule for Children (PANAS-C). Each participant completed the measures in the same order: APS-BR, PANAS-C, MSLSS-C, and finally the SCS. Participants in the fifth grade were not administered the APS-BR as it was designed only for children through the fourth grade. Further, participants who consented to do so were videotaped to compare the brief rating play version to the videotaped version and assess inter-rater reliability.

Measures

1. Affect in Play Scale-Brief Rating Version (APS-BR; Sacha Cordiano, Russ, & Short, 2008). The APS-BR is a standardized play instrument designed to assess

affect and imagination in play in children ages six through ten (Sacha Cordiano, Russ, & Short, 2008). The brief version, adapted from Russ' (1993) original videotaped version, allows the examiner to score the play as it occurs without relying on videotaped presentation. The measure includes five scales: Frequency of Affect, Tone of Affect, Organization, Imagination, and Comfort. Each aspect of play is scored on a four-point Likert scale. The Frequency of Affect score refers to the amount of emotion expressed during the play and is scored based on the number of demonstrations of emotion within the play narrative. The Tone score indicates the overall tone of the affect in the play, either positive or negative. The Organization score, a cognitive component of the scale, measures the quality of the plot and the complexity of the story within the play. The Imagination score refers to the child's ability to pretend and use fantasy within play, and also includes the overall novelty and uniqueness of the play. The Comfort scale indicates the child's level of comfort and enjoyment of the play. (See Appendix for manual.)

For the play task, children were given three blocks and two puppets and received the following instructions:

I am here to learn 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. I'll tell you when to stop.

Also, play tasks of participants whose parents consented to videotaping and assented themselves were videotaped. However, the tasks were still scored at the time of administration with the brief rating version without referring to the videotaped recording of the session.

The APS-BR has been shown to correlate highly with the videotaped version, which has good psychometric properties. Correlations for the main scores range from .75 to .92, which suggest the two scales measure similar elements of play and the validity studies for the APS should apply to the APS-BR. Further, interrater reliability for the APS-BR has been good, ranging from .62 to .94 (Sacha Cordinao, Russ & Short, 2008). Finally, the APS-BR has been shown to relate to levels of creativity and emotional memories (Sacha Cordiano, Russ, & Short, 2008) and to openness to experience (Sacha Cordiano, 2008), which supports its validity.

2. The Multidimensional Student Life Satisfaction Scale for Children (MSLSS-C; Huebner 1991, 1994). The MSLSS-C is designed to assess life satisfaction, one component of subjective well-being. The scale was originally created and validated for children in grades three and above (Huebner 1991; 1994). The adaptation for young children used in this study was devised by Russ, Moore, and Pearson (2007). Six of the 40 original items that contained more advanced vocabulary were removed and some of the language was changed to be more developmentally appropriate. The MLSS-C assesses how satisfied children feel with different areas of their life, including family, friends, school, living environment, and the self. Children were asked to rate how they felt about each

of statements by selecting circles of varying sizes. The instructions are as follows:

I'm here to find out how children feel about their lives. I'd like to know what you've been thinking about your life for the last few weeks. Think about what you have done during the day and night and how you feel about it. We want to know what you really think, so tell me how you really feel, not what you think you should say. This is not a test. There are no right or wrong answers. Your parents and your teachers won't be told what you say. Now I'm going to ask you some questions about your life. Point to the circle that tells how you feel (*show circles*). So if I asked you how much you like to eat ice cream, which one would you point to? What if I asked you how much you play outside?

The scale has good psychometric properties, with a total score alpha of .92 and alphas for the factor scores ranging from .78 to .83 (Huebner, 1994). The reliability and validity of the original Multidimensional Student Life Satisfaction Scale has been demonstrated with a middle school sample of 291 students (Huebner, Laughlin, Ash, & Gilman, 1998). Validation supports the existence of a general life satisfaction factor indicated by the total score, which was used in the present study (Huebner, Laughlin, Ash, & Gilman, 1998).

3. Positive and Negative Affect Schedule for Children (PANAS-C; Laurent et al., 1999). The PANAS-C is a 30-item self-report scale based on direct questioning, designed to assess state affect, or recent experiences of positive and negative affect in children. The PANAS-C was originally validated for children in grades

four through eight but was adapted for younger children by Moore and Russ (2008). The adapted version used in this study altered the language for two of the items and removed three of the more difficult ones, resulting in a 27-item measure (Moore & Russ, 2008). The PANAS-C has good psychometric properties, with reliability alpha coefficients ranging from .89 to .94 for the two affect scores (Laurent, et al, 1999). Further, convergent and divergent validity for the PANAS-C has also been demonstrated. Laurent, et al (1999) found the positive affect scale to negatively correlate with the Children's Depression Inventory, and the negative affect scale to positively correlate with self-report measure of anxiety and depression.

4. The School Coping Scale. The School Coping Scale is a 10-item self-report measure that assesses how children deal with problems that potentially arise in school settings. The scale asks children to list what they would do in ten different stressful situations. For example, they were asked, "What would you do if you were going to be late to school?" and "What would you do if your best friend didn't want to play with you anymore?" Responses are scored for frequency and quality of coping. The frequency score is the total number of effective responses generated by each child. Each response is given a quality score of either "zero" for ineffective or non-adaptive coping responses, "one" for recognition of a potential coping strategy, but without demonstration of a mean or an end, or "two" for an effective, well-planned coping response with some detail. The quality score is calculated by summing the quality values and dividing by the number of the effective responses to determine an average quality of each child's

responses. The School Coping Scale has been found to relate to play and to divergent thinking (Russ, Robins, & Christiano, 1999). Further, at baseline of the original study, number and quality of coping related to play skills, as indicated by the APS-BR scores of Imagination, Organization, and Comfort (Burck, 2009).

Specific Hypotheses

1. Current APS-BR scores would significantly relate to the current measures of subjective well-being and coping ability.
 - a. The cognitive components of play, Organization and Imagination scores, would positively correlate with the cognitive component of subjective well-being, the life satisfaction score on the MSLSS-C.
 - b. The Frequency of Affect score of play would positively correlate with the affective component of subjective well-being, the positive affect score on the PANAS-C.
 - c. The cognitive components of play, Imagination and Organization scores, would positively correlate with the frequency and quality of effective coping responses on the School Coping Scale.
2. The relationships between play, subjective well-being, and coping ability would be maintained overtime, so that the baseline APS-BR play scores would significantly relate to the current subjective well-being and coping scores. The same pattern as specified in the first hypothesis was theorized.
3. Play scores will be stable over time, so that baseline play scores of Imagination, Organization, Frequency of Affect, Tone, and Comfort would positively correlate with their respective current scores. For example, it was hypothesized that the

baseline Organization score would significantly correlate with the current Organization score.

4. Finally, the MSLSS-C and PANAS-C positive affect scores would positively correlate with the frequency and quality of effective coping responses, so that children who have greater life satisfaction and positive affect would demonstrate better coping ability.

Data Analytic Plan

The data analytic plan was designed to test for the proposed significant relationships among play, subjective well-being, and coping, as well as to test the longitudinal stability of play and its relation to well-being and coping over an eighteen-month period. Exploratory analyses were also run to examine correlations between negative affect and these constructs.

Pearson product-moment correlations were used to examine the interrelationships among the variables of play ability, subjective well-being, and coping skills both currently and over an eighteen-month period. Additionally, Pearson product-moment correlations were used to assess the stability of play ability, by assessing the relationships between the baseline and current play scores. An alpha of .05 was used for all statistical tests, unless otherwise noted. Effect sizes are also reported. According to Cohen (1988), correlation coefficients of .10 are “small,” those of .30 are “medium,” and those of .50 are “large.” Through a meta-analytic review, Hemphill (2003) provided empirical support for these three categories, and even suggested lower values may be warranted in some cases. For the present study, effect sizes according to Cohen’s (1988) criteria are reported. Multiple regression analyses were used to further understand how the variables

relate to one another and determine potential additive benefits of examining multiple variables as predictors of other constructs. Relevant findings are reported.

Additionally, repeated measures analysis of variance (ANOVA) was used to assess the effect of the intervention when controlling for baseline play differences. The repeated measures ANOVA confirmed there were no significant group differences. Therefore, the groups were combined for all analyses in order to increase power.

The data was checked for skewness and kurtosis. They were assessed using a more conservative method that involved hypothesis testing of the resulting value when each skewness and kurtosis statistic was divided by its respective standard error. This method revealed no significant differences from normal, deeming neither skewness nor kurtosis to be a pervasive problem in these data. Therefore, no further adjustments were made.

There were several participants with missing data for the play task. Of the present 30- participant sample, two did not wish to participate in the play task. In addition, the APS-BR has only been validated for children ages 6 to 11, thus children over the age of 11 did not complete the play task. All 30 participants completed the MSLSS-C, PANAS-C, and the School Coping Scale. The present follow-up sample was compared to the original sample using standard t-tests. Means and standard deviations for play ability and coping of the present and original samples at baseline are presented in Table 2. There were no significant differences between the two groups, suggesting the follow-up sample is representative of the total sample on measures of play and coping abilities.

Results

Descriptive Statistics

Play Ability. Play ability was measured using the Affect in Play Scale – Brief Rating version (APS-BR). Descriptive statistics, including means, standard deviations and ranges, for the present and baseline play ability scores are presented in Table 3. Imagination, Organization, Frequency of Affect, Tone, and Comfort were scored following the previously validated coding system (Sacha Cordiano, Russ, & Short, 2008), using a four-point Likert scale. The means for the main scores were: Organization = 2.87 (SD = 0.97), Imagination = 3.00 (SD = 1.00) Frequency of Affect = 2.83 (SD = 1.11), Tone = 3.21 (SD = 0.71), and Comfort = 3.52 (SD = 0.79). These results indicate adequate variability among players and are similar to those found in the previous validation study (Sacha Cordiano, Russ, & Short, 2008). Inter-rater reliability was calculated by comparing the examiner's ratings to another observer's ratings on 20 participants. Because there were not 20 videos of the APS-BR with participants from the present sample, inter-rater reliability was checked using 20 videos of the APS-BR administration from a previous study. Consistency between raters was as follows: .71 for Organization, .78 for Imagination, .92 for Frequency of Affect, .97 for Tone, and .94 for Comfort. With the exception of Organization, which is considered good reliability, these values fall above Cicchetti's .75 guideline for excellent reliability (Cicchetti, 1994).

Life Satisfaction. Descriptive statistics for the MSLSS-C are presented in Table 4. Participants had a mean score of 111.23 (SD = 12.19) with a range of 87.00 to 134.00. The mean score was higher than mean scores previously found for the same adapted version (Moore & Russ, 2008). Also relative to previous findings (Moore & Russ, 2008),

no extremely low scores were obtained, but similar standard deviations suggest analogous variability.

Positive Affect. Descriptive statistics for the PANAS-C are presented in Table 4. The mean score was 45.83 (SD = 8.08) with a range of 26.00 to 62.00. Few studies have used the adapted version of the PANAS-C, but relative to the few that have, the mean score and range are similar to values previously found (Moore & Russ, 2008).

Coping. Coping ability was assessed using two scores from the School Coping Scale: the frequency and quality of effective coping response. The mean score of the current frequency of effective coping responses was 11.60 (SD = 2.58) with a range of 7.00 to 20.00. For the current quality of effective coping responses, participants had a mean score of 1.35 (SD = 0.21) with a range of 1.00 to 1.75. Inter-rater reliability was previously checked against 20 participants of the original sample at baseline.

Consistency among raters was as follows: .92 for the frequency of coping responses and .75 for the quality of coping responses. Both values fall above Cicchetti's guideline for excellent reliability (Cicchetti, 1994).

IQ, Age, and Grade. Scores on the Vocabulary section of the Wechsler Intelligence Scale for Children, Fourth Edition (WISC-IV) administered at baseline were used as an estimate of IQ. The participants from the present sample had a mean score of 12.27 (SD = 2.70), with a range of 7.00 to 17.00. The WISC-IV has a standardized mean of 10 and a standard deviation of 3. Thus, the present sample scored above average and had a wide range of scores. Further, correlations between the variables of play, subjective well-being, and coping and IQ, age, and grade are presented in Table 5. None of the variables significantly related to IQ. The frequency of effective coping responses

scores significantly correlated with both age and grade, suggesting that coping ability improves with age and progression in school.

Main Hypotheses

Concurrent Relationships. Correlations among the current play scores on the APS-BR and subjective well-being variables are presented in Table 6. The primary hypothesis proposed significant relationships between current measures of play ability, subjective well-being, and coping. Several significant relationships were found. First, it was hypothesized that the affective component of play would positively significantly correlate with the affective component of subjective well-being, as measured by the PANAS-C positive affect score. Consistent with this hypothesis, the Frequency of Affect score on the APS-BR positively correlated with the positive affect score on the PANAS-C, $r = .39, p < .05$. This relationship maintained significance when verbal intelligence was controlled for, $r = .35, p < .05$. As predicted, children who demonstrated greater overall affect in their play also rated themselves as having greater positive affect in daily life.

Second, it was hypothesized that the cognitive components of play, the Organization and Imagination scores, would positively and significantly correlate to the cognitive component of subjective well-being, life satisfaction, as measured by the total score on the MSLSS-C. Inconsistent with hypotheses, life satisfaction scores were not significantly related to imagination or organization, but were significantly negatively correlated with the Frequency of Affect score, $r = -.36, p < .05$. Children who demonstrated less overall affect in their play rated themselves as having higher life satisfaction.

Third, consistent with hypothesis, the Organization score of the APS-BR positively related to the frequency of effective coping responses, $r = .38$, $p < .05$. Similarly, the Imagination score positively related to the frequency of effective coping responses, $r = .34$, $p = .05$. According to Cohen (1988), the effect sizes of these relationships considered medium, suggesting meaningful relationships between the variables. Children who demonstrated greater organization and imagination in their play generated a greater number of effective coping responses. When verbal intelligence was controlled for, these coefficients remained unchanged. However, the quality of effective coping responses score did not significantly relate to either organization or imagination in play.

Baseline play and current measures of subjective well-being. Results are presented in Table 7. Hypotheses also proposed significant relationships between baseline play ability and measures of subjective well-being and coping over an eighteen-month period. Consistent with hypothesis, the baseline Imagination score significantly correlated with the frequency of effective coping responses after eighteen months, $r = .34$, $p < .05$. Children who demonstrated greater imagination in their play at baseline were able to generate a greater number of effective coping responses at outcome, approximately eighteen months later. In addition, several relationships yielded correlation coefficients that approached significance. Organization related to the frequency of effective coping responses, $r = .27$ and the baseline Frequency of Affect score related to positive affect on the PANAS-C, $r = .24$. As with the concurrent relationships, the effect sizes are considered medium (Cohen, 1988). It is possible that these relationships would reach significance with a larger sample size. Importantly, the

pattern and magnitude of the correlations are similar to those among the concurrent relationships, which suggests relationships maintained over time.

Stability of Play. Significant relationships between baseline play ability and current measures of play ability were proposed, such that baseline scores would significantly relate to their currently measured counterparts. Refer to Table 8 for correlations. Several baseline scores related significantly with their respective outcome scores, most notably were the cognitive components of play. The baseline Organization score significantly correlated to outcome Organization, $r = .58, p < .01$, as the baseline Imagination score correlated significantly to its respective outcome score, $r = .46, p < .05$. Also, baseline Comfort correlated significantly to outcome Comfort ($r = .46, p < .05$). According to Cohen's (1988) effect size criteria, these values are deemed large effect sizes, indicating stable relationships between these variables. Finally, the correlation between baseline Frequency of Affect and its respective outcome score is considered small ($r = .26$), but noteworthy given the study's small sample size.

Interrelationships among life satisfaction, positive affect, and coping ability.

Current life satisfaction and positive affect were hypothesized to significantly relate to the frequency and quality of effective coping responses. Several of these relationships were found to be significant and of medium effect sizes. Results are presented in Table 9. First, the frequency of effective coping responses score significantly correlated with the positive affect score on the PANAS-C, $r = .38, p < .05$. This suggests that children who generated a greater number of effective coping responses rated themselves as possessing greater positive affect. Further, the quality of effective coping responses score correlated significantly with life satisfaction ($r = .33, p < .05$) and positive affect ($r = .36$,

$p < .05$). Children who generated coping responses with higher quality rated themselves as possessing greater positive affect and as more satisfied with life. Exploratory analyses also revealed a significant relationship between the quality of effective coping responses and the negative affect score of the PANAS-C, $r = -.45$, $p < .01$. Thus, children who generated coping responses with greater quality rated themselves as having less negative affect.

Stability of Coping. Exploratory correlational analyses suggest the stability of coping ability. Baseline coping scores significantly correlated with coping scores at outcome. Specifically, the frequency of effective coping responses at baseline related to the same measure at post-test, $r = .56$, $p < .01$ and to the quality of effective coping responses at post-test, $r = .41$, $p < .05$. Finally, the quality of effective coping responses at baseline correlated with the frequency of effective coping responses at outcome, $r = .34$, $p < .05$. Importantly, these are medium to large effect sizes, according to Cohen's (1988) criteria. However, the quality of effective coping responses at baseline did not significantly correlate with its respective outcome measure.

Negative Affect. Although specific hypotheses were not formulated regarding the negative affect score on the PANAS-C, exploratory analyses yielded a significantly negative correlation between negative affect and the quality of effective coping responses, $r = -.45$, $p < .01$. Children who rated themselves as having more negative affect demonstrated less quality of effective coping responses compared to those who rated themselves as having less negative affect. Further, although not statistically significant, the negative affect score related to several play scores based on their medium effect sizes. Negative affect correlated with the Frequency of Affect score ($r = .32$) and

with the Tone score ($r = -.34$). Children who expressed greater overall affect in their play rated themselves as having more negative affect in daily living. Additionally, those whose affect in their play was more negative also rated themselves as having more negative affect emotion. It is possible that the small sample size may have precluded finding a statistically significant effect.

Additional Analyses. Exploratory correlational analyses were used to further understand whether coping ability at baseline accounts for the relationship between baseline imagination in play and coping ability at outcome. The correlation between baseline imagination scores and frequency of effective coping responses at outcome is significant, $r = .34$, $p < .05$, as is the correlation between baseline imagination in play and baseline frequency of effective coping responses, $r = .31$, $p < .05$. Baseline frequency of effective coping response scores were partialled out of the correlation between baseline imagination scores and frequency of effective coping scores at outcome. The analysis was carried out to provide further information regarding the unique variance in baseline imagination not attributed to coping ability at baseline that is related to the coping ability at outcome. When baseline coping ability was partialled out, the correlation remained a small effective size (Cohen, 1988), but was no longer statistically significant ($r = .21$). Thus, the baseline coping scores account for a portion of the relationship, but do not explain the entire correlation.

Multiple regression analysis was carried out to determine the variance accounted for when coping skills are combined with play ability to predict positive affect. Standard multiple regression was used to assess the variance explained by the predictors. When multiple regression was carried out with the frequency of effective coping responses and

the Frequency of Affect in play, 33.2% of the variance in positive affect on the PANAS-C was accounted for, $F(2, 20) = 4.98$, $p < .05$. Further evaluation of the regression indicates the frequency of effective coping responses is accounting for most of the variance, $R^2 = .27$, $p < .05$. The frequency of affect in play does not significantly add to the variance, $R^2 = .06$, $p = .19$.

Discussion

Play ability was found to be significantly related to measures of subjective well-being and coping. Supportive evidence for the predictive power of play ability was obtained, with baseline play scores significantly related to coping skills over an eighteen-month period. Evidence was also obtained for the stability of play skills, the cognitive components. Finally, several measures of well-being significantly related to measures of coping ability. It should also be noted that as in the original study, verbal ability did not relate to play skills and all significant relationships remained significant when verbal ability was controlled for. This indicates that play is a resource for development separate from intelligence.

Current Play and Subjective Well-Being

The results suggest significant relationships between current play ability, subjective well-being, and coping. First, the Frequency of Affect score on the APS-BR significantly related to the affective component of subjective well-being as measured by the positive affect score on the PANAS-C. Specifically, girls who demonstrated greater affect in their play rated themselves as having greater positive affect in the past two weeks. This finding is consistent with Grossman-McKee's (1990) research, which found

that children who demonstrated greater affect in their play had fewer pain complaints and anxiety than their less expressive counterparts. Similarly, Seja and Russ (1998) found that children who expressed more emotion in play demonstrated more positive emotion in their daily behavior as rated by their parents. The present finding both supports existing literature and has important implications. Girls who are able to think about emotion-laden thoughts and experience both positive and negative affect in the context of play demonstrate greater positive affect in daily living. The present study supports the belief that through play, children practice thinking, feeling, and expressing positive and negative emotion, which translates to more positive emotion overall. In other words, children who express affect in play rate themselves as having more positive affect.

Next, inconsistent with hypotheses, the cognitive components of play were not significantly related to life satisfaction. However, life satisfaction was significantly negatively correlated with the Frequency of Affect score. This finding is unexpected, as evidence suggests greater expression of affect in play is associated with adaptive skills, such as the ability to regulate emotion and control affect (Dillon, 2009). It was proposed that children with these adaptive abilities would tend to be more satisfied with life. However, potential issues with the MLSS-C measure may have impacted the finding regarding this theorized relationship. The scale asks children to rate individual items on a scale from one to four, deeming the statements to be true about them either *Never*, *Sometimes*, *A Lot*, or *Almost all the Time*. According to the scoring system, children receive the most points for selecting *Almost all the Time* for positive statements such as “my friends are nice to me” or for selecting *Never* for negative statements such as “there are many things about school I don’t like.” Thus, children deemed more satisfied with

life tended to mostly respond by selecting the extreme frequency options. However, it seems children could be satisfied with their lives even if they are aware that life is not pleasing to them all of the time. For example, a child may be satisfied with life even if she is aware that there are things about school she does not like. In fact, it may be that a child most satisfied with life is the child who is able to recognize and accept that school may not always be pleasing to her. It is therefore possible that the relationship between play skills and the MSLSS-C may be curvilinear, so that the best players are those who rated themselves as moderately, but not perfectly, satisfied with life. Future research is needed regarding the relationships between life satisfaction and play skills.

Additionally, the MSLSS-C is a validated scale for children in grades three and above. The adapted version used in the present study has yet to be validated for children as young as grades one and above. Validation of the measure to ensure it is developmentally appropriate and an accurate indication of life satisfaction is necessary.

Play Ability and Coping

As predicted, the cognitive components of play (i.e. imagination and organization) significantly related to the frequency of effective coping responses. Girls who demonstrated greater imagination and organization in their play were able to generate a greater number of effective coping responses. This finding is consistent with previous studies (Russ, Robins, & Christiano, 1999; Goldstein & Russ, 2001). Further, it is theorized that divergent thinking may mediate this relationship, so that children who demonstrate imagination and organization in play are able to generate more creative ideas and are better able to explore a variety of solutions to different problems. Children who

express more creativity and divergent thinking in play are also able to generate a greater number of coping solutions tailored to problems.

Contrary to hypothesis, organization and imagination in play did not significantly correlate with the quality of effective coping responses. Although unexpected, this finding may be related to the nature of the quality score. The frequency of coping responses score assesses the number of coping responses generated by the child, while the quality score rates each strategy for its worth as an effective coping response. The lack of a significant relationship between play and the quality score suggests there may not be enough of a differential between a “level 1” and a “level 2” coping strategy, for example. Further, it may be argued that the most important aspect of coping is the ability to generate an effective coping strategy, not necessarily the differential between a “good” coping strategy and a “great” coping strategy. This lack of variation may have precluded finding a significant relationship between the quality of coping score and play.

Baseline Play and Current Well-being and Coping

The present study explored the predictive power of play by examining the relationships between play ability at baseline and the subjective well-being and coping measures administered approximately eighteen months later. Only one relationship was found to be significant. Imagination in play at baseline was significantly related to the frequency of effective responses at outcome. Girls who demonstrated imagination in their play were able to generate a greater number of effective coping responses when assessed eighteen months later. Although other relationships were not found to be statistically significant, the magnitude of the correlations suggests relationships worth further attention. Specifically, small effect sizes were observed for the relationships between the

baseline Frequency of Affect score and the positive affect score on the PANAS-C and between the baseline Organization score and the frequency of effective coping responses at outcome. In addition, a medium effect was observed for the relationship between the baseline Tone score and the quality of effective coping responses score, indicating that children whose affect in play was more positive also demonstrated a greater average quality of effective coping responses than children whose play was less positive.

Stability of Play

Results indicate significant relationships between several components of play over approximately an eighteen-month period. Baseline organization in play significantly correlated with outcome organization in play, as baseline imagination significantly correlated with outcome imagination. This suggests an important element of stability in both of the cognitive components of play. Comfort in play at baseline was also significantly correlated with comfort in play at outcome, suggesting genuine comfort and enjoyment of the play are also stable. The magnitudes of these correlation coefficients are considered large effect sizes according to Cohen's (1988) criteria and are consistent with values observed in other constructs deemed stable over time, such as aggression (Tomada & Schneider, 1997), antisocial and delinquent child behavior (Loeber, 1982), and creativity (Kogan & Pankove, 1972).

Interestingly, the baseline frequency of affect score was not significantly correlated with its outcome counterpart. This suggests the affective component of play may be more fluid and changing than the more stable cognitive components. However, the primary longitudinal study addressing the stability of play ability (Russ, Robins, and Christiano, 1999) found significant correlations between the baseline and follow-up

affect scores. However, that study utilized the original videotaped version of the Affect in Play Scale, which includes a more extensive affective scoring system which distinguishes positive from negative affect. Their findings indicated that positive affect was stable over time, as the baseline score correlated significantly with its respective outcome score, $r = .51, p < .01$. However, the baseline negative affect score did not significantly correlate with the outcome score. Thus, scoring differences between the APS-BR and the videotaped APS may be in large part responsible for differences in the present findings and previously published research.

Well-Being and Coping

It was also proposed that the constructs of coping and subjective well-being would relate to one another. Theoretically, a child with better coping skills is more likely satisfied with life and more likely to demonstrate positive affect. The present findings support this notion. Specifically, life satisfaction significantly positively correlated with the quality of effective coping responses, so that girls with higher life satisfaction were able to generate effective coping responses with greater quality. Similarly, girls who rated themselves as having more positive affect were able to generate a greater number of effective coping responses in addition to responses with better quality.

Additional Findings

Specific hypotheses were not formulated regarding the negative affect score of the PANAS-C, but exploratory analyses suggest that girls who rated themselves as having more negative affect in daily life demonstrated less quality in their coping responses. Although there exists no known research regarding this relationship, the finding makes theoretical sense. Children who demonstrate more negative affect (sad, angry, gloomy)

are less effective copers than children who demonstrate less negative affect. Further, although the correlations did not reach significance, the negative affect score positively related to the frequency of affect and negatively related to tone in play. Although empirical support does not yet exist, this suggests that affect in play is related to the negative affect expression in daily living, so that children who express greater overall affect in play are have generally more negative affect in life. Further, the negative relationship to tone indicates that players whose affect in play was predominately negative also rated themselves as having greater negative affect in daily life. This relationship should be further explored, as the implications are important. Theorists suggest the expression of both positive and negative affect in play can be beneficial, facilitating creativity and divergent thinking, and that negative affect expression in play does not necessarily correspond to negative emotion (Richards, 1990; Russ, 1993). However, the present finding indicates that predominately negative play may correspond to true negative emotion.

Limitations and Future Directions

There were several limitations to the present study. First, the generalizability of the findings is limited to female children who attend an upper middle class, private school. The results may not be generalized to male children or children from low income, at-risk, or clinical samples. Further, the sample size was small.

There are issues with the utilized measures that may have impacted the findings. First, the APS-BR is still a new measure for assessing play and may not be as sensitive as the videotaped version. Specifically with regard to assessing affect expression in play, the original APS and more extensive scoring system may be more effective at

differentiating positive and negative affect in play. Further, it may provide a better indication of the stability of affect expression in play and of the true relationships between affect in play and subjective well-being. Second, although deemed a valid assessment of life satisfaction, the MSLSS-C may not be a particularly sensitive measure of life satisfaction for young children. Third, the PANAS-C has been validated as a measure of state affect (Laurent, et al, 1999). A more trait-like measure of affect may yield different results. For example, in assessing the predictive power of play skills, it may be more effective to utilize a more stable assessment of affect. This does not suggest that state-like affect is unimportant, but rather that assessment of trait-like affect may yield stronger correlations with the stable play skills. Finally, it is suggested that a wider range of coping quality on the School Coping Scale may more effectively differentiate “good” copers from “great” copers and may subsequently yield a stronger correlation with play skills.

The results of the present study suggest a variety of directions worthy of further research. The present study uniquely examined the stability of play, providing evidence of the stability of several dimensions of play skills, specifically with regard to organization, imagination, and comfort. Further research is suggested to explore the stability of affect in play. Although the cognitive components of play are theorized to be more stable, previous research suggests affect should also possess significant stability over time.

In addition, it would be beneficial to replicate and further explore the relationships between play skills, subjective well-being, and coping ability with a larger sample. Also, the findings suggest negative affect may relate to negative affect expressed

in play. Further investigation of negative affect as a component of subjective well-being and its relation to play ability is recommended.

Further understanding of life satisfaction in children would be also beneficial. Validation of the adapted version of the MSLSS-C or an additional measure to ensure life satisfaction can be appropriately and effectively measured in such young children is essential to fully understanding its relation to play and other relevant constructs.

Replication and further investigation of these relationships with different populations are recommended. Exploration with male children and at-risk samples would broaden the generalizability of the findings.

The present study yields important implications for a child's overall well-being. The findings indicate that emotional expression in play is associated with positive affect in daily living. Children who are able to express emotion, both positive and negative, in the context of play generally feel happier, more energetic, and more cheerful than children who are more constricted with their play, expressing less overall affect. Although Russ and colleagues have already begun the formulation and testing of an effective intervention to improve play skills, the present study provides further support. If children are able to learn and practice the expression of affect in play, it is theorized they would subsequently feel happier. Further, the present findings indicate that children who are more organized and more imaginative in play are more effective copers than those who express less organization and imagination. It is thought that play skills foster the development of divergent thinking. Children who are able to practice the generation of new creative ideas in the context of play are also able to generate a greater number of effective coping responses to potentially stressful situations. This provides additional

support for the importance of intervention as the next step. If children develop the play skills of organization and imagination, it is thought they would be subsequently able to apply these skills to situations that require coping. Further understanding and development of an effective intervention to improve play skills in order to improve a child's well-being and coping ability is necessary.

Appendix

AFFECT IN PLAY SCALE-BRIEF RATING

Tori Sacha Cordiano, Elizabeth Short, Sandra Russ (2008)

The Affect in Play Scale – Brief Rating (APS-BR) 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-BR measures the amount and tone of affect expression in children's pretend play. The scale also rates the amount and quality of organization, imagination, and comfort in the child's 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-BR 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 props and instructions 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

1. 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.
2. 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.
3. 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 given, space about one minute apart.
4. 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.
5. 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.”
6. 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.

7. Be sure to stop after five minutes. A wristwatch with a second hand is adequate.

Time in an unobtrusive manner.

The APS-BR Rating Scale

As you are watching the 5-minute taped session, rate the child on Organization, Imagination, Comfort, Frequency of Affect Expression, and Positive/Negative Tone of Affect Expression. 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.

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.

4-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 – More cause-effect; related events resembling an integrated plot; story is somewhat complex
- 4 – Integrated plot with beginning, middle, and end; story is complex

EXAMPLES:

1 – Events are completely scattered, story jumps around from event to event without any continuity or similarity between events or any continuing storyline (could be either no real events occurring, or events that have no linkage, and are completely unrelated)

2 – Events are a little less scattered, may be periods of connected events, but still no overarching plot or storyline that is consistent throughout (could be sets of events that have consistency within each other, but are not joined together as a whole – i.e., puppets get in a fight, then build something with blocks, then do something else...)

3 – Events are joined into a somewhat consistent storyline, with a more structured plot and events that would flow naturally (could be events within the context of a day, but not extremely detailed or completely structured – i.e. puppets go to school, come home, play together, build something with blocks...)

4 – Events are very detailed and all interconnected within a highly structured plot that is consistent throughout (could be puppets get up, eat breakfast, go to school, eat lunch, go to one puppet's house, play with blocks, eat dinner, have a fight, make up, go home, go to bed)

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.

4-POINT LIKERT SCALE

- 1 – No make-believe, transformations, or fantasy, or only one of these, without the context of a story
- 2 – Several transformations, with some fantasy and pretend events, but no novel events; some variety
- 3 – Many transformations, variety of events, but few novel events; some fantasy and pretend events or addition of other characters
- 4 – Many transformations, many novel fantasy events, addition of other characters or unusual twists

EXAMPLES:

- 1 – Child is not really doing anything with the puppets or blocks, there is little verbalization, puppets have very simple conversations with each other and do not build anything with the blocks, or blocks are used without description of what is being built
- 2 – Puppets build simple things with the blocks (i.e. house, tower, table) and have a little more detail in their conversations (could be puppets are pretending to play house, or going to school), a little bit of variety in the events or transformations, but nothing especially different or unique.

3 – Puppets build many things with the blocks, and a wide variety of things, some of which may be a little different or unique, puppets may add some (not many) other events or objects to the story (i.e. both puppets having a conversation with their mother, who is not really there, pretending to pick flowers that are not really there)

4 – Puppets build many unique and different things using the blocks (i.e. computer, spaceship, telescope, swing set, car) with a wide variety of transformations and events, other characters or objects are introduced into the story, and unusual or different twists are present (i.e. going in a spaceship, flying, etc...)

COMFORT:

Global rating for overall comfort in playing; lower end rates comfort (ability to play), while higher end indicates comfort and enjoyment (immersion in play).

4-POINT LIKERT SCALE

- 1 – Reticent, distressed; stops and starts
- 2 – Some stiffness; not enjoying or involved in play
- 3 – OK, but not completely involved or enjoying; continues to play
- 4 – Comfortable, involved, and enjoying play

EXAMPLES:

1 – Child cannot really “get into” the play, may look to examiner or express that he/she doesn’t know what to do, child seems not to want to play or expresses that he/she doesn’t want to play, once child begins playing, he/she

stops frequently and cannot pick back up easily, session may be discontinued because of child's inability to play continuously

2 – Child may take time to “get into” the play and seem hesitant or reluctant to play, may look to examiner for encouragement or instruction, child eventually begins to play but may stop from time to time, child is able to continue or “get back into” the play, but is not enjoying or involved in the play, may ask how much time is left or express that he/she doesn't know what to do

3 – Child may take a little time to get started, but once started, child continues to play, child is somewhat involved and enjoying the play, once he/she gets started, he/she doesn't stop often or need encouragement or instruction from the examiner, child's affect and tone of voice indicate some level of involvement or enjoyment in the play, even though child is not completely immersed.

4 – Child is eager and enthusiastic to play, is able to “jump right in” and continue playing throughout the session, child does not need encouragement or instruction from the examiner, and tone of voice and affect indicate the child is completely immersed in and enjoying the play

FREQUENCY OF AFFECT EXPRESSION:

Measures the frequency of affective expression. The rater should attempt to tally each unit of affect expression. The tally should be an estimation, so as not to detract from the other rating. 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 **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).

AFFECT CATEGORIES

Aggression: Expression of anger; fighting, destruction, or harm to another character or object; 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, doctor visits, fears, concern about punishment, and worry. Actions of fleeing and hiding, or agitation.

Sadness/Hurt: Expressions 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.

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

Sexual: Expressions of sexual content.

4 POINT LIKERT SCALE

1 – Low (0 – 2 affect units present)

2 – Mild (<8 affect units present)

3 – Moderate (8 – 15 affect units present)

4 – High (>15 affect units present)

TONE OF AFFECT EXPRESSION:

Measures overall tone of affect in the story, based on the average amount of positive or negative affect expression in the affect units in the child's play. If there is no affect present, do not give the child a score for this category.

4-POINT LIKERT SCALE

1 – Predominately negative affect dominates the play; overall negative tone to play and negative affect units

2 – Somewhat negative affect dominates the play; there is a mix of negative and positive affect units, but there is a generally negative affect tone to the play

3 – Somewhat positive affect dominates the play; there is a mix of positive and negative affect units, but there is a generally positive affect tone to the play.

4 – Predominately positive affect dominates the play; overall positive tone to play and positive affect units.

EXAMPLES:

- 1 – Almost all of the affect revolves around events that are sad, frustrating, disappointing, or upsetting; puppets are predominately angry, aggressive, and upset; fighting, crying or anger is present
- 2 – Most of the affect revolves around negative events, but there are some positive events mixed in; the negative events dominate the story, and fighting or other aggression may occur; the story may end on a negative note
- 3 – Most of the affect revolves around positive events, but there are some negative events mixed in; the positive events dominate the story, and affection or other happy events may occur; the story may end on a positive note
- 4 – Almost all of the affect revolves around events that are happy, affectionate, pleasurable, enjoyable, or fun; puppets are predominately happy, affectionate, and having a good time; physical affection, verbal praise, or evidence of enjoyment is present.

Feelings and Emotions (PANAS-C, revised for young children)

This scale has a lot of words that name different feelings and emotions. I will read each one to you, and then you circle the number of the way you feel next to the word. If you don't understand the word, please tell me. This is about the way you have felt over the past two weeks.

	Hardly at all	A little	A medium amount	A lot	Very very much
Interested	1	2	3	4	5
Sad	1	2	3	4	5
Frightened	1	2	3	4	5
Alert	1	2	3	4	5
Excited	1	2	3	4	5
Ashamed	1	2	3	4	5
Upset	1	2	3	4	5
Happy	1	2	3	4	5
Strong	1	2	3	4	5
Nervous	1	2	3	4	5
Guilty	1	2	3	4	5
Lots of Energy	1	2	3	4	5
Scared	1	2	3	4	5
Calm	1	2	3	4	5
Miserable	1	2	3	4	5
Jumpy	1	2	3	4	5
Cheerful	1	2	3	4	5
Active	1	2	3	4	5
Proud	1	2	3	4	5
Afraid	1	2	3	4	5
Joyful	1	2	3	4	5
Lonely	1	2	3	4	5
Mad	1	2	3	4	5
Fearless	1	2	3	4	5
Blue	1	2	3	4	5
Gloomy	1	2	3	4	5
Lively	1	2	3	4	5

Child Version of the Multidimensional Student Life Satisfaction Scale

Never Sometimes A Lot Almost all the time

1. My friends are nice to me
2. I feel bad at school*
3. I have a bad time with my friends*
4. I am good at lots of things
5. I like to be with my parents
6. There are many things about school I don't like*
7. My friends are great
8. My friends will help me if I need it
9. I wish I didn't have to go to school
10. I like myself
11. There are lots of fun things to do where I live
12. Most people like me
13. I like being at home with my family
14. My family has fun together
15. I like going to school
16. My parents are fair with me
17. I like being in school
18. My friends are mean to me*
19. I wish I had different friends*
20. I like the things I do at school
21. I wish I lived in a different house*

- 22. Members of my family talk nicely to one another
- 23. I have a lot of fun with my friends
- 24. My parents and I do fun things together
- 25. I like my neighborhood
- 26. I wish I lived somewhere else*
- 27. I am a nice person
- 28. This town is filled with mean people*
- 29. I like to try to do new things
- 30. My family's house is nice
- 31. I like my neighbors
- 32. I wish I had more friends
- 33. I wish I had different neighbors
- 34. I like where I live

SUBTOTALS

TOTAL SCORE

School Coping Scale

WHAT WOULD YOU DO IF....

1. ... you were going to be late to school?

(anything else?)

2. ...your teacher asked you a question and you didn't know the answer?

(anything else?)

3. ...you forgot something that you needed to bring to school (i.e. homework, show & tell object, a project)

4. ...your best friend didn't want to play with you anymore?

5. ...another girl in your class called you names?

6. ...another girl in your class took a pencil from you when you were using it?

7. ...you were put into a class where you didn't know any of the other children?

8. ...another girl in your class tattled on you?

9. ...you felt sick while you were at school?

10. ...you were the last person to be picked when your class picked sides to play a game?

Table 1. *Measures and corresponding Scores*

Construct	Measure	Scores	Method
Play Processes	Affect in Play Scale-Brief Rating Version (APS-BR)	Frequency of Affect, Tone of Affect, Organization, Imagination, and Comfort	Child Performance Task
Coping	School Coping Scale	Frequency of Effective Coping Responses Quality of Effective Coping Responses	Child Self-Report
Subjective Well-being	Multidimensional Student Life Satisfaction Scale for Children (MSLSS-C) Positive and Negative Affect Schedule for Children (PANAS-C)	Total Score Positive Affect Subscale	Child Self-Report Child Self-Report

Table 2. *Descriptive statistics of follow-up sample vs. total sample on play and coping at baseline*

	Total Sample ^a		Follow-up Sample ^b	
	M	SD	M	SD
APS-BR				
Organization	2.41	1.02	2.34	1.08
Imagination	2.63	1.17	2.52	1.24
Frequency of Affect	3.00	1.13	2.80	1.24
Tone	2.92	0.76	2.72	0.80
Comfort	2.95	1.06	3.01	1.10
School Coping Scale				
Frequency of Coping	12.61	4.12	11.27	3.11
Quality of Coping	1.53	0.22	1.48	0.21

^an = 59, except total sample tone, n = 52, and total sample coping scores, n = 61

^bn = 29, except follow-up sample tone, n = 25, and follow-up sample coping scores, n = 30

Table 3. *Descriptive Statistics of Affect in Play Scale-Brief Rating (APS-BR) Variables**

	Baseline		Current	
	M	SD	M	SD
Organization	2.34	1.08	2.87	0.97
Imagination	2.52	1.24	3.00	1.00
Frequency of Affect	2.83	1.23	2.83	1.11
Tone	2.87	0.63	3.21	0.71
Comfort	3.03	1.09	3.52	0.79

*All play scores ranged from 1 to 4

n = 23

^an = 19; Tone scores are not assigned to participants who display no affect during the play task.

Table 4. *Descriptive statistics of subjective well-being variables*

Construct	Measure (Score)	M	SD	Range
Life Satisfaction	MSLSS-C (Total)	111.23	12.19	87.0-134.0
Positive Affect	PANAS-C (Positive Affect)	45.83	8.09	26.0-62.0
Negative Affect	PANAS-C (Negative Affect)	25.27	7.49	16.0-46.0

n = 30

Table 5. *Correlations between major variables and IQ, age, and grade*

Measure	Variable	IQ	Age	Grade
APS-BR ^a	Organization	-.07	.20	.15
	Imagination	-.14	.11	.04
	Frequency of Affect	-.37	-.03	-.10
	Tone	.12	-.18	-.16
	Comfort	-.41	-.11	-.15
PANAS-C ^c	Positive Affect	-.20	.00	-.03
	Negative Affect	.01	-.10	-.04
MSLSS-C ^c	Total Score	.10	.02	-.04
School Coping Scale ^c	Frequency of Coping	.01	.45*	.46*
	Quality of Coping	-.17	.26	.23

^an = 29; ^bn = 23; ^cn = 30

*p<.05

Table 6. *Concurrent Pearson-product correlations among APS-BR and well-being variables*

	Affect in Play Scale Variables: Outcome				
Well-Being: Outcome	Organization	Imagination	Frequency of Affect	Tone	Comfort
Life Satisfaction (MSLSS-C)	-.16 (-.16)	-.22 (-.21)	-.36* (-.34)	.33 (.31)	.25 (-.23)
Positive Affect (PANAS-C)	.24 (.23)	.26 (.24)	.39* (.35†)	-.20 (-.16)	.20 (.13)
Negative Affect (PANAS-C)	.02 (.02)	.01 (.00)	.32 (.31)	-.34 (-.33)	.09 (.06)
Coping (Frequency)	.38* (.38*)	.34† (.34)	.30 (.33)	-.12 (-.12)	.09 (.10)
(Quality)	.09 (.08)	-.01 (-.03)	-.10 (-.18)	.16 (.19)	-.22 (-.32)

n = 23

^an = 19; Tone scores are not assigned to participants who display no affect during the play task.

partial correlations (controlling for verbal intelligence) in parentheses

*p<.05

†p=.05

Table 7. *Pearson-product correlations among baseline APS-BR and well-being variables*

	Affect in Play Scale Variables: Baseline				
Well-Being: Outcome	Organization	Imagination	Frequency of Affect	Tone	Comfort
Life Satisfaction (MSLSS-C)	.04	.02	.08	-.14	.06
Positive Affect (PANAS-C)	.12	.14	.24	-.03	.24
Negative Affect (PANAS-C)	.02	-.17	-.19	.16	.11
Coping (Frequency)	.27	.34*	.01	.20	.13
(Quality)	-.13	.15	-.14	.34	.04

n = 29

^an = 29

*p<.05

†p=.05

Table 8. *Pearson-product correlations among baseline and outcome APS-BR variables*

	APS-BR Variables: Outcome				
APS-BR: Baseline	Organization	Imagination	Frequency of Affect	Tone	Comfort
Organization	.58**	.51**	.35†	-.13	.42*
Imagination	.56**	.46*	.45†	-.12	.50*
Frequency of Affect	.18	.19	.26	-.19	.37*
Tone	.25	.20	.32	-.16	.19
Comfort	.20	.23	.32	-.36	.46*

n = 23

^an = 19; Tone scores are not assigned to participants who display no affect during the play task.

*p<.05

** p<.01

†p=.05

Table 9. *Concurrent Pearson-product correlations among well-being and coping variables*

	Subjective Well-Being			Coping	
	Life Satisfaction	Positive Affect	Negative Affect	Frequency	Quality
Life Satisfaction	1.00	.11 (.14)	-.28 (-.27)	-.18 (-.18)	.33* (.35*)
Positive Affect		1.00	-.04 (-.06)	.38* (.40*)	.36* (.34*)
Negative Affect			1.00	-.15 (-.15)	-.45** (-.48**)
Frequency of Coping				1.00	.53** (.54**)
Quality of Coping					1.00

n = 30

^apartial correlations (controlling for verbal intelligence) in parentheses

*p<.05

**p<.01

†p=.05

References

- Bateson, G. (1955). A theory of play and fantasy. *Psychiatric research reports*, 2, 39-55.
- Burck, A. (2009). [Play, coping, adjustment, and emotion regulation in elementary school children]. Unpublished raw data.
- Burstein, S. & Meichenbaum, P. (1979). The work of worrying in children undergoing surgery. *Journal of Abnormal Psychology*, 7, 121-132.
- Carson, D., Bittner, M., Cameron, B., Brown, D., & Meyer, S. (1994). Creative thinking as a predictor of school-aged children's stress response and coping abilities. *Creativity Research Journal*, 7, 145-158.
- Christiano, B., & Russ, S. (1996). Play as a predictor of coping and distress in children during an invasive dental procedure. *Journal of Child Clinical Psychology*, 25, 130-138.
- Cicchetti, D. (1994). Guidelines, criteria, and rules of thumb for evaluating normed and standardized assessment instruments in psychology. *Psychological Assessment*, 6, 284-290.
- Cohen, D. (2006). *The development of play* (3rd edition.). New York: New York University Press.
- Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences* (2nd edition). UK: Lawrence Erlbaum Associates.
- Cummins, R. (1996). The domains of life satisfaction: An attempt to order chaos. *Social Indicators Research*, 38, 303-328.
- Curry, S. & Russ, S. (1985). Identifying coping strategies in children. *Journal of Clinical Child Psychology*, 14, 61-69.

- Dansky, J. (1980). Make-believe: A mediator of the relationship between play and associative fluency. *Child Development*, 51, 576-579.
- Dansky, J. (1999). Play. In Runco, M. & Pritzner, S. (Eds.), *Encyclopedia of creativity* (Vol. 2, pp. 393-408). New York: Academic Press.
- Diener, E. Suh, E., Lucas, R., & Smith, H. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, 125, 276-302.
- Dillon, J. (2009). *Play, creativity, emotion regulation, and executive functioning* (Master's Thesis). Case Western Reserve University, Cleveland, OH.
- Fein, G. (1981). Pretend play in childhood: An integrative review. *Child Development*, 52, 1095-1118.
- Fein, G. (1987). Pretend play: Creativity and consciousness. In P. Gorlitz & J. Wohlwill (Eds.), *Curiosity, imagination, and play* (pp. 281-204). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Fisher, E. (1992). The impact of play on development: A meta-analysis. *Play and Culture*, 5, 159-181.
- Folkman, S. & Lazarus, R. (1980). An analysis of coping in a middle-aged community sample. *Journal of Health and Social Behavior*, 21, 219-239.
- Freedheim, D., & Russ, S. (1992). Psychotherapy with children. In C. Walker & M. Roberts (Eds.), *Handbook of clinical child psychology* (2nd ed., pp. 765-781). New York: Wiley.
- Freyberg, J. (1973). Increasing the imaginative play of urban disadvantaged kindergarten children through systematic training. In J. Singer (Ed.), *The child's world of make-believe*. New York: Academic Press.

- Fromberg, D. (2002). *Play and meaning in early childhood education*. Boston: Allyn & Bacon.
- Gayler, K. & Evans, I. (2001). Pretend play and the development of emotion regulation in preschool children. *Early Child Development and Care*, 166, 93-108.
- Goldstein, A., & Russ, S. (2000-2001). Understanding children's literature and its relationship to fantasy ability and coping. *Imagination, Cognition, and Personality*, 20, 105-126.
- Grossman-McKee, A. (1990). The relationship between affective expression in fantasy play and pain complaints in first and second grade children. *Dissertation Abstracts International*, 50 (09), 4219B.
- Guilford, J. (1968). *Intelligence, creativity and their educational implications*. San Diego: Knapp.
- Haight, W., Black, J., Ostler, T., & Sheridan, K. (2006). Pretend play and emotion learning in traumatized mothers and children. In D. Singer, R Golinkoff, & K. Hirsh-Pasek (Eds.), *Play = learning: How play motivates and enhances children's cognitive and social-emotional growth* (pp. 209-230).
- Hartley, R., Frank, L., & Goldenson, R. (1952). *Understanding children's play*. New York: Columbus University Press.
- Huebner, E. (1991). Further validation of the students' life satisfaction scale: The independence of satisfaction and affect ratings. *Journal of Psychoeducational Assessment*, 9, 363-368.
- Huebner, E. (1994). Preliminary developmental and validation of a multidimensional life satisfaction scale for children. *Psychological Assessment*, 6, 149-158.

- Huebner, E., Laughlin, J., Ash, C., & Gilman, R. (1998). Further validation of the multidimensional students' life satisfaction scale. *Journal of Psychoeducational Assessment, 16*, 118-134.
- Huebner, E. & Dew, T. (1996). Interrelationships of positive affect, negative affect, and life satisfaction in an adolescent sample. *Social Indicators Research, 38*, 129-137.
- Kogan, N. & Pankove, E. (1972). Cognitive ability over a five-year span. *Child Development, 43*, 427-442,
- Land, K., Lamb, V., Meadows, S., & Taylor, A. (2007). Measuring trends in child well-being: An evidence-based approach. *Social Indicators Research, 80*, 105-132.
- Laurent, J., Catanzaro, S., Joiner, T., Rudolph, K., Potter, K., Lambert, S., Osborne, L., & Gathright, T. (1999). A measure of positive and negative affect for children: Scale development and preliminary validation. *Psychological Assessment, 11*, 326-338.
- Lieberman, J. (1977). *Playfulness: Its relationship to imagination and creativity*. New York: Academic Press.
- Lee, A. & Browne, M. (2008). Subjective well-being, sociodemographic factors, mental and physical health of rural residents. *The Australian Journal of Rural Health, 16*, 290-296.
- Loeber, R. (1982). The stability of antisocial and delinquent child behavior: A review. *Child Development, 53*, 1431-1446.
- Lucas, R., Diener, E., & Sug, E. (1996). Discriminant validity of well-being measures. *Journal of Personality and Social Psychology, 71*, 616-628.
- Monat, A., & Lazarus, R. (1977). Introduction: Stress and coping—some current issues

- and controversies. In A. Monat & R. Lazarus (Eds.), *Stress and coping: An anthology* (pp. 1-11). New York: Columbia University Press.
- Moore, M., & Russ, S. (2008). Follow-up of a pretend play intervention: Effects on play, creativity, and emotional processes in children. *Creativity Research Journal*, 20, 427-436.
- Murphy, L. (1962). *The widening world of childhood*. New York: Basic.
- Pepler, D. & Ross, H. (1981). The effects of play on convergent and divergent problem solving. *Child Development*, 52, 449-470.
- Piaget, J. (1962). *Play, dreams, and imitation in childhood*. New York: Norton.
- Richards, R. (1990). Everyday creativity, eminent creativity, and health: Afterview for CRT issues on creativity and health. *Creativity Research Journal*, 3, 300-326.
- Rubin, K., Fein, G., & Vandenberg, B. (1983). Play. In P. Mussen (Ed.) *Handbook of child psychology* (Vol. 4, pp. 693-774). New York: Wiley.
- Russ, S. (1988). Primary process thinking on the Rorschach, divergent thinking, and coping in children. *Journal of Personality Assessment*, 52, 539-548.
- Russ, S. (1993). *Affect and creativity: The role of affect and play in the creative process*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Russ, S. (2004). *Play in child development and psychotherapy: Towards empirically supported treatment*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Russ, S., Burck, A., Dillon, J., & Fiorelli, J. (2009). [Play intervention with elementary school children]. Unpublished raw data.
- Russ, S., & Grossman-McKee, A. (1990). Affective expression in children's fantasy play,

- primary process thinking on the Rorschach, and divergent thinking. *Journal of Personality Assessment*, 54, 756-771.
- Russ, S., Moore, M., & Pearson, B. (2004, July). *Effects of play intervention on play skills*. Poster session presented at the American Psychological Association National Conference, Honolulu, HI.
- Russ, S., Moore, M., & Pearson, B. (2007). *Effects of play intervention on play skills*. Manuscript submitted for publication.
- Russ, S., Robins, D., & Christiano, B. (1999). Pretend play: Longitudinal prediction of creativity and affect in fantasy in children. *Creativity Research Journal*, 12, 129-139.
- Russ, S., & Schafer, E. (2006). Affect in fantasy play, emotion in memories, and divergent thinking. *Creativity Research Journal*, 18, 347-354.
- Sacha Cordiano, T., Russ, S. & Short, E. (2008). Development and validation of the Affect in Play Scale-Brief Rating Version (APS-BR). *Journal of Personality Assessment*, 90, 52-60.
- Saltz, E. Dixon, D. & Johnson, J. (1977). Training disadvantaged preschoolers on various fantasy activities: Effects on cognitive functioning and impulse control. *Child Development*. 48, 367-380.
- Seja, A., & Russ, S. (1998, May). *Children's fantasy play, emotional understanding and parents' reports of children's daily behavior*. Poster session presented at the Great Lakes Regional Conference on Child Health Psychology, Louisville, KY.
- Singer, D., & Rummo, J. (1973). Ideational creativity and behavioral style in kindergarten age children. *Developmental Psychology*, 8, 154-161.

- Singer, D. & Singer, J. (1990). *The house of make-believe: Children's play and the developing imagination*. Cambridge, MA: Harvard University Press.
- Sylva, K., Bruner, J., Genova, P. (1976). The role of play in the problem-solving of children 3-5 years old. In J. Bruner, A. Jolly, & K. Sylva (Eds.), *Play: Its Role in Development and Evolution* (pp. 244-257). New York: Basic Books.
- Tomada, G. & Schneider, B. (1997). Relational aggression, gender, and peer acceptance: Invariance across culture, stability over time, and concordance among informants. *Developmental Psychology*, 33, 601-609.
- Udwin, O. (1983). Imaginative play training as an intervention method with institutionalized preschool children. *British Journal of Educational Psychology*, 53, 32-39.
- Watson, D., Clark, L., Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54, 1063-1070.
- Watson, D. & Pennebaker, J. (1989). Health complaints, stress, and distress: Exploring the central role of negative affectivity. *Psychological Review*, 96, 234-254.
- Youngblade, L. & Dunn, J. (1995). Individual differences in young children's pretend play with mother and sibling: Links to relationships and understanding of other people's feelings and beliefs. *Child Development*, 66, 1472-1492.