

Childhood Playfulness as a Predictor of Adult Playfulness and
Creativity: A Longitudinal Study

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(ABSTRACT)

The primary purpose of this study was to examine the strength of the relationship between childhood playfulness and adult playfulness. The relationship between adult playfulness and adult creativity was also examined along with the relationship between child playfulness and adult creativity. Exploratory interviews were conducted with a purposive sample of individuals to provide insight into subjects' perceptions of their own playfulness as well as life experiences they perceived to be related to stability or change in their own playfulness. Specifically, the researcher interviewed one subject in each of four categories: (1) low childhood playfulness scores but high adult playfulness scores (2) low childhood playfulness scores and low adult playfulness scores (3) high childhood playfulness scores but low adult playfulness scores and (4) high childhood playfulness scores and high adult playfulness scores.

The Adult Behaviors Inventory (ABI) and the Student Self-Evaluation of Creativity (SSEC) were completed by 27 young adults from a pool of 103 subjects who had participated in a previous study in the period from 1985-1987,

more than 15 years ago. The Adult Behaviors Inventory, an adaptation of the Child Behaviors Inventory (CBI) that was used to rate these subjects between 1985-1987, was completed by 31 mothers for a son or daughter. The total sample ($n = 36$) for this study consisted of 17 females (47.2%) and 19 males (52.8%). The mean age of the subjects was 20.32 at the time of the follow-up study. Participants were from well-educated middle class families, and 96.2% of the participants were enrolled in college or had completed a college degree.

Pearson correlation coefficients computed to determine the strength of the relationships among variables of interest and they yielded these results:

- (a) Childhood playfulness during the preschool years as rated by mothers using the CBI was not significantly related to maternal ratings on the ABI, self-ratings on the ABI, or self-ratings on the SSEC.
- (b) Adult playfulness as self-reported by the same participants (now young adults) using the Adult Behaviors Inventory (ABI) was significantly related to maternal ratings on the ABI and self-ratings on the SSEC. Self-rated ABI scores were not significantly related to maternal or teachers' ratings on the CBI.
- (c) Adult creativity scores obtained from self-reports using the Students Self-Evaluation of Creativity Scale was not related to maternal or teachers' ratings on the CBI. Creativity scores on the SSEC were significantly related to both maternal and self-ratings on the ABI.
- (d) Adult playfulness as reported by each participant's mother was significantly related to self-ratings on the ABI and SSEC.

Short structured interviews with a purposive sample of subjects representing low or high playfulness in childhood and adulthood indicated that the interviewees were able to accurately identify their own playfulness classification even though the survey questionnaire was designed so as not to make it obvious that playfulness was the focus of the study. Interview data pointed to possible links between life events and playfulness.

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CHAPTER 1

INTRODUCTION

Child development specialists whose mission is to optimize human development by facilitating cognitive, social, emotional, and physical well being look to researchers for guidance. In the twentieth century, developmental science focused at different times on behavior outcomes, cognitive psychology, and complex systematic interactions between various aspects of development. More often than not developmental researchers sought to explain causal factors in non-optimal development. Early in the 21st Century a special issue of *American Psychologist* (2001) was devoted to an emergent focus on positive development. Seligman and Csikszentmihalyi (2001), co-editors of the special issue, pointed out the importance of understanding contextual factors associated with positive outcomes. The present study was conducted to contribute to the literature on positive development.

This project focused on play and creativity, both factors that have been touted by philosophers and psychologists alike as positive developmental processes and outcomes. Specifically, the stability of the dispositional or attitudinal dimension of play was studied along with creativity. Young adults for whom extant data on childhood playfulness existed were assessed to estimate the relationship between playfulness scores taken at two points in development – preschool and young adulthood.

A second purpose of this study was to determine the strength of the relationship between preschool playfulness scores and self-reported creativity in young adulthood. The relationship between adult playfulness and adult creativity was also assessed. Finally, the researcher examined continuities and discontinuities in playfulness by interviewing a purposive sample of participants about attributions associated with variations in self-reported playfulness. The following section provides an introduction to some of the major themes and issues pertaining to the factors of interest in this study.

Play

Theorists have struggled unsuccessfully for years to reach consensus on a definition of play (e.g., see Sutton-Smith, 1997). However, a comprehensive review of literature on play by Rubin, Fein, and Vandenburg (1983) led them to define play by three dimensions, i.e., behavior, context, and disposition. Studies on the behavioral dimension typically focus on cognitive or social level (e.g., Piaget, 1950/1962). Research on the contextual dimension of play focuses on such variables as space, time, social constraints, or body states. The third dimension, dispositional tendencies, includes tendencies to act in certain ways even under varying conditions. Rubin et al. (1983) found in the literature, six aspects of play dispositions. These include play as (a) an intrinsically motivated behavior, (b) a focus on the process over the product, (c) play rather than exploratory behaviors, (d) nonliterality, (e) freedom from external rules, and (f) active engagement. The proposed study takes the dispositional dimension of play as its definition of playfulness. This study focused on the strength of the

relationship between childhood playfulness and adult playfulness as well as relationships between child playfulness and adult creativity.

Playfulness

Child development researchers have provided evidence to demonstrate that playfulness is a measurable construct (Rogers, Impara, Frary, Harris, Meeks, Semanic-Lauth, & Reynolds, 1998) that shows wide individual differences. Moreover, playfulness is known to be associated with several variables including the following: (a) creativity (e. g., Lieberman 1965, 1977; Taylor, 1992; Taylor & Rogers, 2001), (b) gender (Barnett, 1991), (c) intelligence (Armstrong, 1998; Barnett & Fiscella, 1985, Harris, 1989), (d) culture (Li, Bundy, & Beer, 1995; Porter & Bundy, 2001; Taylor, 1992, Taylor & Rogers, 2001), (e) workplace attitudes (Glynn & Webster, 1992 1993), (f) personality (Meehl, Lykken, Schofield, & Tellegan, 1971), (g) temperament (Rogers, Fox, Harrison, & Ross 2000), and (h) teacher characteristics (Graham, 1987). The proposed study adds to the literature by providing information on the relationship between child playfulness and adult playfulness and creativity.

Playfulness and Creativity

Lieberman (1965, 1977) was the pioneer who first proposed a relationship between playfulness and creativity, and several researchers provided additional data that pointed to a concurrent relationship between play and creativity. In fact, in 1983 Nathan Kogan, in a comprehensive review of research on creativity, made this comment:

If there is any sort of new look to recent process-oriented research on children's creativity, it is the repeated demonstrations of linkages between play behaviors and dispositions on the one hand and divergent thinking performance on the other hand. (Kogan, 1983, p. 639)

A more detailed description of research on the play-creativity link will be provided in the review of literature.

In addition to the concurrent relationship between play and creativity, several scholars have hypothesized that playfulness in childhood may contribute to adult creativity. For example, Erik H. Erikson, in a Smithsonian Institution symposium celebrating the "International Year of the Child," presented the psychohistory of Albert Einstein as anecdotal evidence for the relationship between childhood play and adult innovation (See Rogers & Sluss, 1999). However, no longitudinal empirical data has been reported to corroborate Erikson's conjecture.

This study addressed the gap in research linking childhood play and adult creativity by following up with children who had participated in a study on preschool playfulness several years ago. The subjects, now young adults, were surveyed to assess the strength of the relationships between (a) childhood playfulness and adult playfulness, (b) childhood playfulness and adult creativity, and (c) adult playfulness and adult creativity. Another aim of the study was to explore subjects' perceptions of their own playfulness and of life experiences that might have contributed to their adult playfulness and creativity.

Research Questions

- What is the strength of the relationship between teachers' ratings of 3- and 4-year-olds on the Child Behaviors Inventory and self-ratings on the Adult Behaviors Inventory?
- What is the strength of the relationship between maternal ratings of 3- and 4-year-olds on the Child Behaviors Inventory and self-ratings on the Adult Behaviors Inventory?
- What is the strength of the relationship between maternal ratings of 3- and 4-year-olds on the Child Behaviors Inventory and maternal ratings of the same subjects on the Adult Behaviors Inventory?
- What is the strength of the relationship between maternal ratings of childhood playfulness on the Child Behaviors Inventory and self-reported adult creativity on the Student Self-Evaluation of Creativity?
- What is the strength of the relationship between self-ratings on the Adult Behaviors Inventory and self-ratings on the Student Self-Evaluation of Creativity?
- What is the strength of the relationship between maternal ratings on the Adult Behaviors Inventory and self-ratings on the Student Self-Evaluation of Creativity?
- What is the strength of the relationship between self-ratings on the Adult Behaviors Inventory and maternal ratings on the Adult Behaviors Inventory?

- How do participants perceive themselves in terms of the playful disposition and what are some contextual variables that might have impacted changes in playfulness from childhood to adulthood?

CHAPTER 2

REVIEW OF LITERATURE

The primary purpose of this study was to assess relationships between playfulness in early childhood and playfulness and creativity in young adulthood. The concurrent relationships between playfulness and creativity in the young adults were also examined along with an exploration of possible factors associated with stability or change in playfulness ratings from childhood to adulthood.

To provide a background for the study, theoretical literature related to the constructs of play, playfulness, and creativity will be summarized in this review. Previous empirical research on playfulness will be presented, including methods of measuring the construct. An examination of the relationship between playfulness and creativity comprised a secondary focus of the project. Hence, a brief review of literature focused specifically on the play creativity link will be presented.

Playfulness

Theory

Rubin, Fein, and Vandenberg's perspective on play. It is essential to elucidate the definition of the construct of playfulness. While scholars have debated the definition of play for decades without arriving at a consensus, a review of literature on play, published as part of the third volume of the *Handbook*

of Childhood Psychology in 1983, (Rubin et al., 1983) provided a comprehensive three-dimensional definition of play. Rubin and his coauthors stated:

...play is a behavioral disposition that occurs in describable and reproduceable contexts and is manifest in a variety of observable behaviors. (Rubin et al. 1983, p. 698)

The context for play consists of five criteria including familiar objects or toys, an agreement between the children and the adults that the children have a choice in their play, minimally intrusive adults, friendly atmosphere, and practical schedule which suits the children's needs (Rubin et al., 1983).

The behavioral dimension of play includes observable cognitive (e.g., Piaget's levels of cognitive play) or social behaviors. Advancing the 1983 description of play behaviors, Rubin (1989) combined cognitive and social behaviors as well as non-play behaviors to create the Play Observation Scale. Social play consists of solitary play, parallel play, and group play. Cognitive play consists of functional play, constructive play, dramatic play, and games with rules. Non-play behaviors include exploratory behaviors, reading, unoccupied behaviors, onlooker behaviors, transitions, active conversations, aggression, and rough and tumble play (Rubin, 1989).

According to Rubin, Fein, and Vandenberg a third dimension of play is the disposition with which it is carried out. The disposition of play includes six criteria: (a) intrinsically motivated behavior, (b) a focus on the process rather than the product, (c) different than exploratory behaviors, (d) nonliteral, (e) free from external rules, and (f) active engagement (Rubin et al., 1983, pp. 698-700).

This study focused on the dispositional dimension of play. The focus on disposition was based on the supposition that “which” behaviors one exhibits is less important than “how” the behaviors are carried out. Although Rubin et al. (1983) used Piaget’s classification of three types of play (practice, symbolic, games-with-rules) as an example of play behaviors, close examination of Piaget’s criteria for play, indicate that he might have been more concerned with the disposition or “how” of playfulness than is generally thought.

Piagetian perspective on play. Piaget (1950/1962) identified six criteria that are typically used to describe play: (a) lacking precision, (b) spontaneous, (c) pleasurable, (d) lacking organization, (e) free from conflicts, and (f) consisting of additional incentives. However, he presented logical arguments to refute each criterion and concluded that the only acceptable definition of play was that play occurs when assimilation predominates over accommodation. Piaget wrote, “Play is primarily mere functional or reproductive assimilation” (Piaget, 1950/1962, p. 87). He also stated, “Play begins, then, with the first dissociation between assimilation and accommodation” (Piaget, 1950/1962, p. 162). This dissociation occurs in disequilibrium and is an extreme case of assimilation.

Although Rubin et al. did not cite Piaget among researchers who focused on the disposition of play, Piaget (1950/1962) wrote that play is not a behavior but rather an orientation of the behavior:

An examination of the main criteria usually adopted to distinguish play from non-ludic activities shows clearly that play is not a behaviour *per se*, or one particular type of activity among others. It is determined by a

certain orientation of the behavior, or by a general 'pole' of the activity, each particular action being characterized by its greater or less proximity to the pole and by the kind of equilibrium between the polarized tendencies. (Piaget, 1950/1962, p. 147)

Vygotskian perspective on play. Vygotsky (1933) defined play differently from Piaget. He stated that play should not be judged on whether or not the act is enjoyable. He purported that play begins at the minimum age of three with the emergence of symbolic play. Vygotsky named two criteria of play: (a) an imaginary situation, and (b) rules correlating with the imaginary situation (Nicolopoulou, 1993). An imaginary situation exists when children play in order to fulfill their wishes such as a child who played cabs because he had wished to ride in a cab (Vygotsky, 1933, p. 539). Having rules created by the children as a part of their imaginative play was Vygotsky's second criteria of play. Vygotsky described all imaginary situations as having rules. He also described how throughout play, young children use objects to represent items. Vygotsky used the example of a child participating in symbolic play using a stick as a mental representation for a horse (Vygotsky, 1933). When discussing play for older children Vygotsky stated:

At school age play does not die away but permeates the attitude to reality. It has its own inner continuation in school instruction and work (compulsory activity based on rules). All examinations of the essence of play have shown that in play a new relationship is created between the

semantic and visible fields – that is, between situations in thought and real situations. (Vygotsky, 1933, p.554)

Lieberman's perspective on play. Nina Lieberman (1977), a pioneer of research on playfulness offered a formal definition of the construct and attempted to operationalize it. She concluded that playfulness is a unitary trait characterized by the five components that comprised her definition, i.e., physical spontaneity, manifest joy, sense of humor, social spontaneity, and cognitive spontaneity. She noted that playfulness was a disposition and described it as follows:

By this I mean the lightheartedness that we find as a quality of play in the young child's activities and, later on, as the combinatorial play essential to imagination and creativity. I, therefore, see playfulness as behavior that goes beyond the childhood years; and, through its component parts of sense of humor, manifest joy, and spontaneity, it has major implications for childrearing practices, educational planning, career choices, and leisure pursuits. (Lieberman, 1977, p. xi)

Child Playfulness

Correlates of Child Playfulness

One theme of early research on playfulness was the relationship between playfulness and factors that co-occur with it. Gender, intelligence, culture, therapy, divergent thinking, and creativity are among the factors that have been studied in relationship to playfulness. A brief review of correlates of playfulness will be presented next.

Personality, sex, and family factors related to playfulness. Barnett (1991) studied playfulness with regard to children's personality, sex, age, birth order, and family size among 271 preschoolers. Teachers rated the children on playfulness and personality traits. The results were described as follows:

Those person characteristics that correlated significantly with the playfulness composite were bright, active, aggressive, cheerful, confident, curious, dependent, imaginative, impulsive, mischievous, and responsible. The correlations for affectionate, attractive, considerate, cute, disruptive, docile, obedient, temperamental, and truthful were all insignificant.

(Barnett, 1991, p.379)

Barnett (1991) observed that boys received higher scores on physical spontaneity and manifest joy, while girls received higher ratings on cognitive spontaneity. Studies of age related differences showed significant results for social spontaneity, cognitive spontaneity, and sense of humor. Ratings of playfulness in social spontaneity and cognitive spontaneity increased gradually with age. Ratings for playfulness in sense of humor showed small differences among children before age 5 when an increase in scores was noted. Barnett also found that birth order was related to three characteristics of playfulness, i.e., sense of humor, cognitive spontaneity, and social spontaneity. First born children showed a greater sense of humor and imagination than the middle born children or the later born children. Later born children were rated higher in social spontaneity than the other children. The number of siblings made little or no impact on playfulness ratings. Family size was related to playfulness but

moderated by gender differences. Boys had higher ratings of manifest joy, social spontaneity, physical spontaneity, and sense of humor when part of a larger family while girls had lower playfulness scores than boys when part of larger families. Fewer differences were found between boys' and girls' playfulness ratings when they had a fewer siblings.

Harris (1989) studied the relationship between parental perceptions of their child's playfulness and temperament. Parents were asked to complete the Child Behaviors Inventory and the Behavioral Style Questionnaire (a measure of temperament) for their children. Results showed that parents rated playfulness and persistence similarly. This finding corroborated an observation by Jennings that the play context fostered persistence (Jennings, Harmon, Moran, Gaiter, & Yarrow, 1979).

Intelligence. Some researchers have been particularly interested in playfulness among gifted children (Armstrong, 1998; Barnett & Fiscella, 1985). Armstrong (1998) listed playfulness as one of the 12 qualities of genius. He described playfulness as "...an attitude toward life that informs the behavior of the 4th grader who dances his way into the classroom as well as the playful manipulations of an 11th grade -wise guy" (p. 5). Barnett and Fiscella (1985) studied playfulness in gifted preschoolers and found that they were given higher ratings than their typically developing peers in both social spontaneity and cognitive spontaneity. However, scores of gifted subjects did not differ significantly from those of their peers in manifest joy or sense of humor. In the

area of physical spontaneity, boys of normal intelligence received the highest ratings. Gifted subjects also showed more creativity than their peers in their play:

...they showed higher levels of imaginative and creative playful interactions by incorporating new and unconventional objects within their play and by designing play activities which were more numerous and varied in content. (Barnett & Fiscella, 1985, p. 64)

Children of higher than average intelligence scored higher on some of the characteristics of playfulness, including social spontaneity and cognitive spontaneity, but were equal or lower on others, such as manifest joy, physical spontaneity, and sense of humor (Barnett & Fiscella, 1985).

Harris (1989) conducted a study with 128 four-years-olds, in which scores of playfulness, temperament, and IQ were recorded. Parents were asked to complete the Child Behaviors Inventory for their child and intelligence was estimated using the Wechsler Preschool and Primary Scale of Intelligence. Harris found no significant relationship between scores of intelligence and child playfulness ratings. Hence, the relationship between intelligence and playfulness is not straightforward.

Special needs. Bundy and Clifton (1998) advanced the research on playfulness by developing an assessment tool, the Children's Playfulness Scale, which was designed to capture playful behavior of children with special needs. Parents completed the Child Playfulness Scale for 89 children (nine of whom had special needs), from 15 months to 118 months. Results showed the internal validity of the CPS to be in jeopardy because of three items, namely "one item

from the physical spontaneity category (# 1: movements are generally well coordinated during play activities), one item from the social spontaneity category (# 9: assumes a leadership role when playing with others), and one item from the cognitive spontaneity category (# 11: uses conventional objects in play)” (Bundy & Clifton, 1998, p. 142). Results also showed that only 92% of the children fit the model. Of those children who did not fit the model, 43% were children with special needs. In addition, results of the study showed that typically developing children scored higher than the children with special needs on overall playfulness. Bundy and Clifton’s study showed the Child Playfulness Scale to be a valid instrument for typically developing children, but that more research needs to be done in order to assess the playfulness of children with special needs.

Therapy. Erik Erikson fathered the field of child play therapy when he modified Freud’s “talking method” of therapy by allowing children to use play as a medium for communicating and modifying feelings. In the book *Toys and Reasons* (1977), Erikson noted that when followed into adulthood, children with whom he had worked in therapy had a higher quality of life if they had maintained a sense of playfulness at the core of their being. He stated that “playfulness transforms them into acts of renewal (Erikson, 1977, p. 42)” when dealing with traumatic events. Erikson (1977) wrote of playfulness as happiness in self-expression and simply being alive, while not having playfulness is described as missing out on aspects of life. He stated:

Unimpaired playfulness, however, not only endows events categorized by play; it is so much a part of being active and alive that it soon tends to

elude any definition except, perhaps, one that can include this elusive quality – as does Plato's leap. (Erikson, 1977, p. 42)

Culture. The cultural impact on playfulness has been the subject of a few studies (e.g., Li, Bundy, & Beer, 1995; Porter & Bundy, 2001; Taylor, 1992, 2001). After surveying 77 parents and 4 teachers, Li, Bundy, and Beer (1995) found that Taiwanese adults believed that playfulness was important. For example, Taiwanese adults attributed a great deal of importance to social spontaneity and manifest joy and less importance to cognitive spontaneity, physical spontaneity, and sense of humor. Their study showed that Taiwanese adults saw child playfulness as important, but that the American culture and the Taiwanese culture differ in which behavioral dimensions are deemed important (Li et al., 1995).

Porter and Bundy (2001) continued their studies of the cultural impact of playfulness by exploring playfulness among African-American children and their parents. Forty-seven African-American parents and 35 children of African-American heritage participated in the study. Parents and/or educators completed an adapted form of the Child Playfulness Scale, which measured parental beliefs and values towards playfulness. Two videotaped observations (outdoors and indoors) were also scored by two raters for each child using the second version of The Test of Playfulness (ToP), created by Bundy. Results showed that playfulness is represented in both the Beliefs Scale and the Values Scale as a disposition. African American parents had high scores on the Beliefs and Values Scale which shows that they deem playfulness as important. There was

no significant correlation, however, between parental beliefs on playfulness and the scores which the children received on the ToP scale because, seemingly, most parents rated their children higher on the playfulness aspect than did the researchers.

Divergent thinking and creativity. Nina Lieberman (1965, 1977) was one of the first researchers to study playfulness with regard to divergent thinking. She hypothesized that kindergarteners who received higher rates on playfulness would also receive higher scores on divergent thinking. Lieberman studied 93 children who were enrolled in kindergarten classrooms in New York City. She asked teachers to rate the children for playfulness using The Playfulness Scale, interviewed the children in order to obtain scores on divergent thinking tasks, and tested intelligence through the use of The Peabody Picture Vocabulary Test. She concluded that playfulness and divergent thinking were significantly and positively related.

Barnett and Kleiber (1982) examined the relationship between playfulness and divergent thinking task scores in young children while taking into account both intelligence and gender differences. They assessed 106 children in both day care and kindergarten classrooms using Lieberman's (1977) Playfulness Scale, the Peabody Picture Vocabulary Test, and the Novel Uses Test created by Torrance. Correlations between playfulness and divergent thinking, were significant, a finding that was similar to Lieberman's original findings. However, when taking into account the intelligence factor, Barnett and Kleiber found little or no relationship between playfulness and divergent thinking. They then expanded

on these findings and took gender differences into account with playfulness, divergent thinking, and intelligence and concluded that gender differences make an impact on the results. Playfulness and divergent thinking were related among females but not among males. This study showed a need for more research on the relationship between playfulness, gender, and divergent thinking (Barnett & Kleiber, 1982).

The relationship between playfulness and creativity has also been studied in the Japanese culture by Taylor and Rogers (Taylor, 1992; Taylor & Rogers, 2001) who observed 164 young children between the ages of 5 and 6. Teachers at the Kawasaki Kindergarten in Kawasaki City, Japan rated all the children using the Child Behaviors Inventory (Rogers et al., 1998), the Test for Creativity Thinking-Drawing Production (TCT-DP) created in 1986, and the children's drawings created in 1984. Twelve children were then chosen to be studied using qualitative measures. Taylor measured the children's drawings for their artistic creativity. Children were asked to draw anything they wished during an art activity and results were calculated based on Torrance's scale for scoring. Drawings were judged for fluency, flexibility, originality, and elaboration. Results from the quantitative data showed no significant relationship between the two factors, playfulness and creativity. However, the qualitative data suggested that playfulness and creativity may co-occur (Taylor, 1992; Taylor & Rogers, 2001).

Csikszentmihalyi in the book titled, *Creativity: Flow and the Psychology of Discovery and Invention* (1996), spoke of playfulness as one of the complex traits

of creative individuals. “There is no question that a playfully light attitude is typical of creative individuals” (Csikszentmihalyi, 1996, p. 61). He also asserted that discipline is important in order for creative persons to be able to accomplish the task at hand. Csikszentmihalyi described creative people as complex. Specifically, he used ten dimensions of complexity which includes bi-polar characteristics. These include (a) much physical energy and able to be restful (b) smart and naïve (c) playful and disciplined (d) sense of fantasy and a sense of reality (e) extroverted and introverted (f) humble and proud (g) masculine and feminine (h) independent and culturally adept (i) passionate about their work and objective about their work (j) able to feel both suffering and enjoyment (pgs. 58-76). Csikszentmihalyi purports that creative people exhibit each of the above behaviors and are able to move from one extreme to another rather than staying neutral or stable on one pole (Csikszentmihalyi, 1996).

Measures of Child Playfulness

Child Behaviors Inventory. The Child Behaviors Inventory (Moore, 1985; Rogers et al. 1988, 1998) was created in order to measure playfulness in young children using Rubin et al.’s dispositional dimension of playfulness. The six dispositions include play as an intrinsically motivated behavior, a focus on the process rather than the product, different than exploratory behaviors, nonliteral, free from external rules, and actively engaging. The Child Behaviors Inventory consists of 28 Likert statements which represent the six dispositions as described by Rubin et al. and is measured on a scale from 1-5. The original scale was created by asking scholars in the field to identify items which represent Rubin’s

definition. Five scholars responded to this task and outlined the scale. Then, eight more scholars in the field were asked to rate each item on whether or not they believed the item rated playfulness. From this information, some items were eliminated and 28 items were retained for the Child Behaviors Inventory (Moore, 1985; Rogers et al. 1988, 1998). After construction of the initial items for the CBI, parents and teachers of 892 children from a variety of educational settings were asked to complete the Child Behaviors Inventory for their son or daughter. The data was subjected to a varimax rotation factor analysis with principle components root extraction. These findings showed that 21 items comprised the central factor, playfulness, while 7 items measure a second construct called externality. Individual items on the scale had means ranging from 3.44 to 4.49 with parents as raters and means from 3.08 to 3.89 with teachers as raters. Items measuring playfulness had internal consistency ranging from .81 to .94 while items measuring externality had internal consistency ranging from .62 to .72. Construct validity was shown through the study of the teachers ratings which were correlated with measures of playfulness by raters and videotaped observations of a play scenario (Moore, 1985; Rogers et al. 1988, 1998). This scale has been shown to be both reliable and valid and has been used in various research studies on playfulness. It will be used in the proposed study as well (Graham, 1987; Taylor, 1992, 2001).

Adult Playfulness

Playfulness has been studied primarily with children, but literature on adult playfulness is less plentiful. Nevertheless, in the few studies that are available,

adult playfulness has typically been characterized by researchers as an enjoyable activity that keeps adults actively involved and intrinsically motivated (Glynn and Webster, 1992). Glynn and Webster defined adult playfulness in the following way:

. . . an individual trait, a propensity to define (or redefine) an activity in an imaginative, nonserious or metaphoric manner so as to enhance intrinsic enjoyment, involvement, and satisfaction. Playfulness is a multidimensional construct encompassing cognitive, affective, and behavioral components, which together constitute a continuum along which individuals range from low to high. (p. 85)

Graham (1987) adopted the Rogers et al. (1998) definition of playfulness which was based on the dispositional criterion of play reviewed by Rubin and colleagues (1983). She adapted the Child Behaviors Inventory of playfulness in children to create an adult version called the Adult Behaviors Inventory. Young adult subjects in the present study responded to the ABI. Hence a more detailed description of the ABI will be included in Chapter 3: Methodology.

Studies on adult playfulness have been conducted in the in a variety of contexts. Among these are studies on playfulness in the workplace (Glynn & Webster, 1992 1993) and in relationship to personality (Meehl, Lykken, Schofield, & Tellegan, 1971), temperament (Rogers, Fox, Harrison, & Ross 2000), teacher behaviors (Graham, 1987; Lieberman, 1977), and therapy (Feiner, 1990). A brief review of the correlates of adult playfulness will be presented next.

Correlates of Adult Playfulness

Personality. When studying adult personalities, Meehl, Lykken, Schofield, and Tellegan (1971), found that "...item content and descriptions such as Jocular, Cheerful, Enthusiastic, Stimulating, and "Colorful" Personality, Smiles Often, Meets People Easily, all load together quite highly on a factor that Cattell has viewed as one of the best established assessments of adult personality" (Singer & Singer, 1980, p.153).

Workplace. Glynn and Webster (1992) created The Adult Playfulness Scale (APS) specifically for use in studies being conducted in the workplace. The APS taps five characteristics including, spontaneity, expressiveness, fun, creativity, and silliness. The Adult Playfulness Scale (APS) consists of 32 adjective pairs on which adults rate themselves on using a scale from 1-7. Glynn and Webster studied over 300 subjects representing various professions including young adults in their undergraduate career, graduate students, and employees in a workplace. Five studies included techniques such as asking participants to explore a new spreadsheet program (two of these were completed), completing questionnaires in order to assess individual traits, completing a questionnaire while studying how to make decisions, and solving word puzzles. Other assessments were also given to the participants throughout the studies, some of which included The Cognitive Spontaneity Scale, Creative Personality Scale, and an adaptation of the Job Descriptive Survey. The APS was tested for internal consistency, reliability, test-test reliability, and both concurrent and convergent reliability. A significant relationship to playfulness

occurred with task evaluations, perception, involvement, and performance. The study showed no significant relationship between gender and playfulness (Glynn & Webster, 1992,1993).

Glynn and Webster (1992) found that adults who were more playful perceived work actions as being more enjoyable and kept more of a playful attitude in the workplace. In addition, the data showed a significant relationship between self-reported playfulness and cognitive spontaneity, while also showing a relationship between playfulness and creativity as measured by the Adult Playfulness Scale and the Creative Personality Scale. This study showed no evidence for a relationship between self-reported adult playfulness and either gender or age.

Glynn and Webster (1993) continued their studies of adult playfulness by testing the playfulness of adults with higher intelligence. They mailed a packet which included the Adult Playfulness Scale, Innovative Intentions and Behaviors, Work Preference Inventory, the Order Scale of the Research Personality Research Form Scales, and Crowne and Marlowe's Social Desirability Scale to 1000 randomly selected members of MENSA, a society for people with intelligence levels in the top 2% of the population. Out of the 1000 packets mailed, 550 subjects responded. When analyzing the data, they found a significant relationship between playfulness and innovative attitudes as well as a significant relationship between playfulness and intrinsic motivation. No correlations were found with either gender or individual orderliness (Glynn & Webster, 1993).

Temperament. Since playfulness is generally considered to be a disposition or behavioral tendency to act in one way as opposed to another, it seems reasonable that it could be considered to be an aspect of one's "temperament." In one study, adult playfulness has been compared using the two measuring tools available and has been correlated with temperament. A study of older adolescent college students by Rogers, Fox, Harrison, and Ross (2000) used both the Adult Playfulness Scale (Glynn & Webster, 1992, 1993) and the Adult Behaviors Inventory (Rogers et al., 2000). The Adult Playfulness Scale and the Adult Behaviors Inventory use slightly different characteristics and definitions to measure adult playfulness. All categories in both scales were significantly related to one another and measured a disposition called playfulness. However, Glynn & Webster (1992, 1993) had two criteria, namely "Fun" and "Silly" that correlated the least with results from the Adult Behaviors Inventory. The reason for this might be the fact that the two scales have disparate definitions of playfulness and use varying behavioral tendencies to describe playfulness (Rogers et al., 2000). In the 2000 study by Rogers et al., Adult Behaviors Inventory scores were significantly related to scores on several subscales of the Dimensions of Temperament Survey-Revised. Among the scales that were significantly correlated to playfulness were: persistence, low distractibility, flexibility, positive mood, and approachability. This study provided information comparing the two measurement scales available for adult playfulness while enhancing research on adult playfulness.

Teacher Behaviors. After completing a study on young children, Nina Lieberman (1977) began to study playfulness in adults. From her work on child playfulness, i.e., she created a self-administered playfulness scale for adults using the five characteristics of physical spontaneity, cognitive spontaneity, social spontaneity, manifest joy, and sense of humor. In a pilot study with undergraduate students she participated as the instructor while the students enrolled in her college class rated themselves for playfulness. She also had the students make their own comments on playfulness and their scores. Comments from the students showed that the students believed that both the “subject matter and the personality of the teacher influenced their manifestation of playfulness.” (Lieberman, 1977, p. 51) Lieberman asked sixteen teachers, consisting of both elementary school and middle school teachers, to list characteristics of playfulness. The most common characteristics that teachers identified were: (a) Sense of humor; (b) Kindness, sensitivity; (c) Cheerfulness, laughter; (d) Enthusiasm, active participation; (e) Flexibility; (f) Imagination; (g) At ease, relaxation; and (h) Entertainment (Lieberman, 1977, p. 52). The teachers stated that when they showed these characteristics in the classroom environment, the students responded more positively to the learning environment and used more divergent thinking in the process (Lieberman, 1977).

Graham (1987) studied adult playfulness among preschool teachers and college students participating in child development courses at a university and a community college with teacher education programs. Graham adapted items from the Child Behaviors Inventory for use with adults, thus creating the Adult

Behavior Inventory (ABI). She then used the ABI, the Multidimensional Stimulus Fluency Measure, and the Play Interaction Scale to compare playfulness to creativity. She hypothesized that adults receiving a high rating on playfulness or elaborative responses would also receive a high rating on both divergent thinking and creativity. She also hypothesized that high scores for either structured or unstructured responses, characterized by very intrusive, demanding or passive, imitative behavior, on the Play Interaction Scale would result in lower scores for creativity. Graham administered the Multidimensional Stimulus Fluency Measure, the Adult Behaviors Inventory, and the Play Interaction Scale to 37 teachers from various child care centers and Head Start centers, 18 undergraduate students from a local community college, and 28 undergraduate students from a large university. She administered the assessments over the course of one day. Graham found that only the university students fit the hypothesis and received higher scores on divergent thinking and creativity if they had higher scores on playfulness and elaborative responses. No significant relationship was found between the teacher's playfulness and creativity. Moreover, no relationship was found between structured and unstructured responses on the Playful Interaction Scale, creativity, and playfulness.

Therapy. Playfulness has been studied in regard to adult therapy (Feiner, 1990; Schaefer & Greenberg, 1997). Using Glynn and Webster's Adult Playfulness Scale, Schaefer and Greenberg (1997) assessed university students majoring in a psychology. They concluded: "The new playfulness scale should be of interest to play therapists because playfulness may be an important aspect

of the therapeutic alliance“(Schaefer & Greenberg, 1997, p.22). Related to therapeutic playfulness is a sense of humor. Feiner (1990) discussed the effect of humor, spontaneity, and playful interactions in an adult therapy group. He spoke of playfulness as both ongoing and spontaneous.

With spontaneity the focus is on the lack of planning of action, the freedom to imagine, or to feel, but with an eye on social connection. Playfulness, like any other creative gesture, derives from our deepest resources – our vitality, our vivaciousness, our capacity to see different levels of reality at the same time, different meanings and nuances, different feelings in relation to another person, event or idea. (Feiner, 1990, p. 99)

Feiner (1990) indicated that therapy can be done without playfulness, but that the playful attitudes add more to the therapy sessions and that playfulness helps people know themselves and others.

Creativity

Definition of Creativity

According to Tegano, Moran, and Sawyers (1991), creativity may be defined as “the interpersonal process by means of which original, high quality, and genuinely significant products are developed” (p. 8). These authors stated that originality, high quality of responses, and significance to the culture are vital to assessing the degree of creativity. In their review, they found that children who engage in dramatic play, use divergent thinking skills, use metaphoric thinking, have curiosity, reflect on decisions, don’t always conform, are willing to

take risks, are intrinsically motivated are some examples of possible characteristics in creative children (Tegano, Moran, & Sawyers, 1991).

When defining creativity, Runco stated “This definition is predicated on the idea that creativity requires a special combination of skills; some of these reflect maturity and experience and some reflect behaviors that are found in early childhood. The combination of maturity and immaturity-and continuity and discontinuity-is possible because creativity is multifaceted; it is a complex syndrome and relies on a variety on traits, skills and capacities” (Runco, 1996, p. 3). Runco also stated that there are three characteristics of creativity, namely, transformation and interpretation, discretion, and intentions. People who are considered to be creative are typically able to take knowledge and transform it into something new. Discretion is also essential to creative persons because, in order to be creative, a person must have the ability to think in both a convergent and a divergent manner. The reasoning for this is because a person needs a foundation of core knowledge on which to stand in order to make a change (Runco, 1996).

Correlates of Creativity

A longitudinal study was completed by Torrance (1981) on creativity. Data on the Torrance Tests of Creative Thinking were collected on each elementary student enrolled in two Minneapolis Schools starting in 1958. Torrance studied these same participants in 1979-1980, and asked them to complete two questionnaires, one of which had basic demographical information and a second which had an emphasis on subjects’ creative achievements. Torrance also had

the subjects explain if any persons had influenced their creativity for either the positive or the negative. He created five checklists for creativity that included “Number of high school creative achievements, number of post high school creative achievements, number of creative style of life achievements, quality of highest achievements, and creativeness of future career image” (Torrance, 1981, p. 60). Correlations showed that the best predictor of creativity was the pursuit of a Child’s Future Career Image. A significant relationship existed between having a mentor and creative achievement. He also found that intelligence, age of marriage, number of children, and sex were not related to creativity scores (Torrance, 1981).

Tegano, Moran, and Sawyers (1991) characterized child creativity as including fantasy, divergent thinking, metamorphic thinking, conceptual tempo, curiosity, personality, temperament, nonconformity, risk taking, and motivation. They found that teachers who provided materials and facilitated play activities helped to encourage creativity in young children. Moreover, they asserted that child creativity could be fostered by more playful teachers.

Stability of creativity from childhood to adulthood. Albert (1996) found that the level of creativity was typically not maintained from childhood to adulthood. He observed that (a) creativity in childhood is different from creativity in adulthood, (b) education plays a very minute role in children’s creativity, (c) adult creativity is impacted by the person’s environment and experiences in life, (d) there is a difference in families who are creative within the workplace positions and social positions they acquire, (e) creativity can be detected at a very early

age, (f) and adult creativity is impacted by the changes during and after adolescence.

When studying adult creativity, Keegan's (1996) findings did not support Albert's (1996) observations. He stated that children's creativity can be a predictor of adult creativity. Keegan found that creative adults tend to be able to gain knowledge, organize knowledge, have motivation to work hard, and love the work in which they participate. He summed these characteristics up by saying that creative adults have the ability to acquire expert knowledge in their field of study. Keegan made a point that children are capable of being creative following these criteria, but they do so to a different degree because acquiring expert knowledge is a process requiring many years (Keegan, 1996). "Great as it may seem, and great as it may be, the difference between the processes of thought, motivations, and emotions of a Darwin or Newton is, nevertheless, 'certainly one of degree and not of kind'" (Keegan, 1996, p. 65).

Tegano et al. (1991) characterized children's creative potential separately from adult creativity. They characterized children's creative potential in terms of originality and process rather than product. Adult creativity, however, was defined as including originality, product, and significance. Creativity in the young child then can lead to adult creativity. They stated, "The emphasis on multiple ideas or solutions, generated in a non-evaluative atmosphere that produces originality-this is the starting point for adult creativity" (Tegano et al., 1991, p. 19).

Measures of Creativity

Multidimensional Stimulus Fluency Measure. The multidimensional stimulus fluency measure (MSFM) was created by Moran, Milgram, Sawyers, and Fu (1983) by adapting three previous published scales. When completed, the MSFM consisted of three subtests and three items in each subtest. In the first subtest, children were asked to name items that were round, things that make noise, and things that were red. In the second subtest, children were shown three patterns and asked to name as many ways as they could think of to view those patterns. In the third subtest, children were asked to name as many uses for typical objects that they could think of. After the children completed the scale, each response was scored as either a popular response or an original response. Alpha coefficients were .76 for original responses and .55 for popular scores which showed adequate reliability of the MSFM scale.

When using this scale with 47 preschool children between the ages of 3-10, the researchers found that preschool children participate in original thinking. Preschoolers contributed a large portion (60.14%) of original responses. Moran et al. (1983) concluded that these results may show the effects of formal schooling on children's original thinking through the difference in original versus popular responses. The study also showed that original thinking was separate from intelligence.

Summary

No research was found that involved longitudinal studies performed to assess whether playfulness is stable throughout the across broad time spans. As Glynn and Webster (1992) have stated: "Research is needed on both the short-term and long-term consequences of playfulness" (Glynn & Webster, 1992, p. 98). Hence, the purpose of this study was to examine the strength of the relationship between childhood playfulness and adult playfulness as well as to examine the strength of the relationship between adult playfulness and adult creativity. Finally, the study sought to explore subjects' self-perceptions of playfulness and life events that might impact the playful disposition.

CHAPTER 3

METHODOLOGY

This study was designed to examine relationships between childhood playfulness, adult playfulness, and adult creativity by following up subjects for whom childhood playfulness scores were available and who were willing to participate as young adults. The study was also conducted to explore subjects' perception of their own playfulness and to uncover links to life events that might have affected their playfulness.

Subjects

The sample for this study ($N = 36$) consisted of 17 females (47.2%) and 19 males (52.8%) from a pool of 103 young adults who had participated as children in research on playfulness and creativity conducted between 1985 and 1987. At the time of the original study, the mean age of the participants was 53.87 months and included children who were enrolled in the Virginia Tech Child Development Laboratory School. The mean age of the participants at the time of this follow-up study was 20.32 years. The age range of these young adults was 233 months (19.4 years) to 258 months (21.5 years). The majority (96.2%) of the sample was either enrolled in a college or university or had already completed a degree. Half (50%) of the young adults who attended college held a GPA between 3.5 and 4.0. The other young adults held GPA's ranging from 2.0-3.5. Some of the young adults were continuing their education by pursuing a graduate degree. There was great diversity in majors and occupations they held.

Potential contacts for the study were determined by first contacting parents and requesting current address, telephone, and e-mail of their children who are now young adults. Of the 103 children who participated in the original study, current contact information was available on 47 young adults and 47 mothers. Of these, 22 mother/child pairs agreed to participate in the study. An additional 5 young adults participated by completing the ABI and SSEC though their mothers did not participate. Nine mothers completed the ABI on their children but the child (now young adult) did not respond. Hence, a complete mother/child data set including time 1 and time 2 were available on 22 pairs, but partial data were available for an additional 14 subjects (9 mothers and 5 children). Full data available represents information on 22 young adult participants. Partial data available represents information on 14 young adult participants. Full and partial data represents information on a total of 36 young adult participants. The online questionnaire was completed by 18 young adults and 5 mothers. In addition, 9 young adults and 26 mothers completed the questionnaire through packets that were mailed to the addresses that they had provided. There was a 62% response rate for this study including both the young adults and their mothers. The number of responses in each category may be viewed in Table 1.

Procedures

Data Collection

The mothers of the children who participated in the 1980's study were contacted and invited to participate in the present follow-up study by using the

Table 1. Data sets available at Time 1 and Time 2.

Rater	Measurement	<i>n</i> responses
Time 1 – Extant Data		
Teacher 1	CBI	47
Teacher 2	CBI	16
Mother	CBI	28
Time 2 – Current Data		
Mother	ABI	31
Self	ABI	27
Self	SSEC	27

Adult Behaviors Inventory to rate their son or daughter as a young adult. Parents were asked to assist by providing an e-mail and/or postal address for their respective son or daughter. After obtaining contact information, packets containing a copy of the demographic questionnaire, Adult Behaviors Inventory (Graham, 1987), the Student Self-Evaluation of Creativity (Miller & Sawyers, 1989), a description of the project, and an informed consent form were mailed or e-mailed to the young adult participants. A copy of the Adult Behaviors Inventory was either mailed or e-mailed to the mothers of the young adults. The e-mail version on the survey could be completed using a survey tool provided by Virginia Tech. Subjects who received paper copies were asked to complete the forms and return them to the University in the pre-stamped envelope provided. Subjects who received an e-mail version only needed to complete the online survey which included an electronic consent form.

Interviews were conducted to explore young adults' perceptions of their childhood and adult playfulness and possible life events that might have affected adult playfulness. Four interviews were conducted based on child playfulness ratings by teachers when the young adults were 3 and 4 years of age and adult playfulness self-ratings. These were chosen to represent four categories as follows: (a) high playfulness ratings on the CBI and high playfulness ratings on the ABI, (b) high playfulness ratings on the CBI and low playfulness ratings on the ABI, (c) low playfulness ratings on the CBI and high playfulness ratings on the ABI, and (d) low playfulness ratings on the CBI and low playfulness ratings on the ABI. With permission, these interviews were audio-taped for the purpose

of transcription. The investigator transcribed each audiotape in order to analyze the contents. This provided an exploration of subjects' perceptions of their own playfulness status in adulthood and factors that might have impacted their playfulness and creativity.

Instruments

Measurements of Playfulness

Child Behaviors Inventory. Extant data were comprised of childhood playfulness scores on the Child Behaviors Inventory as rated by morning teachers, an afternoon teacher, and mothers. The Child Behaviors Inventory was described in detail in Chapter 2, the Review of Literature. Hence, it will not be repeated here.

Adult Behaviors Inventory. The Adult Behaviors Inventory (Graham, 1987) was adapted from the Child Behaviors Inventory (See Rogers et al., 1998) in order to measure playfulness in adults. In order to measure the reliabilities and validities of the ABI, Rogers et al. (2000) reviewed self-ratings completed by two classes of undergraduates ($N = 1134$). Results showed that the mean score for playfulness on the Adult Behaviors Inventory was 88.3 while the mean score for externality was 25.63. The means of individual items for playfulness ranged from 3.59 to 4.96 and the individual items for externality ranged from 3.02 to 4.24 on a 5-point scale. Reliability of the ABI was also shown to be high, ranging from .71 - .85. This instrument was shown to be both a reliable and valid tool for measuring playfulness in older adolescents and young adults (Rogers et al., 2000).

Measurements of Creativity

Students' Self-Evaluation of Creativity Scale. Miller and Sawyers (1989) created the Students' Self-Evaluation of Creativity Scale (SSEC) which can be used by upper elementary children to assess their own creativity based on ideational fluency. This scale is classified as a socially valid scale and can be used with adolescents and young adults in order for them to rate their own creativity. The scale was based on Runco's work in 1984 in which he created the Teachers Evaluation of Student's Creativity (TESC). Miller adapted Runco's scale for students in the process of social validation. The SSEC consists of 25 adjectives on which children rate themselves using a scale from 1 to 7. In order to create the SSEC, Miller asked 63 sixth and seventh graders to list synonyms of creativity, common behaviors of creative children, and personality traits in those they viewed as creative. Miller then combined these responses and formed 20 questions on the SSEC. Four antonyms were also added in order to have an opposite (Miller & Sawyers, 1989). It was found to be a socially valid instrument with a significant relationship between student self-evaluation scores on the SSEC and the Multidimensional Stimulus Fluency Measure (Miller & Sawyers, 1989).

Miller and Sawyers (1989) asked 54 fifth graders to complete the Student Self-Evaluation of Creativity (SSEC) as well as the Multidimensional Stimulus Fluency Measure and the Otis Lennon School Ability Test. Teachers evaluated children using the Teachers' Evaluation of Student's Creativity (TESC). Ratings were then compared and results showed that teachers rated children who were

high in intelligence as high in creativity. However, no relationships were found between the Otis Lennon School Ability Test, the MSFM, and the SSEC. The results also showed that students scored themselves more highly on creativity than did their teachers. There was a significant relationship between the students' self assessed creativity on the SSEC and the original ideational fluency measure. There was no significant relationship between the teacher's estimates of creativity on the Teachers Evaluation of Student's Creativity (TESC) and the original ideational fluency measure. This study indicated that upper elementary school children could provide more accurate assessments of their own ideational fluency than could their teachers. It also showed that the SSEC is both a valid and reliable instrument for measuring creativity in older children and possibly adults (Miller & Sawyers, 1989). Hence it was selected for use in the present study.

Interview Protocol

A short, structured interview protocol was developed to assess subjects' self perceptions regarding playfulness and to explore possible life events that might have affected their playfulness. Subjects were asked the following questions:

- 1) Please think about yourself as you were when you were 3 or 4 years old. Would you characterize yourself more as very playful, somewhat playful or not very playful? Can you explain a bit about why you indicated that you were very playful (somewhat playful) (not very playful)?

- 2) Do you currently see yourself as very playful, moderately playful, or not at all playful? What can you tell us to help us understand why you see yourself as very playful (moderately playful) (not at all playful) at your present age?
 - 3) Describe any life experiences that you feel might have affected your playfulness.
 - 4) Think of a typical week in your life. “Do you consider your work (whether as a student, employee, or parent) to be work, play, both, or neither?”
- (Csikszentmihalyi, 2000, p. 253)

CHAPTER FOUR

RESULTS

The main purpose of this study was to examine the relationship between childhood playfulness and adult playfulness by conducting a follow-up study on young adults for whom extant childhood data were available. This purpose was fulfilled by asking a series of research questions aimed at determining the relationship between (a) teachers' ratings of 3- and 4-year-olds on the Child Behaviors Inventory of playfulness and self-ratings by the same individuals 15 years later on the Adult Behaviors Inventory of playfulness, (b) maternal ratings of 3- and 4-year-olds on the Child Behaviors Inventory and self-ratings on the Adult Behaviors Inventory, (c) maternal ratings of 3- and 4-year-olds on the Child Behaviors Inventory and maternal ratings of the same subjects on the Adult Behaviors Inventory, (d) maternal ratings of childhood playfulness on the Child Behaviors Inventory and self-reported adult creativity on the Student Self-Evaluation of Creativity, (e) self-ratings on the Adult Behaviors Inventory and self-ratings on the Student Self-Evaluation of Creativity, (f) maternal ratings on the Adult Behaviors Inventory and self-ratings on the Student Self-Evaluation of Creativity, and (g) self-ratings on the Adult Behaviors Inventory and maternal ratings on the Adult Behaviors Inventory.

The second purpose was to explore young adults' perceived contextual variables that might have impacted changes in playfulness from childhood to adulthood. This purpose was fulfilled by conducting a total of four interviews. Subjects for the interviews were chosen on the basis of four categories, namely:

(a) high child playfulness – high adult playfulness (b) low child playfulness – low adult playfulness (c) high child playfulness – low adult playfulness (d) low child playfulness – high adult playfulness.

In order to answer the research questions, one set of extant data was used and an additional set was collected in order to obtain longitudinal data on playfulness at two developmental periods: preschool and young adulthood. Extant data were available on 103 children who attended the Virginia Tech Child Development Laboratory School in the 1980s. This data was comprised of maternal and teacher ratings of the children on the Child Behaviors Inventory. New playfulness ratings were collected on the same participants who were between 233 months (19.4 years) and 258 months (21.5 years) in 2003. Adult playfulness was measured using the Adult Behaviors Inventory, a modified version of the Child Behaviors Inventory that has been used in two previous studies (Graham, 1987; Rogers et al., 2001). A self-reported creativity measure was also obtained from the young adults using the Student Self-Evaluation of Creativity.

Data To Be Analyzed

This study yielded both quantitative and qualitative data. Quantitative data included:

- (a) Childhood playfulness as rated in 1985-1987 by mothers using the Child Behaviors Inventory
- (b) Childhood playfulness as rated in 1985-1987 by teachers using the Child Behaviors Inventory

- (c) Adult playfulness as self-reported on the Adult Behaviors Inventory by the same individuals (now young adults)
- (d) Adult playfulness as measured by maternal ratings on the Adult Behaviors Inventory
- (e) Adult creativity scores obtained from self-reports using the Students Self-Evaluation of Creativity Scale

The quantitative data were analyzed to obtain descriptive statistics on demographic data and questionnaire responses. Pearson product correlations were used to assess the relationship between child playfulness ratings and adult playfulness ratings. Pearson product correlations were also used to assess the relationship between adult playfulness scores and adult creativity scores and between child playfulness and adult creativity. Regression analysis was used to take into account college grade point average and age.

Qualitative data were comprised of transcribed interviews obtained from a purposive sample of participants. One subject was sought to fill each of the following categories: (a) high child playfulness – high adult playfulness (b) low child playfulness – low adult playfulness (c) high child playfulness – low adult playfulness (d) low child playfulness – high adult playfulness. The median of CBI scores as rated by the first group of teachers when the participant was 3 or 4 years old and young adult self-ratings on the ABI were found. A median split was used to place all participants in one of the four categories: (a) high child playfulness – high adult playfulness (b) low child playfulness – low adult

playfulness (c) high child playfulness – low adult playfulness (d) low child playfulness – high adult playfulness.

Quantitative Results

Descriptive Statistics

Means and standard deviations for child and adult playfulness ratings and adult creativity ratings are shown in Table 2. CBI items were rated on a 5-point scale; ABI items were rated on a 4-point scale; and SSEC items were rated on a 7-point scale. Hence, group means on the ABI and the CBI cannot be compared directly. However, by extrapolating the point scale and multiplying CBI scores by 0.8 a comparison can be made. Extrapolation of CBI scores yields a CBI mean of 3.27 compared with an ABI mean of 3.09 (maternal ratings) and 3.12 (self-ratings on creativity). A paired t-test indicated that the CBI scores as not significantly different from self-rated ABI scores during the young adult time period ($t = 2.23, p > .05$).

Bivariate Correlations

To assess the strength of the relationship between variables, Pearson Correlation Coefficients were computed. Results are reported below by each individual research question and Table 3 shows the complete correlation matrix.

1. *What is the strength of the relationship between teachers' ratings of 3- and 4-year-olds on the Child Behaviors Inventory and self-ratings on the Adult Behaviors Inventory?*

As shown in Table 3, the correlation between teachers' ratings of children on the CBI and the young adults self-ratings on the ABI was quite low and was

Table 2. Means, Standard Deviations, and Range of Scores on the CBI, ABI, and SSEC

	N	Min	Max	Mean	SD
CBI (Mothers)	28	3.29	4.86	4.09	.47
CBI (Teachers)	47	2.10	4.86	3.54	.67
CBI (2 nd Teacher)	16	2.67	5.00	3.80	.74
ABI (Mother)	31	2.33	4.00	3.09	.42
ABI (Self)	27	2.48	3.81	3.12	.34
SSEC (Self)	27	3.72	5.56	4.85	.43

Note. CBI items were rated on a 5-point scale; ABI items were rated on a 4-point scale; and SSEC items were rated on a 7-point scale.

Table 3. Pearson Correlations Between CBI, ABI, and SSEC Scale Scores.

	CBI (Mothers)	CBI (Teachers)	CBI (2 nd Teacher)	ABI (Mothers)	ABI (Self)	SSEC (Self)
CBI (Mothers)	1.000 (n=28)					
CBI (Teachers)	-.17 (n=26)	1.000 (n=47)				
CBI (2 nd Teacher)	.84** (n=8)	.45 (n=16)	1.000 (n=16)			
ABI (Mothers)	.21 (n=19)	.14 (n=29)	.19 (n=13)	1.000 (n=31)		
ABI (Self)	.14 (n=15)	.09 (n=25)	.06 (n=10)	.62** (n=22)	1.000 (n=27)	
SSEC (Self)	.03 (n=15)	-.07 (n=25)	-.38 (n=10)	.60** (n=22)	.59** (n=27)	1.000 (n=27)

** Correlation is significant at the 0.01 level (2-tailed).

not significant. The first group of teachers ($n = 3$) was comprised of teachers of morning classes. The second teacher ($n = 1$) was a teacher in the afternoon session of the lab school when the subjects were preschoolers. Correlations between the morning teachers' ratings on the CBI and the young adults' self-ratings showed little relationship between the two factors ($r = .09, ns$). Similarly, the correlation between the second teacher's ratings and the young adults' self-ratings was also very low ($r = .06, ns$).

2. *What is the strength of the relationship between maternal ratings of 3- and 4-year-olds on the Child Behaviors Inventory and self-ratings on the Adult Behaviors Inventory?*

Child playfulness as rated by mothers and adult playfulness as rated by self was low and not significant ($r = .14, ns$).

3. *What is the strength of the relationship between maternal ratings of 3- and 4-year-olds on the Child Behaviors Inventory and maternal ratings of the same subjects on the Adult Behaviors Inventory?*

Child playfulness as rated by mothers and adult playfulness as rated by the same mothers several years later were not significantly correlated ($r = .21, ns$).

4. *What is the strength of the relationship between maternal ratings of childhood playfulness on the Child Behaviors Inventory and self-reported adult creativity on the Student Self-Evaluation of Creativity?*

A Pearson product correlation of 0.03 showed an extremely low and non significant relationship between these two variables.

5. *What is the strength of the relationship between self-ratings on the Adult Behaviors Inventory and self-reported adult creativity on the Student Self-Evaluation of Creativity?*

As shown in Table 3, the Pearson correlation between self-ratings on the ABI and self-ratings on the SSEC was 0.59 and was statistically significant at the 0.01 level. Apparently, if these are valid measures of the constructs, then adults who perceive themselves as being playful also see themselves as being creative.

6. *What is the strength of the relationship between maternal ratings of the young adults on the Adult Behaviors Inventory and self-reported adult creativity on the Student Self-Evaluation of Creativity?*

Maternal ratings on the ABI and self-ratings on the SSEC were significantly related ($r = .60, p < .01$), indicating that mothers who perceived their young adult children to be playful also perceived them to be creative.

7. *What is the strength of the relationship between self-ratings on the Adult Behaviors Inventory and maternal ratings of the young adults on the Adult Behaviors Inventory?*

Pearson correlations showed a significant relationship between self-ratings on the ABI and maternal ratings on the ABI ($r = .62, p < .01$). This shows that both the participants and their mothers tended to provide similar ratings on the Adult Behaviors Inventory when the participants were young adults. It should be noted that scores on the ABI as rated by both mother and self and scores on the SSEC as rated by self are all highly inter-correlated.

Results were quite similar when running correlations using only the cases that contained complete data on the 22 mother/child pairs. Results showed that adult playfulness as rated by both mothers and self on the CBI and self-ratings on the SSEC were all inter-correlated with similar levels of significance. Also, ratings by the afternoon teacher (teacher 2) were not significantly correlated, but were still moderately high. When using only the cases containing full data, correlations showed a strong relationship between the morning teachers' ratings on the CBI and the afternoon teachers' ratings on the CBI. This was consistent with the previous results in that there were no significant relationships between child playfulness and adult playfulness. Results showed high inter-rater reliability for the ABI scale when mothers and their young adult children completed the scale. Finally, results show that adult playfulness is significantly related to adult creativity when rated by mothers and their young adult children at the same time period.

Multiple Regression

As seen in Table 4, the relationships between scores on the CBI, ABI, and SSEC were not affected by the young adult's grade point average or age. Regression analyses in which age and grade point average were background variables showed that scores on the ABI as rated by both mothers and scores on the SSEC as rated by self were all inter-correlated.

Qualitative Data

After obtaining data on the young adults, participants were categorized into four groups based on CBI scores as rated by the first group of teachers

Table 4. Regression Analyses between CBI, ABI, and SSEC.

Independent Variable	Dependent Variable	Beta	Sig
ABI (Self) Age College GPA	CBI (Teachers)	-.044	.830
ABI (Self) Age College GPA	CBI (Mothers)	-.207	.629
ABI (Mothers) Age College GPA	CBI (Mothers)	.235	.593
SSEC (Self) Age College GPA	CBI (Mothers)	-.150	.686
SSEC (Self) Age College GPA	ABI (Self)	.619	*.001
SSEC (Self) Age College GPA	ABI (Mothers)	.577	*.006
ABI (Mothers) Age College GPA	ABI (Self)	.700	*.002

*p < .01

when the participant was 3 or 4 years old and young adult self-ratings on the ABI. The median for the CBI scores as rated by teachers when the subjects were 3 or 4 years old was computed (*Median* = 3.57, *SD* = .73). Additionally, the median was computed for the young adult self-ratings on the ABI (*Median* = 3.14, *SD* = .34). After obtaining the medians for each variable, a median split was used to organize data into four categories: (a) high child playfulness – high adult playfulness (b) low child playfulness – low adult playfulness (c) high child playfulness – low adult playfulness (d) low child playfulness – high adult playfulness. Participants chosen for interviews were chosen on the extremes in each category.

Focused Interviews

Focused interviews were conducted with one person from each of the four categories: (a) high child playfulness – high adult playfulness (b) low child playfulness – low adult playfulness (c) high child playfulness – low adult playfulness (d) low child playfulness – high adult playfulness. Interviews were completed either over the phone or in person based on the locality of the participants. Interviews were audio-taped with participant permission and were then transcribed by the investigator.

As seen in Table 5, focused answers in the qualitative data were first organized into four categories according to the classification of the respondent: (a) high child playfulness – high adult playfulness (b) low child playfulness – low adult playfulness (c) high child playfulness – low adult playfulness (d) low child playfulness – high adult playfulness. This included specific participant responses

Table 5. Matrix of Key Characteristics Obtained From Interview Data

<p>High Child Playfulness and Low Adult Playfulness ($n = 1$)</p> <ul style="list-style-type: none"> • Playfulness as a Child: <ul style="list-style-type: none"> ○ Very Playful • Playfulness as an Adult: <ul style="list-style-type: none"> ○ Moderately Playful • Causes of Change: Getting into trouble one night • Work or Play: Both 	<p>High Child Playfulness and High Adult Playfulness ($n = 1$)</p> <ul style="list-style-type: none"> • Playfulness as a Child: <ul style="list-style-type: none"> ○ Very Playful • Playfulness as an Adult: <ul style="list-style-type: none"> ○ Very Playful • Causes of Change: Friends with similar characteristics, school systems, positive mentor, changing locations • Work or Play: Both
<p>Low Child Playfulness and Low Adult Playfulness ($n = 1$)</p> <ul style="list-style-type: none"> • Playfulness as a Child: <ul style="list-style-type: none"> ○ Between Somewhat Playful and Generally Playful • Playfulness as an Adult: <ul style="list-style-type: none"> ○ Moderately Playful • Causes of Change: Nothing in particular, school environment, family environment (younger sibling, extended family), different people, different experiences • Work or Play: Both 	<p>Low Child Playfulness and High Adult Playfulness ($n = 1$)</p> <ul style="list-style-type: none"> • Playfulness as a Child: <ul style="list-style-type: none"> ○ Probably Playful • Playfulness as an Adult: <ul style="list-style-type: none"> ○ Very Playful • Causes of Change: Participation in sports, more confidence in self • Work or Play: Both

on their childhood playfulness (very playful, somewhat playful or not very playful), adult playfulness (very playful, moderately playful, or not at all playful), possible causes of change in personal playfulness, and their perspective of work (was work considered to be work, play, both, or neither).

Interviews were then analyzed by question (Bryman & Burgess, 1994). Transcriptions were read for emerging themes within each question. Results were placed in matrices with contrasting categories (Graue & Walsh, 1998). An asterisk was used to represent the items for which there was more than one identical response.

As seen in Table 6, qualitative data showed descriptors of child playfulness. Themes that emerged based on this question were characteristics of high childhood playfulness and characteristics of general to low childhood playfulness. Likewise, as seen in Table 7, descriptors of adult playfulness also emerged. The contrasting categories based on this question were characteristics of very playful adults and characteristics of moderately playful adults. As seen in Table 8, types of work and play were also found in the matrix of types of work and play. Based on this question, the contrasting categories included characteristics/types of work and characteristics/types of play.

Table 6. Descriptors of Child Playfulness Named By Young Adults

Young Adult's Descriptors of High Child Playfulness	Young Adult's Descriptors of General to Low Child Playfulness
<ul style="list-style-type: none"> • Tomboy • Causing trouble • Always having things to do • Being silly • Always having something to say • Running around a whole lot • Always wanting to make things 	<ul style="list-style-type: none"> • **Not an extreme child • Not incredibly energetic • Not one to sit back and watch • **Have friends to play and interact with/Enjoy playing • Have routines • Relatively consistent • Shy

* Signifies the number of identical responses

Table 7. Descriptors of Adult Playfulness Named By Young Adults

Young Adult's Descriptors of Very Playful Adults	Young Adult's Descriptors of Moderately Playful Adults
<ul style="list-style-type: none"> • Very outgoing • Like to joke around • Hard time staying still • Fidgeting • Wandering off to do other things 	<ul style="list-style-type: none"> • More responsibilities • Not giving into peer pressure • Make own decisions rather than go with the crowd • Energy level • Have an ability to enjoy the outdoors or spend time with friends - to choose it sometimes but not always

Table 8. Types of Work and Play Named by Young Adults

Young Adult's Characteristics/Types of Work Activities	Young Adult's Characteristics/Types of Play Activities
<ul style="list-style-type: none"> • ***Classes • Homework 	<ul style="list-style-type: none"> • School as a method for providing opportunities • Volunteering with organizations • Working with kids • Being an RA • Doing stuff with friends • Cooking • Art projects • Riding a bike • Sticking fun in wherever I can

* Signifies the number of identical responses

CHAPTER 5

DISCUSSION

Researchers have long wondered whether or not playfulness as a disposition is stable across time (Barnett, 1991). Likewise, many developmentalists have speculated on the relationship between child playfulness and adult creativity. However, no known studies have been able to provide longitudinal data to determine the relationship between these factors. Hence, the present study was designed to measure childhood playfulness as rated by the Child Behaviors Inventory and adult playfulness as rated by the Adult Behaviors Inventory as well as adult creativity measured by the Student Self-Evaluation of Creativity. Using the CBI and the ABI, statistical analyses indicated no consistent pattern of stability of childhood playfulness into adulthood. Hence data from the present study calls into question the Erikson's (1979) hypothesis that playful children can be expected to be playful adults.

Another hypothesis that has appeared in the research literature is that, while comprising a separate construct, playfulness is related to creativity (Barnett, 1982; Kogan, 1983; Lieberman, 1966, 1977). The results of the present study showed a moderately strong relationship between self-ratings of playfulness and self-ratings of creativity taken at the same time in adulthood. However, these scores should be interpreted with caution since scores were self-ratings completed at the same time and thus vulnerable to the halo effect. This caution is tempered with the fact that maternal ratings of adult playfulness were also significantly correlated with the young adult's self-ratings of creativity. A

more direct investigation of the relationship between adult playfulness and adult creativity remains a question for future research.

One purpose of this study was to examine the strength of the relationship between teachers' ratings of 3- and 4-year-olds on the Child Behaviors Inventory and self-ratings on the Adult Behaviors Inventory. This study showed no significant relationship between these two variables. Hence, these results indicate that playfulness is not a stable trait when measured across a time span of 15 years. Future studies should be constructed to examine the continuity of this trait across shorter time spans such as 1, 3, and 5 years.

A second purpose of this study was to examine the strength of the relationship between maternal ratings of 3- and 4-year-olds on the Child Behaviors Inventory and self-ratings on the Adult Behaviors Inventory. These variables also showed no significant relationship. One possible explanation is that playfulness is not a stable trait. If this is true, then we may not be able to predict adult playfulness from child playfulness. Another explanation is that maternal perceptions differ from subjects' perceptions. However, that explanation is cancelled by the strong congruence between maternal and self-ratings at the same point in time, young adulthood.

Third, the strength of the relationship between maternal ratings of 3- and 4-year-olds on the Child Behaviors Inventory and maternal ratings of the same subjects on the Adult Behaviors Inventory were studied. Again, no significant relationships were found between the maternal ratings. These findings suggest that mothers' perceptions of their children's playfulness changes over time.

A fourth purpose of the study was to understand the strength of the relationship between maternal ratings of childhood playfulness on the Child Behaviors Inventory and self-reported adult creativity on the Student Self-Evaluation of Creativity. The relationship between child playfulness as rated by mothers and self-reported creativity was not significant. These findings indicate that child playfulness as rated by mothers does not accurately predict the creativity of their offspring as young adults.

Next, the strength of the relationship between self-ratings on the Adult Behaviors Inventory and self-reported adult creativity on the Student Self-Evaluation of Creativity was computed. These two variables were significantly correlated. This indicates that young adults who perceive themselves as playful also perceive themselves as creative. This conclusion must be interpreted in view of the fact that the same individuals completed both questionnaires at the same time. Hence, a positive relationship could have been inflated by a carry-over effect. It is not surprising that these two factors were related because examination of the items on the two scales shows some overlap in the constructs, i.e. similar questions were used to measure playfulness and creativity. For example, item 18 (invent new things) on the SSEC is quite similar to Item 6 (invent new activities) on the ABI. Items 1 (work on your own), 23 (inventive), 13 (funny), and 16 (imaginative) on the SSEC are also similar to items 12 (work well on my own), 21 (invent variations or different ideas), 25 (have a sense of humor), and 26 (am imaginative) on the ABI respectively. Future

studies are needed to discriminate measures of playfulness from measures of creativity.

Another purpose of this study was to calculate the strength of the relationship between maternal ratings of the young adults on the Adult Behaviors Inventory and self-reported adult creativity on the Student Self-Evaluation of Creativity. This relationship, too, was significant, providing further support for the purported relationship between adult playfulness and adult creativity even when the two measures are taken from separate measures.

A seventh purpose of this study was to examine the strength of the relationship between self-ratings on the Adult Behaviors Inventory and maternal ratings of the young adults on the same measure. This relationship between self-ratings on the ABI and maternal ratings on the ABI was significant, suggesting that both mothers and the young adults tend to have the same perception on the playfulness of these young adults. This finding also suggests that playfulness is a reliable construct measured at the same point in time by different raters using the Adult Behaviors Inventory.

An eighth purpose of this study was to discover, from the participants' perspectives, some perceived contextual variables that might have impacted changes in playfulness from childhood to adulthood. These data reflect perspectives from four playfulness categories: (a) high child playfulness – high adult playfulness (b) low child playfulness – low adult playfulness (c) high child playfulness – low adult playfulness (d) low child playfulness – high adult playfulness. Qualitative data revealed that students were able to accurately

classify their own playfulness (as both a child and young adult) quite similarly to the categories in which their rankings on the CBI and ABI would place them. The ratings and interviews took place at two different time periods, thus reducing the potential for the halo effect.

The qualitative data were organized for characteristics of child playfulness, characteristics of adult playfulness, and the types of work and play. Possibly because of the small sample size used for the interviews and because of the short and structured nature of the interviews, few themes occurred. Two of the themes that did occur were reported in the category of characteristics of general to low child playfulness. These two themes were (a) not an extreme child and (b) have friends to play and interact with/enjoy playing. This theme suggested by the participants offers us the idea that though one might be less playful, one still interacts with others, but not to an extreme. The other theme which occurred was in the category of types of work. The participants tended to classify their college classes as work rather than play.

Suggestions for Future Research

The present study focused on two time frames, preschool (ages 3 and 4 years) and young adulthood. Future studies could be completed by collecting data while the subjects are in different developmental stages and time frames. The use of a larger sample size might also be considered.

Possible qualitative links were explored through the use of short and structured interviews. While the interviews provided some information in the area of playfulness, there is a need for future studies to collect more qualitative data

using more in-depth interviews in order to understand subjects' self-attributions of playful or non-playful dispositions as well as stability or instability over time.

In the present study we noted that childhood playfulness ratings were congruent with one of the teacher's ratings and the mothers ratings at time 1 but ratings by a second teacher showed less sensitivity to individual differences. Future studies should address the contribution of the rater to the variability in CBI and ABI scores.

In the process of designing the current research project, we had considered examining the relationship between childhood creativity and adult creativity in addition to playfulness. However, insufficient extant data was available for the same subjects for whom playfulness scores were available. The relationship between childhood creativity and adult creativity is an option for researchers to explore in the future.

REFERENCES

- Albert, R. (1996). Some reasons why childhood creativity often fails to make it past puberty into the real world. *New directions in child development, 72*, 3-30.
- Armstrong, T. (1998). *Awakening genius in the classroom*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Barnett, L. A. (1991). Characterizing playfulness: Correlates with individual attributes and personality traits. *Play and Culture Studies, 4*, 371-393.
- Barnett, L. A., & Fiscella, J. (1985). A child by any other name...a comparison of the playfulness of gifted and nongifted children. *Gifted Child Quarterly, 29* (2), 61-66.
- Barnett, L. A., & Kleiber, D. (1982). Concomitants of playfulness in early childhood: Cognitive abilities and gender. *The Journal of Genetic Psychology, 141*, 115-127.
- Bryman, A., & Burgess, R. (1994). *Analyzing qualitative data*. London: Routledge.
- Bundy, A. C., & Clifton, J. L. (1998). Construct validity of the children's playfulness scale. *Play and Culture Studies, 1*, 137-147.
- Csikszentmihalyi, M. (1996). *Creativity: Flow and the psychology of discovery and invention*. New York: Harper Collins.
- Csikszentmihalyi, M., & Schneider, B. (2000). *Becoming adult: How teenagers prepare for the world of work*. New York: Basic Books.

- Erikson, E. (1977). *Toys and reasons: Stages in the ritualization of experience*.
New York: W.W. Norton and Company, Inc..
- Erikson, E. H. (1979, May). Play and inventiveness. Colloquium conducted at the
Smithsonian Institution in Observance of the International Year of the
Child and the Einstein Centennial. Washington, DC.
- Feiner, A. H. (1990). Playfulness and the interpersonal ideology. *Contemporary
Psychoanalysis* 26 (1), 95-107.
- Glynn, M. A., & Webster, J. (1992). The adult playfulness scale: An initial
assessment. *Psychological Reports*, 71, 83-103.
- Glynn, M. A., & Webster, J. (1993). Refining the nomological net of the adult
playfulness scale: Personality, motivational and attitudinal correlates for
highly intelligent adults. *Psychological Reports*, 72, 1023-1026.
- Graham, B. C. (1987). *The effects of teachers' playfulness and creativity on
teacher-child interactions*. Masters thesis, Virginia Polytechnic Institute
and State University.
- Graue, M., & Walsh, D. (1998). *Studying children in context: Theories, methods,
and ethics*. Thousand Oaks, CA: Sage.
- Harris, T. (1989). *Temperament and the disposition to play: Sources of shared
variance*. Doctoral Dissertation, Virginia Polytechnic Institute and State
University.
- Jennings, K., Harmon, R., Moran, G., Gaiter, J., & Yarrow, L. (1979). Exploratory
play as an index of mastery motivation: Relationships to persistence,

- cognitive functioning, and environmental measures. *Developmental Psychology*, 15, 386-394.
- Keegan, R. (1996). Creativity from childhood to adulthood: A difference of degree and not of kind. *New directions in child development*, 72, 3-30.
- Kogan, N. (1983). Stylistic variation in childhood and adolescence: Creativity, metaphor, and cognitive styles. In J. H. Flavell & E. M. Markman (Ed.), P. H. Mussen (Series Ed.), *Handbook of Child Psychology: Vol. 3, Cognitive Development* (pp. 630-706). New York: Wiley.
- Li, W., Bundy, A. C., & Beer, D. (1995). Taiwanese parental values toward an American evaluation of playfulness, *The Occupational Therapy Journal of Research*, 15, 237-258.
- Lieberman, J. N. (1965) Playfulness and divergent thinking: Investigation of their relationship at the kindergarten level. *The Journal of Genetic Psychology*, 107, 219-224.
- Lieberman, J. N. (1977) Playfulness: Its relationship to imagination and creativity. New York: Academic Press.
- Meehl, P., Lykken, D., Schofield, W., & Tellegen, A. (1971). Recapturing item technique (RIT): A method for reducing somewhat the subjective element in factor naming. *Journal of Experimental Research in Personality*, 5, 171-190.
- Miller, H., & Sawyers, J.K. (1989). A comparison of self and teachers' rating of creativity in fifth grade children. *The Creative Child and Adult Quarterly*, 3 & 4, 179-185.

- Moore, A. (1985). *Childrearing practices associated with playfulness and type a behavior in children*. Doctoral dissertation, Virginia Polytechnic Institute and State University.
- Moran III, J., Milgram, R., Sawyers, J., & Fu, V. (1983). Original thinking in preschool children. *Child Development, 54*, 921-925.
- Nicolopoulou, A. (1993). Play, cognitive development, and the social world: Piaget, Vygotsky, and beyond. *Human Development, 36*, 1-23.
- Piaget, J. (1950/1962). *Play, dreams and imitation in childhood*. New York: W. W. Norton. Original work published in 1950.
- Porter, C., & Bundy, A. C. (2001). Validity of three tests of playfulness with African American children and their parents and relationships among parental beliefs and values and children's observed playfulness. *Play and Culture Studies, 3*, 315-334.
- Rogers, C. S., Fox, G. E., Harrison, P. K., & Ross, J. D. (2000). Playfulness and temperament among older adolescents and young adults. Paper presented at the Association for the Study of Play, Baltimore, MD.
- Rogers, C. S., Impara, J. C., Frary, R. B., (1988). Measuring playfulness: Development of the child behaviors inventory of playfulness. Paper presented at the biennial meeting of the Southwestern Society of Research in Human Development, New Orleans, LA.
- Rogers, C. S., Impara, J., Frary, R., Harris, T., Meeks, A., Semanic-Lauth, & Reynolds, M. (1998). Measuring playfulness: Development of the child behaviors inventory of playfulness. *Play & Culture Studies, 1*, 121-135.

- Rogers, C. S., & Sluss, D. J. (1999) Play and inventiveness: Revisiting Erikson's views on Einstein's playfulness. In S. Reifel (Ed.), *Play and Culture Studies*, 2, 3-24. Greenwich, CN: Ablex.
- Rubin, K. (1989). The play observation scale. University of Waterloo.
- Rubin, K. H., Fein, G. G., & Vandenberg, B. (1983). Play. In E. M. Hetherington (Ed.), P. H. Mussen (Series Ed.), *Handbook of Child Psychology: Vol. 4, Socialization, personality, and social development* (pp. 693-774). New York: Wiley.
- Runco, M. (1996). Personal creativity: Definition and developmental issues. *New Directions in Child Development*, 72, 3-30.
- Schaefer, C., & Greenberg, R. (1997). Measurement of playfulness: A neglected therapist variable. *International Journal of Play Therapy*, 6 (2), 21-31.
- Seligman, M., & Csikszentmihalyi, M. (2001). Reply to comments (editorial). *American Psychologist*, 56 (1), 89-90.
- Singer, J. L., & Singer, D. G. (1980). A factor analytic study of preschoolers' play behavior. *Academic Psychology Bulletin*, 2, 143-156.
- Sutton-Smith, B. (1997). The ambiguity of play. Cambridge, Mass.: Harvard University Press.
- Taylor, S. I. (1992). *The relationship between playfulness and creativity of Japanese preschool children*. Doctoral dissertation, Virginia Polytechnic Institute and State University.

Taylor, S. I., & Rogers, C. S. (2001). The relationship between playfulness and creativity of Japanese preschool children. *International Journal of Early Childhood, 33* (1), 43-49.

Tegano, D., Moran III, J., Sawyers, J. (1991). Creativity in early childhood classrooms. United States: National Education Association of the United States.

Torrance, E. (1981). Predicting the creativity of elementary school children (1958-80) – and the teacher who “made a difference.” *Gifted Children Quarterly, 25* (2), 55-62.

Vygotsky, L. (1966). Play and its role in the mental development of the child. *Soviet Psychology, 12* (6), 62-76.

APPENDIXES

Appendix A – Letter to Participants

<DATE>

Dear <NAME>,

Greetings after 15 years! We are contacting several Virginia Tech Child Development Lab School Alumni in order to learn about the current lives of the young adults who shared the Lab School experience.

Please join us in this project (see attached description of project) by completing the enclosed questionnaire which takes about 5-10 minutes of your time. We ask that you also sign the Informed Consent as an agreement that you are willing to participate in the project. Would you be kind enough to complete the enclosed questionnaire and informed consent and return it in the envelope provided?

Upon receipt of the returned questionnaires, Aleysha Casas, a graduate student in Child Development, plans to compile information that will be useful to the field of education.

After completing the questionnaire, a few young adults will be asked to participate in a brief interview.

Thank you for your generous gift of your time! We look forward to hearing from you over the next few days!

Sincerely,

Dr. Janet Sawyers, Ph.D.

Dr. Cosby Rogers, Ph.D.

Aleysha Casas, B.S.

Appendix B – Initial Phone Contact Conversation

Initial Phone Contact Conversation

Hi.....My name is Aleysha Casas. May I speak with Mr. and Mrs. _____?

I am a graduate student in Human Development at Virginia Tech. For my Master's thesis I am working with Dr. Janet Sawyers and Dr. Cosby Rogers to locate some of the young adults who attended the Virginia Tech Child Development Lab School in the 1980's. We are interested in learning about your current activities.

I understand that (NAME) attended the Virginia Tech Child Development Lab School during this time. Am I correct?

(If talk about past Lab School experiences.....I am sure it was a time for many wonderful memories)

Would you be willing to assist us in this project by completing a questionnaire about your child's activities. We are asking both the young adult (who attended the Virginia Tech Child Development Lab School during these years) and his/her parents to complete the questionnaire, which takes about 5-10 minutes.

If yes.....

Thank you very much for your help.

Is there a mailing address where I can send you an explanation of the project and a copy of the questionnaire?

How can I contact (NAME) to ask him/her to complete a questionnaire for me? Either a mailing address, phone number, or e-mail address would be very helpful.

I will be mailing the questionnaire in February. I ask you to complete it and return it in the stamped envelope provided. In the packet I will also include a description of the project for you to review. If you have any questions about the project feel free to call myself (Aleysha Casas), Dr. Cosby Rogers, or Dr. Janet Sawyers at (540) 231 -6149 or mail us questions at the Department of Human Development, 0416 Virginia Tech, Blacksburg, VA 24060.

Do you have any questions for me?

Well, it looks like I have everything I need with a Parental Mailing Address and Phone Number and Young Adult Contact Information (Address, Phone, E-Mail).

So I appreciate your time and help and look forward to your reply!

Thanks so very much and have a wonderful day!

If No:

Ok, I understand. Thank you very much for your time.....Have a good day.

Appendix C – Questionnaire for Parents

Virginia Tech
Child Development
Lab School

A Follow-Up Project

Department of Human Development
(0416) Virginia Tech
Blacksburg, VA 24060
(540) 231 - 6149



Parent Questionnaire 2

Adult Behaviors Inventory

Please circle a number after each statement below to indicate how characteristic each of the behaviors are of your son or daughter at this time. The scale is:

(1) Very Uncharacteristic
(2) Uncharacteristic
(3) Characteristic
(4) Very Characteristic

1. Always has ideas of things to do. 1 2 3 4
2. Uses resources in typical rather than unusual ways. 1 2 3 4
3. Once a goal is achieved, stops working with the object/material. 1 2 3 4
4. Explores different ways to accomplish activities. 1 2 3 4
5. Needs reinforcement to continue activities. 1 2 3 4
6. Invents new activities. 1 2 3 4
7. Asks many questions about what to do. 1 2 3 4
8. Seeks approval frequently. 1 2 3 4
9. Uses things in his/her own way. 1 2 3 4
10. Looks to others to tell him/her what to do. 1 2 3 4
11. Enjoys learning new skills. 1 2 3 4
12. Works well on his/her own. 1 2 3 4
13. Enjoys doing things even when there's no purpose. 1 2 3 4
14. Has fun doing things without worrying how well they turn out. 1 2 3 4

15. Gets so involved in an activity that it is hard for him/her to quit. 1 2 3 4
16. Starts activities for his/her own enjoyment. 1 2 3 4
17. Daydreams a lot. 1 2 3 4
18. Uses resources only in the way they were designed to be used. 1 2 3 4
19. Participates eagerly. 1 2 3 4
20. Participates intently. 1 2 3 4
21. Invents variations or different ideas. 1 2 3 4
22. Displays exuberance much of the time. 1 2 3 4
23. Rearranges situations to come up with novel ones. 1 2 3 4
24. Once he/she has been shown something he/she creates their own way. 1 2 3 4
25. Has a sense of humor. 1 2 3 4
26. Is imaginative. 1 2 3 4
27. Uses resources in unusual ways. 1 2 3 4
28. Finds unusual things to do with common objects. 1 2 3 4
29. Identifies with many people. 1 2 3 4
30. Gets so involved in an activity that he/she forgets what is going on in the room. 1 2 3 4
31. Is a playful person. 1 2 3 4

Appendix D – Questionnaire for Students

Student Questionnaire

Virginia Tech
Child Development
Lab School

A Follow-Up Project

Department of Human Development
(0416) Virginia Tech
Blacksburg, VA 24060
(540) 231 - 6149



Lab School Alumni Update

Level of Education (Please Check One):

High School or equivalency _____

B.S. _____

M.S. _____

Other _____

If Previous or Current College Student:

Name of college or vocational school attended _____

Major Area _____

Years Completed: _____

Expected Graduation Date: _____

Overall GPA: _____

What degree did you / will you earn?

Current Occupation: _____

How long employed? _____

If attending college or other schooling, expected
occupation after completion of the program

Student Questionnaire 2

Self-Description Scale

Please circle a number after each statement below to indicate how characteristic each of the behaviors is of you. The scale is:

	(1) Rarely	(2) Very Little	(3) Slightly	(4) Moderately			
	(5) Considerably	(6) Very Much	(7) Extremely				
1. Work on your own	1	2	3	4	5	6	7
2. Interested in many things	1	2	3	4	5	6	7
3. Conforming	1	2	3	4	5	6	7
4. Questioning	1	2	3	4	5	6	7
5. Artistic	1	2	3	4	5	6	7
6. Willing to change plans	1	2	3	4	5	6	7
7. Intelligent	1	2	3	4	5	6	7
8. Willing to try the difficult	1	2	3	4	5	6	7
9. See things different from others	1	2	3	4	5	6	7
10. Quiet	1	2	3	4	5	6	7
11. Unique	1	2	3	4	5	6	7
12. Have new ideas	1	2	3	4	5	6	7
13. Funny	1	2	3	4	5	6	7
14. Disagree with teacher	1	2	3	4	5	6	7
15. Different	1	2	3	4	5	6	7
16. Imaginative	1	2	3	4	5	6	7
17. Outgoing	1	2	3	4	5	6	7
18. Invent new things	1	2	3	4	5	6	7
19. Insist your way is right	1	2	3	4	5	6	7
20. Need help	1	2	3	4	5	6	7
21. Sensitive	1	2	3	4	5	6	7
22. Expressive	1	2	3	4	5	6	7
23. Inventive	1	2	3	4	5	6	7
24. Good at designing things	1	2	3	4	5	6	7
25. Creative	1	2	3	4	5	6	7

Please don't give up.....just a few more questions! →

Adult Behaviors Inventory

Please circle a number after each statement below to indicate how characteristic each of the behaviors is of you. The scale is:

	(1) Very Uncharacteristic	(2) Uncharacteristic	(3) Characteristic	(4) Very Characteristic
1. Always have ideas of things to do.	1	2	3	4
2. Use resources in typical rather than unusual ways.	1	2	3	4
3. Once a goal is achieved, stop working with the object/material.	1	2	3	4
4. Explore different ways to accomplish activities.	1	2	3	4
5. Need reinforcement to continue activities.	1	2	3	4
6. Invent new activities.	1	2	3	4
7. Ask many questions about what to do.	1	2	3	4
8. Seek approval frequently.	1	2	3	4
9. Use things in my own way.	1	2	3	4
10. Look to others to tell me what to do.	1	2	3	4
11. Enjoy learning new skills.	1	2	3	4
12. Work well on my own.	1	2	3	4
13. Enjoy doing things even when there's no purpose.	1	2	3	4
14. Have fun doing things without worrying how well they turn out.	1	2	3	4
15. Get so involved in an activity that it is hard to quit.	1	2	3	4
16. Start activities for my own enjoyment.	1	2	3	4
17. Daydream a lot.	1	2	3	4
18. Use resources only in the way they were designed to be used.	1	2	3	4
19. Participate eagerly.	1	2	3	4
20. Participate intently.	1	2	3	4
21. Invent variations or different ideas.	1	2	3	4
22. Display exuberance much of the time.	1	2	3	4
23. Rearrange situations to come up with novel ones.	1	2	3	4
24. Once I have been shown something, I create my own way.	1	2	3	4
25. Have a sense of humor	1	2	3	4
26. Am imaginative.	1	2	3	4
27. Use resources in unusual ways.	1	2	3	4
28. Find unusual things to do with common objects.	1	2	3	4
29. Identify with many people.	1	2	3	4
30. Get so involved in an activity that I forget what is going on in the room.	1	2	3	4
31. Am a playful person.	1	2	3	4

Appendix E – Phone Contact for a Personal Interview

Phone Contact for a Personal Interview

May I speak with _____.

My name is Aleysha Casas. I am a graduate student in Human Development at Virginia Tech. You had completed a questionnaire as part of a follow up study on young adults who attended the Virginia Tech Child Development Lab School.

As part of this project we are asking a few former Virginia Tech Child Development Lab School Students to participate in a brief interview. Depending on your location it can be a personal interview or a phone interview. Would you have time to answer a few questions?

If yes and in Blacksburg:

Are you currently in the Blacksburg area?

Would you have time this week to meet with me?

If yes and living at a distance:

Do you have time to answer a few questions now?

Is there a time which would be good for me to call to ask you these questions?

If no:

Thank you very much for your time. I appreciate your participation in the project.

Appendix F – Interview Questions

Interview Questions

- Please think about yourself as you were when you were 3 or 4 years old. Would you characterize yourself more as very playful, somewhat playful or not very playful?
 - Can you explain a bit about why you indicated that you were playful (somewhat playful) (not very playful)?

- Do you currently see yourself as very playful, moderately playful, or not at all playful?
 - What can you tell us to help us understand why you see yourself as very playful (moderately playful) (not at all playful) at your present age?

- Describe any life experiences that you feel might have affected your playfulness.

- Think of a typical week in your life. “Do you consider your work (whether as a student, employee, or parent) to be work, play, both, or neither?” (Csikszentmihalyi, 2000, p. 253)

Appendix G – Informed Consent

Virginia Polytechnic Institute and State University
Informed Consent for Participants of
A Follow – Up Project
Primary Investigator: Aleysha Casas

The information provided below will inform you of the details of the Virginia Tech Child Development Lab School Follow-Up Project.

We invite you to participate in a follow-up study of the young adults who attended the Virginia Tech Child Development Lab School. The purpose of this project is to learn about the current activities of the young adults who attended the Virginia Tech Child Development Lab School in the 1980's.

The enclosed questionnaire consists of questions related to demographics and current ways of carrying out activities. If you decide to participate in the study, we ask that you complete the questionnaire, which takes about 5-10 minutes. A few participants will be asked to participate in a follow-up interview in order to find out more detailed information on activities and key experiences. This can be done via personal interviews or on the phone (depending on your location). These interviews will be audio-taped and transcribed.

This study contains no known risks. It will offer a benefit for those who choose to participate by providing results of the questionnaire and of the overall study by participant request.

Anonymity and confidentiality will be assured in this study. Participant names will not be included in the study. Instead we will use numbers to represent each participant. Only the main investigator and research supervisors will have access to the coding list or audio-taped interviews. At no time will researchers release confidential data to other individuals who are not members of the research team without your written consent.

After compiling all the information we plan to create a Lab School Roster with names of those who wish to be included (see the attached form). We will mail those out to participants with their prior classmates contact information.

The results of this study will provide much needed information in the field of education because it will help us learn whether there is any relationship between your lab school experience and your current life.

Participants are free to withdraw from the study at any time.

This research project has been approved, as required, by the Institutional Review Board for Research involving Human Subjects at Virginia Polytechnic Institute and State University, by the Department of Human Development.

February 4, 2003
IRB Approval Date

February 4, 2004
Approval Expiration Date

Please sign below if you voluntarily agree to participate in this study.
I have read and understand the Informed Consent and conditions of this project.
I have had all my questions answered. I hereby acknowledge the above and give my voluntary consent.

Signature of Participant

Date

If you have any questions regarding this research or its conduct, please contact:

Investigator: Aleysha Casas

Phone: (540) – 953 – 2822
acasas@vt.edu

Faculty Advisor: Dr. Cosby Rogers

(540) – 231 – 4793
rogersco@vt.edu

Departmental Reviewer: Dr. Joyce Arditti

(540) 231 – 5758
jarditti@vt.edu

Chair IRB: David M. Moore
Office of Research Compliance
Research and Graduate Studies

(540) – 231 – 4991
moored@vt.edu

Appendix H – Institutional Review Board Application

Institutional Review Board Application

Study: Childhood Predictors of Adult Playfulness and Adult Creativity - A Follow-Up Study

Investigator: Aleysha Casas

Justification of Project:

Rubin, Fein, and Vandenberg (1983) defined the disposition of playfulness by six characteristics, including play as intrinsically motivated, a focus on means rather than ends, different than exploratory behaviors, nonliteral, free from external rules, and actively engaging. One of the first to study playfulness and develop the construct of playfulness was Nina Lieberman (1977). Other researchers continued these studies correlating playfulness to various factors including gender (Barnett, 1991), intelligence (Armstrong, 1998; Barnett & Fiscella, 1985), culture (Li, Bundy, & Beer, 1995; Porter & Bundy, 2001; Taylor, 1992, Taylor & Rogers, 2001), therapy (Erikson, 1977), and divergent thinking and creativity (Lieberman, 1977, Taylor, 1992, Taylor & Rogers, 2001).

The purpose of this study is to examine the strength of the relationship between childhood playfulness and adult playfulness. Many studies have been conducted on playfulness in both children and adults. However, no longitudinal studies have been found to test the relationship between child playfulness and adult playfulness. This study would contribute to the field by examining the strength of the relationship between these two factors. Adult creativity will also be assessed in order to determine its relationship to child and adult playfulness.

Procedures:

The subjects for the proposed study will be up to 100 young adults who participated in a study of playfulness conducted between 1985 and 1987 (see Rogers et al., 1998). At the time of the original study, the mean age of the participants was 55.48 months and included 24 boys and 19 girls who were enrolled in the Virginia Tech Child Development Laboratory School. In the original study each child was rated independently on the Child Behaviors Inventory of Playfulness by the mother and by one or more preschool teachers.

Mothers of the children who participated in the 1980's study will be contacted and invited to participate in the present study by using the Adult Behaviors Inventory to rate the son or daughter as a young adult. The current mean age of participants is 19.62 years. Parents will be asked to assist by providing an e-mail and/or postal address for their respective son or daughter. Because many of the parents continue to reside in the university community where the original study was conducted, I anticipate having at least an 85% participation rate in the follow-up study. Dr. Janet Sawyers, a faculty member who was director of the Laboratory School at the time of the original study has offered to assist in identifying contact information for the parents. After obtaining contact information, packets will be sent mailed containing a copy of the

demographic questionnaire, Adult Behaviors Inventory (Rogers et al., 1988, 1998), the Student Self-Evaluation of Creativity (Miller & Sawyers, 1989), a description of the project, and informed consent. Subjects will then be asked to complete the forms and return them to the University in the pre-stamped envelope provided. Alternatively, participants may complete the questionnaire by sending responses via e-mail.

Once the mothers and children who were subjects in the original study are located, and have agreed to participate in the follow-up, mothers will be asked to complete the Adult Behaviors Inventory for their son or daughter. In order to assess the relationship between the ABI and previous ratings on the CBI, young adults who participated in the study in the 1980s will also be asked to complete the ABI as a self-report instrument.

A second purpose of this study is to determine whether there is a significant relationship between childhood playfulness ratings and adult creativity as well as between adult creativity and adult playfulness. Adult creativity in this study will be measured by the Student Self-Evaluation of Creativity (SSEC). Each student will be asked to complete this scale for himself/herself in order to assess scores of creativity.

A basic demographic questionnaire will also be mailed to the participants. This questionnaire will gather information on occupation, educational level, and career.

Interviews will be conducted to explore perceptions of possible links between life events and adult playfulness. Four interviews should be conducted. If possible, one subject will be selected for each of these categories: (a) high playfulness ratings on the CBI and high playfulness ratings on the ABI, (b) high playfulness ratings on the CBI and low playfulness ratings on the ABI, (c) low playfulness ratings on the CBI and high playfulness ratings on the ABI, (d) low playfulness ratings on the CBI and low playfulness ratings on the ABI. These interviews will be audiotaped for the purpose of transcription. The investigator, will be the one to transcribe each audiotape. This should provide understanding of possible connections between playfulness in childhood and adulthood as well as the concurrent relationship between playfulness and creativity in young adults.

Risks and Benefits:

There are no known risks to this study. Subjects will only be asked to complete the questionnaires and possibly be one of four to participate in an interview, either in person or over the phone (depending on the locality of the subjects).

It will offer a benefit for those who choose to participate by providing results of the questionnaire and of the overall study by participant request. They will also receive an opportunity to participate in and receive an updated version of the class roster of their previous classmates from the Child Development Lab School at the end of the project.

Confidentiality / Anonymity:

Confidentiality will be maintained through the project. Subjects will be assigned numbers in order to maintain confidentiality and a coding list will only be read by the investigators. The coding list will remain in a locked file cabinet at the investigator's residence until the completion of the study.

Data and transcriptions will also be available to investigators only and will also be kept at a safe place in my home. Interviews will be audiotaped by the investigator as well as being transcribed by the investigator. The audiotape of the interview will contain no names but only subject numbers. These again will be stored at my home in a locked cabinet, not accessible by anyone other than the investigator.

Informed Consent:

Informed consent forms will be sent in the mailing packet along with the questionnaire for subjects to complete. A copy of this form is attached.

Right to Withdraw:

Subjects will be free to withdraw from the project at any point during the study.

Biographical Sketches:

These faculty members are guiding me through this research process:

Dr. Cosby Rogers, Ph.D.

Child Development
Department of Human Development
College of Human Sciences and Education

Dr. Janet Sawyers, Ph.D.

Child Development
Department of Human Development
College of Human Sciences and Education

Bonnie Graham, M.S.

Child Development
Department of Human Development
College of Human Sciences and Education

Dr. Gary Skaggs

Department of Educational Leadership
College of Human Sciences and Education

The Master's student conducting this research is: **Aleysha Casas**

Child Development
Department of Human Development
College of Human Sciences and Education

Appendix I – Institutional Review Board Approval

Institutional Review Board

Dr. David M. Moore
IRB (Human Subjects) Chair
Assistant Vice Provost for Research Compliance
CVM Phase II - Duckpond Dr., Blacksburg, VA 24061-0442
Office: 540/231-4991; FAX: 540/231-6033
e-mail: moored@vt.edu

February 5, 2003

MEMORANDUM

TO: Cosby Rogers HD 0416
Aleysha Casas HD 0416

FROM: David M. Moore 

SUBJECT: **Expedited Approval** – “Childhood Playfulness as a Predictor of Adult Playfulness and Creativity”– IRB # 03-066

This memo is regarding the above-mentioned protocol. The proposed research is eligible for expedited review according to the specifications authorized by 45 CFR 46.110 and 21 CFR 56.110. As Chair of the Virginia Tech Institutional Review Board, I have granted approval to the study for a period of 12 months, effective February 4, 2003.

Approval of your research by the IRB provides the appropriate review as required by federal and state laws regarding human subject research. It is your responsibility to report to the IRB any adverse reactions that can be attributed to this study.

To continue the project past the 12 month approval period, a continuing review application must be submitted (30) days prior to the anniversary of the original approval date and a summary of the project to date must be provided. My office will send you a reminder of this (60) days prior to the anniversary date.

cc:File
Joyce Arditti HD 0416

Appendix J – Participation in the Lab School Roster

Participation in the Lab School Roster

As a participant in the follow-up project we are creating an updated Virginia Tech Lab School Roster with contact information of your peers from your Lab School experience. This roster would be sent to your peers from the Virginia Tech Child Development Lab School.

If you wish to have your contact information included in this roster, please sign below and provide contact information which you wish to have listed. If you do not wish to be included in the roster, please indicate that below as well through your signature.

This form in no way affects the follow-up project. We simply wanted to provide the roster as a form of contacting previous peers.

Thank you so much for your time!

Sincerely,
Aleysha Casas
Graduate Student
Department of Human Development
acasas2@vt.edu

I wish to have my contact information included in the updated Lab School roster.

Signature _____

My current information is:

Name _____

Address _____

Phone Number _____

E-mail _____

I do not wish to have my contact information included in the updated Lab School roster. Please exclude any information on myself from this list.

Signature _____

VITA

Aleysha K. Casas

vtplayfulness@yahoo.com

OBJECTIVE

To obtain a teaching position in a preschool, Kindergarten, first, second, or third grade classroom.

EDUCATION

Fall, 2001 – Spring 2003 24060	Virginia Polytechnic University	Blacksburg, VA
MS Child Development		GPA: 3.93
Graduation Date: Spring 2003 <i>Title of Thesis: Childhood Playfulness as a Predictor of Adult Playfulness and Creativity – A Longitudinal Study</i>		
Fall, 1997 – Spring 2001 TN 37614	East Tennessee State University	Johnson City,
BS Early Childhood Development	Licensure Area: PreK - 3	GPA: 3.85
Graduation Date: Spring 2001		

AWARDS RECEIVED

Gamma Beta Phi	1999 – Present
Alpha Lambda Delta	1998 - Present
Dean's List	Fall 1998 – Present
National Dean's List	1997 - 2000

PROFESSIONAL EXPERIENCE

Graduate Assistant – Intergenerational Research		
Fall 2002 – Present 24060	Adult Day Services at Virginia Tech	Blacksburg, VA
Graduate Assistant – Head Teacher/Mentor Teacher		
Fall 2001 – Spring 2002 24060	Virginia Tech Laboratory School	Blacksburg, VA
Teacher's Assistant		
Summer 2001 TN 37601	Children First Development Center	Johnson City,
Student Teacher		
Spring 2001 TN 37614	University School	Johnson City,
Sunday School Teacher (Two-year olds)		
1999 – Summer 2001 TN 37604	Grace Fellowship Church	Johnson City,
Teacher's Aide		
Summer 2000 TN 37601	Children First Development Center	Johnson City,

Teacher's Aide/Substitute
Summer 1998
TN 37604

Hospitots

Johnson City,

OTHER EXPERIENCE

Campus Job (APS Scholarship)
Fall, 1997 – Spring 2001
TN 37614

East Tennessee State University

Johnson City,

PROFESSIONAL MEMBERSHIPS

NAEYC	2001-Present
Kappa Delta Pi	1999 - Present
SAYC	1998-2001
STEA	1997-2001

EXTRACURRICULAR ACTIVITIES

Luther Memorial Church