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Childhood Play as a Predictor for Development of Creative Potential in Adulthood: A Mixed Methods Study

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Childhood Play as a Predictor for Development of Creative Potential in Adulthood:

A Mixed Methods Study

by

Brittany Nicole Saviers

Submitted in Partial Fulfillment of the Requirements for the Degree of
Doctor of Philosophy in Occupational Therapy
Nova Southeastern University
Dr. Pallavi Patel College of Health Care Sciences
Nova Southeastern University

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Abstract

Previous research has demonstrated the benefits of childhood play and creativity in childhood from either a qualitative or quantitative perspective; yet, questions remain regarding the predictive power of childhood play, specifically what types of toys facilitate competencies such as creative potential in adulthood. Utilizing a mixed methods convergent parallel design, the aim of this research was to explore the relationship between the types of toys frequently used during childhood and adult creative potential. Additionally, utilizing adults' retrospective play stories, the study sought to understand the contribution of play to human development by identifying how qualitative themes of childhood play experiences aligned with the concepts from the Framework of Doing-Being-Becoming-Belonging (Wilcock, 2006; Wilcock & Hocking, 2015).

The quantitative strand consisted of a global sample of 972 participants, aged 23-74, who completed the researcher-developed Retrospective Childhood Play Inventory to gather information regarding a participant's preferred toy use during childhood, as well as the Runco Ideational Behavior Scale: Short Form to measure creative potential. Results indicated that although every participant possessed varying ranges of creative potential, there was no conclusive evidence that the types of toys used during childhood had a significant relationship or prediction on creative potential in adulthood. Based on a post-priori framework, the qualitative strand was conducted utilizing 116 adult retrospective play stories from existing data from The Strong National Museum of Play's *America at Play: Play Stories Video Archive*. The data demonstrated the meaningful influences of childhood play in a person's adult life. These findings led to a deeper understanding of the link between childhood play and a person's lived experiences and identity development in adulthood through the two themes that emerged: the

kaleidoscope of play and the continuity of play across the lifespan. Thus, the mixed methods approached demonstrated the complexity involved in studying the links between childhood play and creative potential in adulthood and the difficulty in measuring these constructs via quantitative means alone.

The integration of both quantitative and qualitative data demonstrated that, regardless of age, what people played with, how they played with the toys or objects, whom they played with, where and when the play occurred, and the meaning infused and derived from play, all contributed to a person's evolution into an occupational being in adulthood. Strong recommendations are made for occupational therapy and occupational science to influence development through play and through the facilitation of creative potential for the enhancement of health, well-being, and development across the lifespan for individuals, communities, and populations.

Keywords: play, toys, creativity, creative potential, mixed methods

Dedication

This dissertation is dedicated to the memory of Odie and Willow, who provided me with endless opportunities for play and contributed immensely to my life meaning.

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Chapter 1: Introduction

Since 1990, despite increasing intelligence scores, America has been plagued by a creativity crisis, as evident by a steady decline in creative thinking scores among individuals of all ages (Kim, 2011, 2017). Plausible rationale for the decline in creativity of children and adults in the United States has been linked to the types of play experiences and toys afforded during childhood (Brown, 2009; Kim, 2011, 2017; Russ, 2013; Sandberg, 2001; Sandberg & Vuorinen, 2008).

The right of every child to engage in play as well as the importance of play and toys for an individual's overall development and life course trajectory has been purported by many professional organizations and government bodies (American Occupational Therapy Association [AOTA], 2008; Ginsburg, 2007; United Nations, 2012). Adults of earlier generations have been reported as recalling play memories that involved playing for long durations in a variety of environments, games with child-generated rules, and toys made of natural materials and household items (Bergen & Fromberg, 2009; Sandberg, 2001; Sandberg & Vuorinen, 2008). For many of today's children, opportunities for such child-directed play with a wide repertoire of experiences and engagement with toys are narrowing in response to shifting cultural values, thus limiting opportunities for society to cultivate the development of creative potential in children in order to facilitate adaptable adults who are problem solvers, leaders, innovators, and individuals who are well positioned for health, well-being, and success in an ever-changing world (Chudacoff, 2007; Ginsburg, 2007; Gray, 2011; Russ, 2013; Wilcock & Hocking, 2015; Yogman, Garner, Hutchinson, Hirsh-Pasek, & Golinkoff, 2018). Therefore, the lifelong implications of childhood play must be reemphasized and further studied by occupational

therapy practitioners and researchers to identify what type of play, specifically what types of toys, during childhood facilitates competencies, such as creative potential, in adulthood.

Relationship Between Play and Creativity

The connection between play and creativity is grounded upon an interdisciplinary theoretical and empirical foundation, where the benefits of play are well documented and range from the development of social, cognitive, emotional, and physical skills to the facilitation of adaptation and health (Kohlberg, 1987; Piaget, 1962; Reilly, 1974; Sutton-Smith, 1992; Vygotsky, 1979). Additionally, play is considered a vehicle for the development of creativity, critical thinking, and complex problem-solving skills (Csikszentmihalyi, 1996; Russ, 2013). The World Economic Forum has predicted these skills to be the top three job skills that will be required by 2020 for an adult's success in the 21st-century and beyond (Gray, 2011). Evolving environments and greater demands for occupational performance gives compelling rationale for the study of the relationship between creativity and play, because as a child transitions into adulthood, it is the skills learned from engagement in play that evolves into the occupations and competencies of adulthood (Parham, 1996; Reilly, 1974; Vygotsky, 1979).

Purpose Statement

The purpose of this study was to explore the relationship between the types of toys frequently used during childhood and adult creative potential. Additionally, utilizing adults' retrospective play stories, the study sought to understand the contribution of play to human development by identifying how themes of childhood play experiences aligned with the constructs of the Framework of Doing-Being-Becoming-Belonging (Wilcock, 2006; Wilcock & Hocking, 2015).

Significance of Study and Implications for Occupational Therapy

Occupational therapy has a longstanding commitment to valuing engagement in play, as evident by Meyer (1922), who identified play alongside work, rest, and sleep as an essential rhythm shaping human organization. Similarly, it is theorized that all individuals possess an innate capacity for creativity and that health and well-being are enhanced through the biological need for expression of creativity in occupation (Hasselkus, 2002; Schmid, 2005; Wilcock & Hocking, 2015). Creativity has been reported as central to the relationship of being and doing and is considered one of the most complex of human capacities, central to human life and development, and a driving force of every individual's behavior repertoire and uniqueness as an occupational being (Guilford, 1950; Perrin, 2001; Schmid, 2005; Wilcock & Hocking, 2015). Creativity is associated with the power to enhance self-actualization, promote purpose and belonging, foster authenticity, facilitate competence, and cultivate health and well-being (Schmid, 2005).

Within occupational therapy, play is regarded as a pleasurable experience, vital for development (Reilly, 1974), and a primary occupation of childhood (AOTA, 2014). Play has long been a key area in pediatric occupational therapy, ranging from a focus about addressing a variety of developmental skills to the art of play itself (Parham, 1996; Parham & Fazio, 2008). Appreciation for creativity facilitated through engagement in play as part of the therapeutic dynamic has important occupational implications; especially, considering recent statistics regarding the correlation between the steady linear decline in childhood play and the consistent linear decline in creativity in Americans of all ages (Kim, 2011, 2017). Research has purported that specific types of play in young children have been significantly predictive of divergent thinking over periods of time (Russ, 2013; Russ & Christian, 2011; Sansanwal, 2014). Despite

research regarding the benefits of play and its foundation for creative thinking, opportunities to engage in a wide repertoire of play experiences have been diminishing in time and space for all children over recent decades. This change has been linked to cultural shifts including, evolving family lifestyles, rising demand for extracurricular activities, challenges in education, more digital distractions, and safety concerns (Brown, 2009; Gray, 2011; Louv, 2008).

Scholars allude to an ominous threat to the survival of humankind and society if people are not reaching their biological need for creative potential (Gray, 2011; Perrin, 2001; Schmid, 2005; Wilcock & Hocking, 2015). Therefore, the implications of diminishing opportunities for fulfillment of creative potential through engagement in childhood play are dramatic and long-term. In addition to health problems such as childhood obesity, children are at potential risk for being deprived opportunities to practice life skills needed for the occupations of adulthood and are at risk for navigating the world with a sense of dependence, vulnerability, lack of initiation, and diminished creativity required to solve their own problems (Gray, 2011; Perrin, 2001; Schmid, 2005; Wilcock & Hocking, 2015).

The evaluation of creative potential has been the focus of a growing number of studies over recent decades (Cropley, 1996; Mouchiroud & Lubart, 2001; Runco, 2003, 2014b; Runco & Acar, 2012; Schmid, 2005), as interdisciplinary researchers have become aware of the usefulness of creative abilities beyond the academic and workplace settings and how creativity can be applied to everyday situations and health over one's entire lifespan (Csikszentmihalyi, 1996; Perrin, 2001; Runco, 2014b; Schmid, 2005; Wilcock & Hocking, 2015). Creativity is a highly relevant component of children's development and has been indicated to be predictive of adaptive behaviors in the professional, personal, and social domains of adults (Reilly, 1974; Runco, 2014b; Russ, 2013; Schmid, 2005). Specific attention has recently been given to the

development of cognitive abilities, such as creative thinking, during childhood. Creative thinking, the process of facilitating the generation of new and original methods to solve problems, was popularized by Guilford (1950) in his presidential address to the American Psychological Association. During this address, Guilford proposed that most critical or creative thinking fell into the category of divergent thinking and that divergent thinking was the primary basis for creativity.

Although attention has been drawn to the nature, meaning, and importance of creativity and divergent thinking in childhood, little research involving longitudinal or retrospective studies of the creative potential of adults has been conducted to demonstrate the relationship between preferred childhood play experiences (e.g., toys) in a person's overall development and life course trajectory. More knowledge is needed about the nature of childhood activities and childhood play materials that encourage divergent thinking across the lifespan.

Research Questions

This study aimed to provide perspective about the following quantitative and qualitative research questions.

Quantitative Research Questions

1. What are the differences in the type of toys used during childhood between samples of adults across three generations?
2. What is the relationship between adult creative potential and the type of toys used during childhood among a sample of adults across three generations?
3. Which types of childhood toys are the most predictive of creative potential in adulthood?

Qualitative Research Questions

1. What is the experience of childhood play?

2. In what ways are childhood play experiences aligned with concepts from the Framework of Doing-Being-Becoming-Belonging (Wilcock, 2006; Wilcock & Hocking, 2015)?

Operational Definitions

This section provides operational definitions of terms related to creativity and play that were used within the context of the study.

Adulthood. The age range for adulthood was adopted and modified from the World Health Organization (2013) and included individuals who were aged 22 to 73. The following generations, defined by the Pew Research Center (2015), were included in the conceptualization of adulthood for the study: the Baby Boomer Generation (born 1946-1964), Generation X (born 1965-1980), and the Millennial Generation (born 1981-1997).

Childhood. For the purposes of the study, childhood is defined as a time period in a person's life between the ages of 3 and 18. Although a child is defined by the World Health Organization (2013) as a person below the age of 18, research has suggested that adults can only recall early childhood memories back to approximately 3 to 3.5 years of age with few experiences before the age of 6 becoming lifelong memories (Wang & Peterson, 2014; Wells, Morrison, & Conway, 2014). Due to this study utilizing retrospective memories of childhood play, any memories prior to age 3 were not considered for use in the study.

Creative ideation. Creative ideation is the tendency to think in creative ways, generate many new diverging ideas, and come up with alternative ways of thinking about a problem (Runco, Plucker, & Lim, 2000-2001; Runco et al., 2014).

Creative potential. Operationalized in this study, creative potential refers to the ideational behaviors as measured by the Runco Ideational Behavior Scale: Short Form (RIBS-S;

Runco et al., 2000-2001). Runco and colleagues defined creative potential as an “individual’s use of, appreciation of, and skill with ideas” (Runco et al., 2000-2001, p. 393).

Creativity. This study was designed to conceptualize creativity as the process of exploring a variety of diverse possible solutions and generating original ideas via the cognitive process of divergent thinking that involves the construction of new meaning (Runco, 2003; Russ, 2013; Wang et al., 2017) and has been found to be a vital part of daily living for all individuals across the lifespan due to the need to generate new ways of thinking for real-world problems (Fein, 1987; Schmid, 2004).

Divergent thinking. For the purposes of this research, divergent thinking was conceptualized as the breadth of thinking, the ability to see the world in new and unconventional ways, and the ability to acknowledge or generate more than one kind of idea or alternative solutions to solve a particular problem (Csikszentmihalyi, 1996; Guilford, 1950; Russ, Robins, & Christiano, 1999; Wang et al., 2017).

Everyday creativity. Everyday creativity is a perspective that creativity is a quality or capability of all humans, in varying degrees, and that creativity can manifest in all aspects of daily life that are valuable and meaningful (Hasselkus, 2002; Schmid, 2005). This is a departure from the view of creativity as an exceptionally rare concept found only in individuals typically considered talented or gifted in the creative arts, of high intellectual capacity, or engaged in occupational roles that require a high level of creativity (Hasselkus, 2002; Runco, 2003; Schmid, 2005).

Play. Play is categorized as an occupation by the Occupational Therapy Practice Framework (AOTA, 2014) and defined as “any spontaneous or organized activity that provides enjoyment, entertainment, amusement, or diversion” (p. S21). The focus of the study was about

engagement in childhood play experiences, which is synonymous with play participation, described by the AOTA (2014) as encompassing engagement in play, maintaining a balance of play with other occupations, and using toys and other play objects appropriately.

Toy. For the purposes of this study, a toy is defined as an object (whether manufactured, purchased, or found in nature or one's environment) that is used by a person for play throughout the span of human development (DuBois, 1997; Healey, Mendelsohn, & AAP Council on Early Childhood, 2019).

Summary

This study has potential to add value in the field of occupational therapy by identifying what childhood toys are correlated with enhanced creative potential in adulthood. Further research into how childhood play serves as a conduit for adult creative potential could broaden the understanding of play as a child's primary occupation and generate knowledge regarding how the experience of play and the processes of creativity contribute to development and health promotion. Additionally, this knowledge could empower occupational therapy and occupational science to influence development through play at a population level by collaborating about public policy and with private industry for the enhancement of health, well-being, and development across the lifespan for individuals and populations.

Chapter 2: Literature Review

The multifaceted dimensions of creativity and play are understood through numerous theoretical perspectives, including lifespan developmental theorists (Piaget, 1962; Reilly, 1974; Vygotsky, 1979), a Theory of Creativity: An Innate Capacity (Schmid, 2005), and the Framework of Doing-Being-Becoming-Belonging (Wilcock, 2006; Wilcock & Hocking, 2015). This chapter reviews the literature related to studying the childhood occupation of play and its predictive power in adult creative potential among three generational cohorts. The literature review of constructs addressed in this study begins with an introduction of the child as an occupational and creative being. Next, a broad overview is provided of creativity, divergent thinking, play, and their related constructs. This leads into a discussion about the relationship between play, creativity, and occupational therapy.

The implications of how historical changes in play have contributed to a creativity crisis in America are presented. Next, recommendations for how occupational therapy practitioners can demonstrate their distinct value and unique role in cultivating creativity across the lifespan by developing and maximizing play opportunities are provided. Previous methods of studying creativity and play in occupational therapy and related fields are presented to justify the mixed methods convergent parallel design (Creswell & Plano Clark, 2011; Teddlie & Tashakkori, 2009) used for this study. Finally, the literature review concludes with how the study will contribute to the literature and to the field of occupational therapy in practice, education, and research.

Guiding Theoretical Perspectives

There are a variety of theoretical perspectives contributing to the thorough analysis of the multifaceted dimensions of creativity and play across the lifespan as well as to how childhood

play contributes to the development of creative potential in adulthood. These include perspectives related specifically to play, those related specifically to creativity, and perspectives that offer a holistic framework to integrate the two variables. To provide a thorough analysis of creativity and play across the lifespan, numerous theoretical perspectives will guide this study. The first theoretical perspective reviewed in this section is the Occupational Behavior frame of reference (Reilly, 1974) to guide the development of the Retrospective Childhood Play Inventory and the perspective that play is necessary to development across the lifespan. The second theoretical perspective reviewed is a Theory of Creativity: In Innate Capacity (Schmid, 2005), which will support the link between creativity, occupation, play, and health. Finally, the third theoretical perspective, the Framework of Doing-Being-Becoming-Belonging (Wilcock, 2006; Wilcock & Hocking, 2015), provides a structural framework to analyze the final data and to describe the influence of childhood play experiences on adult creative potential.

Occupational Behavior

The theory of Occupational Behavior (Reilly, 1962) was used to guide the development of the Retrospective Childhood Play Inventory due to the theoretical perspective that play is necessary to development across the lifespan. Occupational scientist and theorist, Mary Reilly (1974), originated the occupational behavior frame of reference that utilized a general systems approach to explain the multifaceted aspects of play. Occupational behavior is broadly defined as a developmental continuum of work and play across an individual's lifespan. The basic premise of this theoretical perspective is that humans have an innate need to successfully interact with their environment, which results in the development of skills, competency, and mastery of occupational roles in the real-world environment. The major hypothesis of the Occupational Behavior approach is that childhood play and exploration of the environment serve as a critical

foundation and prerequisite for the adaptive skills and competency necessary for later demands in the occupational roles of adulthood (Reilly, 1974). This hypothesis is related to the interest area of how childhood play contributes to critical thinking and creativity in adulthood, as creativity is considered a key component of adult competency (Reilly, 1974; Wilcock & Hocking, 2015).

Although not specifically stated, four concepts can be inferred as being central to the occupational behavior perspective (Reilly, 1974) that also relate to the areas of play, creativity, and critical thinking. These four areas include humans having an innate need for competency and achievement, the developmental aspects of the work-play continuum, the nature and importance of occupational roles across the lifespan, and the relationship of health and human adaptation. Reilly (1974) identified three hierarchical stages of play, including exploration, competency, and achievement. The first stage of play behavior, exploration, is observed most frequently in early childhood play and is fueled by intrinsic motivation. The competency stage of play develops after the exploration stage and is often characterized by experimentation and practice in order to achieve task mastery. Achievement is the third phase of play behavior and focuses on competitive performance, goal attainment, and the desire to achieve excellence (Reilly, 1974).

The Occupational Behavior frame of reference (Reilly, 1974) views play as more than a necessity for child development and play for its own sake, but also as a means to prepare children with the adaptive skills and competence for adult occupations in later life. Additionally, the Occupational Behavior framework corroborates the play and creativity literature that purports how play develops simultaneously with development across the lifespan, which has been explored by various scholars in relation to children's playthings, social interaction, and with the

environment, just to name a few (Piaget, 1962; Sutton-Smith, 1986; Vygotsky, 1979). Reilly (1962) acknowledged creativity as essential to the occupational therapy profession when emphasizing, “Creativity is the end to which our knowledge ought to be designed” (p. 9). This rationale regarding the Occupational Behavior frame of reference (Reilly, 1974) makes it an appropriate theoretical lens for exploring how childhood play experiences influence adult creative capacities.

Theory of Creativity: An Innate Capacity

Schmid (2005) developed the Theory of Creativity: An Innate Capacity as a way to view creativity and its role in human life by offering evidence that creativity is an innate human biological capacity. The Theory of Creativity is based on a range of philosophies from humanistic, cognitive, educational psychology, and anthropology that is infused with occupational science, neuroscience, and psychology (Schmid, 2005). Grounded in occupational science, this theory draws upon an occupational perspective of health (Wilcock & Hocking, 2015) in regard to how creativity is critically linked to everyday occupations. Specifically, this theory proposes the following: “Humans have both the innate capacity to be creative and the biological need to express it. When creativity is adequately expressed through everyday activities, it has a major influence on health and well-being” (Schmid, 2005, p. 27).

The Theory of Creativity: An Innate Capacity (Schmid, 2005) will guide the creativity research portion of this study because it provides an occupation-based lens to view creativity as within the capacity of all people and within everyday occupations. Schmid (2005) defined creativity as follows:

Creativity is the innate capacity to think and act in original ways, to be inventive, to be imaginative and to find new and original solutions to needs, problems and forms of

expression. It can be used in all activities. Its processes and outcomes are meaningful to its user and generate positive feelings. (p. 6)

The Theory of Creativity: An Innate Capacity (Schmid, 2005) states that humans have a biological need for creativity that is linked to health and well-being, not only by a person's need for survival and adaptation, but also for self-expression and the creation of something special. Therefore, for this study, creativity is regarded as skill-based with its origins in creative thinking and behavior, which can be learned and facilitated. These ideas are supported by Schmid (2005), other health theorists (Graham, 1983; Hasselkus, 2002), and creativity researchers (Runco, Millar, Acar, & Cramond, 2010).

In addition, the term *everyday creativity* is a key concept in this theory, indicating that creativity in everyday occupations can be valuable and meaningful to every type of person, not just individuals typically considered talented or gifted. The concept of everyday creativity is important for this study, as previous research in this area has typically focused on studying creative artists, persons with high intellectual capacity, or persons occupying occupational roles that require a high level of creativity. Therefore, the concept of everyday creativity will reinforce the decision of the researcher to use convenience sampling when recruiting participants from a large nationwide population, to capture the creative abilities of a diverse group of individuals, further adding to the literature in this area. The Theory of Creativity: An Innate Capacity (Schmid, 2005) also synthesized literature into a discussion on the consequences of the decreasing demands for and expression of creativity in current society. This dialogue could be linked to the changing faces of play over previous decades in America that are interwoven throughout this manuscript.

Utilizing a Theory of Creativity: An Innate Capacity (Schmid, 2005) for this study, which is grounded in the principles of occupational therapy and occupational science, will facilitate the connection between this study and the creative processes of the occupational therapy profession. The ability of this study to connect the importance of creativity to occupational therapy practice, education, and research will acknowledge and reinforce how aspects of creativity have influenced the development of the profession since its inception (Meyer, 1922; Reilly, 1962) and highlight that “creativity is key to our art” (Royeen, 2003, p. 619).

The Framework of Doing-Being-Becoming-Belonging

The Framework of Doing-Being-Becoming-Belonging (Wilcock, 2006; Wilcock & Hocking, 2015) was used to frame this study’s qualitative and quantitative findings as a way of identifying recommendations for occupational therapy practice, education, and research. This study will frame its discussion of childhood play as a lifespan experience around the doing-being-becoming-belonging conceptualization of occupation outlined by Wilcock (Wilcock, 2006; Wilcock & Hocking, 2015). Based on core occupational therapy principles, theoretical contributions from occupational therapy, and other disciplines such as psychology, Wilcock offered the Framework of Doing-Being-Becoming-Belonging as a tool to enhance the understanding of the complexities of occupation (Wilcock, 2006; Wilcock & Hocking, 2015). Wilcock and Hocking (2015) conceptualized occupation as the dynamic relationship among the things people *do*, who they are as human *beings*, and their constant transformation into *becoming* someone different.

The first dimension of this framework, *doing*, consists of the observable actions of occupation and fosters social interaction and a sense of community (Wilcock, 2006; Wilcock & Hocking, 2015). *Doing* is a commonly researched and understood dimension, as occupational

therapy practice is grounded in the belief that doing influences health and well-being (Wilcock, 2006; Wilcock & Hocking, 2015). Less visible than the actions of doing is the experience of *being*. According to Wilcock and Hocking (2015), the doing component of occupation is dependent upon the aspect of being. Being is concerned with an individualistic sense of self and existence, as well as inner meaning and the essence of the person. *Becoming* is considered the pinnacle of the doing-being-becoming-belonging process and is conceptualized as a transformative element where humans are in a constant state of change and development as a result of occupational engagement (Wilcock, 2006; Wilcock & Hocking, 2015). This study hypothesized that the childhood play experiences of participants influenced the shaping and molding of who they became as adults. The last dimension of this framework, *belonging*, is concerned with connectedness among an individual's friends, organizations, and community that is experienced through doing with others (Wilcock & Hocking, 2015).

Due to the Framework of Doing-Being-Becoming-Belonging (Wilcock, 2006; Wilcock & Hocking, 2015) containing a simple and compelling analysis of the many dimensions of occupation, it is being utilized as a way to frame how the types of toys engaged with during childhood contribute to a person's creative potential in adulthood. Additionally, this framework offers a means of encompassing the breadth of participant's occupational experiences. The study utilized the dimensions of doing, being, becoming, and belonging to explore play as a primary and essential occupation of childhood and to comprehensively capture the continuity of childhood play experiences (doing) into adulthood (becoming). This framework is beneficial in providing a holistic analysis of both facets of this study, including childhood play and adulthood creative abilities. The importance of a lifespan perspective that focuses on the benefits of childhood play and its influence in adulthood was illustrated by Wilcock (2006) in her statement,

“Occupational therapists are in the business of helping people transform their lives by facilitating talents and abilities not yet in full use through enabling them to do and be” (p. 6).

The Wilcock and Hocking (2015) concept of doing was adopted to represent childhood play experiences gleaned from the play memories of adults. Doing and being complement one another, in that one concept cannot exist without the other (Wilcock, 2006; Wilcock & Hocking, 2015). Specific to this study, Wilcock and Hocking identified creativity as central to the interdependent relationship of being and doing and that creativity is considered one of the most complex of human capacities. Therefore, the concept of being represents how people feel and ascribe meaning to particular childhood play experiences, while focusing on the human capacity of creativity and creative potential. In addition, an argument was formulated of how being a child engaged in play is interdependent upon personal, environmental, and occupational factors to support doing. Becoming through play was related to the potential development and growth of the individual’s creative abilities into adulthood through the occupation of childhood play. Royeen (2003) supported Wilcock’s (Wilcock, 2006; Wilcock & Hocking, 2015) construct of becoming, when purporting that children who have the opportunity for a variety of play experiences throughout their childhood have the potential for occupational shaping. Occupational shaping is a dynamic process occurring through the doing of an occupation over time (Royeen, 2003) and influences the development of an individual. Finally, belonging was illustrated in this study by a person’s relationship and connectedness with others, both in childhood play and in adulthood through the skills they develop through play.

Occupational therapy practitioners are well-positioned to shape children through a variety of play experiences that facilitate the becoming stage of complex human capacities and commence the transformation from child to an adult with creative potential. Understanding the

interdependence of all four dimensions of the Framework of Doing-Being-Becoming-Belonging (Wilcock, 2006; Wilcock & Hocking, 2015) enhances how occupational therapy practitioners facilitate and engage in play with individuals across the lifespan. This study also contributed to the empirical scrutiny of the perspective through exploration into how people shape their future through becoming, which is the least understood and researched dimension of the framework.

Review of All Constructs Addressed in the Study

A review of the constructs addressed in this study includes an introduction of the child as an occupational and creative being. Next, a broad overview is provided of creativity, divergent thinking, play, and their related constructs. This information leads into a discussion about the relationship between play, creativity, and occupational therapy. The implications of how historical changes in play have contributed to a creativity crisis in America are presented, followed by recommendations for how occupational therapy practitioners can cultivate creativity through play.

The Child as an Occupational and Creative Being

The academic discipline of occupational science conceptualizes the child as an occupational being and defines play as a primary occupation of childhood (Clark et al., 1991). In occupational science, humans are viewed from an open system perspective where there is a self-initiated and ongoing interaction between the person and the environment across the lifespan (Clark et al., 1991). Occupational science defines occupations as chunks of culturally and personally meaningful everyday activities in which the individual engages (Clark et al., 1991); therefore, the study of play and creativity from a lifespan perspective is critical to understanding the importance of play as an occupation of childhood, as well as its predictive influence on adult creative potential.

Occupational scientists and creativity researchers have theorized that occupational beings have an innate capacity for creativity and that through the biological need for expression of creativity, the health and well-being of individuals are enhanced (Hasselkus, 2002; Schmid, 2005; Wilcock & Hocking, 2015). Wilcock and Hocking (2015) identified creativity as central to the relationship of being and doing and considered creativity one of the most complex of human capacities in the Framework of Doing-Being-Becoming-Belonging. Additionally, Guilford (1950) considered all individuals capable of creative abilities across a continuum where creative acts were expected of individuals, regardless of frequency. Therefore, similar to previous scholars, this study considered all occupational beings as creative persons who have an innate capacity for everyday creativity and the biological need to express it through daily activities (Hasselkus, 2002; Schmid, 2005; Wilcock & Hocking, 2015). This perspective implies creativity is a concept that can be studied in children and adults of all abilities across the lifespan.

Creativity

The importance of creativity to individuals and society is unquestionable. Since the 1950s, research has continuously highlighted the contributions of creativity to health, quality of life, and the ability for a person to learn, as well as to overall human development and to many forms of innovative progress (Barbot, Besancon, & Lubart, 2015; Chand O'Neal & Runco, 2016; Mouchiroud & Lubart, 2001; Runco, 2004; Runco, 2014b). Additionally, creativity is increasingly being recognized as a crucial asset for a person's everyday problem solving that contributes to personal and societal development in a rapidly changing environment (Barbot et al., 2015; IBM, 2010; Russ, 2013).

The world is becoming increasingly more complex due to advancements in technology and modern conveniences (Runco, 2014b; Russ, 2013). While these innovative advancements

frequently provide more opportunities for individuals, they also produce more demands that require individuals to adapt and develop new skills. Due to this dynamic environment, creativity is being deemed as more important than ever. One obvious benefit of creativity is creative problem solving, which this study conceptualized as divergent thinking. There are other important areas in which creativity has a role, including flexibility and adaptability, which allow a person to cope with the type of cultural evolution that is becoming a part of everyday life in today's society (Runco, 2014b; Russ, 2013). These skills are important as children develop into adults because the lifespan continuum consists of developmental life stages characterized by situations requiring a person to cope with new challenges, work collaboratively with others to solve interpersonal conflicts, and use flexibility to balance the demands of peers, family, academics, work, and an evolving sense of identity (Erikson, 1950; Reilly, 1974; Runco, 2014b; Russ, 2013).

Societies around the world are in constant need of people who can be proactive in evolving culture while also providing creative solutions to solve some of the greatest occupational challenges that are of national and international importance. Examples could include addressing the needs of marginalized groups, social and human rights, disaster relief, societal violence, homelessness, addictions, immigration, and global warming, just to name a few (Townsend & Rappolt, 2014). Recognizing the contributions of creativity, countries such as China, Korea, Singapore, and New Zealand have made creativity a key element of their national goals (Runco, 2014b). The leaders of these countries have recognized that their best resource is the ability of their citizens to think creatively, to problem solve, and to develop new and innovative concepts (Runco, 2014b).

Creative moments and creative achievements are often tangible and easily recognizable; however, the process of creativity is more difficult to explain and understand, resulting in many different interpretations. Creativity has been documented as manifesting as a “mental phenomenon or vision, capability, innovative action or skills, tools, or as inspired, insightful, interpretive and innovative thought and action” (Wilcock & Hocking, 2015, p. 190). Despite growing research about this topic and the idea that creativity is considered one of the key 21st-century skills (IBM, 2010; IBM Institute for Business Value, 2010), the constructs and assessment of creativity remain ambiguous, with some research reporting 10 or more examples of definitions for creativity (Kaufman & Sternberg, 2019; Piffer, 2012).

The lack of a rigorous definition has led to a plethora of criteria for creativity being inconsistently documented in the literature. Some criteria for creativity include originality, novelty, uniqueness, usefulness, value, adaptiveness, and meaningfulness (Piffer, 2012; Runco, 2004; Runco, 2014b). Wilcock and Hocking (2015) described creativity as one of the “most complex of human capacities” (p. 190), while also describing characteristics of creative people, such as intuition spontaneity, flexibility, openness, and independence. In a book about the creative process, Myers (1999) described creativity as a concept that was “intimidating, strong and, powerful” (p. xiii). Runco (2003) recommended scholars who research children do so with a focus on creative potential rather than creative performance; and to conceptualize creativity very literally. Therefore, this study conceptualized creativity as the process of exploring a variety of diverse possible solutions and generating original ideas via the cognitive process of divergent thinking (Russ, 2013; Wang et al., 2017), which has been found to be a vital part of daily occupations for all individuals across the lifespan due to the need to generate new ways of thinking for real-world problems (Fein, 1987; Runco, 2003; Schmid, 2004).

Interdisciplinary scholars have also described creativity as something of everyday life for all persons (Myers, 1999; Runco, 2003; Schmid, 2005; Wilcock & Hocking, 2015). It is the creativity of everyday life that was explored for this study. Everyday creativity is a concept that purports opportunities for creativity exist in everyday occupations and is widely distributed in that it can be meaningful to all individuals, not just those typically thought of or who think of themselves as highly creative (Myers, 1999; Runco, 2003; Schmid, 2005; Wilcock & Hocking, 2015). For the purposes of this study, an occupation-based view of everyday creativity, as being within the capacity of all people and within everyday occupations, was used and was defined by Schmid (2005) as follows:

Creativity is the innate capacity to think and act in original ways, to be inventive, to be imaginative and to find new and original solutions to needs, problems and forms of expression. It can be used in all activities. Its processes and outcomes are meaningful to its user and generate positive feelings. (p. 6)

Everyday creativity is often referred to in the literature as little-c creativity. Scholars tend to differentiate between little-c and big-c creativity in regard to the influence or importance of creative products or persons (Barbot et al., 2015; Runco, 2003; Runco, 2004, 2014a, 2014b, 2016; Russ, 2013). At the core of little-c creativity is the opportunity for self-actualization of all persons and the opportunity for meaningful personal construction of new ideas to create small changes that have potential to bring about larger change (Hasselkus, 2002). Little-c creativity represents a departure from big-c creativity, which is a perspective focused on creativity as represented only in rare accomplishments and found only in eminent geniuses whose works have lasted for centuries in their chosen fields, such as Mozart and Picasso (Runco, 2004). According to Runco (2014a), the problem with big-c creativity is that the construct suggests a false

dichotomy and can be interpreted as if it is not connected to little-c creativity. Therefore, Runco (2014a) recommended avoiding this dichotomization when discussing development and creativity in order to fully recognize the continuity of creativity across the lifespan. What separates big-c from little-c creativity is creative potential; specifically, personality, knowledge, and opportunity (Runco, 2016). In fact, numerous studies in the creativity literature have found that all big-c creators had little-c creative potential (Runco, 2016).

Creative Product Versus Creative Process

Creativity can take several forms; therefore, it was important to distinguish between the conceptualization and use of everyday creativity as a theoretical lens for this study and other existing theories of creativity. Many existing theories of creativity are focused on constructs related to the creative product, including objective performances and achievements of the person (Runco, 2003; Russ, 2013). This focus is about the creative product, which is the outcome of the individual that can be judged for its amount of creativity (Russ, 2013). According to Russ (2013), there is a consensus that, for a product to be deemed creative, it must be original, of good quality, and appropriate to the task according to specific disciplines.

The focus of this study was not about the creative product, but rather the creative process and the internal processes of the individual that underlie creative behavior. This study focused specifically on creative potential. Creative potential has been identified as more important than creative performance for educators, health care professionals, and anyone concerned with human development across the lifespan (Runco, 2003). The reason is due to creative potential being so widely distributed that it is a capacity for everyone from childhood through adulthood and that creative potential is a process that can be targeted and fulfilled (Runco, 2003; Schmid, 2005). Additionally, this notable difference between the conceptualization of creativity for this study

and existing theories is that it provides meaning to this study's purpose as it leads directly toward implications for health promotion for populations and communities.

Divergent Thinking as an Indicator of Creative Potential

Creativity researchers have identified cognitive processes that should lead to original ideas, including divergent thinking, along with broad associative ability, cognitive flexibility, insight, and perspective taking (Guilford, 1950; Runco, 2011; Russ, 2013). Divergent thinking, identified throughout the literature as one of the most important cognitive processes in both creativity and play, involves the ability to generate a variety of ideas or alternative solutions to solve a problem (Russ et al., 1999; Wang et al., 2017). Divergent thinking was given impetus as a primary driving force of creativity by Guilford during his 1950 presidential address to the American Psychological Association. Since then, divergent thinking has gained a sound theoretical base through empirical scrutiny and has become one of the most commonly studied constructs in the creative studies literature (Runco, 2010; Runco, 2014b; Runco & Acar, 2012) and, more specifically, a commonly studied construct from a developmental perspective in regard to creativity (Barbot et al., 2015; Mouchiroud & Lubart, 2001; Russ, 2013; Russ & Fiorelli, 2010).

Divergent and convergent thinking often represent two opposite ends of a creative problem-solving continuum, with the former being indicative of creative potential (Lloyd & Howe, 2003; Runco, 2004, 2010; Runco & Acar, 2012). As a central feature of creativity, divergent thinking offers opportunities to think beyond traditional conceptual boundaries, encouraging people to think outside of the box and beyond normal rules or regulations. In contrast, convergent thinking typically involves solutions that are deemed correct or that

conform to rules and social norms rather than the production of original ideas (Lloyd & Howe, 2003; Runco, 2004, 2010; Runco & Acar, 2012).

Theories associated with creativity are connected to developmental theories that also consider the divergent and convergent thinking continuum. For instance, Piaget (1952) believed assimilation was the key to creative thinking. Through assimilation, a person is interpretive and takes liberties with information, which are often opportunities for divergent thinking. Piaget was a proponent of pretend play, as he felt this form of play was primarily assimilatory in nature. Through a Piagetian lens, divergent and original interpretations are considered assimilatory, whereas convergent insights are viewed as involving accommodation. Accommodation occurs when there is a sudden recognition of a solution or when the person takes new information into account to solve a problem (Piaget, 1952).

Divergent thinking is not a synonym for creativity; however, divergent thinking assessment tools have been shown to be a reliable and reasonably sound predictor of creative potential and the meaningful creative problem solving that occurs in the natural environment (Runco, 2008, 2014b; Runco & Acar, 2012; Runco et al., 2000-2001). When measuring creative potential, there is the possibility for someone to score well on a divergent thinking assessment and never fulfill his or her creative potential or perform in a creative fashion. The study of divergent thinking as an indicator for creative potential is only an estimate because how a person will perform in the future is always unknown. Research indicates that divergent thinking assessments provide useful estimates of the potential for creative problem solving and future creative performance (Runco, 2008, 2014b; Runco & Acar, 2012; Runco et al., 2000-2001).

There is a general level of agreement within the creativity literature that divergent thinking and intelligence are independent constructs of one another, thus contributing to the

discriminant validity of divergent thinking assessment tools (Runco, 2011; Runco & Acar, 2012; Runco et al., 2000-2001, 2014). Juxtaposed to the foundational bedrock of divergent thinking, intelligence, as measured by an intelligence quotient score, is typically measured with tests assessing convergent thinking. Research acknowledges that a basic level of cognitive ability is needed for creativity but becomes less important beyond a specific threshold (Runco, 2011; Runco & Acar, 2012; Runco et al., 2000-2001, 2014).

Divergent thinking is considered a performance measure of creative ideation (Runco, 2014b; Runco et al., 2000-2001, 2014). Creative ideation is the tendency to think in creative ways, to generate many new diverging ideas, or to come up with alternative ways of thinking about a problem. Runco et al. (2000-2001) contended that ideas can be treated as “products of original, divergent, and even creative thinking” (p. 393). The extensive literature on divergent thinking tests demonstrates that the measurement of creative ideation captures the core components of divergent thinking, including the ability of a person to be original, fluent, and flexible with ideas (Runco et al., 2000-2001, 2014).

Cognitive processes, such as divergent thinking, represent breadth of thinking. Breadth of thinking reflects a person’s creative ideation via their ability to generate a vast number of wide ranging ideas that are drawn from a repertoire of real-world experiences and knowledge (Grant, 2016; Hasselkus, 2002). A recent poll conducted by IBM of Chief Executive Officers from around the world indicated that creativity, in particular divergent thinking, is the most important leadership quality being sought by new hires of the company (IBM Institute for Business Value, 2010). Valuing breadth of thinking, the generation of new ideas, and innovation could be one of the reasons why IBM was granted the most patents in 2018 for the 26th consecutive year. Of the over 330,000 patents granted in the United States by the U.S. Patent and Trademark Office

(Blake, 2019), approximately 9,100 of those were granted to IBM inventors. Research proves the chances are minimal that any one of these inventions will drastically change the world (Blake, 2019; Grant, 2016). Rather, scholars stress the importance of divergent thinking abilities by suggesting that individuals have better odds of originality and creative problem solving over a lifetime of generating ideas (Grant, 2016).

Creative ideation is a relevant construct for this study, as everyone produces ideas; therefore, ideas can be viewed as everyday products and especially useful in understanding everyday creativity (Runco et al., 2000-2001, 2014). Additionally, ideas are not limited by some of the confounding variables that are evident when analyzing creative products and achievements. Ideation is an important influence in an individual's developmental trajectory, as the generation of ideas is one of the first steps of creative problem solving, giving original ideas and insight to navigate real-world challenges across the lifespan. Divergent thinking and creative ideation are vital features of creativity, as indicated by research demonstrating how creativity is hampered if ideation does not occur (Runco et al., 2000-2001, 2014).

While divergent thinking is an important criterion of creativity because it isolates a single cognitive process vital for creativity, it is only one necessary component of creativity and is not solely sufficient for creative production (Barbot et al., 2015; Lubart, Zenasni, & Barbot, 2013; Plucker, Runco, & Lim, 2006). In addition to divergent thinking, creativity draws from various interrelated resources. Creative potential consists of several resources needed to transform ideas into creative production, including genetic factors, motivation, personality features, aspects of conation such as the willingness to take risks and the ability to tolerate ambiguity, as well as task-relevant knowledge. Environmental resources, such as culture and temporality, also have the potential to influence a person's creative potential. It is also possible for creativity to be

facilitated or hampered by external factors such as parenting or education, to name a few. Current creativity research insists upon a need for balance of each of these factors for the facilitation of creative potential (Barbot et al., 2015; Lubart et al., 2013; Plucker et al., 2006). Similar to theoretical contributions in this area, this study considered divergent thinking and its associated instrumentation, as partial indicators of a person's creative potential.

This study was specifically interested in using divergent thinking to predict a person's creative potential. Research purports that tests of divergent thinking assess ideation and that the most appropriate criterion for a divergent thinking test is one that emphasizes ideational behaviors (Runco et al., 2000-2001). Runco and colleagues (Runco & Acar, 2012; Runco et al., 2014) found that ideas are less likely than creative achievements and accomplishments to be biased by factors such as opportunity, chance, and socioeconomic status. The Runco Ideational Behavior Scale: Short Form (RIBS-S) is a self-report measure that asks solely about ideational behaviors (Runco et al., 2000-2001). The RIBS-S was selected for this study as it has demonstrated better predictive validities due to the criterion relying only on ideation and not opportunities and extra cognitive factors (Plucker et al., 2006; Runco & Acar, 2012).

Benefits of Divergent Thinking

Personal and professional benefits abound when divergent thinking is encouraged. Research has indicated individuals who are deemed more creative are often considered healthier, more adaptive, and experiencing longer life expectancies (Hasselkus, 2006; Runco, 2014b; Schmid, 2005; Wilcock & Hocking, 2015). Additionally, many innovations and creative problem solving have led to incredible societal benefits, including cures for diseases and more advanced technologies (Chand O'Neal & Runco, 2016; Runco, 2014b; Townsend & Rappolt, 2014). Current research is focused on the exploration of lifespan creativity and how to better

prepare children for the future (Hasselkus, 2002, 2006; Runco, 2016; Wilcock & Hocking, 2015). One example of the importance of maintaining a lifespan perspective of creativity is evident in what the U.S. Census Bureau coined the “Graying of America” trend (Vespa, 2018). The Graying of America is a projection that, by the year 2035, for the first time in U.S. history, older adults will outnumber children (Vespa, 2018). Facilitation of creativity, in particular divergent thinking, will play a critical role in the aging trend as creativity has been linked to late-life adaptations (Runco, 2004, 2014b). These trends are especially true of the cognitive flexibility and divergent thinking provided by creativity, as older adults tend to rely heavily on daily routines and have the potential to become cognitively inflexible, unless they are intentionally creative (Runco, 2004, 2014b). The Graying of America is one example of how creativity is integral to an occupational perspective of health and how creativity, when adequately expressed through everyday occupations, can have a major influence on a person’s health and well-being.

Creativity contributes to both physical and psychological health, as well as to a better immune system and the ability to facilitate greater life satisfaction and meaning (Hasselkus, 2006; Runco, 2014b; Schmid, 2005; Wilcock & Hocking, 2015). Individuals with high divergent thinking abilities should be able to think of alternative solutions to real-life problems, such as aging. However, it is evident that a great deal of the nation’s creative potential is going unfilled, as evident by hierarchical relationships stifling individual creativity, children unable to cope with the daily problems they face, and the lack of creative problem solving as children progress toward adulthood (Gray, 2011; Kim, 2011, 2017; Schmid, 2005; Wilcock & Hocking, 2015). Therefore, it is important to create occupational environments that facilitate creative development and allow for the flourishing of creative ideas. Numerous scholars have reported

that facilitating the development of children in a variety of processes important to creativity will enhance the probability that they will cultivate their own creative potential in order to make genuine creative contributions as an adult (Reilly, 1974; Russ & Fiorelli, 2010; Wilcock & Hocking, 2015). Peloquin (1997) philosophized that, through everyday occupations, the power of creativity is demonstrated. Among the numerous methods shown to enhance creativity, the occupation of play has been found to be one catalyst for divergent thinking (Brown, 2009; Parham & Fazio, 2008; Russ, 2013; Russ & Christian, 2011; Sutton-Smith, 1992). This study specifically explored the relationship between the types of toys frequently used during childhood and adult creative potential. Additionally, utilizing adults' retrospective play stories, the study sought to understand the contribution of play to human development.

The Importance of Play

The importance of play in child development and across the lifespan has been purported by many professional organizations, including the American Academy of Pediatrics (2018), the United Nations Convention on Rights of the Child (United Nations, 2012), and the AOTA (AOTA, 2014). All children engage in some form of play and it is through play that children interact with their environment. Due to the pervasiveness of play in the everyday lives of children, it has been described as one of the primary occupations of childhood (AOTA, 2014). Occupational therapist, Mary Reilly (1974), proposed a theoretical framework of Occupational Behavior that described play as a necessary occupation of childhood that occurred along a continuum of work and leisure. In an Occupational Behavior framework, children learn skills and develop interests that act as a prerequisite to future choices and success in occupational roles later in life (Reilly, 1974). Furthermore, Reilly hypothesized that childhood play experiences served as the foundation for the adaptive skills necessary for competence that occurs through

exploration, manipulation and investigation, learning, social interaction, competition and cooperation, the learning of rules, and the development of self-determination and personality.

The benefits of play are well documented in occupational therapy. Play theorists agree that childhood play is important in the development of flexible thinking, adaptability, and creativity (Brown, 2009; Piaget, 1962; Reilly, 1974; Sutton-Smith, 1992; Vygotsky, 1979). Additionally, play is believed to facilitate learning, problem solving, exploring, mastering of one's environment, and the development of social, cognitive, emotional, and physical skills (Brown, 2009; Piaget, 1962; Reilly, 1974; Sutton-Smith, 1992; Vygotsky, 1979).

Conceptualizing Play and Play as Occupation

Play researchers have proposed a variety of descriptions and characteristics of play that make articulating a single definition almost impossible. Despite its deceptive simplicity, play is regarded as a complex and multifaceted human behavior that can often be easily observed but difficult to define (Brown, 2009; Missiuna & Pollock, 1991; Parham, 1996). Properties of play include being seemingly purposeless, voluntary, having an intrinsic attraction and desire for continuation, being free from time, experiencing a diminished consciousness of self, and having improvisational potential (Brown, 2009). Within occupational therapy, play is regarded as a pleasurable experience that is vital for development (Clark et al., 1991; Parham, 1996; Reilly, 1974). For the purposes of this study, play is defined as “any spontaneous or organized activity that provides enjoyment, entertainment, amusement, or diversion” (AOTA, 2014, p. S44).

Play with Toys

Toys are often considered the artifacts and media of play (DuBois, 1997; Mergen, 1982). It is through various types of play that toys afford a media that can facilitate life roles and related skills (DuBois, 1997). For this study, a toy is operationalized as an object (whether

manufactured, purchased, or found in nature or one's environment) that is used by a person for play throughout the span of human development (DuBois, 1997; Healey et al., 2019). The importance of toys to lifespan development is grounded in the large amount of research documenting the role of play, as well as the specific role of play with objects, in facilitating development in the cognitive, physical, and psychosocial domains, with increasing importance as children age (Yogman et al., 2018).

Over time, the concept of play has changed very little; however, what constitutes a toy at the time of this study was significantly different from the previous century (Chudacoff, 2007; DuBois, 1997). For instance, around the 1880s, play pretties was a common term for what is now referred to as a toy. Play pretties were toys often derived from natural materials, in which imagination was required to transform items such as sticks into a horse to ride and organic materials into a homemade doll. Since this time, an increase in industrialization and manufacturing has provided the opportunity for mass production of store-bought toys, such as dolls, trains, and balls (Chudacoff, 2007; DuBois, 1997).

An increase in sophistication and complexity of toys has occurred over the last 20 years. This change has brought an evolution of societal perceptions of toys, ranging from parents, caregivers, and society viewing toys as simply children's playthings to viewing toys as vital facilitators of child development (Chudacoff, 2007; Healey et al., 2019; Yogman et al., 2018). The constant evolution of toys provides boundless opportunities for toys to be used in meeting a diversity of developmental needs across the lifespan continuum. It is also important to acknowledge the recent effect of mass marketing in promoting more concrete and literal toy designs that have diminished the affordances for expanding play opportunities. Currently, there is an evolving replacement of traditional toys, such as blocks and balls, with electronic and

digital-based toys, despite the lack of supporting evidence of similar benefits to development as traditional toys (Chudacoff, 2007; Healey et al., 2019; Yogman et al., 2018).

Although different types of play have been associated with promoting creativity and divergent thinking, this is an area that can be fostered by providing opportunities to engage with toys that have an array of intrinsic and bestowed properties (DuBois, 1997; Yogman et al., 2018). Intrinsic properties are the inherent characteristics of a toy, including the toy's texture, shape, weight, and size, for example. These inherent properties contribute to both a toy's intended and unintended uses. Bestowed properties of toys are those characteristics that are applied to a toy from various sources. Common examples of bestowed properties are how toys are categorized as educational toys, gender-neutral application, and categorization relative to developmental age or cognitive skills. When a person capitalizes on a toy's inherent properties to bestow characteristics upon the toy, there is potential for the toy to be used in an unintended manner from its original intended use (DuBois, 1997; Yogman et al., 2018).

Toys enrich play through the intrinsic and extrinsic properties they possess. Closed-ended toys, such as puzzles, have a single use, are intended to be used in a certain way, and have potential for encouraging convergent thinking because the focus is about a prescribed way to play with a toy (Guilford, 1967). Open-ended toys, such as LEGO blocks and clay, have potential to lead to multiple uses, afford a variety of intended and unintended possibilities for play through bestowed properties, and encourage divergent thinking (Guilford, 1967). Research has demonstrated how the intrinsic properties, specifically the unintended use of play materials, may contribute to the notion of divergent thinking (DuBois, 1997; Lloyd & Howe, 2003). However, knowing if there is a relationship between the intended or unintended use of toys and convergent and divergent thinking has not been adequately addressed in previous research. This

concept forms one of the central questions in the Retrospective Childhood Play Inventory pilot study used in this study for discovering a toy's overall creativity affordance index.

Evidence has demonstrated that it is best to maintain a balance in the types of toys engaged with during childhood, to include toys that match a child's current developmental level and abilities and also with toys that provide a challenge to encourage the development of new skills (DuBois, 1997; Healey et al., 2019; Yogman et al., 2018). Additionally, toys that are deemed enjoyable, that are used productively in reciprocal play with others, that can be adapted for continued use as the child advances developmentally, and that facilitate pretend play and problem-solving activities are more likely to facilitate healthy child development (DuBois, 1997; Healey et al., 2019; Yogman et al., 2018).

Occupational therapy practitioners can view the historical evolution of toys as a way to glean greater insight into the role of toys in play and in human occupations (DuBois, 1997). Additionally, this perspective allows for research about how engagement with toys acts as a catalyst to overall development and a person's life course trajectory, specifically as a predictor of adult creative potential and occupational competencies.

Types of Play

Many play theorists have created categories to conceptualize the types of play in which children engage. The lifespan development approach explores how persons grow and change from conception to death (Kohlberg, 1987; Piaget, 1962; Vygotsky, 1979). Consisting of developmental psychologists, lifespan development approaches view development as a lifelong process in physical, cognitive, and psychosocial domains (Kohlberg, 1987; Piaget, 1962; Vygotsky, 1979). Well-known psychologist, Jean Piaget (1962), categorized play as a developmental hierarchy according to play behaviors and believed that the development of play

occurred simultaneously with cognitive development. His play categorizations included sensorimotor play, symbolic play, and games with rules (Piaget, 1962). Piaget also developed stages of cognitive development to describe play and activities associated with child development, including the sensory-motor period, preoperational stage, concrete operational stage, and the formal operational stage.

Vygotsky (1979), a contemporary play researcher, had more creative implication than Piaget and focused only on pretend play. In contrast to Piaget, who focused solely on childhood development, Vygotsky believed pretend play could extend into adulthood and was necessary for development. In addition, Vygotsky believed that, through play with toys, children could develop competencies and roles needed for adulthood that may not be demonstrated in everyday childhood behaviors. Current play researcher, Stuart Brown, studies play as a necessity of life, health, happiness, success, and creativity across the lifespan. Brown (2009) categorized play as body and movement play, object play, imaginative play, social play, storytelling and narrative play, and creative play.

Prior play categorizations, such as those developed by the aforementioned theorists, have been shown to be helpful in understanding the developmental nature of play. For instance, Piaget's sensory-motor stage, in which the child engages in sensory play and play involving moving objects, is equivalent to what this research categorizes as the Move category. Additionally, Piaget's preoperational stage, in which the child can imagine and engage in symbolic play, is equivalent to what is identified in this research as the toy category of Imagine. It is less clear how Piaget's later two cognitive development stages match the classification system used for this study. Piaget's stages could be useful in determining if a toy is age appropriate for a child; however, they did not meet the needs for classifying toys for this study.

Rather, these historical play categorizations served as a useful foundation for the rationale and development of the categories used in the Retrospective Childhood Play Inventory for this study.

Additionally, during the compilation of toys for use in the Retrospective Childhood Play Inventory for this study, common play categories began to emerge. These play categories were similar to the cognitive and social categories of play represented in the developmental literature (Piaget, 1962; Vygotsky, 1979), as well as the categories used by The Strong in the National Toy Hall of Fame. With respect to the cognitive and social categorizations of play, it was decided by the researcher to use a categorical structure similar to that used by The Strong National Museum of Play. Curators at The Strong organize the National Toy Hall of Fame categories toward the general public who visit the museum with the aim to clarify why a toy or play item is put into a certain category (Trien & Appel, 2013). For the purposes of this study, arranging the items on the Retrospective Childhood Play Inventory into categories that are relevant to the everyday person versus what is relevant to the research community allowed for use of categories that people typically use to recollect and structure their own childhood play experiences (Washburn, 1987). This structure also made the toys on the Retrospective Childhood Play Inventory more memory-evocative, interesting, and motivating for participants who completed the survey.

The play categories used in the Retrospective Childhood Play Inventory include the categories of Move, Build, Imagine, Compete, Create, Non-Toy Games, and Non-Play Items used as Toys. It is believed that these categories can be applied to a variety of toys, regardless of a person's age, and that each category offers a distinction between the other. Below is a brief explanation of each toy category and an example of what types of toys would fall into each category. The toy categories are modified, with permission, from the National Toy Hall of Fame at The Strong National Museum of Play.

Move. This toy category involves toys that move or encourage movement, such as throwing, pedaling, sliding, climbing, rocking, tumbling, balancing, and swiveling. A toy may encourage a player to visually track an object or to keep time and coordinate the actions of the hand and feet (The Strong, 2015a, 2015b). In this category, the body is frequently in motion, as the player runs, jumps, tosses, catches, and slides during play. Opportunities to enjoy movement can be experienced through engagement with classic toys, such as a bicycle, roller skates, Big Wheel, and the yo-yo, to name a few (The Strong, 2015a, 2015b).

Build. This category involves toys that encourage children to connect loose parts to engage the mind, instruct the hands, and train spatial understanding (The Strong, 2015a, 2015b). The innovative creations that take shape during construction play require experimentation, manipulating of structures, and turning them in various ways, both mentally and physically. This type of complex play often attracts collaborators, helpers, advisors, and playmates to the play experience. Classic examples of toys in the Build category involve construction, such as LEGO Bricks, Tinker toys, and Erector sets (The Strong, 2015a, 2015b).

Imagine. The toy category of Imagine is comprised of toys that become tools of the imagination, props for storytelling, a means to make friends, and a vehicle for self-expression (The Strong, 2015a, 2015b). Through imaginative play, children learn from make-believe by giving fantasy a reality check, by exploring cause-and-effect, and by pairing up what they know with what might be. While pretending, they negotiate, problem solve, expand their vocabularies, and train their memories. Opportunities for imaginative play are afforded with toys such as Barbie, action figures, and playing dress-up (The Strong, 2015a, 2015b).

Compete. The category of Compete is comprised of toys that most often follow rules while also building skill and chance (The Strong, 2015a, 2015b). Competition may call for

strategy or strength and challenging competitors physically or mentally, thus building minds and bodies. Players may compete against a personal best or head-to-head against opponents.

However, competitive team play requires working together to win and the facilitation of social skills (The Strong, 2015a, 2015b). Common examples of toys that are categorized as a Compete play item for this study include Monopoly, video game consoles, and Hot Wheels.

Create. Engaging with toys in the category of Create encourages invention and innovation, allowing players to transform thoughts into things (The Strong, 2015a, 2015b). Using play items, players can visualize a scene and draw a picture, create forts and castles, and transform piles of parts into skyscrapers (The Strong, 2015a, 2015b). Examples of toys classified as Create items for this study are Mr. Potato Head, Play-Doh, and crayons.

Non-toy games. This toy category was added to the categorizations adapted from The Strong National Museum of Play when the researcher noted toys that did not appear to fit into one of the other play categories. Non-Toy Games is a toy category that highlights play that does not require use of a toy or play item. Examples of Non-Toy Games include the games of Hide-and-Seek and Peek-a-Boo.

Non-play items used as toys. This category was added to the categorizations adapted from The Strong National Museum of Play when the researcher noted toys that did not appear to fit into one of the other play categories. Non-Play Items Used as Toys is a category that highlights play involving objects whose traditional purpose is not that of a toy. Examples of Non-Play Items Used as Toys include a pillow, pots and pans, and dirt.

Play and Divergent Thinking

The rich theoretical connection between play and creativity can be found in a variety of disciplines, including psychology, anthropology, zoology, and health sciences (Runco, 2014b).

Play is often considered a vehicle for the development and expression of creativity because the same cognitive and affective processes that are involved in creativity are also found in a wide repertoire of play experiences (Csikszentmihalyi, 1996; Russ, 2013; Sansanwal, 2014). One reason the relationship between creativity and play is important to occupational therapy is because play is a major occupation of childhood where the creative cognitive and affective processes develop, are practiced, can influence developmental trajectory, and predict future adult creativity needed for occupations across the lifespan. Creativity is believed to be a developmental process where imagination and the skills required for adult competencies are developed through childhood play (Kohlberg, 1987; Piaget, 1962; Reilly, 1974; Vygotsky, 1979).

The benefits of research on the link between play and creativity has continued to be realized since 1983, when Nathan Kogan reported that the most promising research outcomes in the children's creativity literature over the past decade had been related to the relationship between play and creativity. Research into the areas of play and child development has concluded that play does result in the facilitation of the developmental process of children (Russ & Christian, 2011). Scholars have found that some of the strongest relationships in play and creativity were between the constructs of play, divergent thinking, and creative problem solving (Russ & Christian, 2011).

Creative problem solving involves the use of either convergent or divergent thinking strategies to reach successful solutions to everyday problems. Recent literature highlights how play with objects fosters creativity and divergent thinking (Healey et al., 2019; Lloyd & Howe, 2003; Russ, 2013; Russ & Christian, 2011; Yogman et al., 2018). Singer and Singer (1990) described the importance of play by suggesting it is through play that children have the

opportunity to practice creative problem-solving skills by using toys and objects to represent different things and role-play various scenarios. Guilford (1967) argued that toys affording open-ended opportunities may facilitate divergent thinking and that toys affording closed-ended opportunities facilitate more convergent thinking skills.

There is a strong theoretical rationale for the relationship between play and creativity; however, previous research has typically focused on children and does not include longitudinal or retrospective studies to include a lifespan perspective with adults regarding their childhood play experiences as a predictor of adult creative potential. Therefore, it is essential for researchers to study the development and continuity of creativity over time (Runco, 2014b; Russ, 2013), including longitudinal and retrospective studies of adults regarding their childhood play.

Influence of Play on Creativity

There are numerous influences on creativity and its predictive power in adult competencies, including opportunity, work ethic, risk-taking, motivation, socioeconomic status, and openness to experience, just to name a few (Runco, 2014b; Russ, 2013). However, this study specifically explored how childhood play experiences serve as a predictor for adult creative potential. In order to appropriately situate the study of creativity and play experiences in a meaningful context, an overview of the historical and recent shifts in play is reviewed.

Shifts in American play. For over 50 years, the United States of America has been experiencing a gradual decline in children's opportunities for a variety of play experiences. In an analysis of children's play and children's culture over the course of American history, Chudacoff (2007) constructed an argument of how changes related to place, materialistic things, and time use have altered the state of play in American children. Chudacoff described the first half of the 20th century as the golden age of free play for children, as they had little responsibility in regard

to the labor industry at this time. Beginning around 1960, children were required to spend more time in school, and adults began to slowly encroach upon the amount and autonomous nature of children's free play (Chudacoff, 2007).

By the early 20th century, many of the toys that are loved by today's parents and grandparents, such as baby dolls, Lincoln Logs, and board games, became commonplace, thereby providing opportunities for a variety of types of play while also reinforcing gender roles (Chudacoff, 2007). After the 1950s, a shift began to occur with the rise of television and marketing that was directed toward children, which changed the play value of toys. Additionally, the influence of electronic media created the much-debated diversion away from children's play. Currently, adult-directed activities have replaced free play, 'pickup' games, and childhood hobbies (Chudacoff, 2007). Reasons for these changes across recent decades are too numerous to elaborate upon for the scope of this study; however, the effects of such changes across decades have resulted in a continuous decline in the opportunities for children to independently play and explore their world through a diversity of choices and possibilities for varied types of play.

Modern barriers to play. There are barriers to encouraging play in today's society. In recent years, research examining time allocation in elementary schools confirm that time for play is consistently decreasing in American schools, despite evidence supporting the benefits of its infusion throughout the school day. According to the 2012 Survey of Health Policies and Practices Study conducted by the Centers for Disease Control and Prevention and Health and Human Services, only 58.5% of school districts were required to provide recess ranging from 10 minutes to more than 30 minutes per day. These data represent a decline from a 2010 Gallup Poll sponsored by the Robert Wood Johnson Foundation, in which 96% of school systems

reported having a required recess. These statistics highlight that most respondents were receiving minimal or no time for unstructured or child-directed play opportunities during the school day. Despite this trend, principals from the 2010 Robert Wood Johnson Foundation study, overwhelmingly reported recess as having a positive influence on student academic success, and 96% of principals believed recess had a positive influence on social development and overall student well-being.

The trend toward diminishing play opportunities in childhood can also be attributed to the influence of caregivers. Ginsburg (2007) outlined possible factors contributing to the reduction of play opportunities that could be influenced by caregiver involvement. Among the many factors were shifts toward more single-parent households and children staying in after-school programming and activities for additional hours outside of the traditional school day. For example, American culture places a high value on academic skill-building for children; therefore, good parenting is often perceived as ensuring as many opportunities for academic success as possible, which often does not include time for free play but rather over-scheduling of adult-structured activities for children (Ginsburg, 2007; Russ & Dillon, 2011). An additional factor contributing to the reduction in play in the United States involves the increasing amounts of time children spend consuming technology, such as television, computer, or video game consoles (Ginsburg, 2007). According to the American Academy of Pediatrics (2018), the average preschooler watches 4.5 hours of television each day, with 41% of television viewing occurring online or through a mobile device. For young children, the steady increase in media use and screen time has occurred in association with a linear decline in active play and play with toys (Yogman et al., 2018).

Opportunities for children to experience a variety of types of play have also been reduced by parental fear of predators or crime at playgrounds and in outdoor spaces, an overall reduction of playground space, and time restraints (Brown, 2009; Gray, 2011). Louv (2008) described this as an American phenomenon, in which feelings of isolation and containment arise due to children being isolated from play in the natural environment because of strong adult fears of physical risk, bombardment of technology, lack of neighborhood parks, or lack of opportunity due to time or money.

Importance of varied childhood play experiences. Play is how and where the child practices and learns the skills necessary for being an adult (Reilly, 1974). De Bono (1970) and others recommended occupations and strategies that foster creativity and divergent thinking. Of these strategies and occupations, numerous play experiences were included that addressed areas such as assisting a person to challenge initial assumptions, practicing alternative ways of considering things, restructuring patterns, and suspending judgment (de Bono, 1970). Therefore, if play opportunities are diminished in lieu of more time in a formal school setting, for more adult direction in childhood occupations, or for less opportunities for free play, children are at risk for being deprived of their ability to practice the life skills needed for adulthood and are at risk for navigating the world with a sense of dependence, vulnerability, lack of initiation, and diminished creativity required to solve their own problems (Gray, 2011; Reilly, 1974). Given the evidence-based benefits of play, it is important that this study explored the relationship between the steady linear decline in childhood play experiences and the consistent linear decline in creative problem solving in Americans of all ages (Kim, 2011, 2017).

The American Creativity Crisis and Childhood Play

Creativity, specifically divergent thinking, is more important than ever as evident by the creativity crisis plaguing America (Kim, 2011, 2017). Since 1990, despite increasing intelligence scores, America has been plagued by a creativity crisis, as evident by a steady decline in creative problem-solving scores among individuals of all ages (Kim, 2011, 2017). The decline in creativity scores, observed to begin in young children, can potentially inhibit the creative problem-solving abilities expected to mature across a lifetime (Kim, 2011, 2017; Vygotsky, 1979).

Plausible rationale for the decline in creativity and creative problem solving of children and adults in the United States has been linked to the types of play experiences and toys afforded during childhood (Brown, 2009; Gray, 2011; Kim, 2011, 2017; Russ, 2013; Sandberg, 2001; Sandberg & Vuorinen, 2008). In an educational context, increased emphasis on standardized testing and decreased attention to critical and creative problem solving often result in less time allowed for recess, which can potentially stifle creativity and reinforce societal encouragement of intellectual conformity (Brown, 2009; Kim, 2011, 2017; Sandberg & Vuorinen, 2008; Wilcock & Hocking, 2015). Additionally, fast-paced lifestyles have led to scheduling or over-scheduling structured activities, often at the expense of playtime (Ginsburg, 2007; Gray, 2011; Kim, 2011). In the context of childhood play, previous qualitative studies have found correlations between adult memories of childhood play experiences (e.g., toys) and current creative abilities in adulthood (Sandberg, 2001; Sandberg & Vuorinen, 2008). For example, Sandberg and Vuorinen (2008) concluded that childhood play experiences were influenced by the evolution of toys across generations, including toys made of natural materials, household items, ready-made toys for a specific purpose, or those toys that facilitated social play with others. Additional shifts in

childhood play experiences over recent decades that have the potential to stifle creativity in children and adults include the shift in childhood play from autonomous outdoor play to indoor play that is less imaginative and more sedentary, as well as an increase in the amount of time children interact with electronic media (Brown, 2009; Ginsburg, 2007; Louv, 2008; Sandberg, 2001; Sandberg & Vuorinen, 2008).

Overcoming the American Creativity Crisis: The Role of Occupational Therapy

Occupational therapy practitioners are well positioned to promote play opportunities that facilitate the fulfillment of creative potential across the lifespan. The AOTA's (2016) *Distinct Value of Occupational Therapy for Children and Youth* provides a framework for the role of occupational therapy that could be used to battle the American creativity crisis through participation and engagement in occupations that are meaningful and client-centered and that achieve positive outcomes to improve overall health and quality of life. The AOTA *Distinct Value Statement* illustrates how occupational therapy practitioners can demonstrate their unique value through their expertise in play, toy use, and activity analysis, which promotes participation in play, child development, and health and well-being across the lifespan (AOTA, 2015). Occupational therapy practitioners can develop and maximize play opportunities following an assessment of the individual's play history (Missiuna & Pollock, 1991). Interventions for maximizing play opportunities and enhancing creativity, specifically divergent thinking, can include provision of opportunities, education, and consultation with caregivers, teachers, and other important stakeholders (Missiuna & Pollock, 1991). Additionally, practitioners can act as advocates for play, not only for their clients, but also for individuals of all ages in the general population.

As experts in how play contributes to physical, cognitive, and social development, occupational therapy practitioners can collaborate with families to understand the appropriateness of selecting toys to enhance child development. The AOTA (2015) determined that occupational therapy practitioners are capable of facilitating child and caregiver interactions by offering information, encouragement, and practical strategies regarding how to enhance growth and development, promote inclusive environments, strengthen child and family bonds, increase family engagement and participation in daily routines, and build play and leisure skills in all environments. Occupational therapy practitioners can also assume leadership roles when collaborating with interprofessional teams, including engineers, designers, and toy manufacturers, in the development and consultation of new products and analysis of existing toy products. For instance, the expertise of occupational therapy practitioners has been sought by companies such as Microsoft (Yamkovenko, 2019), the Johnson and Johnson Company, and Toy Tips, Inc., when designing and testing developmental toys for people of all abilities (DuBois, 1997). A current example of occupational therapy's role in this area involves three occupational therapy practitioners who collaborated with Microsoft in the design and development of the Xbox Adaptive Controller. The Xbox Adaptive Controller gained national recognition during a Super Bowl commercial debut where it showcased the power of occupation through play and the value of occupational therapy in facilitating the ability of people with disabilities to participate more fully in video gaming (Yamkovenko, 2019).

Another example is the "Toy Queen," Keri Wilmot, a pediatric occupational therapy practitioner who has established herself as a toy expert by utilizing her expertise in child development and love for toys to provide consultation for product and brand development with well-known companies such as Hasbro, Mattel, LEGO, and the Boston Red Sox. Wilmot

demonstrates the distinct value of occupational therapy while overcoming barriers to the American creativity crisis by educating parents and caregivers on how to play with their children through practical strategies, unique products, and varied play experiences. Her medium for educating her clients, as well as the general public, is through online reviews of toys, games, local attractions, and experiences in which the focus is on the developmental qualities of each. Additionally, Wilmot educates and advocates for play by publishing in parenting and developmental venues, as well as making media appearances at a variety of shows, including the Huffington Post Live.

Review of the Existing Literature

Using a variety of research designs and methodologies, this section presents an integrated summary of the existing studies in the creativity and play literature relative to this study. This review justifies the mixed methods convergent parallel design (Creswell & Plano Clark, 2011; Teddlie & Tashakkori, 2009) that was utilized for this study.

Strengths of Existing Research Related to Creativity and Play

Existing studies of creativity and play include strong correlational evidence to support the hypothesis that play has a role in creative development and divergent thinking. Although, some of the studies reviewed were methodologically flawed, a sufficient number of studies successfully implemented rigorous research designs and instrumentation methods, all of which can be expanded upon for this study.

Longitudinal studies. Cross-sequential longitudinal designs (Creswell, 2013; Teddlie & Tashakkori, 2009) are often cited as the most rigorous approach for studying development across the lifespan (Chawla, 2006; Russ, 2013). Theoretically, for the purposes of the study, play should be predictive of creative potential over time. Guilford (1950) believed all persons were

capable of creative abilities, and creative processes were expected to be stable across the lifespan. There are few longitudinal studies that support the hypothesis by Guilford that the creative processes in play, including divergent thinking, were predictive of creativity over time (Clark et al., 1991). Although the longitudinal studies found play to be predictive of divergent thinking, the duration of the studies were only over a 3- to 4-year period, included only preschool-aged children, and looked only at the category of pretend play. In another study that followed a small sample of children from a previous study conducted with high school students, Russ et al. (1999) found the results similar to those of the initial study, indicating the relationship between play and creativity to be stable over time, but there was no causal evidence that play facilitated divergent thinking in this sample. There are currently no existing longitudinal studies that have utilized a lifespan perspective to determine the predictive value of childhood play, with a specific focus on the toys frequently used during childhood, and the development of adult creative potential (Russ, 2013).

Retrospective studies. Despite the rigor of longitudinal designs, challenges related to funding, sample size, and institutional and researcher commitment have limited the implementation of the design within the existing play and creativity literature as well as its proposed implementation in future studies (Chawla, 2006; Lillard et al., 2013; Russ, 2013). Instead, researchers studying creativity and play from a lifespan perspective, with a focus on childhood play, have often utilized retrospective designs as a way to compensate for the challenges associated with longitudinal studies (Lillard et al., 2013; Russ, 2013).

Existing play and creativity studies with a retrospective design have typically utilized adult play memories or comprehensive play histories as an exploratory and descriptive measure to capture the adult's childhood play experiences and the meaning associated with that

experience (Brown, 2009; Chawla, 2006; Sandberg, 2001, 2003; Sandberg & Pramling Samuelsson, 2003; Sandberg & Vuorinen, 2008). Memories and adult nostalgia regarding significant life experiences, including childhood play and associated play materials (e.g., toys), have been identified as the best method for providing the most longitudinal glimpse into lifespan learning when unable to conduct actual longitudinal studies (Baxter, 2016; Chawla, 2006). Existing retrospective studies have disseminated results that successfully explored and described favorite play memories and play environments from childhood to adulthood (Sandberg, 2001, 2003), as well as preschool teachers' experiences of childhood play (Sandberg & Pramling Samuelsson, 2003), while also describing these experiences from a gender perspective (Sandberg & Pramling Samuelsson, 2003).

Chawla (2006) reviewed various research approaches for retrospective studies related to significant life experiences in the field of environmental education. The review highlighted the methodological strengths of retrospective designs, including having a natural lifespan perspective, its qualitative nature, opportunities for cohort and sample diversity, and the ability to enhance interest in future longitudinal studies (Chawla, 2006). This dissertation study built upon the strengths and avoided the weaknesses of existing retrospective studies identified by Chawla. For example, this study used a lifespan perspective as the foundation for understanding how play with favored childhood toys that occurred up to 75 years ago did and/or continue to influence a person's development of creative potential. Additionally, the study utilized a diverse sample representing three generational cohorts (Pew Research Center, 2019) as a way to gain a diverse understanding that play is a phenomenon conditioned by time and that younger and older adult participants have the potential for differing childhood play experiences and associated retrospective memories due to growing up during different decades.

Retrospective research also has methodological shortcomings, including how studying life experiences are only as valid as the autobiographical memories upon which they are based (Chawla, 2006; Sandberg & Vuorinen, 2008). Additionally, people's recollections of the past are often influenced and idealized by the present (Chawla, 2006; Sandberg & Vuorinen, 2008). Robinson (as cited in Sobel, 1990) argued for the importance of retrospective research while defending from criticism the validity of adult remembrances that the memories had been influenced by later adult experiences, when writing:

Childhood cannot be fully understood simply by the observation of children. Quite apart from the difficulties of communication in the pre-adolescent years, there is often a dimension to our early experiences that we can only become fully conscious of (if at all) in later life, when we compare them with other forms of experience that lack that dimension; in childhood we may be wiser than we know. (p. 8)

Regarding the accuracy of recall in retrospective studies, Chawla (2006) discussed providing participants with prompts or cues as a strategy for avoiding the shortcomings of autobiographical recall. The prompts or cues could be related to the original event in the form of words, images, sounds, smells, or a return to the original location, all of which would enhance the number and detail of the memory (Chawla, 2006). In a study by Howes and Katz (1992), older adult participants were asked to recall events ranging from childhood to young adulthood. Participants were able to recall, with prompts, an approximately equal number of episodic memories from all segments of life (Howes & Katz, 1992). These results indicated that, when autobiographical memory is given a prompt or cue, it is fairly accurate (Chawla, 2006; Howes & Katz, 1992). Despite the challenges of retrospective research, the purpose of this study was not to discern whether a particular event really took place, but rather to glean information regarding

the types of toys frequently used during childhood and how the participants' play experiences contributed to their creative potential in adulthood and overall human development.

Limitations of Existing Research Related to Creativity and Play

Existing studies in the area of creativity and play include limitations related to experimental designs, the lack of a lifespan perspective that extends from childhood to adulthood, and a need for the integration of qualitative and quantitative methods to generate a more comprehensive study.

Experimental studies. Numerous experimental studies of play and creativity have found significant relationships between divergent thinking and pretend play in children when testing the efficacy of play intervention programs and/or with prescribed play materials (Russ, 2013; Russ & Christian, 2011; Russ & Dillon, 2011). However, experimental studies have generated areas of concern in the play and creativity literature. Experimental studies strive for precision and objectivity (Creswell, 2013; Portney & Watkins, 2015); therefore, this type of design can pose a paradox when studying the ambiguous and unstructured nature of play in human development while also attempting to enhance the rigor of research. Limitations of previous experimental studies related to the effects of play on divergent thinking include the use of artificial or controlled situations, prescribed play materials and play procedures made available to participants, and/or adult facilitated situations versus child-driven play scenarios (Chawla, 2006; Lillard et al., 2013; Russ, 2003), all of which limit or alter the free-spirited nature of play into something other than a child-directed play experience. Additionally, Lillard et al. (2013) criticized the methodology of previous experimental studies related to play and creativity because of the possibility of experimenter bias, due to the same researcher administering both the divergent thinking and play task. Overall, experimental studies related to play and creativity

suggest results that are inconsistent, have yet to be replicated with more controlled procedures or parameters, and address only short-term outcomes in the pediatric population versus a lifespan perspective.

Lifespan perspective studies. Despite the array of creativity assessment tools, Russ (2013) and Starkweather (1964) indicated the major challenge to the empirical testing of the relationship between creativity and play was the limited selection of valid and reliable creativity assessments that include methods that can be administered to persons at all phases of the lifespan. Undeterred by the challenges and limitations related to studying the continuity between play and creativity across the lifespan, researchers have conducted few studies of the creative abilities of children, some of which are encapsulated in play, and the creative abilities of those same individuals in adulthood (Lieberman, 1965, 1967).

Lillard et al. (2013) criticized critical thinking as a measure of creativity and as a valid assessment measure. This criticism contradicts many existing studies proving validity in the connection between play and creativity. For instance, the Torrance Test of Creative Thinking (Kim, 2011) offers strong evidence of predictive validity, as evident by follow-up studies that predicted creative achievement in adulthood (Cramond, Matthews-Morgan, Bandalos, & Zuo, 2005). These longitudinal studies have made the Torrance Test of Creative Thinking the most widely used and researched test of creativity while also strengthening the empirical evidence linking the critical thinking abilities in childhood to creative abilities in adulthood.

Qualitative and quantitative studies. The majority of research related to play and creativity or that suggests childhood play specifically facilitates divergent thinking has involved qualitative studies (Brown, 2009; Russ, 2013; Russ & Christian, 2011; Sandberg, 2001; Sandberg & Vuorinen, 2008). A limitation of most of the existing qualitative studies used for

this review is that the researchers either looked at play globally or studied the role of only one form of play (typically pretend play) in developing creativity and divergent thinking. According to well-renowned play researchers, failing to study the relationships between a variety of types of play makes the existing evidence related to how play enhances creativity unconvincing and inconsistent (Lillard et al., 2013; Russ, 2013). Researchers agree on the need for future studies to focus on the different types of play in the outcome of creativity across the lifespan (Lillard et al., 2013; Russ, 2013). Contrarily, the pitfall with using only quantitative methods to study play and/or creativity is that the person engaged in play or the creative processes (e.g. divergent thinking) becomes lost in the numerical data, and the measures do not fully explain the complexity of the phenomena being studied. Therefore, this study aimed to capitalize on the strengths of both the qualitative and quantitative methods and infuse them throughout the mixed methods study.

Rationale for Methodology Choices Based on Existing Literature

The body of existing research regarding the relationship between childhood play and adult creative abilities has been explored from both qualitative and quantitative perspectives in children; yet questions remain regarding the predictive power of play to the creative potential in adulthood. There is a paucity in existing studies related to creativity and play in regard to a lifespan perspective focusing on the benefits of childhood play and its influence in adulthood utilizing a comprehensive approach with quantitative and qualitative data. The existing literature presented in this manuscript highlighted the successful implementation of retrospective and exploratory approaches that utilized play memories, adult nostalgia, and strategies for enhancing autobiographical recall when attempting to glean themes regarding the meaning of childhood play experiences. Therefore, this study expanded upon the strengths and recommendations for

future research in each of these areas to provide a foundation for the mixed methods convergent parallel design. A retrospective lens provided a preliminary step in capturing the type of formative events and information that longitudinal research should monitor for in future research in this area of study.

To enhance methodological rigor, this study utilized the existing studies' strengths and recommendations for future research. The researcher-developed Retrospective Childhood Play Inventory was used to gather information on a participant's toy preferences in childhood. The inventory built upon the recommendations for future research to include multiple types of play (Brown, 2009; Piaget, 1962; Sutton-Smith, 1986; Vygotsky, 1979) that was adapted from the categories of play used for the National Toy Hall of Fame at The Strong National Museum of Play. Additionally, the inventory prompted participants in the form of a visual pictorial representation of each toy item to elicit nostalgia as well as through written inventory items.

Yerxa (1991) discussed traditional research approaches as they related to occupational therapy's knowledge, professional values, and ethics, while adding to the understanding of persons engaged in meaningful occupations. Yerxa et al. (1990) identified research approaches appropriate for occupational therapy as "life history, naturalistic inquiry, historical research, dramaturgic models, case method, psychobiographies, and other forms of new paradigm research" (p. 17). Remaining true to the profession's ethos and building upon the existing studies reviewed in the previous section of this manuscript, this study contributed to the gap in the literature related to play histories, play memories, creativity, and divergent thinking by implementing a lifespan perspective utilizing historical retrospective memories of the adult participant's play history from childhood to adulthood. In conclusion, the current study sought to replicate successful retrospective and exploratory designs from existing qualitative and

quantitative studies while incorporating a lifespan perspective. Therefore, the study utilized a mixed methods convergent parallel design (Creswell & Plano Clark, 2011; Teddlie & Tashakkori, 2009) to generate a comprehensive understanding of the predictive power of childhood play to the creative potential in adulthood.

Summary

This review of the literature provided a broad overview of the interrelationship of creativity, divergent thinking, and play from an occupational science perspective, while setting the tone for how research in this area will influence occupational therapy research, practice, and education by furthering the understanding of the importance of play as an occupation of childhood and a predictor of adult creative potential. Guiding theoretical perspectives for the study of creativity, play, and lifespan development were reviewed. An illustration of the changing play culture in the United States of America was highlighted, and it was contended that such changes in play and potential for deprivation in varied play opportunities have resulted in what researchers have coined, an American creativity crisis. Evidence was outlined regarding how adult success in later life could be related to a person's childhood play experiences, specifically the preferred toys that cultivated creativity and divergent thinking. This chapter concluded by discussing previous methods of studying play and creativity. The following chapter presents the methodology for this study.

Chapter 3: Methods

The purpose of this chapter is to present the methodology utilized in this study. First, the foundations of mixed methods design are provided, along with rationale for using a convergent parallel design. A procedural diagram illustrates the study's sequence. Next, details for the quantitative and qualitative strands are discussed. Comprehensive design descriptions, data collection procedures, instrumentation, and data analysis methods for each phase are presented, followed by strengths and limitations of each strand. Detailed attention through a written narrative and visual depiction is given to the development process of the Retrospective Childhood Play Inventory used in the quantitative phase of this study. Finally, the combined mixed methods plan for integration of the quantitative and qualitative results is discussed. This chapter concludes with a review of anticipated ethical considerations for the study. Findings of the data analyses are presented in Chapter 4.

Research Design

This study utilized a mixed methods convergent parallel design (Creswell & Plano Clark, 2011; Teddlie & Tashakkori, 2009). Mixed methods research combines both quantitative and qualitative approaches into a single study. The rationale for utilizing a mixed methods approach is that the mixing of quantitative and qualitative data into a single study “provides a better understanding of research problems than either approach alone” (Creswell & Plano Clark, 2011, p. 5).

The use of a mixed methods convergent parallel design for this study included separate analyses of quantitative and qualitative data, which were collected separately as they were different sources of information that were not dependent upon one another (Creswell & Plano Clark, 2011; Teddlie & Tashakkori, 2009). Results of the quantitative and qualitative data were

then converged for meaningful interpretation of the results and for an enhanced discussion. The purpose of this design is to extrapolate mutually supported and valid conclusions from all data sources that are traditionally found separately in qualitative and quantitative methods. For this study, the quantitative and qualitative data were complementary, therefore providing the possibility for elaboration or enhancement of results from both methods, which was synthesized for an enriched understanding of the research topic (Creswell & Plano Clark, 2011; Teddlie & Tashakkori, 2009).

The body of existing research regarding childhood play has explored the relationship between play and childhood development from both a quantitative and qualitative perspective (Brown, 2009; Russ, 2013; Sandberg, 2001; Sandberg & Vuorinen, 2008); yet, questions remain regarding the long-term influence of childhood play into adulthood. For example, there are only a small number of qualitative studies analyzing whether the type of childhood play experiences influence specific variables in adulthood, such as the occupational roles chosen by adults. Research in this area tends to focus on the benefits of play in childhood rather than the benefits of play across the lifespan. Retrospective studies of childhood play memories have frequently used qualitative interviews with school-aged children (Coury & Wolfgang, 1984; Russ, 2013; Sandberg, 2001; Sandberg & Vuorinen, 2008); however, this information has rarely been collected from adults as quantitative data in a mixed methods study, as was utilized for this research. The development of the retrospective data collection tool for the quantitative phase of this study is supported by literature that emphasizes the need for toy and play inventories to be updated and reorganized to reflect changes in society and to capture a wider age range outside of school-aged children (Coury & Wolfgang, 1984).

There remains paucity in the play literature in regard to a lifespan perspective focusing on childhood play and its influence into adulthood utilizing a comprehensive approach with quantitative and qualitative data. Therefore, a mixed methods study utilizing a convergent parallel design was selected to effectively and comprehensively capture how childhood play is a function of occupational engagement and contributes to the growth and development of creative potential in adulthood.

This study aimed to explore the relationship between the types of toys frequently used during childhood play and adult creative potential. Additionally, the study sought to understand the contribution of play to human development by identifying themes of childhood play experiences specific to the constructs of the Framework of Doing-Being-Becoming-Belonging (Wilcock, 2006; Wilcock & Hocking, 2015). In this convergent parallel design (Creswell & Plano Clark, 2011; Teddlie & Tashakkori, 2009), quantitative analyses measured variables using two data collection instruments to quantify creative ideation and a person's preferred types of childhood toys. These data were used to measure the types of childhood toys that are most predictive of adult creative potential.

Individual interviews of narrated retrospective play stories from existing archives at The Strong National Museum of Play were simultaneously analyzed to add depth and meaning to the study. Specifically, the personal retrospective stories provided insight into the complexity of childhood play and into the constructs of the Framework of Doing-Being-Becoming-Belonging (Wilcock, 2006; Wilcock & Hocking, 2015) as a developmental trajectory from the emic perspective of adults across three generations. Finally, findings from the two strands were integrated to comprehensively understand how childhood play contributes to the development of creative potential in adulthood.

Due to the complexity of this mixed methods study, a notation system from Creswell and Plano Clark (2011) was used to describe the methodology. The notation system for this methodology, *QUANT + QUAL = converged findings*, indicates that neither strand is more prominent than the other and that data collection for each strand were conducted simultaneously before the timelines split for data collection. Findings were converged for an enriching interpretation. Additionally, a procedural diagram adapted from Creswell and Plano Clark was created to illustrate the convergent parallel design methods, procedures, and outcomes. Figure 1 illustrates the steps within the mixed methods convergent parallel design for this study (Creswell & Plano Clark, 2011; Teddlie & Tashakkori, 2009).

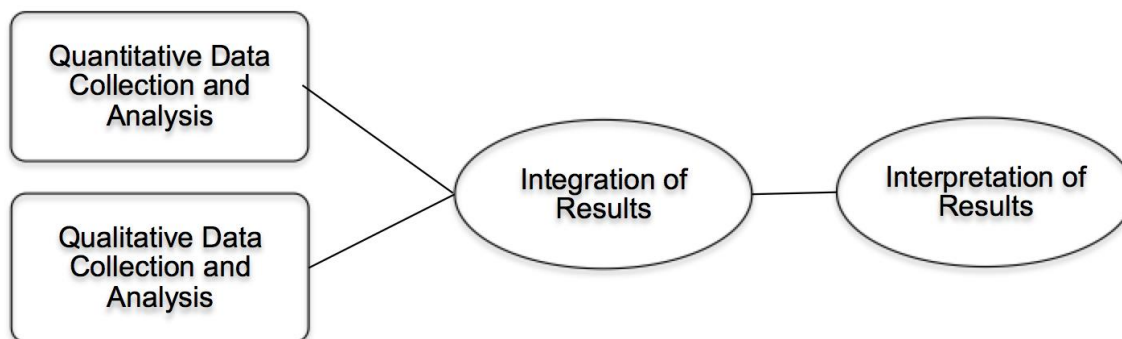


Figure 1. Study design using a convergent parallel mixed methods design. Adapted from Figure 4.3 diagram for a study that used the convergent design in Creswell, J. & Plano Clark, V. (2011), *Designing and conducting mixed methods research* (2nd ed.). Thousand Oaks, Sage.

Quantitative Phase of Project

Participants

This study used a sample of convenience who voluntarily self-selected into the study after viewing the research recruitment invitation that was available online through social media (see Appendix A) and by word of mouth. Inclusion criteria for the study included adults who (a) were aged 22 to 73, (b) understood the written and/or verbal English language, and (c) had

access to Wi-Fi or Internet connection. There were no specific exclusion criteria for this study, besides individuals who did not meet the inclusion criteria.

Quantitative Phase Setting

Participation in this study was open to persons across the United States and other countries that met the inclusion criterion. The participant completed two online quantitative data collection instruments at a location of convenience that had Internet connection capabilities.

Instrumentation

The data for the quantitative phase of this study was provided by two online instruments, the researcher-developed Retrospective Childhood Play Inventory and the Runco Ideational Behavioral Scale: Short Form (Runco et al., 2014).

Retrospective childhood play inventory. A researcher-developed Retrospective Childhood Play Inventory (see Appendix B) was used to gather information regarding a participant's retrospective toy preferences during childhood. The inventory included the written name and a visual pictorial representation of each toy and play experience to elicit participant nostalgia. According to Creswell and Creswell (2018), it is important to validate an instrument prior to its implementation. The instrument was developed through a thorough review of toys from a nationally recognized source, followed by employment of the Delphi method for selection of the most appropriate items to include in the Retrospective Childhood Play Inventory. The entire process involved oversight from experts with varying expertise to ensure continuity with the instrument development process to achieve the optimal content validity.

Development of the retrospective childhood play inventory. Figure 2 presents the diagram for the development of the Retrospective Childhood Play Inventory. The initial selection of toys for inclusion in the Retrospective Childhood Play Inventory was based on those

from The Strong National Museum of Play's National Toy Hall of Fame. This was selected as a foundation from which to build the Retrospective Childhood Play Inventory due to the museum's structure and criterion for selecting toys and play items that have endured as cultural icons based on icon status, longevity, discovery, and innovation (The Strong, 2020).

There were initially 427 toys and play items that had been inducted, selected as a finalist, or nominated by the public for induction into The Strong's National Toy Hall of Fame as of October 2018. The researcher narrowed the 427 toys and play items to 194 items by combining similar toys into single categories, deleting duplicate entries, or deleting items that were so specific they would not be easily recognizable to the general public. For instance, the initial list of 427 play items included numerous video game consoles, including, the Atari 2600, Nintendo systems, Xbox, and various versions of the PlayStation, just to name a few. These gaming systems were combined into the single toy category of video game consoles and represented on the Retrospective Childhood Play Inventory pilot study with various pictures depicting this toy item across multiple generations to elicit participant nostalgia. Another example of combining similar toys into a single category is the researcher identifying numerous stuffed animals on the initial list of 427 items, including a stuffed bunny, a stuffed lion, and a stuffed panda. The researcher combined these similar play items into the single toy category of stuffed animal. Items such as a banana, a door stop spring, and a dog bone were deleted from the initial list because they were deemed by the researcher as being too specific or not having enough icon status to the general public. This process resulted in a reduction of the 427 initial play items to 194 play items.

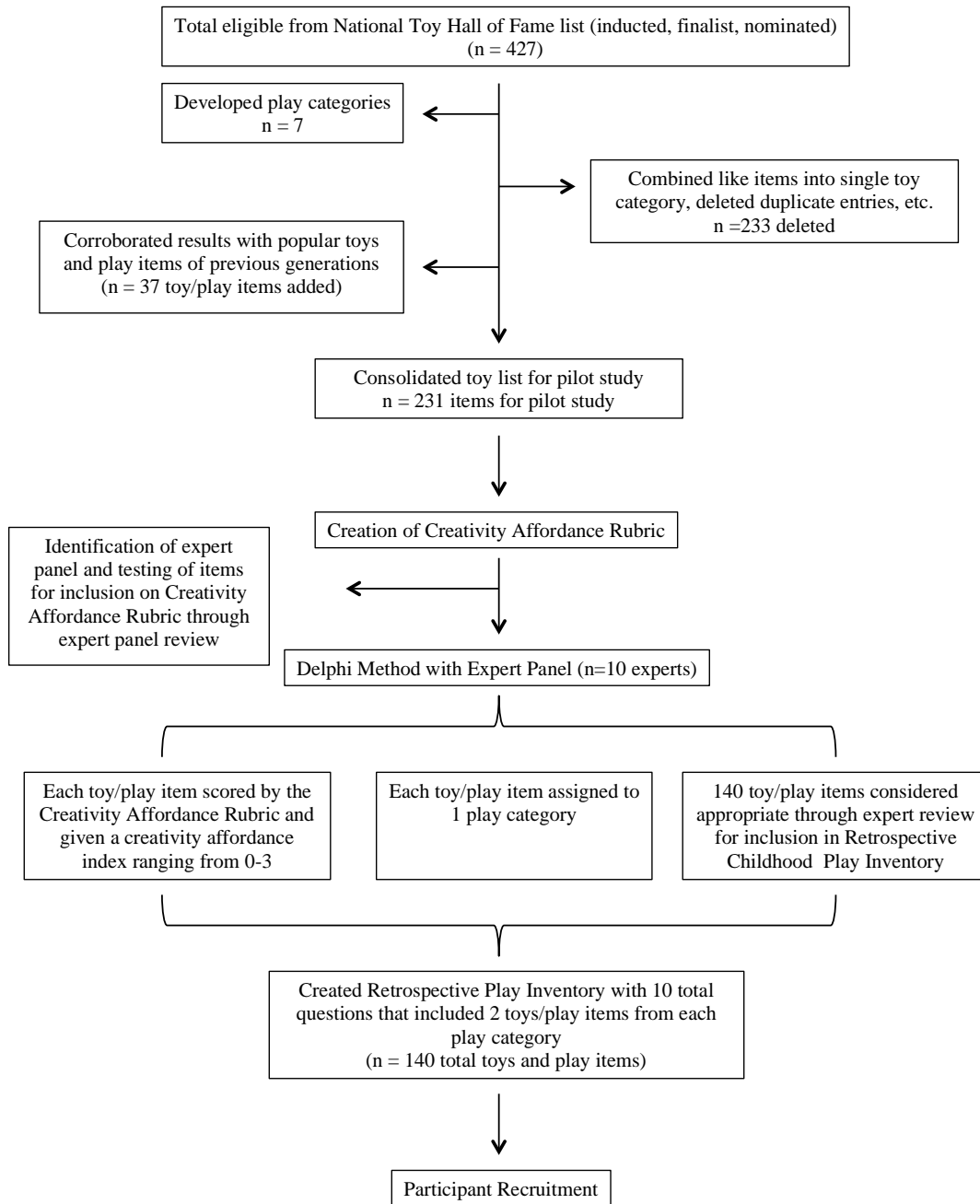


Figure 2. Development of the retrospective childhood play inventory.

Because the aim of this study was to capture childhood play experiences across three generations, the initial list of 427 play items from The Strong's National Toy Hall of Fame was

corroborated with popular toy products from previous generations, as depicted in the JCPenney Big Book Catalog and the Sears Roebuck & Company Christmas Book, as well as reviews and ratings from popular toys and parenting websites. This research resulted in the addition of 37 toys, for a total of 231 items selected for inclusion on the pilot survey for the Retrospective Childhood Play Inventory.

During the compilation of the toys into a more succinct list, common play categories began to emerge. These play categories were similar to the cognitive and social categories of play represented in the developmental literature (Piaget, 1962; Vygotsky, 1979), as well as the categories used by The Strong in the National Toy Hall of Fame. With respect to the cognitive and social categorizations of play, it was decided by the researcher to use a categorical structure similar to that used by The Strong National Museum of Play. Curators at The Strong organize the National Toy Hall of Fame categories toward the general public who visit the museum with the aim to clarify why a toy or play item is put into a certain category (Trien & Appel, 2013). For the purposes of this study, arranging the items on the Retrospective Childhood Play Inventory into categories that are relevant to the everyday person versus what is relevant to the research community allowed for use of categories that people typically use to recollect and structure their own childhood play experiences (Washburn, 1987). This organization also allowed the childhood toys on the Retrospective Childhood Play Inventory to be more memory-evocative, interesting, and motivating for participants completing the survey.

With permission, the play categories from The Strong National Toy Hall of Fame were used in the Retrospective Childhood Play Inventory. The categories include Move, Build, Imagine, Compete, and Create. Additionally, the researcher added two play categories, Non-Toy

Games and Non-Play Items Used as Toys, for the toys that did not appear to fit into one of the play categories identified by The Strong.

Prior to conducting the pilot study for the Retrospective Childhood Play Inventory, the researcher had to ensure that each play item included a quantifiable creativity score to help answer the quantitative research questions. Therefore, a creativity affordance rubric, grounded in evidence from the creativity and play literature, was developed to guide the creativity affordance assessment of each play item included in the pilot study. An expert panel was formed to assist in the development of items to be included as part of the creativity affordance rubric, which is included in the pilot survey for the Retrospective Childhood Play Inventory. The expert panel consisted of the researcher's three dissertation committee members, five occupational therapy practitioners with expertise in pediatrics and/or play, and the Vice President of Collections at The Strong National Museum of Play. Five questions were initially created and reviewed by the researcher and expert panel members for possible inclusion on the creativity affordance rubric. Following modifications of questions and a consensus by the expert panel, three of the five questions, with a dichotomous scale (yes/no), were selected for inclusion in the pilot study for the Retrospective Childhood Play Inventory. Consensus for selecting questions for inclusion on the creativity affordance rubric was identified as a simple majority of the expert panel (von der Gracht, 2012).

The three questions on the creativity affordance rubric were included as part of the Retrospective Childhood Play Inventory pilot study and were used to calculate a creativity affordance index for each play item. Each question on the creativity affordance rubric was scored either 0 or 1 point, totaling a 4-point scale ranging from 0 to 3 for each creativity index. The three questions selected for inclusion on the creativity affordance rubric were related to how

the play item was used in play and not necessarily the item's therapeutic implications or personal experience. Questions from the creativity affordance rubric included "Can the toy be played with in more than one way?," "Based on its intended use, are there specific written or unwritten rules or social/cultural norms on how to play with the toy?," and "Does the toy require the child to develop a scenario for play (e.g. context for play, their own ideas and rules, etc.)?"

As an example, Play-Doh is a historically award-winning toy that the expert panelists perceived as having a high creativity affordance. When completing the pilot study for the Retrospective Childhood Play Inventory, panel experts scored Play-Doh as having a perceived creativity affordance index of 3, as indicated by receiving 1 point due to the toy being able to be played with in more than one way, receiving 1 point due to there being no written or unwritten rules or social/cultural norms on how to play with the toy, and receiving 1 point as the toy requires the child to develop a scenario for play.

Delphi method. A consensus-based approach, utilizing a modified Delphi method technique, was utilized for the Retrospective Childhood Play Inventory pilot survey as a way to remain intentional in selection of toys for the inventory and build the content validity of the data collection instrument. Developed from a series of studies conducted by the RAND Corporation in the 1950s, the Delphi method is a widely used and accepted way of systematically determining consensus among a group of experts within a specific topic area (Dalkey, 1969; Jorm, 2015; Patton, 2015). The method is based on the perspective that judgments from a structured group of individuals are more accurate than those from unstructured groups and individuals. The Delphi method allows for anonymity and a greater geographical representation of participants at a low cost and in a timely manner. This approach has been used in previous research for making

estimations and predictions, determining collective values, and defining foundational concepts (Dalkey, 1969; Jorm, 2015; Patton, 2015).

The Delphi method typically requires multiple administrations of questionnaires over two or more rounds, in which expert opinions are stated, refined, analyzed, and summarized (Dalkey, 1969; Roberts & Kovacich, 2018; Stewart et al., 2017). The first round of data collection in the classic Delphi method is a scoping round to generate qualitative data that is used to guide the development of statements for an initial questionnaire. A modified Delphi method omits the first round of qualitative data collection and can be utilized when the questionnaire statements have been derived from previous literature or research, as in this study. The literature also supports using a modified Delphi method when reconsideration of questionnaire items through multiple rounds are not feasible due to the large number of items in the initial questionnaire. Rather, the facilitator will remove items that do not meet the standards for consensus (Dalkey, 1969; Roberts & Kovacich, 2018; Stewart et al., 2017).

Both classic and modified Delphi methods are characterized by feedback from experts of the statistical data and comments that are provided by the facilitator of the panel's replies (Dalkey, 1969; Jorm, 2015; Stewart et al., 2017). Participants are afforded the opportunity to revise their initial answers based on the feedback provided by the facilitator in subsequent rounds. The process of providing feedback, analysis, and more feedback is ongoing until the desired level of consensus is obtained. Finally, statistical analyses are conducted to allow for an objective analysis and summary of the collected data that is representative of the opinions generated from the expert panel (Dalkey, 1969; Roberts & Kovacich, 2018; Stewart et al., 2017).

The goal of the modified Delphi method employed for the pilot survey in this study was to select the best and most widely recognizable list of toys for creation of the Retrospective

Childhood Play Inventory through consensus from an expert panel on each of the 241 play items related to the item's identified toy category, creativity affordance, and recommendation of the item for inclusion in the final Retrospective Childhood Play Inventory. Through the Delphi method, the researcher aimed to narrow the list of 241 play items by reaching a consensus on 140 toys and/or play experiences that would be used to create the Retrospective Childhood Play Inventory.

As previously described, the information regarding the toys to include in the Delphi method questionnaire were developed from the National Toy Hall of Fame at The Strong National Museum of Play as well as the exhibit's corresponding research. This existing information allowed for use of a modified Delphi approach and to forgo the traditional first round of qualitative data collection. Instead, the questionnaire items for the first round of the Delphi method focused on how the play item is used, identification of a toy category for each play item, and recommendation of the play item for inclusion into the Retrospective Childhood Play Inventory.

Draft items for the pilot questionnaire were developed and reviewed by the researcher's dissertation committee for appropriateness and clarity. The questionnaire for round one was developed in Google Forms and its functionality pilot tested by the researcher and the dissertation chairperson prior to implementation of the Delphi method. Each play item on the questionnaire included five corresponding questions. Four of the five questions used a nominal scale (yes or no) for participants to rate their level of agreement or disagreement with each question. One of the five questionnaire items offered seven categorical options for participants to identify the most appropriate toy category for each play item.

Von der Gracht (2012) outlined a variety of means of assessing consensus in Delphi research. Simple measurements of consensus include using a predetermined number of rounds, having the facilitator define a certain level of agreement, and conducting a subjective analysis. Other mathematical techniques include the use of mean, median, or mode with standard deviation rankings; average percent of majority opinions; interquartile range; coefficient of variation; and post-group consensus. While there is no agreement in the literature on a standard approach to measuring consensus in Delphi studies, determining a certain level of agreement is the most commonly used method (von der Gracht, 2012) and, therefore, was adopted for this study. Additionally, there is no set standard for the target percentage of agreement; however, 70% consensus has been commonly used in previous Delphi studies (von der Gracht, 2012). In keeping consistent with other Delphi research and considering the number of expert members in this study, consensus for the Retrospective Childhood Play Inventory was defined as 70% or greater endorsement among experts for each individual questionnaire item.

Following the wisdom-of-crowds literature that proposed four conditions for a crowd to be considered wise (Surowiecki, 2004), a 10-person expert panel was formed to complete the pilot survey in order to develop a consensus for each play item to be considered for inclusion into the Retrospective Childhood Play Inventory. There is no consensus in the literature regarding the optimal number of experts to include in a Delphi study (von der Gracht, 2012). Okoli and Pawlowski (2004) stated the group size of a Delphi panel depended less on statistical power and more on group dynamics; recommending that 10 to 18 experts be included on a typical panel. Donohoe and Needham (2009) suggested a minimum of seven panel members, while other studies have noted Delphi panels of over 100 participants (Snape et al., 2014; Sobaih,

Ritchie, & Jones, 2012). For this study, 10 was considered a reasonable number of experts to contact for participation in the pilot survey due to recommendations of the existing literature.

The composition of the 10-person panel was agreed upon with the researcher's dissertation chairperson. The expert panel consisted of 10 nationally renowned subject matter experts and two individuals without content expertise. The wisdom-of-crowds literature supports the inclusion of persons with and without relevant content expertise within the same expert panel, purporting that crowds make better decisions when they include diversity of experience (Surowiecki, 2004). The panel represented various areas of expertise, including the fields of play, toys, creativity, developmental psychology, occupation, occupational therapy, business, and technical writing. Of these 10 experts, six were women and four were men. The panel was representative of three of the six regions of the United States, as defined by the U.S. Embassy (2008), including the mid-Atlantic, the South, and the Western regions. Demographic information regarding the expert's age and self-identified ethnicity were not sought.

The researcher contacted each of the selected experts via an individual e-mail, telephone call, or face-to-face meeting to explore their interest in participating in the pilot study for the Retrospective Childhood Play Inventory. The Delphi method for the pilot study commenced in March 2019. Each expert who agreed to participate was sent detailed instructions and links to the three online pilot surveys with a 2-week deadline for completion. A reminder of the deadline was sent to participants who had not completed the surveys within 1 week. Responses remained anonymous except to the researcher. No face-to-face or virtual meetings or conference calls were held among expert panelists to ease burden and to allow for a wider geographic net for recruitment of panel experts. For convenience, the pilot survey was broken down into three separate surveys with approximately 80 play items and their five corresponding questions in each

survey. Each survey required approximately 30 to 40 minutes to complete for a total of 1.5 to 2.0 hours for completion of all three surveys.

In each survey, experts were asked to review a series of play items by answering five questions associated with each item based on their knowledge of empirical evidence and their own beliefs and experiences. The first survey question asked the expert to identify the most appropriate toy category for the play item, using the categories of Move, Build, Imagine, Compete, Create, Non-Toy Games, and Non-Play Items Used as Toys. Three additional questions, developed to calculate a creativity affordance index for each play item, were asked related to how the play item is used. The final question asked the expert if he or she thought a particular play item should be considered for inclusion in the Retrospective Childhood Play Inventory that would be created for this study. Experts were encouraged to mark a play item for removal if they considered the item to be too specific, not easily recognizable to the general public, or if it was repeated in the pilot survey. This question helped the researcher reduce the 231 play items in the pilot survey to 140 items for inclusion in the final Retrospective Childhood Play Inventory.

Data generated from completing the online questionnaires were stored in the Google Forms platform and were extracted to Microsoft Excel for descriptive analysis to identify whether a 70% consensus had been obtained regarding inclusion of the toy in the final version of the inventory. Additionally, the gathered information allowed for each toy to be labeled with a creativity affordance index and a toy category based on the consensus ratings from the expert panel.

Based on results from the first round of the modified Delphi method, there was no need to conduct an additional round of questionnaires due to reaching the study's goal of having 140

of the 231 play items reach consensus on all questionnaire items, including the question regarding if the expert recommended the toy for inclusion in the final Retrospective Childhood Play Inventory. Therefore, consistent with the literature related to conducting a modified Delphi study (Dalkey, 1969; Roberts & Kovacich, 2018; Stewart et al., 2017), no collective feedback of the panel members' responses from Round 1 was provided to the panel members. Those items not achieving consensus were deemed as being in non-agreement and were not included in the Retrospective Childhood Play Inventory. The median and mean of the creativity affordance index of each toy category following results from the pilot test of the Retrospective Play Inventory are reported in Table 1.

Table 1

Central Tendency of Creativity Affordance Indices of the Retrospective Childhood Play Inventory

	Median	Mean
Build	2	1.75
Compete	0	0.5
Create	2	1.75
Imagine	2	2.25
Move	1	1.15
Non-Play Items Used as Toys	3	2.75
Non-Toy Games	1	1.15

Finalizing the retrospective childhood play inventory. The pilot test ensured content validity of the Retrospective Childhood Play Inventory. Additionally, the pilot test verified the approximate amount of time required to complete the survey and other logistical issues. As a result of the pilot test, the 140 toys and/or play experiences that met 70% consensus were selected for inclusion on the Retrospective Childhood Play Inventory.

Following completion of the Delphi method, the 140 toys and play experiences were built into an online survey, the Retrospective Childhood Play Inventory, using the SurveyLegend platform. The Retrospective Childhood Play Inventory asked participants a total of 10 questions. Each question contained pictorial and text representations of 14 toys (each question contained two toys/experiences from each of the seven play categories). For each of the 10 questions, participants were asked to select four toys and/or experiences most frequently played with during their childhood. Information from the Retrospective Childhood Play Inventory provided quantitative data related to a participant's play preferences, including a total creativity affordance index score based on the participant's toy preferences and information as to what types of childhood toys were predictive of higher creative potential in adulthood, as measured by the RIBS-S (Runco et al., 2014).

Runco ideational behavior scale: Short form (RIBS-S). Both the full version and the short version of the Runco Ideational Behavior scale (RIBS) have been utilized for over a decade as a self-report measure of creative ideation. The RIBS is based on the belief of Guilford (1967), who purported ideas could be treated as the products of original, divergent, and creative thinking (Runco et al., 2000-2001). The short form of the RIBS, the RIBS-S (Runco et al., 2014) was used with permission (see Appendix C) and was adopted for this study (see Appendix D).

The RIBS-S consists of a 19-item scale of overt behaviors and activities that describes an individual's use of, appreciation of, and skill with ideas" (Runco et al., 2000-2001, p. 393). Participants are asked to rate the frequency that each item describes his/her thinking in daily life on a 5-point Likert scale, ranging from 0 (*never*) to 4 (*just about every day*), as suggested by Runco et al. (2014). The sum of the 19 items is the creative ideation score. Participants scoring high on the RIBS or RIBS-S frequently generate and appreciate ideas, as well as think about

alternate ways of problem solving and accomplishing tasks (Runco et al., 2000-2001). Sample items from the RIBS-S include “I have ideas for a new business or product” and “I have ideas about what I will be doing 10 years from now” (Runco et al., 2014).

The RIBS-S has been shown effective in measuring divergent thinking and creative potential in various studies (Chen, Roth, & Todhunter, 2015; Plucker et al., 2006; Runco et al., 2000-2001, 2014). Runco et al. (2014) reported strong incremental validity of the RIBS-S by identifying the product moment correlation to be highly correlated with the long-form of the RIBS, $r = .94, p < .001$. This research confirms that most decisions made from use of the RIBS-S would closely correspond with decisions that would have been reached if utilizing the RIBS (Runco et al., 2014). The RIBS-S has good concurrent validity as evident by a significant correlation to a checklist of creative activities, including the Creative Activity and Achievement Checklist (Hocevar, 1980; Holland, 1961; Milgram & Milgram, 1978; Runco et al., 2014; Wallach & Kogan, 1965), $r = .47, p < .001$. Internal consistency for the RIBS-S is reported as 0.84 (Runco et al., 2014). Additionally, an inter-item reliability of 0.90 has been reported for the RIBS, which is comparable to other reported reliabilities from other samples (Chand O’Neal, Runco, & Paek, 2015; Paek, Park, Runco, & Choe, 2016).

The RIBS-S was selected for the study based on the following criteria. First, the measure of creative potential had to be based on the assumption that ideation is involved in everyday occupations and that ideas are produced by everyone, therefore making creative ideation useful for understanding everyday creativity. Second, it should be possible to administer the instrument through an online data collection process. Third, the validity and reliability of the instrument should be adequate and supported by previous studies as a measure of divergent and creative thinking. The RIBS-S was also chosen because of its utility in cross-cultural research. Research

findings purport that creative potential, as measured through creative ideation, is less likely than achievements and accomplishments to be biased by cultural differences, opportunity, chance, and socioeconomic status (Plucker et al., 2006; Runco et al., 2014)

In addition to the 19-items of the RIB-S, a small number of sociodemographic questions was included as part of the online assessment prior to the participant beginning the RIBS-S (Runco et al., 2014). The additional questions allowed the researcher to obtain general data on factors such as the year the participant was born, gender identity, ethnic background, and state and/or country where the participant currently resides.

Procedures

Once Institutional Review Board approval was obtained from Nova Southeastern University, the study procedures commenced beginning with recruitment, data collection, and data analysis. Each of these aspects of the procedures is detailed below.

Recruitment. Social media recruitment ads were disseminated to advertise the purpose of the research, invite adults to participate, provide researcher contact information, and provide the host site information to complete the quantitative phase of this study. Recruitment of participants was completed via convenience sampling. While not the primary sampling method, given the nature of this study, it was possible for snowball sampling to occur by participants informing other adults interested in participating. For the recruitment of participants, the researcher utilized an online social media website, as well as individuals within the researcher's professional and personal network.

Prior to completing the quantitative phase components, participants were provided with basic consent information through SurveyLegend. The two online data collection instruments did not require any identifying information; therefore, participants were informed via a statement

that completion of the two online instruments connotes consent to voluntarily participate in the study (see Appendix E). Participants were also informed to contact the researcher or the researcher's dissertation chairperson by email or telephone with any questions prior to beginning each of the instruments. Prior to beginning the two online instruments, participants answered five sociodemographic questions (see Appendix F) to determine eligibility based on the inclusion criteria. All voluntary participants were able to complete the two online instruments; however, only the results of qualified participants meeting the inclusion criteria, as indicated by their answers to the inclusion criteria information via SurveyLegend, were collected for data analysis purposes.

Data collection. During the first phase of the study, quantitative data were gathered using the RIBS-S (Runco et al., 2014) and the researcher-developed Retrospective Childhood Play Inventory. Both instruments were embedded into one online survey for data collection. Each participant voluntarily self-selected into the study and followed a link to data collection through the host site, SurveyLegend. Participants were asked to complete both instruments during one session. Participants first completed the Retrospective Childhood Play Inventory and then were led directly into questions pertaining to the RIBS-S via the SurveyLegend platform. This study has seven predictors; therefore, a minimum sample size of 102 participants was needed for a medium effect size at a power of .80 and an alpha = .05 (Cohen, 1992). The survey was open for data collection for approximately 2 weeks to obtain the needed sample size.

The Survey Legend host site automatically recorded and stored the information after each participant's entry and the researcher retrieved the information electronically for data analysis. Information delivered across the Internet was stored on a password-protected database accessible only to the researcher. There was the possibility for participant information transmitted from

entry to the database to be delivered through unprotected Internet connections; however, this did not appear critical as the information obtained did not contain identifying or personal information about the participant. This method of online data collection was selected for its ability to reach a large nationwide and worldwide population, as well as for its ease of accessibility, minimal time commitment, and free cost for participants.

Data Analysis of the Quantitative Phase of Study

The quantitative data were interpreted independently from the qualitative data to provide a more in-depth understanding of the research questions. Descriptive statistics, specifically measures of central tendency, from the sociodemographic questions related to the participant's age, gender identity, ethnic background, and state and/or country where the participant currently resides, were compiled to provide a thorough description of the population (Portney & Watkins, 2015). The Retrospective Childhood Play Inventory and the RIBS-S (Runco et al., 2014) produced quantitative results, and, because the aim was to understand the relationship between the types of preferred childhood toys and creative potential in adulthood, descriptive and multivariate statistics were utilized to interpret the data. The data gleaned through this phase of the study provided a foundation for identifying the common types of toys participant's recall engaging with during childhood as measured on the Retrospective Childhood Play Inventory (independent variables) as well as the participants' current creative potential, as measured by the RIBS-S (outcome variable).

During data analysis, the researcher quantified the frequency and the percentage of each type of childhood toy reported on the Retrospective Childhood Play Inventory. Adult memories of childhood toys were captured on the Retrospective Childhood Play Inventory and were categorized using the modified play categories of the Strong's National Toy Hall of Fame. The

toys selected by each participant included play categories and creativity indices as assigned at the conclusion of the Delphi study. The values associated with each participant-selected toy compromised the data for each participant. Next, correlations were performed to determine what types of toys were associated with higher levels of adult creative potential as measured by the RIBS-S (Runco et al., 2014). Finally, the types of childhood toys that were shown to correlate with creative potential were included in a linear regression to determine what type of childhood toys were predictive of higher creative potential in adulthood.

Additionally, an area of comparison in this study was related to age, as the sample included individuals spanning three generations. Play is a temporal phenomenon (Sandberg & Vuorinen, 2008). For example, some toys tend to remain the same over time while other toys are modified, phase out of popularity, or are newly created. Therefore, generational comparisons allowed for exploration the similarities and differences in memories of childhood play among younger and older participants. An analysis of variance (ANOVA) was conducted utilizing the creative potential scores, as measured by the RIBS-S (Runco et al., 2014) and the three generations of participants to determine the generation with the highest creative potential. All statistical analysis of the quantitative results was conducted using the Statistical Package for the Social Sciences, Version 25.

Strengths

The strength of the quantitative phase of this study is that it provided descriptive information about the sample along with statistical information to gain a better understanding of the particular types of toys preferred by the participants during childhood. The ease of use, accessibility, minimal time commitment to complete assessments, and the cost of assessment tools were also strengths. Because SurveyLegend is formatted for use on multiple devices,

participants were able to access the data collection instruments for this phase using a variety of means, including the computer, smartphone, or tablet. Administration via electronic format allowed for the possibility of a greater geographically heterogeneous sample that may have been more challenging to obtain if using only traditional data collection strategies (e.g., paper and pencil). Benefits of participation to participants included the potential pleasure in recalling their enjoyable early play experiences and increased self-awareness of how these experiences may have positively influenced their adult life.

Qualitative Phase of Project

The qualitative phase of this study included an analysis of existing data from first-hand narrated retrospective play stories from the digital archives of the *America at Play: Play Stories Video Archive* (The Strong, 2010-present) at The Strong National Museum of Play. The original purpose of the existing data was to inform the Strong's *America at Play* four-part exhibit that illustrates how play has changed and remained the same in America over time (The Strong, 2010-2013). The existing data were selected for use in this study to complement the quantitative information in answering the research questions by eliciting aspects of Wilcock's Framework of Doing-Being-Becoming-Belonging (Wilcock, 2006; Wilcock & Hocking, 2015). The primary data from The Strong's *America at Play: Play Stories Video Archive* was used with permission from the Brian Sutton-Smith Library and Archives of Play.

Participants

Participants for the qualitative phase of this study were not specifically recruited for this study, but rather were participants in a bigger project related to the retrospective study of memories of childhood play conducted by The Strong National Museum of Play. Play stories from this existing project were purposively selected for use in this study.

America at play participants. The *America at Play: Play Stories Video Archive* consists of approximately 1,616 voluntary participants from a sample of convenience (The Strong, 2010-2013, 2010-present, 2015a). Contributors to this archival data include males and females ranging in age from 8 to 80 years. Inclusion criteria consisted of any person residing in the United States of America over 13 years of age who could understand the written English language. Participants younger than 13 years of age were allowed to participate with parental consent, as depicted by the parent appearing in the play story video. According to The Strong Museum of Play, the video solicitation for participants in the *America at Play: Play Stories Video Archive* was structured in compliance with the Children's Online Privacy Protection Rule (The Strong, 2010-present, 2010-2013, 2015a).

Exclusion criteria included anyone under the age of 13 who did not have parental consent, persons residing outside of the United States of America, or persons who did not understand the written English language (The Strong, 2010-2013, 2010-present, 2015a). Use of the existing data allowed for a greater geographical heterogeneous sample than performing one-to-one interviews. For instance, while the majority of the play stories were collected onsite at the Strong Museum, large numbers of videos were submitted online from more than 16 states across the United States of America (The Strong, 2010-2013).

Study participants. Using the approximate 1,616 first-person accounts of adults' and children's play memories in the *America at Play: Play Stories Video Archive*, the researcher aimed to purposively select three generations to gain an understanding of how their play aligned with the constructs of the Framework of Doing-Being-Becoming-Belonging (Wilcock, 2006; Wilcock & Hocking, 2015), in order to provide diverse experiences and perspectives of the phenomenon being studied. Inclusion criteria included the following generations, as defined by

Pew Research Center (2015): the Baby Boomer generation (born 1946-1964), Generation X (born 1965-1980), and the Millennial generation (born 1981-1997). Additional information regarding the participants for the qualitative phase of this study was obtained once analysis of the existing data commenced. Exclusion criteria included those individuals not meeting the inclusion criteria, the quality of the recording was unintelligible, or the story content was not related to play.

Qualitative Phase Setting

Located in Rochester, New York, The Strong National Museum of Play is a highly interactive, collections-based museum, devoted to the history and exploration of play (The Strong, 2019). The Strong contains the world's largest and most comprehensive collection of historical materials related to play and playthings and is home to notable exhibits and resources, such as the National Toy Hall of Fame, the Brian Sutton-Smith Library and Archives of Play, and the *American Journal of Play* (The Strong, 2019).

Play stories for the *America at Play: Play Stories Video Archive* were captured online and through video kiosks onsite at The Strong museum (The Strong, 2010-2013). Two modular kiosks were placed on the second floor of the museum in quiet, less trafficked areas of the National Toy Hall of Fame gallery. This location encouraged more participation from museum guests while also enhancing the quality and quantity of the videos as compared to when the kiosks were initially placed on the first floor in highly visible and trafficked areas. Participation in this initial project was also open to persons across the United States who could not physically visit The Strong National Museum of Play. To participate virtually, play stories were videoed at a time and place convenient for the participant and submitted online through The Strong's website (The Strong, 2010-2013).

Creation of the America at Play: Play Stories Video Archive

Inspired by projects such as StoryCorps, the *America at Play: Play Stories Video Archive* is a unique resource of play history that captured and archived over 1,600 firsthand stories and memories of play that were voluntarily offered by everyday Americans (The Strong, 2010-2013, 2015a). Play stories were submitted as 1- to 3-minute videos, still photos, audio files, or written stories, in which children and adults shared personal stories of their solitary play, play with friends and family members, and play with favorite toys (The Strong, 2010-2013, 2015a).

The team charged with developing the *America at Play: Play Stories Video Archive* conducted a small sample of pilot interviews at The Strong to determine the feasibility of generating meaningful play histories and garnering greater public engagement (The Strong, 2010-2013). This information helped develop the specific interview prompts and onscreen guidance used for the video kiosks and online submission processes. The play memories were initially submitted to The Strong as part of two online contests (*America at Play: Play Stories Video Contest*) and later through modular kiosks located onsite at the Strong museum. The first video contest prompted the public to “Share your story about playing with friends.” This broad prompt was selected by the project team due to its ability to highlight the social facets of play, which is an element of play history that can seldom be accessed through artifacts alone. Five months later, the second video contest was launched, prompting participants to share their stories regarding the 12 classic toys nominated for induction into The Strong’s National Toy Hall of Fame in November of 2011 (The Strong, 2010-2013).

Simultaneously to the video contests being implemented, the kiosks were designed and became operational in June 2011 (The Strong, 2010-2013). Participants visiting the onsite kiosks to record their play story utilized the user interface to complete the user registration

process and were presented with prompts such as “What makes your favorite toy or game great?” and “How did you and your best friend play together?” (The Strong, 2010-2013, 2011).

Appendix G includes examples of kiosk prompts from The Strong’s *America at Play: Play Stories Video Archive*.

Procedures

This study utilized existing data that were initially collected by The Strong National Museum of Play between 2010 and 2013 for the *America at Play: Play Stories Video Archive*. The following sections describe the specific procedures for the qualitative phase of this study.

Recruitment for America at play. Participants for the initial *America at Play: Play Stories Video Archive* project were recruited by The Strong National Museum of Play via convenience sampling (The Strong, 2010-2013). Recruitment of participants occurred via email, on the Strong museum’s website, blogs, signage in the museum, and social media promotions. Participants were initially recruited to participate in an online video contest that was specifically developed to draw public attention to the play stories project and generate website traffic to attract both video contributors and viewers. The contest offered incentives for participation, including a first and second place prize of a \$50 and \$25 gift certificate to the Strong museum gift shop. The project team found that the contest format, which included publicity, deadlines, and incentives, provided more motivation for recruitment of users to produce and post videos to the museum’s website than not offering a contest incentive (The Strong, 2010-2013).

Participants were also recruited to contribute their play story through modular kiosks located onsite at The Strong (The Strong, 2010-2013). Prior to completing the kiosk video, participants were prompted by the kiosk’s onscreen guidance to complete a user registration process. The registration process included a waiver/release with basic consent information that

could be completed online at the kiosk station or via paper format to connote consent to voluntarily participate in the project. Additionally, the user registration process asked each participant under the age of 13 to provide verification of parental permission to participate in the project by having the parent appear in the video. Following completion of the user registration, participants were immediately invited to continue with the creation of their video in the video capture kiosk (The Strong, 2010-2013).

Selection of play stories for study. The play stories for the qualitative phase of the study were purposively selected from the approximate 1600 retrospective play stories from The Strong's *America at Play: Play Stories Video Archive* (The Strong, 2010-present). Purposive sampling was used to select participants who supported the quantitative and qualitative findings and provide a different perspective on the phenomena of study (Creswell & Creswell, 2018). Use of purposive sampling in the study facilitated the representation of a diverse cross-section of adults who held different perspectives regarding childhood play experiences. The criteria for maximizing differences through sampling was dependent on the information gleaned from the qualitative data, including age (aged 18 to 70 years and above as identified by the video archives database), gender identity, state of residence within the United States of America, the researcher's quality in deciphering what was said in the narrated play story, or if the play story was related to play.

While there were no specific guidelines for the number of participants in a qualitative study, data collection continued until data saturation occurred and no new themes emerged (Glaser & Strauss, 1967), which typically occurs between 20 to 30 informants in grounded theory methodology (Creswell & Creswell, 2018). Existing archived play stories were continuously collected until the point of saturation for this study. On average, the digital play

story recordings from the *America at Play: Play Stories Video Archive* ranged between one to three minutes each; therefore, the sample size for this study was significantly larger than a typical qualitative study. The existing data from The Strong's *America at Play: Play Stories Video Archive* did not include any contact information for the participants. Additionally, the play stories are made available to the public who are seeking access for research purposes through the Brian Sutton-Smith Library and Archives of Play. Therefore, the researcher did not send a notification to the participants selected for inclusion in the study.

Data collection. Data collection of existing material for the qualitative phase of this study occurred onsite at The Strong National Museum of Play in Rochester, New York. The *America at Play: Play Stories Video Archive* is only accessible onsite at The Strong in the Brian Sutton-Smith Library and Archives of Play research library at a standalone computer on the museum's computer network. This archival asset is from a museum-created project; therefore, The Strong does not have any restrictions related to download or transcriptions for research purposes. Researchers are able to download videos from the system onto a hard drive for personal research following a signed Written Use of Collections Materials Agreement (see Appendix H) with The Strong National Museum of Play. Following approval from The Strong's research staff for an onsite residency, the researcher will view the existing *America at Play: Play Stories Video Archive* in its entirety in the Brian Sutton-Smith Library and Archives of Play. The researcher downloaded videos from the *America at Play: Play Stories Video Archive* data management system, ResourceSpace, and saved them onto a personal external hard drive for analysis at a later date.

Using metadata captured from *The Play Stories Video Archive*, the play stories were purposively collected to facilitate the representation of a diverse cross-section of adults based on

age, gender identity, and state of residence within the United States of America. Play stories were also purposively selected based on the researcher's quality in deciphering what was said in the narrated play story and if the play story was related to play. In addition to capturing existing data, the researcher took brief field notes when viewing the play stories. More in depth field notes and memo writing occurred when the play story videos were further analyzed.

Data management procedures for America at play. The data for the *America at Play: Play Stories Video Archive* was managed through ResourceSpace, an open source digital asset management system, capable of cataloguing and accessing the firsthand play content generated by participants in the project (The Strong, 2011). ResourceSpace is capable of handling various types of media and is available only onsite at The Strong's Brian Sutton-Smith Library and Archives of Play. The Strong's Information Technology team, with the addition of a Multimedia Designer and a Documentary Content Manger, preserved and catalogued the video archives as a permanent resource into ResourceSpace by creating customizable fields, establishing standardized terminology, and performing the story cataloguing. The metadata captured for each play narrative allow for a researcher to search the data by keywords or time periods and see detailed documentation of the data collection and management process (The Strong, 2011).

The Strong's Information Technology team created a ResourceSpace Manual, Style Guide, and Lexicon document to provide users with an overview of how to catalogue and access the data (The Strong, 2011). According to the ResourceSpace Manual, Style Guide, and Lexicon, guidelines for cataloging data included indicating the who, who with, what with, when, and inspiration fields related to the person's play story. The *who* field refers to the primary subject in the video and his or her age at the time of the story being told. The following guidelines were used to determine the player's age: infant (0-1 years), toddler (1-4 years), child

(5-12 years), teen (13-17 years), adult (18-70 years), and senior (70 years or above). The category of *who with* includes other players specifically mentioned by the narrator in the story. The *what with* field captures any objects or items that were discussed in the video (e.g., toys). The field of *when* provides the story context and includes subcategories of season, time of day, occasion, decade, and school age of when the story took place. Guidelines for determining current age, birth year, and childhood decades were provided in the ResourceSpace Manual and Style Guide. Similar to the *when* section, the *where* field gives the story context and includes subcategories of place (e.g., country, state), geographic environment, environment, and setting. Finally, the *inspiration* category captures anything that inspired or influenced the story, including subcategories of media, character/person, or event (The Strong, 2011).

Additionally, data were managed in a user-friendly way through ResourceSpace by adding a section where quotes that captured a vivid portion of the play narrative could be entered into the database (The Strong, 2011). Play categories were also labeled in ResourceSpace and were given guidelines and definitions in the ResourceSpace Manual and Style Guide, ranging from structured play to competitive play, to storytelling (The Strong, 2011).

Data management procedures. The researcher adhered to all accepted practices of qualitative research in regard to treatment of the existing data to maintain confidentiality and to control for any associated risks of the study during data collection. All information was kept in a locked filing cabinet in the researcher's work office in the Department of Occupational Therapy at the University of Central Arkansas. Digital video recordings obtained from the archives at The Strong National Museum of Play were kept on an external hard drive owned by the researcher and accessed via the researcher's personal laptop that was password protected to ensure security of information. The researcher would dispose of the digitally recorded

interviews and hard copy data 3 years after the written dissertation was completed by use of irreversible methods to ensure the data were no longer usable.

Data Analysis for the Qualitative Phase of Study

The qualitative phase of this study used a post-priori grounded theory approach to data analysis to determine the utility of Wilcock's Framework of Doing-Being-Becoming-Belonging (Wilcock, 2006; Wilcock & Hocking, 2015). Grounded theory is well suited for the study of occupation because it allows for exploration of the social processes that influence human behavior and interaction (Birks & Mills, 2015). Using a grounded theory approach to data analysis allows for a more in-depth understanding of occupational processes (Nayar, 2012), in the case of this study, the transactional relationship between doing-being-becoming-belonging (Wilcock, 2006; Wilcock & Hocking, 2015) as a developmental trajectory across the lifespan through play.

Many versions of grounded theory are underpinned by symbolic interactionism, including the approach of Charmaz (2014). The constructivist approach to grounded theory data analysis by Charmaz assumes there are multiple social realities and that individuals are socially constructed beings who create their own realities of the world through interactions with one another and the environment. The researcher followed the methodology for grounded theory data analysis suggested by Corbin and Strauss (2007), who offer a structured approach to grounded theory, and Charmaz, who offered a constructivist and interpretive perspective and has potential to bring new insights to existing theories.

Qualitative data analysis began with the researcher transcribing verbatim the existing digital video, audio recordings, and digital text from The Strong's *America at Play: Play Stories Video Archive* for a textual analysis of the information. Field notes were kept after reviewing

each play story and prior to transcription to record any nonverbal communication, direct quotes, or environmental factors that may have occurred or influenced the data (Richards & Morse, 2013).

Essential grounded theory methods were employed, including the constant comparison method for data analysis (Creswell, 2013). Coding was conducted by the researcher and utilized the three traditional stages in grounded theory, including open coding, axial coding, and selective coding (Creswell, 2013; Glaser & Strauss, 1967). First, the researcher began with open coding to identify major ideas, themes, and categories in each segment of data. This process began by the researcher reading verbatim the play story transcripts and identifying significant statements and sentiments that align with, and give meaning to, the Framework of Doing-Being-Becoming-Belonging (Wilcock, 2006; Wilcock & Hocking, 2015). To capture each participant's story and comments, a blend of coding strategies for the play story transcripts was employed, including the combination of line-by-line coding and coding by phrase or complete thought. Memoing by the researcher was ongoing to highlight key ideas and takeaways from the play story transcripts, as well as any links between categories and properties of the data.

Next, the researcher performed axial coding by identifying open coding categories to focus on and interconnecting the existing categories according to their various properties and assembling them into new categories (Creswell, 2013; Glaser & Strauss, 1967). A visual model and explanation of the axial coding process, including relational diagrams between categories, were developed. The final step included selective coding, in which the researcher acknowledged existing concepts and theoretical frameworks that aided in the data analysis and that were considered and incorporated provided they fit the data (Charmaz, 2014). All qualitative analysis was conducted using QDA Miner Lite for data storage, coding, and theme development. The

data analysis process continued until data saturation occurred, relationships between categories were identified, and no new information or insights into the categories were being obtained.

To maintain and ensure the trustworthiness, rigor, and validity of the qualitative phase of this study, the researcher adhered to several epistemological standards, including credibility, confirmability, and dependability (Creswell & Creswell, 2018). Credibility of the research findings was enhanced through use of the constant comparison method of data collection (Creswell & Creswell, 2018; Glaser & Strauss, 1967), which provided opportunities to refine and verify the emerging theoretical perspectives. In qualitative research, the researcher is the primary data collection instrument (Chenail, 2009). Therefore, the researcher explored and made explicit any personal bias, research experience, clinical experience, and other relevant information that may influence data interpretation and overall validity of the study through bracketing. This transparency helped ensure confirmability that the findings represent the emic perspectives of the participants and not the researcher (Chenail, 2009; Guba & Lincoln, 1994; Richards & Morse, 2013).

Triangulation was addressed through the use of different perspectives and sources of information by utilizing field notes (Creswell & Creswell, 2018). To acquire multiple perspectives, the researcher's chair of the dissertation committee, who is an expert in research methods, served as a qualitative consultant and provided an additional perspective. The chairperson read all transcripts, data reduction procedures, and the data analysis outcomes to ensure accuracy of the researcher's interpretations of the participant's statements and sentiments, as well as their alignment to the Framework of Doing-Being-Becoming-Belonging (Wilcock, 2006; Wilcock & Hocking, 2015). The researcher met with the dissertation chairperson as a

qualitative consultant numerous times throughout the qualitative data collection and analysis phase of this study.

Dependability was ascertained through data auditing (Creswell & Creswell, 2018). An audit trail consisting of the researcher's digital files of the narrated play stories obtained from *The Strong's America at Play: Play Stories Video Archive*, transcripts, data reduction, and data analysis outcomes were kept to support all findings of this study. Additionally, use of an external auditor to review the entire research project was utilized throughout the research process and at the conclusion of the study to enhance the overall validity of the research (Creswell & Creswell, 2018).

Strengths

The occupation of play is experienced differently by each individual and differently by the same individual at various points in time (Brown, 2009). Therefore, one advantage to using a qualitative method when studying the occupation of play was that analyzing the participant's subjective experiences allowed for the comprehensiveness of data collection (in combination with the quantitative phase of a mixed methods study). The qualitative findings from the existing data enhanced robustness of information gleaned from the quantitative phase regarding the experience of childhood play experiences.

The advantages associated with analysis of existing data included cost-effectiveness and convenience (Cheng & Phillips, 2014; Johnston, 2014). For instance, use of existing data from the world's largest and most comprehensive collection of historical materials related to play and playthings offered this study a larger sample size that was more representative of the study's target population and potentially allowed for greater validity and more generalizable findings. Use of existing data had the potential to increase the overall efficiency of the research process by

eliminating some of the time-consuming steps of data collection, which allowed for research to be completed and findings disseminated for contribution to new knowledge at an accelerated rate.

Additionally, use of existing data is often cleaned by researchers involved in the initial project (Cheng & Phillips, 2014; Johnston, 2014). The data provided by The Strong National Museum of Play for this study was cleaned by professional staff members at The Strong and Brian Sutton-Smith Library and Archives of Play and included metadata captured for each play narrative, the ability to search the primary data by keywords or time periods, as well as detailed documentation of the data collection process. Use of existing data provided this study with the opportunity to cross-link information from different data sources to understand play experiences, as well as occupational engagement, through the lens of the Framework of Doing-Being-Becoming-Belonging (Wilcock, 2006; Wilcock & Hocking, 2015).

Integration of Quantitative and Qualitative Results

Integration refers to the stage(s) in the research in which mixing of the quantitative and qualitative data occurs for meaningful interpretation (Creswell & Plano Clark, 2011; Teddlie & Tashakkori, 2009). The researcher looked for mutually supported findings, including if the quantitative findings uphold the prominent constructs of the Framework of Doing-Being-Becoming-Belonging (Wilcock, 2006; Wilcock & Hocking, 2015) and to what extent the qualitative data contributed to richer meaning and understanding of the relationships discovered among the quantitative variables.

Given the complexity of this research topic, a mixed methods convergent parallel design (Creswell & Plano Clark, 2011; Teddlie & Tashakkori, 2009) was employed for this study. The researcher utilized the procedures for integrating results outlined in Creswell and Plano Clark

(2011) for convergent designs. Quantitative and qualitative data were collected simultaneously and analyzed independently. Following independent analysis of the quantitative and qualitative strands, the results were further examined to determine how the two data sets would be compared (Creswell & Plano Clark, 2011; Teddlie & Tashakkori, 2009).

A side-by-side comparison method was used to interpret the merged results to address the research questions (Creswell & Creswell, 2018). First, the researcher reported the quantitative statistical results from the Retrospective Childhood Play Inventory and the RIBS-S (Runco et al., 2014) to identify which types of childhood toys are most predictive of creative potential in adulthood. Next, the researcher discussed the qualitative findings of how participants in the *America at Play: Play Stories Video Archive* experienced childhood play and how the participants' experiences aligned with the concepts of Wilcock's (Wilcock, 2006; Wilcock & Hocking, 2015) Framework of Doing-Being-Becoming-Belonging. Additionally, congruencies and discrepancies between the qualitative data that confirmed or disconfirmed the quantitative results were discussed. The aim of this study was for the researcher to identify themes from the merged results that would add to an enhanced understanding and more robust insight into the conceptualization of the Framework of Doing-Being-Becoming-Belonging (Wilcock, 2006; Wilcock & Hocking, 2015) as an interactive developmental trajectory that was central to how individuals come to consider the types of toys enjoyed during childhood as an important aspect of occupational engagement that contributes to one's future adult potential as an occupational being. The inference process allowed for a more comprehensive meaning of the study's purpose of exploring the relationship between preferred childhood toys and adult creative potential. To further depict the integration of results, the researcher developed a visual representation to illustrate the relationship between the quantitative and qualitative results.

Anticipated Ethical Considerations and Review

Considerations of possible ethical issues were addressed at each phase of this study. This research was submitted and approved by the Internal Review Board for Nova Southeastern University. The confidentiality of participants in this study was assured as no identifying information was collected. Research records would be kept for 3 years from the study's completion date. Hard copy data were kept in the researcher's office at the University of Central Arkansas in a locked filing cabinet and electronic files will be stored on the researcher's password-protected computer. When exploring retrospective childhood memories, there was the possibility for participants to become distressed when discussing their childhoods (e.g., remembering persons who are no longer around or opportunities they no longer have). Therefore, careful ethical consideration was given to these components of the study.

Summary

This chapter provided a detailed description of this study's research methodology. The mixed methods convergent parallel design (Creswell & Plano Clark, 2011; Teddlie & Tashakkori, 2009) was employed to illustrate what childhood toys were predictive of higher creative potential in adulthood, while seeking to understand the importance of toys on an individual's life course trajectory by identifying themes of the Framework of Doing-Being-Becoming-Belonging (Wilcock, 2006; Wilcock & Hocking, 2015). Specific design descriptions and the processes of data collection, instrumentation, and data analysis methods for the quantitative and qualitative strands were described. A comprehensive description of the development of the Retrospective Childhood Play Inventory was provided. Additionally, detailed background information for the existing data that was used for the qualitative phase of

this study was discussed. Merged results were used to answer the research questions. Results are presented in Chapter 4.

Chapter 4: Results

This chapter presents the results of the data analysis for the quantitative data derived from the Retrospective Childhood Play Inventory and the RIBS-S. This chapter also presents the findings from the qualitative phase of the study, which emerged from the analysis of existing data from narrated retrospective play stories from the digital archives of the *America at Play: Play Stories Video Archive* (The Strong, 2010-present) at The Strong National Museum of Play. The qualitative data are presented by including emergent themes. Finally, the concluding phase of analysis included the integration of the quantitative and qualitative data to gain a more robust understanding into the conceptualization of the Framework of Doing-Being-Becoming-Belonging (Wilcock, 2006; Wilcock & Hocking, 2015) as an interactive developmental trajectory that is central to how individuals come to consider the types of toys enjoyed during childhood as an important aspect of occupational engagement that contributes to one's future adult potential as an occupational being.

Quantitative Research Questions

The study addressed the following quantitative research questions:

1. What are the differences in the type of toys used during childhood between samples of adults across three generations?
2. What is the relationship between adult creative potential and the type of toys used during childhood among a sample of adults across three generations?
3. Which types of childhood toys are the most predictive of creative potential in adulthood?

Participants in Quantitative Phase

A total of 1,045 participants voluntarily clicked the SurveyLegend link to complete the online survey consisting of the researcher-developed Retrospective Childhood Play Inventory

and the RIBS-S. Of the 1,045 respondents, the data of 73 participants were excluded from further analyses because of missing information on the Retrospective Childhood Play Inventory, the RIBS-S, and/or the demographic question of age. Therefore, the final sample consisted of 972 participants. Participants ranged in age from 23 to 74 years old. A total of 884 participants were from the United States of America, representing 48 states including the District of Columbia. The study included 88 international participants representing 18 countries from Central America, Europe, the United Kingdom, Asia, and Australia. Canada represented the largest international group at 57%. Please refer to Table 2 for additional demographic information.

Table 2

Descriptive Statistics of Participants of the Retrospective Childhood Play Inventory

Demographic characteristic	No.	%
Generation		
Baby Boomer	184	18.9
Generation X	359	36.9
Millennial	429	44.1
Race		
Caucasian / White	892	91.8
African American / Black	15	1.5
Hispanic / Latino	17	1.7
Asian	9	0.9
American Indian / Alaskan Native	7	0.7
Multiethnic	10	1.0
Prefer not to answer	22	2.3
Gender		
Female	886	91.2
Male	84	8.6
Prefer not to answer	2	0.2
Transgender	0	0.0
Gender nonconforming	0	0.0
No response	0	0.0

Data Analysis

In addition to the descriptive statistics, inferential statistical procedures were performed for all quantitative research questions. Bivariate linear regression and ANOVA procedures were used to analyze the study's data.

RQ1: What are the differences in the type of toys used during childhood between samples of adults across three generations?

All participants completed the Retrospective Childhood Play Inventory to gather information regarding their toy use during childhood. The Retrospective Childhood Play Inventory asked participants a total of 10 questions. Each question contained fourteen total toys representing the seven toy categories used in this study, including Move, Build, Imagine, Compete, Create, Non-Toy Games, and Non-Play Items Used as Toys. For each of the 10 questions, participants were asked to select four toys most frequently played with during their childhood, for a total of 40 toys. A total creativity affordance index score was also yielded based on the participant's identified preferred toy use. Information was calculated regarding how many toys were played with in each toy category for each participant, as well as what toys each generation played with on average.

A one-way ANOVA was performed to determine whether there were any statistically significant differences between the types of toys used during childhood and the three generations. The ANOVA was conducted with the independent variable being the generation and the dependent variables being the seven toy categories. The ANOVA indicated a statistically significant difference between the mean number of toys per toy category as measured by the Retrospective Childhood Play Inventory and the three generations. Next, a Tukey HSD Post-Hoc Test was conducted to determine specifically which toy category and

generation differed from each other. The post-hoc test indicated a statistically significant difference between generations in every toy category with the exception of Build and Non-Play Items Used as Toys. Table 3 presents a comparison of the mean number of toys played with in each category across the three generations, as well as the results from the ANOVA statistical analysis examining differences between generations. Figures 3 and 4 present the mean numbers of toys played with in each category across the three generations.

Table 3

Comparison of the Mean Number of Toys per Category Across Generations

Toy Category	Mean Number of Toys per Toy Category (SD)			<i>F</i>	<i>p</i>
	Baby Boomer	Generation X	Millennial		
Move	6.67 (1.99) *	6.27 (2.32) *	5.65 (2.15) *	16.2	< .001
Build	3.36 (1.73)	3.33 (1.77)	3.55 (1.77)	1.63	.196
Imagine	4.47 (2.37) *^	5.49 (2.43) *^	6.08 (2.21) *	31.03	<.001
Compete	5.64 (2.76) ^	6.33 (2.87) *^	6.30 (2.73) *	4.34	.013
Create	6.09 (2.74) *	6.35 (2.73) *	7.00 (2.63) *	9.53	<.001
Non-Toy Games	8.18 (3.60) *^	6.81 (3.49) *^	6.19 (2.89) *	23.79	<.001
Non-Play Items Used as Toy	5.59 (2.64) *	5.40 (2.52)	5.23 (2.43) *	1.41	.243

Note: Symbols adjacent to mean values indicate a significant difference with the generation containing the same symbol.

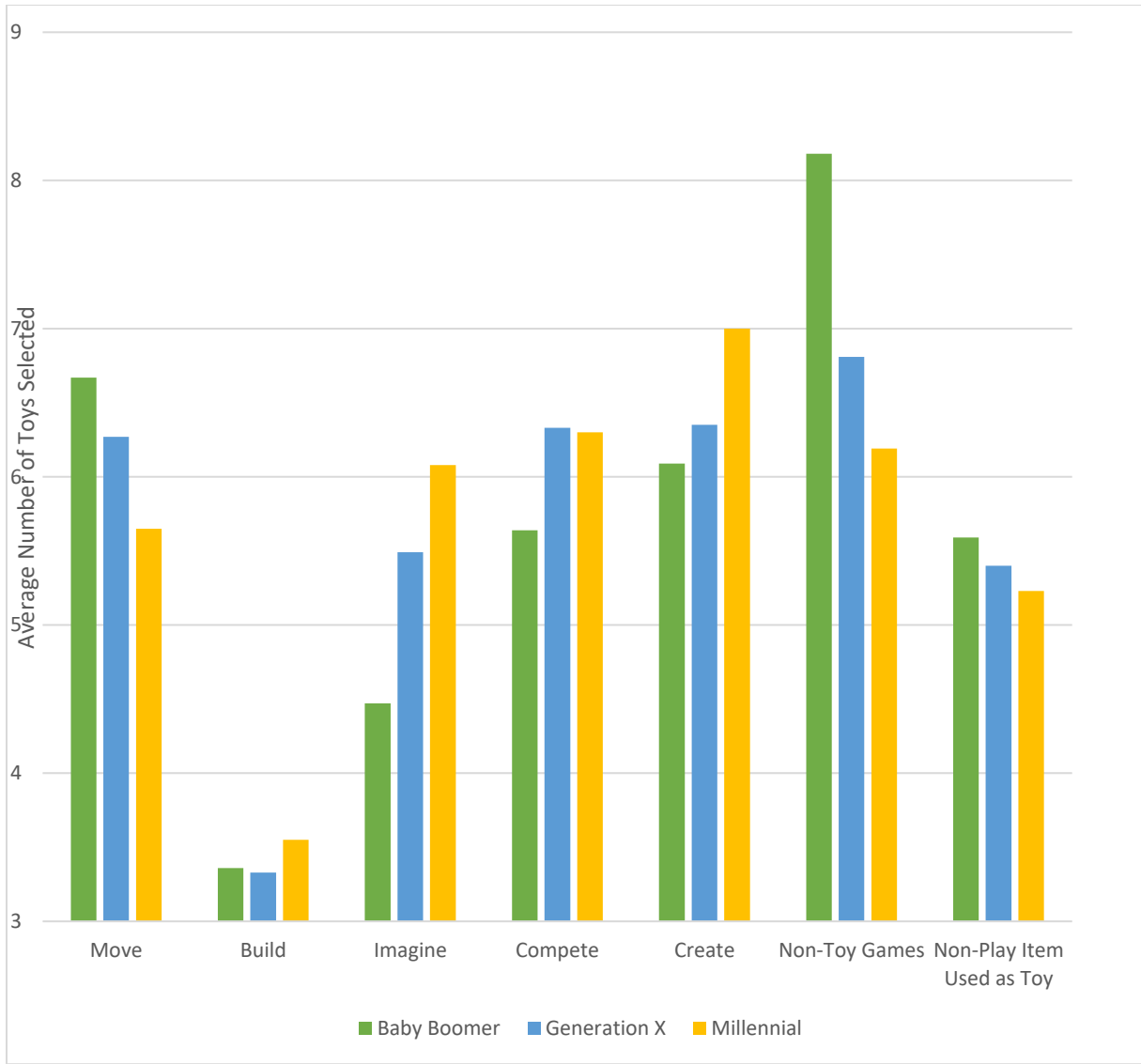


Figure 3. Comparison of the generations that played with each type of toy.

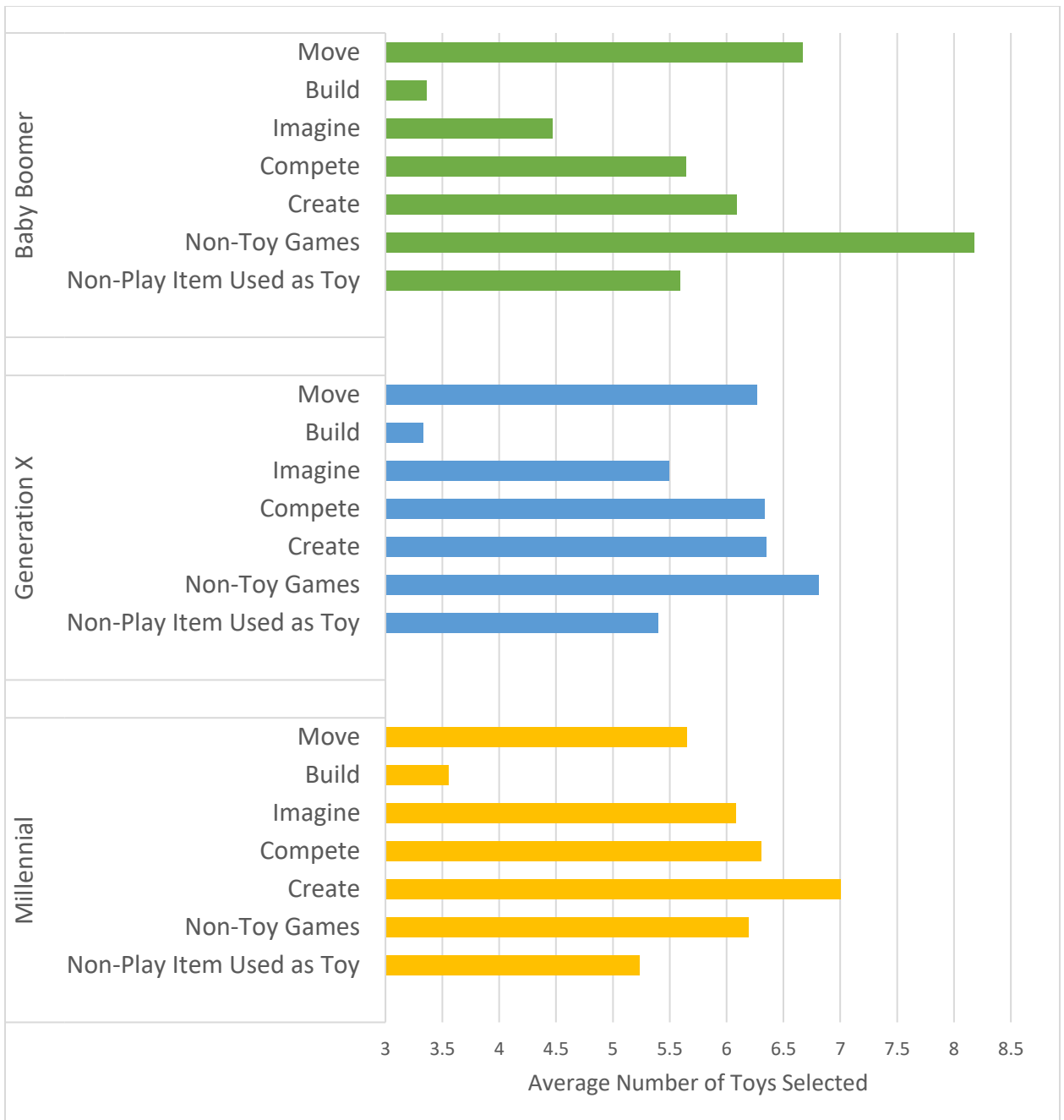


Figure 4. Comparison of the types of toys played with by each generation.

As part of the Delphi method conducted earlier in this study, each toy included on the Retrospective Childhood Play Inventory was assigned a creativity affordance index based on the consensus ratings from the expert panel. This step was to further research and understanding of how the intrinsic properties of play materials, specifically the intended and unintended use of

toys differ from one another and may contribute to divergent thinking. The creativity affordance index for each toy ranged from 0 to 3, totaling a 4-point scale, and was based on the following questions asked of the expert panel during the Delphi method: “Can the toy be played with in more than one way?,” “Based on its intended use, are there specific written or unwritten rules or social/cultural norms on how to play with the toy?,” and “Does the toy require the child to develop a scenario for play (e.g., context for play, their own ideas and rules, etc.)?”

The mean creativity affordance indices were calculated for all participants based on the 40 toys selected in the Retrospective Childhood Play Inventory. A one-way ANOVA was performed to determine whether there were any statistically significant differences in mean creativity affordance index across the three generations included in this study. The ANOVA was conducted with the independent variable being the generation and the dependent variable being the mean creativity affordance index. As shown in Table 4, results indicated a statistically significant difference in mean creativity affordance index across the three generations. Next, a Tukey HSD Post-Hoc Test was conducted to determine specifically which generations differed from others in regard to mean creativity affordance indices. The post-hoc test indicated a statistically significant difference between Baby Boomers and Millennials as well as between Generation X and Millennials. No statistically significant difference was found between Baby Boomers and Generation X. Table 4 presents a comparison of the mean creativity affordance index across the three generations.

Table 4

Comparison of the Mean Creativity Afford Index (CAI) across Generations

	Mean Creativity Affordance Index (CAI) (SD)			<i>F</i>	<i>p</i>
	Baby Boomer	Generation X	Millennial		
CAI	61.54 (8.17) *	60.25 (8.66) ^	63.55 (7.91) *^	15.98	<.001

Note: Symbols adjacent to mean values indicate a significant difference with the generation containing the same symbol.

RQ2: What is the relationship between adult creative potential and the type of toys used during childhood among a sample of adults across three generations?

Runco Ideational Behavior Scale: Short Form (RIBS-S)

All participants in this study completed the RIBS-S. The sum of the scores from the RIBS-S is the participant's creative ideation score and can range from 0 to 76. Participants scoring higher on the RIBS-S are considered to have greater creative potential (Runco et al., 2014). Among the 972 participants, the RIBS-S total scores in this study ranged from 4-69. Mean scores for the three generations ranged from 34.77 to 37.58, with Baby Boomers having the lowest RIBS-S mean and the Millennial generation having the highest RIBS-S mean. A one-way ANOVA was calculated to determine whether there were any statistically significant differences between the RIBS-S means of the three generations. The ANOVA was conducted with the independent variable being the generation and the dependent variable being the RIBS-S total score. The ANOVA indicated a statistically significant difference in creative potential across the three generations as measured by the RIBS-S, $F(2, 969) = 5.37, p = .005$. Next, a Tukey HSD Post-Hoc Test was conducted to determine specifically which generations differed from each other. The post-hoc test indicated a statistically significant difference between group

means of creative potential as measured by the RIBS-S between the Millennial and Baby Boomer generation and between the Millennial generation and Generation X. The RIBS-S mean statistics are presented in Table 5 for each generation in the study.

Table 5

RIBS-S Means for Generations

Generation	No.	Mean (<i>SD</i>) of RIBS-S
Baby Boomer	184	34.77 (11.67)
Generation X	359	35.40 (11.62)
Millennial	429	37.58 (11.24)

Types of Toys and RIBS-S

All participants completed the Retrospective Childhood Play Inventory to gather information regarding their toy use during childhood. The survey asked participants a total of 10 questions. Each question contained 14 total toys representing the seven toy categories used in this study, including Move, Build, Imagine, Compete, Create, Non-Toy Games, and Non-Play Items Used as Toys. For each of the 10 questions, participants were asked to select four toys most frequently played with during their childhood, for a total of 40 toys. Information was calculated regarding how many toys were played with in each toy category for each participant.

Spearman rank-order correlation coefficient was used to examine which types of toys used during childhood related to RIBS-S scores. Spearman correlation results for the entire sample ($n = 972$) indicate that there is little to no relationship between the type of toys used during childhood and creative potential as measured by the RIBS-S. Relationships ranged from r_s $-.126$ to $.107$. When the correlation was split by generations, there was also little to no relationship between the type of toys used during childhood and creative potential, as measured by the RIBS-S. Relationships ranged from r_s $-.168$ to $.134$ for the Baby Boomer generation ($n =$

184), from r_s -.231 to .153 for Generation X ($n = 359$), and from r_s -.081 to .200 for the Millennial generation ($n = 429$). Additional statistical information is provided in Table 6.

Table 6

Correlation Between Types of Toys and RIBS-S

Toy Category	r_s	p
Total Sample ($n = 972$)		
Move	-.126	<.001
Build	.079	.007
Imagine	.107	<.001
Compete	-.049	.064
Create	.045	.078
Non-Toy Games	-.113	<.001
Non-Play Items Used as Toy	.107	<.001
Baby Boomer ($n = 184$)		
Move	-.111	.067
Build	-.011	.440
Imagine	.127	.043
Compete	-.004	.476
Create	.134	.034
Non-Toy Games	-.168	.011
Non-Play Items Used as Toy	.056	.226
Generation X ($n = 359$)		
Move	-.213	<.001
Build	.153	.002
Imagine	.108	.020
Compete	-.051	.169
Create	.089	.046
Non-Toy Games	-.078	.069
Non-Play Items Used as Toy	.041	.221
Millennial ($n=429$)		
Move	-.014	.383
Build	.042	.193
Imagine	.038	.217
Compete	-.081	.046
Create	-.072	.069
Non-Toy Games	-.076	.057
Non-Play Items Used as Toy	.200	<.001

Additionally, the total creativity affordance index was calculated for the toys selected by participants in each toy category for all three generations. A Spearman rank-order correlation

coefficient was used to examine if the total creativity affordance index for each toy category (as measured by the Retrospective Childhood Play Inventory) related to the RIBS-S scores for creative potential in adulthood. Spearman correlation results for the entire sample ($n = 972$) ranged from r_s -.96 to .117. Results indicate that there is little to no relationship between the creativity affordance index of what a participant played with in childhood and creative potential in adulthood, as measured by the RIBS-S. When the correlation was split by generations, there was also little to no relationship between the creativity affordance index of the types of toys used during childhood and creative potential, as measured by the RIBS-S. Relationships ranged from r_s -.100 to .131 for the Baby Boomer generation ($n = 184$), from r_s -.199 to .190 for Generation X ($n = 359$), and from r_s -.036 to .215 for the Millennial generation ($n = 429$). Additional statistical information is provided in Table 7.

RQ3: Which types of childhood toys are the most predictive of creative potential in adulthood?

A step-wise bivariate linear regression analysis was performed to evaluate the predictive relationship between the types of childhood toys and creative potential in adulthood. A significance level of .05 was used for the regression coefficients. The linear regression analysis indicated that the types of toys used during childhood as measured by the Retrospective Childhood Play Inventory were not predictive of creative potential in adulthood as measured by the RIBS-S. The model that was most predictive ($r^2 = .044$) included the toy categories of Move, Non-Toy Games, Non-Play Items Used as Toys, and Compete. This model suggests the types of toys played during childhood accounted for only 4.4% of variance in creative potential in adulthood as measured by the RIBS-S.

Table 7

Correlation Between Total Creativity Affordance Index (CAI) for Toy Categories and RIBS-S

Total CAI for Toy Category	r_s	p
Total Sample ($n = 972$)		
Total CAI for Move	-.096	.001
Total CAI for Build	.117	<.001
Total CAI for Imagine	.109	<.001
Total CAI for Compete	.034	.144
Total CAI for Create	.076	.009
Total CAI for Non-Toy Games	-.056	.042
Total CAI for Non-Play Items Used as Toy	.105	.001
Baby Boomer ($n = 184$)		
Total CAI for Move	-.100	.087
Total CAI for Build	.014	.426
Total CAI for Imagine	.129	.040
Total CAI for Compete	.031	.339
Total CAI for Create	.131	.038
Total CAI for Non-Toy Games	-.059	.214
Total CAI for Non-Play Items Used as Toy	.045	.273
Generation X ($n = 359$)		
Total CAI for Move	-.199	<.001
Total CAI for Build	.190	<.001
Total CAI for Imagine	.115	.015
Total CAI for Compete	-.001	.495
Total CAI for Create	.085	.053
Total CAI for Non-Toy Games	-.045	.198
Total CAI for Non-Play Items Used as Toy	.035	.253
Millennial ($n = 429$)		
Total CAI for Move	.015	.380
Total CAI for Build	.090	.031
Total CAI for Imagine	.031	.259
Total CAI for Compete	.082	.045
Total CAI for Create	-.036	.226
Total CAI for Non-Toy Games	-.027	.286
Total CAI for Non-Play Items Used as Toy	.215	<.001

Qualitative Research Questions

The qualitative data derived from the 116 play stories helped to answer the two qualitative research questions: “What is the experience of childhood play?” and “In what ways are childhood play experiences aligned with concepts from the Framework of Doing-Being-Becoming-Belonging (Wilcock, 2006; Wilcock & Hocking, 2015)?”

Participants in Qualitative Phase

The data provided by The Strong National Museum of Play’s *America at Play: Play Stories Video Archive* for this study included, if available, metadata captured for each, including the decade the play occurred and gender of the person. Some, but not all, of the play stories reported the actual participant’s age at the time of the play memory; therefore, it was difficult to classify the qualitative study participants into generations. Of the 1,616 participants in the *America at Play* archive, 116 met the inclusion criteria for the qualitative phase of this study. Of the 116 play story transcripts reviewed for the qualitative phase of this study, 51 participants were female and 65 were male. Table 8 illustrates the decade(s) in which the play memory occurred for participants.

Qualitative Findings

The qualitative phase of this study used a post-priori grounded theory approach to determine the utility of Wilcock’s Framework of Doing-Being-Becoming-Belonging (Wilcock, 2006; Wilcock & Hocking, 2015) and the interplay of the framework’s constructs as a developmental trajectory across the lifespan through play. Open, axial, and selective coding were completed to analyze qualitative data. Transcripts were initially read and preliminarily coded by the researcher using a web-based qualitative data management system program, QDA

Miner Lite. The researcher initially completed line-by-line analysis of the data in search of salient text depicting people's experiences of play in childhood. Relevant childhood play experiences were inclusive of what people played with, with whom they played, where play occurred, feelings derived and infused from play, how play has changed and stayed the same over time, and how play contributed to a person's adult life.

Table 8

Decade Play Occurred in the Play Memory

Decade of Play ($n = 105$)	n
1930s	3
1940s	3
1950s	4
1960s	17
1970s	17
1980s	18
1990s	18
2000s	10
2010s	14
Multiple Decades of Play ($n = 11$)	
1920-2010	1
1950-1980	1
1960-2000	1
1960-2010	1
1970-2010	2
1980-2010	2
1990-2010	3

Next, the researcher classified the codes to consider alignment with the Framework of Doing-Being-Becoming-Belonging (Wilcock, 2006; Wilcock & Hocking, 2015). Codes that described what people engaged in or how they engaged were classified into the doing construct. Statements infused with meaning, importance, or value of the play experience was classified into being. The construct of being also included codes that reflected who a person felt they were as an occupational being, as well as a need or opportunity for time and space to just be oneself

through play. Statements about with whom people played, friendships, family, groups, and a sense of inclusiveness or isolation were classified into the construct of belonging. Codes reflective of the way childhood play influenced a person's adult occupational being were categorized into the construct of becoming. This classification into the constructs of Wilcock's framework allowed for a deeper understanding of the preliminary codes.

The codes were then analyzed and clustered together in categories that depicted similar ideas. The categories that emerged from the data included: play as a relational experience, space and place, objects played with/types of play, meaning derived from play, identity development through play, and lifespan continuities. At the conclusion of qualitative analysis, these categories were further refined into two themes to provide a richer understanding of the childhood play experience. The two themes that emerged from the data included: the kaleidoscope of play and the continuity of play across the lifespan. The first theme is illustrative of an occupational analysis of play and is comprised of categories that are representative of the various elements of play that were depicted in the play memories of participants. The second theme included categories with an interconnected sense of temporality. This sense of temporality expressed through the play memories of participants depicted how the occupation of childhood play helped to sow seeds of adult character and competence while creating a sense of connectedness to one's self as an adult occupational being.

Emergent Themes

The data illustrated that there were meaningful influences of childhood play into a person's adult life, which led to a deeper understanding of the link between childhood play and a person's lived experiences and identity development in adulthood. This ultimately led to the two emergent themes of the kaleidoscope of play and the continuity of play across the lifespan. Each

theme will be presented with the definition and representative quotes to illustrate and support the theme.

The kaleidoscope of play. The qualitative phase of the study demonstrated that play is broad in human experience, rich and various in time and space, a concept that is complex, dynamic, and an experience that produces meaning. The play experience is like a kaleidoscope comprised of changing glass beads representing the objects played with, the meaning infused, as well as aspects of the context including the places and spaces where play occurred, people, culture, and time. The resultant play experience is a dynamic, complex configuration of parts that were always changing and generating meaning for the participant.

Objects played with. This theme includes the objects played with in childhood. Of the 116 childhood retrospective childhood memories of play utilized in the qualitative phase of this study, 93 participants mentioned a specific toy or play experience. In these 93 play narratives, 143 specific toys or play experiences were mentioned. The specific toys or play experiences that were described in the childhood play memories of the participants varied greatly and included many of the toy categories used in the quantitative phase of this study. Forty percent, and the most frequently mentioned specific type of toys and play experiences, involved imaginative play/using one's imagination. The most frequently mentioned play experiences in this category included playing with dolls, dollhouses, Barbie dolls, Star Wars and other action figures, dress-up play, as well as making up one's own unstructured play scenarios and outdoor games. Fifteen percent of the specific toys and play experiences mentioned were those in the Compete toy category, as classified for this study, making it the second most commonly mentioned group of toys in the play narratives. Those most commonly mentioned included games such as

Monopoly, Jenga, The Game of Life, and Yahtzee. Video and arcade games such as Atari, Nintendo, and Pong were also common among participants as a favored toy.

Other frequently mentioned toys and play experiences were those in the Non-Play Items Used as Toys category and those involving a risky component to the play experience. Common examples of Non-Play Items Used as Toys from the play narratives included animals and/or pets, sticks, sprinklers, dirt or snow, and natural materials (e.g. wood, nails, flowers) found in nature that were typically used in the making of play structures and objects in the outdoor environment. Risky play was illustrated in the participants' retrospective play experiences through recollections of play having a manageable quantity of fear while also involving a risk of physical injury. It was also evident that risky play allowed participants to test boundaries and often occurred without much caregiver surveillance. Examples of risky play in the nostalgic recollections were play with dangerous objects such as fireworks and toys with sharp objects that are no longer made today, rough-and-tumble play with friends, and play that occurred at high speeds often resulting in physical injury such as bicycle tag.

Social context. The kaleidoscope of play theme also underscored how childhood play experiences influenced and were influenced by the social context, including interaction with friends, parents, siblings, other important family members, and animals. Most frequently, adults reminisced of favorite play experiences involving playmates that were friends and/or siblings. Specifically, participants often described playmates as other children who were close by and readily available, often in the same neighborhood or who lived down the street. Much of this play was reported as being spontaneous, without rules, without a time frame, and with opportunities for autonomy due to decreased adult supervision. The following is a vivid example of how spontaneous play would develop among neighborhood children: "Getting an organized

baseball game was the matter of somebody in the neighborhood coming around yelling or heading down to the ball field...you would see a few guys there...and you would just show up and you would start playing.” Place seemed to matter in regard to social context, as evident by one participant recalling how opportunities for friendships were determined by location of their home: “I used to play with my friends who were my cousins because we lived on a farm and we had no outside friends.”

In regard to playing with family, subthemes emerged of family traditions and spending summer vacations at grandparent’s houses. This theme also included salient reflections of how being an only child versus having a large family had an influence on participants’ relational experiences with others. For example, Chris recalled the advantage of having a large family to play with as a child:

It was a real advantage that our street had lots of big Catholic families as opposed to my little Protestant family. There were lots of kids, brother and sisters, bigger and younger, and sometimes it seemed like there were 20 kids hiding up and down the street to play Kick the Can.

This reflection is juxtaposed to another participant who described how being an only child influenced his play options: “...being the only child, of course, it was hard to get a lot of people together to play something in a really big group. So, badminton was nice because all it took was me and one other person.”

A smaller number of participants described engaging in play with their pets, including memories such as “...going outside and playing in the snow with our dog” and “I’d love to go in my backyard and play with my dog”. While reminiscing about riding her bike, Deb, described her pet dog as a “faithful protector” who would “lope along behind me.”

One participant described playing games with his pet rooster while growing up in Cuba:

I grew up in Cuba, so playing there is a little bit different; especially for me. I grew up in a farm and I had tons of toys. But, I guess my favorite thing to do when I was about seven or six years old was going to the backyard with my best friend and grabbing a cute, tiny, rooster we had. And we used to play ball with the rooster. I know it's a little bit weird here. I guarantee you the rooster didn't get hurt. It lasted for seven years, so he had a pretty good life span. And since he was a toy he didn't end up in the kitchen. That was my pet back then. And it was one of my favorite things to do was playing with animals in the backyard.

Notably, the majority of participants tended to describe childhood play experiences that involved two or more people more often than they described solitary play experiences. When childhood play memories were described as being one of solitude, it was often that the participant was highlighting how a particular experience or toy afforded various ways to engage, including opportunities for engagement in solitary play or with others. For example, one participant described how computer games offered a variety of media for engagement when stating:

They're so portable, you can bring them anywhere, play anywhere, and the option to play against a computer is great because you don't have to have a physical opponent there next to you. So, if no one is around to play with you, you can play anywhere, which I think is wonderful.

Similarly, another participant reflected upon how her favorite childhood dollhouse “was something that I could play with by myself or if I had a friend over, we could play house together.”

Many participants' memories of childhood play included salient statements related to how the availability or lack of availability of a toy or play experience facilitated social engagement with others in order to be able to play with the desired toy. For example, Eric recalled the collaborative experience of playing with Matchbox cars by trading and borrowing the cars with his friends that lived across the street. Others recalled how, although they did not have the preferred toy of their own, they were still able to engage in play with the toy through their relationships and forged friendships with others. As one participant stated: "At the time, I was never able to have one of these [pogo stick] myself. I always had to go to a friend's house to enjoy the misadventures of the pogo stick."

The relational experiences and social context described in the play memories of adult participants was an illustration of how engagement in play experiences was important in supporting their sense of belonging and connection to friends and family members. This was evidenced by Justin's memory of playing as a child as being "...a bonding experience. It was a way to make friends and keep friends. And just really have a good time together. A way to pass the time and learn and grow with each other." Amy described how going to visit her family in another state would allow her the opportunity to bond, through play, with 10 to 30 of her cousins that she rarely got to spend time with:

We would have all these mattresses and pillows and blankets and we would just have them to make forts. So, we made these huge forts, and we would be in them and we would play games inside the forts and I feel like that was a really big part of my childhood, because we just played all the time and that's how I got close to my cousins in Oklahoma because I wasn't there very often. When I was, we would just play all the time.

Juxtaposed to play facilitating a sense of belonging and connection, another participant illustrated how her most favored childhood toys created a sense of disconnection and injustice among her peers:

The boys and I would play at lunch time sometimes, but often I had to play with them [Star Wars figures] by myself. It was really not cool for girls to like Star Wars figures . . . My imagination and love of Star Wars continued as each new installment was released but it was becoming harder to fit in at school. There was no girl that I knew that liked Star Wars, let alone carried the toys in her pocket to school. The boys were also starting to agree with the girls that it was odd for me to like Star Wars and would often say so. It seems odd to think that people's perception of a toy could cause such a rift, but it did.

The boys would declare that girls could never be Jedi Knights but that just pushed me to create my own stories where there were girl Jedi. For whatever reason, the Star Wars toys seemed to illuminate all that was unjust in the world toward women.

Physical context. The emerging theme for the kaleidoscope of play also evolved from the physical context, the spaces and places where participants played during childhood. The retrospective play stories indicated a strong preference by adult participants to describe favorite childhood play experiences that took place in outdoor environments. While several play experiences could have occurred in either the outdoor or indoor environment, the participants often recalled them as outdoor play experiences. There was an abundance of play experiences recalled as taking place in backyards, front yards, and neighborhood play spaces. These play experiences were often recalled as being outside of the supervision of adults, illustrating the freedom of children to explore their environments and engage in play that was unstructured. The following nostalgic reflection highlights the physical context of play in regard to the benefits of

unstructured and unsupervised outdoor play in the neighborhood: "...Because you would just show up and have to make up your own rules. There were usually no adults anywhere to be found... And I think we have been kind of missing that for the last decade or two."

Play in the natural environment and with natural materials was keenly remembered as allowing for the development of a participant's creativity and innovation. Participants often provided detailed description of natural places in their childhood where meaningful play experiences occurred. Many of these childhood play memories evoked recollections of how participants were engaged in the doing process or in making things happen, including activities such as building a fort, finding the best hiding spot, or observing animals. These memories are depictive of how participants had the opportunity to adapt to their natural surrounding while engaged in unstructured play. Growing up in a rural area in the early to mid-sixties, Kevin illustrated the importance of natural places and natural materials in his childhood play experiences:

There were woods and there was a swamp, which was great. And best of all, there was a sort of a junkyard nearby. We had all the raw materials for building rafts for the swamp, and treehouses, and forts outside. So, we would leave early in the day on weekends. We would head out right after breakfast and be sure to be home maybe for lunch, but definitely for dinner. But, the rest of it was unstructured. We would be out playing the whole day with imagination.

The interactions between the social and physical contexts of play in the participants' play memories were seemingly connected by a strong sense of temporality. The temporal context was referenced in many of the play memories through statements that reflected prolonged play, for hours at a time, and often involving play in which the child was gone all day and free to explore

and roam without external stressors. These subthemes of the temporal context highlighted what Csikszentmihalyi (1996) called a flow experience, that when fully engaged in play, participants would often lose sense of the passage of time and become absorbed in the process of doing.

Carol was one of a few participants that reminisced on how liberating it felt to play. She recalled a play memory as a 12-year-old child and how having a bicycle as a mode of transportation allowed her to spend time exploring the environment that was not as easily accessible before having a bicycle:

...Living in a small town and we were free to roam, which we did. We could be gone all day and not have to worry about it. But, to get on the bicycle and go for hours was liberating. I just loved it and continue to love bicycles.

Rachel illustrated how her favorite play experience of running combines the outdoor environment and the sensory qualities of the natural surroundings to influence her sense of flow and temporality in the world:

Play is something that I think is very important because it gives the opportunity to escape from everyday mundane things. You can create whole worlds in your mind...it makes you feel really connected with the world.

Less mentioned, but still present in the data, was how childhood play experiences were shaped by the temporal context in regard to a person's stage of life. Often this was observed in regard to how play in a certain stage of life afforded various opportunities for play or with certain toys. For example, Bill described growing up and playing during the Great Depression:

I grew up sort of with the Depression. As a result, our toys were quite limited. I had a lot of war toys in the beginning of the 40's, including some wooden ships, which actually were a prize that we won from the drug store where all our friends turned in sales receipts

from that drug store. Also, at that time, I played with a lot of lead soldiers and had a Marx War Train, which was only a few dollars in the late 1930s. I also collected stamps. This recollection is different than the favorite play memories across the years that were recollected by Chris who was born in 1956:

I was born in 1956 and I mostly grew up with Tootsie toys and then later Matchbox Cars. They were OK and I really loved them, but they were nothing like the speedy Hot Wheels I got late in my early tween years.

Meaning. The emerging theme for the kaleidoscope of play also evolved from the meaning that participants infused and derived from play. Play memories demonstrated what was important to the participant and that play can be a vehicle for meaning. How participants valued engagement in play as well as specific toys were salient statements throughout the play memories. The meaning of play differed for each participant and seemed to fall along a spectrum of symbolic and concrete meaning including personal value, universal value and cultural value.

For some participants, play was infused and derived with meaning at a universal level in which toys seemed to generate similar interpretations across different cultures, helping them to connect with others and engage in meaningful and creative ways. At this level, play appeared to be a universal language. What follows is a descriptive excerpt that contained this subtheme:

When I was about eight I actually spent a summer in Mexico with my family and had an incredible amount of free time to play. A lot of opportunities to play with other children. And I think one of my distinct memories that involves a toy is that we lived in a dual house in Mexico and the little girl that lived downstairs was a Mexican girl about the same age as I was and she had an Easy Bake Oven! My sister and I of course, we did not

have those kinds of toys at home, but it was a really great experience because we played together but we didn't speak the same language. We didn't speak Spanish, but we definitely spoke in regard to the toy. We had the same passion and were so excited about making the little recipe and putting it in there and being amazed at this little light bulb actually baked the cake! So, I have fond memories of that...I don't remember the little girl's name, but I remember distinctly enjoying that play with her. And I think otherwise it was hard to play because we didn't speak together...we didn't have the same language. But, that was a really fond memory playing there.

Some participants derived meaning from play at the cultural level. For instance, caregivers described differences and similarities related to play around holiday celebrations in regard to their own traditional cultures when they were a child to now when raising their own children in the United States of America. For Deb, her subculture of Catholicism was intertwined with family tradition and preferred play experiences as represented in her reflection of her first Holy Communion gift: "Then came the big day...it was my first Holy Communion. And in our house, that didn't just mean a little gold cross. That meant a two-wheel bike!"

In addition to universal and cultural meaning, many participants highlighted how their favorite play memories in childhood held more of a concrete occupational value in regard to improved or newly acquired skills and competence. James reflects upon this type of meaning derived from his favorite childhood toy:

When I was growing up in the late 70s it was just that time when video games and electronic games were really coming into their own. I remember my favorite present I got as a kid was called Data Man, which was a handheld computer game that taught math. It came with a little accompanying box and package and a booklet that had all

sorts of games associated with it, in which you had to do adding, subtracting, division, basic numbers stuff to see how quickly you could do it. I remember I used to play with this for hours. I ended up being very good at math as a result. Later on, I wanted to be on the math team, which is probably not a surprise given the fact I was playing with Data Man all the time. But, it's a great example, I think, of how a kid's toy can also be a great way to learn.

David also gave a rich nostalgic description of his childhood play, which included personal and concrete meaning that was infused with and derived from play with video games:

I make videogames. It's a lot different, but I enjoy creating games so that people will play. Making games - it's about passion in the moment. People think that making video games and playing video games is all about isolating yourself and taking yourself away from other people. But, in fact, it really is teaching you logical skills that help you work with people and help you be able to process the logic of stuff that is acceptable and is not acceptable in social encounters.

Consistent with the conceptualization of occupation as described by Zemke (2004), this theme provides a figurative way to imagine play as rotating and revolving like the numerous glass beads in a kaleidoscope. Picturing play as comprised of multiple shared elements (e.g. objects played with, social context, physical context, and meaning) and capable of a wide variation in patterns as with the ever-changing arrangement of glass beads within the kaleidoscope, illustrates how play looks differently for each person. This dynamic and complex nature of play is comprised of the changing arrangement of the metaphorical glass beads created by each unique play experience that is grounded in context while meaning is infused and derived from each experience for each individual person. The play memories analyzed for this study are

only a snapshot, an individual moment, of each participants' occupation of childhood play and its thread through their adult life. However, the qualitative findings reflect the dynamic elements of play, the rotating and revolving glass beads in the kaleidoscope, which were recognizable across various play experiences in children's lives.

The continuity of play across the lifespan. The qualitative data also illustrated the emergent theme of continuity of play across the lifespan. The process of reflecting on childhood memories of play highlighted the links between childhood play and the framework of our lives as adult occupational beings. This theme depicts how childhood play is not as remote from adult life as may be perceived; rather, childhood play is an integral part of who and how we are as adults because play shaped what we do, what we prefer to do based on the meaning derived from play, the occupational beings we have become, and to which social circles we belong.

Relational experiences. The continuity of play across the lifespan theme included reflections of people's sense of belonging in relationships that stemmed from shared doing, in which people most often were participating in collaborative play experiences. This was evident through salient statements related to the lifelong relational experiences that were forged through play. For instance, one participant gave a rich description of how playing Jenga was the catalyst to a long-lasting friendship:

Eventually it ended up being just me and this shy girl playing Jenga on a picnic table.

Despite the fact that we were playing a game together, she seemed annoyed by me, as if she were just playing this game to pass the time and would much rather be far away from me. I tried to make her laugh, I teased, I joked, I started stacking blocks in different ways that were not according to the rules. I managed to get a small smile out of her and that was all that I wanted...She later informed me that she hated me that night that we met.

She hated my jokes and the way I teased. The silly and playful way that I played Jenga made her laugh a little even though she hated me. Since then, I have overcome the hatred she felt toward me. Three-and-a-half years later, this girl and I are each other's best friends. Jenga is not just a game of building blocks to me anymore. Jenga was the building blocks to a relationship with my best friend.

Meaning. The theme of the continuity of play across the lifespan also highlighted that what many participants do or prefer as an adult is a result of the meaning derived from a favored childhood play experience. Play memories also demonstrated that the meaning derived from play also provided participant's a sense of satisfaction throughout the lifespan. One participant vividly illustrated the personal meaning infused into a toy by her grandfather and the meaning derived from the toy across her lifespan:

When I was about three years old, my grandfather built a dollhouse from scratch for me. I loved spending time with my grandfather and I remember visiting his house while he was working on it. The outside of the house had light blue siding with white trimmed windows and blue shutters. The dollhouse looked just like the house that my family was living in at the time and even had the same house number. Each room was decorated with carpeting, wallpaper, and even lights that were functioning. There was a kitchen, dining room, living room, bathroom, study, and bedrooms. One bedroom was even decorated pink like my own bedroom. I was so excited when my grandfather finally finished it. I had such fun arranging the furniture and playing with my family of dolls in the dollhouse for hours. Even though I do not "play" with my dollhouse today, it is still very important to me. On one side of the house, there is a plaque that reads, "This house was built with TLC by Grandpa." I have a great appreciation for the time and work that

my grandfather put into this dollhouse in order to create a one-of-a-kind gift for me. It is a very special memory of my grandfather and the house that I grew up in when I was younger.

Another example of cultural and personal meaning infused and derived from a toy, was provide by Charles who gave a description of his most unusual Christmas spent traveling back with his family from the Korean War and stopping in Hawaii on Christmas Day:

My dad was in the Air Force and we had been sent to the Phillipian Islands when the Korean War had broken out. They put all the families in a boat and sent us back to the United States...After a typhoon, we reached Hawaii and they let the service men off to get presents for their children and my dad got me a Hawaiian doll. And to this day I still have the Hawaiian doll as part of collection of foreign dolls that I have. That Hawaiian doll symbolized that I would return back to Hawaii because on there it said that if you came to Hawaii and you had a lei, you would throw it over the side, and you would return. And after I was 84 years old and married, I came back to Hawaii.

Identity development. The continuity of play across the lifespan theme also embodied how several participants identified doing as a vehicle for change (becoming); especially when the doing created or was in accordance with the person's sense of meaning as an occupational being. This was evident in the retrospective play memories in how participants described aspects of their own occupational being when reminiscing about their childhood play experiences. This was most often observed in participants' descriptions of their own sense of self, athletic ability, or level of self-esteem and how that was influenced through engagement in play. For instance, Spencer gave a textured description of how his sense of self was influenced through play with Hot Wheels with a friend:

It was middle school and as a kid with Asperger's, I struggled at school. I was in classes where I was being challenged and had plenty of behavioral problems. In these darkest of days, I turned to collecting Hot Wheels, and me and another kid would enjoy playing with them. Hot Wheels brought us together and took our mind off the troubles; for some reason these works of art drew us into a world where we were in control. We had control on what cars to buy and where to put them and where to drive them. In an environment where a lot of things sometimes seemed out of our control, these cars helped provide a refuge for us. We would look them up to learn the history and designers. Fantasize about historical Hot Wheels. This was a shelter that protected us from the storm. Now I am in 11th grade and on my way to college, all thanks to me and my friend's Hot Wheels obsession.

Other participants discussed how their sense of identity in regard to athleticism and self-esteem were influenced through engagement in play with toys and games. For example, Shannon described how playing badminton with her mother in their backyard when she was about 10 years old influenced her sense of self-confidence:

I've never been very athletic, but for some reason badminton and I really took. My mom and I would go out and we would play so often in the backyard...It was actually really good exercise. I think the reason I loved it so much was because it was the first sport I actually played and enjoyed and was not horrible at. It actually improved my badminton skills enough that the next time we had badminton class in gym, I actually was able to hold my own and not look like a complete fool like I usually did!

Full circle. The theme of continuity of play across the lifespan was also evident in participants' reflections of how play has come full circle into their adult life. This was evident in

participants reminiscing about the temporality of play, the enduring qualities of play into adulthood, and the interrelationship of the doing and becoming process from childhood to adulthood. A variety of participants described the temporality of play; specifically, a perspective of play from their childhood to the current state of play at the time of data collection. Ultimately, the play memories highlighted the importance and value of toys that participants perceived to be timeless – those toys they had as a child, continue to have as an adult, and now engage with their own children. The play memories had a feeling of nostalgia related to the belief that a person can never grow too old for play and play with toys.

For those participants who made comparisons of their own play experiences, almost all described children's play at the time the data were being collected from a deficiency perspective. Deficiencies that were mentioned included imaginative and creative abilities, spontaneity and initiation of play, unstructured time for play, caregiver supervision, and less risk taking in play. Numerous participants described the current state of play as being more “manufactured by companies and corporations.” An example of this comparison is illustrated in the following play memory:

This always happened kind of, I don't know, 8 or 9 o'clock when it was starting to get good and dusky so that there were even more hiding places than there would've been in bright sunshine...I don't know how we knew that this was going to happen. I don't remember whether somebody sort of established “Oh, we'll see you later we are going to play Kick the Can tonight,” but, it just sort of took place. I'm not sure that's the kind of neighborhood play that happens anymore. At least when I'm walking the dog at 9 o'clock at night nobody is out on the street in my neighborhood anymore, playing these kinds of pick-up games, that you just recruit people to come and join in on the fun.

Another participant reflects upon previous versus current states of play in regard to the temporality, the unstructured nature of play, and the autonomy given to children due to play occurring outside of the supervision of adults:

...Kids nowadays don't have those fun outdoor games. I mean, they have jump rope and freeze tag and stuff, but they tend to like video games. Whereas when I grew up, we played outside until the street lights came on, until it was dusk, and our parents would yell for us to come back inside. I loved growing up in New York City, because there was always so many people on the street. Whereas up here, you have to look for friends and schedule "play dates."

Some participants' play memories were indicative of how aspects of their childhood play maintained throughout their adulthood. This was evident through salient statements reflecting some of the toys and play experiences the participants played with as children were still being played in their adult years. Additionally, some participants mentioned how some of the skills and dispositions learned through play as a child were still present in their adult lives. The following participant illustrates the enduring nature of a favorite toy and the influence of this play across his lifespan:

When I was seven years old I discovered my first Dungeons and Dragons box set. Up in a friend's attic we were looking for his older brother's comic books and we found the original red box... We tried playing and even roped some other friends into the game. From that moment on for the next twenty-six years I was hooked. Not just with Dungeons and Dragons but role-playing games in general. Everything I ever took an interest in from reading to what classes I took in high school stemmed from that fateful day in the attic. This game, Dungeons and Dragons has comforted me throughout my life.

Memories of many Friday nights and weekends with my friends are just starters. It has helped with dreadful break ups with girlfriends and it has even helped me through deaths in my family. The game has inspired me to take up writing and even submitting material to the game today. Even my son and I spend time with friends playing Dungeons and Dragons. What a unique experience to share with my own child! The game has left such a mark on my life and I wager it will continue to do so another 33 years from now.

The relationship between doing and becoming was also a salient feature of the continuity of play across the lifespan theme. Numerous participants framed ideas about their current adult selves around the evidence of meaningful engagement in childhood doing. For instance, some participant's alluded to the alignment between their favorite childhood toy and the occupational career they chose in adulthood. An example would be play memories that described playing school as a child and growing up to be a school teacher. Maurine described the meaning infused and derived from her favorite childhood doll and how that had a possible influence on her adult career trajectory:

My favorite toy was when I was growing up would be a Thumbelina doll. I got the doll when I was young and carried her wherever I went and she slept with me every night. And I remember one time when I was younger and I was in the hospital and I had croup...and I had my Thumbelina doll. She lost all of her hair due to the humidity in the hospital tent. But, I still loved her, and after I got out of the hospital I carried her all over and I still have her to this day. I also think another part of the story, which is nice to remember, and probably why I am where I am today is that my Thumbelina doll reminds me of the babies that I take care of now today. I take care of moms and babies.

Additionally, many participants reminisced how their childhood play transitioned into their adult life through their own childrearing practices and the carrying-on of family traditions established through play. The following play memory illustrates this doing and becoming relationship:

A Christmas tradition that we started when our kids were young and that goes back a long time is that they got to open one present on Christmas Eve and it was always a new pair of pajamas! It was the kind that had the feet in them. They would get into their pajamas and they'd say goodnight and go to bed and wake up Sunday morning and they were all in their new PJ's when they came back for the tree. Now my son is starting a family and the tradition is getting carried on. Eddie [grandson] is getting pajamas on Christmas Eve and wearing them like his Dad did.

Integration of Quantitative and Qualitative Data

A mixed methods research design integrates both quantitative and qualitative data into a single study (Creswell & Plano Clark, 2011). The integration of data for this study occurred through a mixed methods convergent parallel design (Creswell & Plano Clark, 2011; Teddlie & Tashakkori, 2009) to allow for an enhanced understanding and more robust insight into the conceptualization of the Framework of Doing-Being-Becoming-Belonging (Wilcock, 2006; Wilcock & Hocking, 2015) as an interactive developmental trajectory that is central to how individuals come to consider the types of toys enjoyed during childhood as an important aspect of occupational engagement that contributes to one's future adult creative potential as an occupational being. The quantitative data and qualitative data were collected and analyzed separately and then compared using a side-by-side method (Creswell & Creswell, 2018) to gain a

more comprehensive understanding of the relationship between preferred childhood toys and adult creative potential.

Earlier research has suggested that childhood play is treated as the primary antecedent for cultivation of the interests, skills, and abilities needed for competencies in adulthood. This was mirrored in the qualitative phase of this study; specifically, in the theme related to the continuity of play across the lifespan, which highlighted engagement in play as an integral contributor to a person's future occupational being in adulthood. Adult participants from the Strong's *America at Play: Play Stories Video Archive* did report lifelong benefits of early play experiences in their retrospective play narratives. Benefits mentioned in the narratives ranged from participation in play or with the toys enjoyed as children into their adult years, enduring long-term social bonds and friendships that were forged in childhood adulthood, the continued presence or pursuing of specific skills learned through childhood play (e.g. imagination and concrete skills), and the influence of childhood play on their own child-rearing practices as an adult. Additionally some participants described an alignment between their favored childhood toys or play experiences and the careers they chose as adults. The findings from the qualitative theme, begin to explain the quantitative results.

In occupational therapy, previous research has explored the benefits of play for children; however, there is a reported need for future research with a focus on how play is relevant throughout the lifespan and the application of play for adulthood. The quantitative phase of this study aimed to provide a foundation for identifying the common types of toys participants recalled engaging with during childhood as well as if those toys were predictive of a person's creative potential in adulthood.

One component of the objective quantitative data demonstrated a statistically significant difference in the types of toys played with during childhood between samples of adults across the three generations in this study obtained by the Retrospective Childhood Play Inventory. An ANOVA indicated a statistically significant difference between all three generations in each of the seven toy categories with the exception of the categories of Build and Non-Play Items Used as Toys. These quantitative results supported the qualitative findings from the subthemes related to the temporality of play. Specifically, these quantitative and qualitative phases demonstrated how play is a phenomenon conditioned by time period, which in this study was related to the decade in which participants grew up. The quantitative phase indicated that the oldest generation in this study, the Baby Boomers, played mostly with toys in the Non-Toy Games and Move category. These findings were mirrored in the retrospective play memories in that participants in this generation played more outside games involving an active component, over long periods of time, and without much adult supervision. In this study, Generation X demonstrated the most varied play with toys in both the quantitative and qualitative phase. The millennial generation demonstrated some variances in what was reported in the quantitative phase versus the qualitative phase. Specifically, the quantitative phase indicated this generation played with more toys in the Create and Compete categories on the Retrospective Childhood Play Inventory, whereas the qualitative theme was reflective of less toys classified in the Create category and more play memories involving technology-augmented toys and play themes involving toys that were influenced by commercialism, such as television and other media.

The quantitative data also purported that, although there was a statistically significant difference between group means of creative potential, as measured between the Millennial and Baby Boomer generation and between the Millennial generation and Generation X, there was

little to no relationship between the type of toys used during childhood and creative potential as measured by the RIBS-S. Additionally, a step-wise bivariate linear regression analysis indicated that the types of toys used during childhood, as measured by the Retrospective Childhood Play Inventory, were not predictive of creative potential in adulthood, as measured by the RIBS-S.

This study's quantitative results did support the need for research on this topic from a lifespan perspective; however, they did not support existing research that alluded to how creative potential is facilitated in adulthood through childhood play, specifically with certain toys (Healey et al., 2019; Lloyd & Howe, 2003; Russ, 2013; Russ & Christian, 2011; Singer & Singer, 1990; Sutton-Smith, 1986; Yogman et al., 2018). The fact that there were no statistically significant findings in the quantitative phase related to the relationship between the types of toys frequently used during childhood play and adult creative potential may be explained by the primary qualitative theme that emerged from this study: the kaleidoscope of play. This theme reinforced existing research related to the universal existence of play and that the engagement and expressions of play can be influenced by a variety of factors. Some of these factors that were mirrored in the kaleidoscope of play theme included the objects played with, physical context, social context, cultural context, temporal context, and the meaning infused and derived from play. These factors simultaneously contribute to the various dimensions of occupational engagement of play. The lack of a statistically significant finding in the quantitative phase corroborates the intricacies of the qualitative findings regarding the lived experience of human occupation, including both the individual dimensions of these factors and their interdependence upon one another.

Certain components included in the kaleidoscope of play theme support previous research indicating that specific factors foster a child's creativity across the lifespan. Components in the

kaleidoscope of play theme that were similar to previous research include, the temporal context (e.g. time for unstructured play, time to just be, and a flow experience), the social context (e.g. child-rearing practices and play as a relational experience), and the physical context (environments that foster a child's autonomy and self-confidence). However, this study focused only on the extrapolation of one small glass bead of the kaleidoscope of play, the creativity /divergent thinking component. The findings illustrate the caution required when focusing on one single aspect of play as well as one single component of adulthood, as play was identified as a complex and multidimensional process involving a variety of interconnected factors that are individualized to each person and each person's specific contexts. Thus, making it challenging to determine the influence of childhood play on the creative potential in adulthood. Rather, the findings suggest that each of these interconnected factors making up the glass beads of the kaleidoscope of play, including the physical context, social context, cultural context, temporal context, and the meaning infused and derived from play, are important in the play experience and the successful development of creativity/divergent thinking in a person.

Summary

Chapter 4 depicted the findings of the mixed methods study that highlighted the relationship between the types of toys frequently used during childhood and adult creative potential. The quantitative data from the Retrospective Childhood Play Inventory provided information regarding differences in the types of toys played with during childhood across all three generations studied in this research. The quantitative phase of this study also indicated a statistically significant difference between group means of creative potential in adults across three generations. However, results did not show a statistically significant relationship or

prediction between the types of toys used during childhood, as obtained from the Retrospective Childhood Play Inventory, and creative potential in adulthood, as measured by the RIBS-S.

Qualitative data were also analyzed to add an enhanced understanding and more robust insight into the Framework of Doing-Being-Becoming-Belonging (Wilcock, 2006; Wilcock & Hocking, 2015) as an interactive developmental trajectory that contributes to one's future adult potential as an occupational being. The qualitative findings yielded the two emergent themes of the kaleidoscope of play, and the continuity of play across the lifespan. Furthermore, integrating the quantitative and qualitative results illustrated the complex and integrated phenomena of play, while highlighting the links between childhood play and who we are as adult occupational beings. While there are numerous factors that foster or hinder the development of creativity, the results from this study can be used to supplement scholarly literature in developing creativity through play while also serving as a foundation for future instrument development for retrospective childhood play with adults.

Chapter 5: Discussion

The focus of this chapter is to discuss the findings of the study and to explore the relationship between the types of toys frequently used during childhood and adult creative potential. Additionally, this chapter will provide interpretive results regarding the enhanced understanding of the contribution of play to human development by identifying themes of childhood play experiences specific to the constructs of the Framework of Doing-Being-Becoming-Belonging (Wilcock, 2006; Wilcock & Hocking, 2015). The body of existing research regarding childhood play has explored the relationship between play and childhood development from both a quantitative and qualitative perspective (Brown, 2009; Russ, 2013; Sandberg, 2001; Sandberg & Vuorinen, 2008); yet, questions remain and further research on the long-term influence of childhood play into adulthood is recommended. There remains paucity in the play literature specific to a lifespan perspective focusing on childhood play and its influence into adulthood utilizing comprehensive approaches with both quantitative and qualitative data.

This dissertation study utilized a mixed methods convergent parallel design (Creswell & Plano Clark, 2011; Teddlie & Tashakkori, 2009) consisting of two distinct strands. The quantitative strand of the study utilized two online instruments, the researcher-developed Retrospective Childhood Play Inventory to quantify a person's use of childhood toys, and the RIBS-S (Runco et al., 2014) to quantify creative ideation. Data from these instruments were used to measure the types of childhood toys that are most predictive of adult creative potential. The qualitative strand of this study involved analysis of retrospective play stories from existing archives at The Strong National Museum of Play. This was done in order to add depth and meaning to the study by providing insight into the complexity of childhood play and into the constructs of the Framework of Doing-Being-Becoming-Belonging (Wilcock, 2006; Wilcock &

Hocking, 2015). For this study, the quantitative and qualitative data were complimentary; therefore, utilizing a mixed methods design offered a more enriched understanding from both methods regarding how childhood play contributes to the development of creative potential in adulthood. This mixed methods study answered the following quantitative and qualitative research questions:

Quantitative Research Questions

1. What are the differences in the type of toys used during childhood between samples of adults across three generations?
2. What is the relationship between adult creative potential and the type of toys used during childhood among a sample of adults across three generations?
3. Which types of childhood toys are the most predictive of creative potential in adulthood?

Qualitative Research Questions

1. What is the experience of childhood play?
2. In what ways are childhood play experiences aligned with concepts from the Framework of Doing-Being-Becoming-Belonging (Wilcock, 2006; Wilcock & Hocking, 2015)?

Interpretation of Quantitative Results

The quantitative data collected by the researcher-developed Retrospective Childhood Play Inventory and the RIBS-S (Runco et al., 2014) illustrated the relationship between the types of toys frequently preferred during childhood and adult creative potential. Results of the first research question found a statistically significant difference in the types of toys used during childhood across the three adult generations as measured by the Retrospective Childhood Play Inventory. The statistically significant differences were evident across three generations in all

seven toy categories, with the exception of the categories of Build and Non-Play Items Used as Toys.

Results from the Retrospective Childhood Play Inventory provided important insights related to childhood play across the three generations in this study. Baby Boomers completing the Retrospective Childhood Play Inventory characterized their childhood play experiences with a primary use of Non-Toy Games and Move toys. These types of toys offered unstructured and outdoor play experiences with opportunities for spontaneous physical movement. Adding a complimentary layer to these results, the qualitative data were full of rich and meaningful play memories that were reminiscent of the temporal rhythms of daylight and darkness, long hours outside, little adult supervision, and rarely any extracurricular school activities that could have served as a barrier to play. While many Baby Boomers had the opportunity to have a television during childhood, the results from the quantitative strand of this study mark this generation as mostly screen-free.

The Baby Boomers provided a stark contrast to the Millennial generation, who characterized their childhood play experiences as most frequently using toys from the categories of Create and Compete on the Retrospective Childhood Play Inventory. Commonly selected toys included video games, electronic media games, and board games that provided opportunities for rule-following while competing against an opponent or one's personal best to build skill, chance, and strategy, and strength. The qualitative findings supported the quantitative data in that the play memories were reflective of immersion with technology-augmented toys that offered competition with others in a variety of environments, including the virtual play environment. Toys falling into the Create category allowed for innovation and the transformation of thoughts into things. This toy category received the highest creativity affordance index. Generation X

demonstrated what appeared to be the most balanced toy use of all three generations across all of the seven toy categories, with the exception of the Build toy category. This generation demonstrated a blend of the preceding and following generations. For instance, on the Retrospective Childhood Play Inventory, similar to the Baby Boomers, Generation X showed the highest toy use in the categories of Non-Toy Games and Move toys. The second highest rated toy categories for Generation X were the categories of Create and Compete, which were the most frequently used toys in the Millennial generation. These quantitative results support existing characteristics of Generation X of being adaptable and flexible. For instance, regarding technology and media consumption, this generation is still known to read the newspaper, listen to the radio, and watch television as previous generations; however, they are also digitally savvy as the Internet became a large part of their life and allowed them to adapt to the technological advancements of society (University of South Florida, 2020).

Although not included in the quantitative portion of this study due to the inclusion criteria, it is worth noting the generational comparison of those who had their childhoods prior to the 1940's, which was reported by some participants in the qualitative strand of this study. Compared to all generations in the quantitative strand, these generations characterized their childhood play experiences less by toys and more by people and places. It could be a result of having childhood during an era of war in the United States of America when resources were limited. This effect on the economy resulted in children having fewer toys and instead prompted participants to reminisce upon their childhood play occupations with the people and places that made play meaningful.

Another important finding from this research question is the steady linear decrease across generations in engagement with toys that promote outdoor play, spontaneous movement and

physical activity, and play with everyday objects. Also reported were decreasing ability to make up games and engage in unstructured play. This was observed on the Retrospective Childhood Play Inventory as a steady decline in the use of Move toys and Non-Play Items Used as Toys from the Baby Boomer generation to the Millennial generation. This steady decline from a highly favored to a less favored toy from the Baby Boomer to Millennial generation was also reported for the category of Non-Toy Games, which promotes opportunities for unstructured play, creativity, imagination, and outdoor play with peers. Figure 5 illustrates this decline in toy use in each progressive generation.

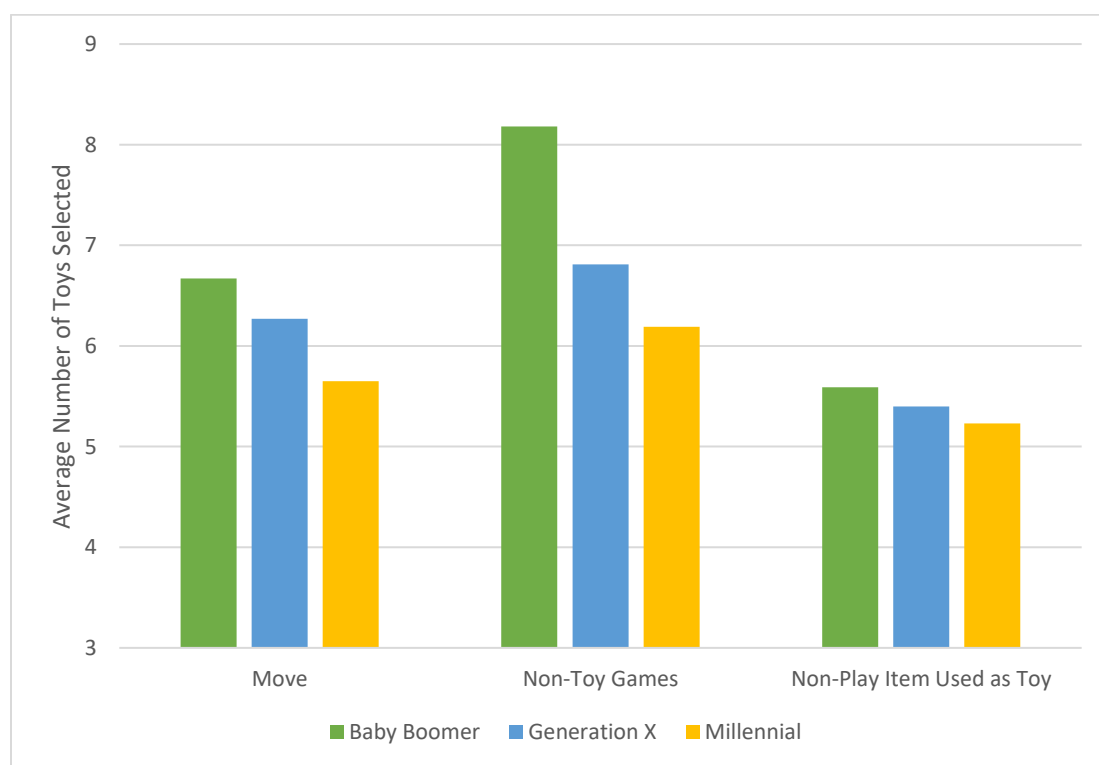


Figure 5. Comparison of the decline in types of toys played with by generations.

While use of toys in these categories declined in each progressive generation, there was a steady linear increase in favored toy use from the Baby Boomer generation to the Millennial generation in the toy categories of Imagine, Create, and Compete (see Figure 6). It was not in the purview of this study to determine why changes in toy use occurred; however, this

information does support existing literature regarding changing play patterns over time and gives implications for occupational therapy practice and future research, which is discussed later in this chapter.

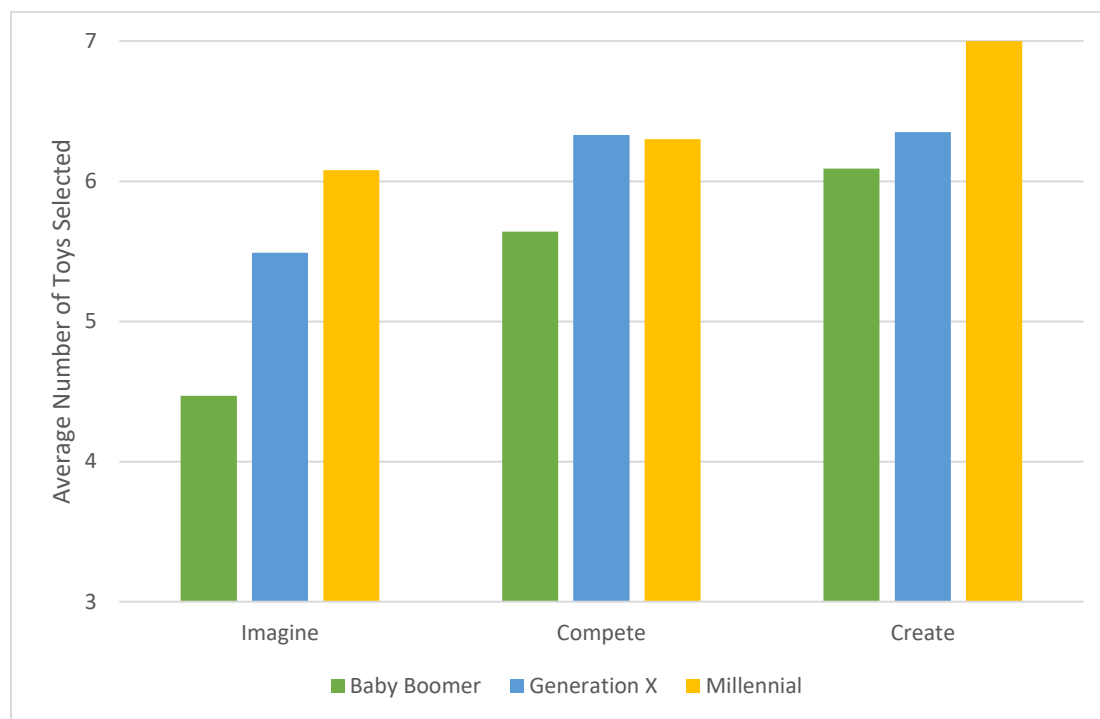


Figure 6. Comparison of the increase in types of toys played with by generations.

Ultimately, the results from this research question illustrate how humans are a product of their temporal and environmental contexts (Vygotsky, 1990). These results also indicate how the occupation of play is changing and often influenced by the time period and the time period's sociocultural context, including how some toys have remained the same over time while others have disappeared, changed, or have been newly created.

The quantitative strand also answered two additional research questions. The results of the quantitative strand indicated a statistically significant difference between group means of creative potential in adults across three generations. This difference, as measured by the RIBS-S, indicated that the Millennial generation had the highest level of creative potential of all

generations included in the research and that creative potential decreased with an increase in generational age. Although there was a significant difference between group means of creative potential across all three generations, the results did not indicate that the types of toys used during childhood had a statistically significant relationship or prediction on creative potential in adulthood as measured by the RIBS-S. These quantitative results are inconsistent with previous researchers (DuBois, 1997; Guilford, 1967; Lloyd & Howe, 2003), who purported links between the type of play items, use of materials, and divergent thinking.

Creating a sobering thought for people in the United States, who often collectively pride themselves on ingenuity, are results from a popular study purporting that, since 1990, despite increasing intelligence scores, the United States has been plagued by a creativity crisis, as evident by a steady decline in creative thinking scores among individuals of all ages (Kim, 2011, 2017). Children, who scored the lowest in creative thinking in Kim's (2011) study, were not included in this dissertation study. However, results from the quantitative strand of this study offer a perspective of hope to overcome the creativity crisis, as the youngest generation in this dissertation had the highest level of creative potential of all three generations.

These results serve to debunk the myth that the millennial generation was not afforded opportunities for a variety of play opportunities to facilitate the development of creativity and critical thinking skills. The common perception from earlier generations regarding children's contemporary play is that younger generations, including the millennial generation, are lacking certain desirable qualities that are facilitated through engagement in diverse play experiences during childhood. Society's current younger generations are often perceived as not being prepared for the complexities of daily life and roles in adulthood. One reason for this perception that was noted in the literature and supported by the qualitative findings of this study is due to

the increasing automation for ready-made lifestyles. The perception that earlier generations had more opportunities for hands-on exploratory play experiences, versus a preference for ready-made toys of recent play, was corroborated by the results from the Retrospective Childhood Play Inventory and the qualitative nostalgic play memories. Quantitative and qualitative results demonstrated how play is conditioned by the temporal factor of generational age differences. The results indicated that the Baby Boomers and Generation X had the most varied play experiences that specifically included play with more non-toy items, Move toys, and play in outdoor environments, which occurred for prolonged periods of time and with little adult supervision.

Interpretation of Qualitative Findings

Just as play is ambiguous with varying definitions, there were complex and individualized variations of play in the participant's play memories in this study. Two overarching themes were identified in the qualitative strand of the study that illustrated the meaningful influences of childhood play on a person's adult life, which led to a deeper understanding of the link between childhood play and a person's lived experiences and identity development in adulthood. The two emergent themes were the kaleidoscope of play and the continuity of play across the lifespan.

The play memories illustrated the value of play, described as the wealth of dimensions of play, the meaning play brought to one's life, and the foundation of play to a person's occupational identity. Participants recalled play that occurred with different individuals, in different physical and virtual environments, and play that occurred with meaningful and engaging toys and other objects. Play was also characterized by aspects of culture, temporality, and was infused and derived with meaning that was always different for each participant.

Additionally, the play memories of this study highlighted the continuity of childhood play and the evolution into adult occupational beings because of how play shaped what we do, what we prefer to do based on the meaning derived from play, the occupational beings we have become, and to which social circles we belong.

Adults' personal play stories from childhood demonstrated the importance of nostalgia in nourishing a connection between childhood and adult lived experiences. The intersection between these experiences helps inform the understanding of our own identity and the experiences we value during our present, adult lives. The process of nostalgia is similar to exercises described as selfing (Christiansen, 1999) and occupational storytelling and story making (Clark, 1993). These reflective practices represent the tracing of an occupational strand in a person's life and aid occupational therapy practitioners in clinical reasoning, while supporting the client in making meaning, identifying problems, and finding solutions for life challenges. Ultimately, the findings from this portion of the study were reflective of humanistic values and emphasized people's experiences and satisfaction with engagement in childhood play occupations. The emergence of these meaningful findings indicates the importance of considering the construction and interpretation of a person's narrative in occupational therapy practice, education, and research.

The qualitative strand of this study did not specifically focus on creative potential in adulthood, nor were the findings indicative of a direct link between the preferred toys in childhood and adult creative potential. Rather, the play memories were flooded with nostalgic descriptions of the contributions of childhood play to who the participants were as adult occupational beings. The play memories did not specifically mention the skill sets of creativity or divergent thinking; however, the narratives did include descriptions that have been suggested

in previous literature as being pre-requisites to these desired skills (Russ, 2013; Russ & Fiorelli, 2010). Common prerequisites to creativity and divergent thinking that appeared as salient features in the play narratives, included characteristics relevant to the temporal, social, and physical contexts, such as spontaneity in play, having time to immerse self in the play experience, opportunities for unstructured play or play that had child-imposed structure, facilitation of self-confidence, child-rearing practices, and environments that facilitated engagement in activities with opportunities to learn that a person can act upon the world and get a response. What could not be captured quantitatively in this study was highlighted qualitatively when participants described their play experiences in relation to growth as an occupational being. Based on the scope of this study, the precise way this learning occurred cannot be determined. However, it can be concluded from the rich descriptions of the retrospective play memories that learning through the doing process did occur in all generations, even if it was through different means.

Integration of Quantitative and Qualitative Findings

Findings from the Retrospective Childhood Play Inventory and qualitative play memories debunked common perspectives of contemporary childhood play and the possible contribution to a negative developmental progression held by earlier generations. Instead, findings indicated that millennials did play with different types of toys compared to the other two generations and that they also had varied play experiences across all types of toy categories. The results of this study indicated that the millennial generation was the generation that most frequently engaged in toys and play experiences from the toy category of Create out of all seven play categories on the Retrospective Childhood Play Inventory. Conversely, the retrospective play memories of

millennials aligned with the contemporary view of play. This view was noted through descriptions of play with technology, augmented toys, and toys influenced by commercialism.

It is important to recall that the RIBS-S is a divergent thinking assessment that only allows for estimation of a person's creative potential. Unlike the creativity crisis found in studies performed by Kim (2011, 2017) that included multiple subtests to measure not only creative potential but also critical thinking, this dissertation study only measured creative potential. Research indicates that it is possible for someone to score well on a divergent thinking assessment and never fulfill his or her creative potential or perform in a creative fashion. Therefore, although millennials did have the highest levels of creative potential it is possible that this generation may not be acting upon their own potential in a creative way. This means that a person's creative potential might not be fulfilled or be brought to fruition for use in creative problem solving or creative performance (Runco, 2008, 2014; Runco & Acar, 2012; Runco et al., 2000-2001). This perspective could provide an explanation to the current societal stigma of today's youth being a product of their environment, while also resulting in similar disturbing data that creativity is consistently decreasing in younger age groups (Kim, 2011, 2017). However, an alternative perspective can be drawn from the data of this study that perhaps younger generations of today are not void of creativity or divergent thinking, but rather have the potential that simply needs to be tapped into or facilitated through various opportunities so that a person's creative potential can be fulfilled and executed (Schmid, 2005).

Qualitative findings from this mixed methods study demonstrated that many participants from earlier generations viewed generational differences in play as insufficient and as influencing a person's creative potential. Juxtaposed to the insufficiency perspective, the integrated findings from this study can offer a different perspective, which proposes that

although the faces of play may have changed over time it does not necessarily mean that the development of creative potential and divergent thinking in children have suffered or are insufficient. Rather, the findings are indicative of a perspective that although children are playing differently from generation to generation, people are still engaging in the rich and meaningful play experiences they need and thus, have potential to obtain the developmental outcomes they require. This study lends itself to the possibility that children may no longer develop creativity in the same way as earlier generations. This is similar Sandberg and Vuorinen (2008) who reiterated society's current challenges to children's creativity and proposed a perspective that the decrease in creativity may not be within children, but rather with adults who lack the divergent thinking skills to perceive how new tasks can be solved in innovative ways or who lack the perception to notice the potential for play that exists in ready-made toys.

Therefore, the integrated findings of this study, combined with previous research, offer optimism and expansive opportunities for the future of creative potential and divergent thinking across the lifespan. Adapted with permission (see Appendix I) to highlight the integrated findings of this study, Figure 7 illustrates how engagement in childhood play contributes to a person's evolution into an occupational being in adulthood. This figure does not depict a timeline or temporarily; rather, it showcases how all aspects of occupation (i.e., doing, being, becoming, and belonging) happen simultaneously. It is not until all constructs are considered collectively that the person can be viewed as an occupational being. For occupational therapy, this perspective demonstrates the opportunity to not simply focus on one construct of occupation, such as doing, as this does not provide meaning and would not tap into who someone is as an occupational being. Figure 7 illustrates the layered and growing depiction of becoming an

occupational being and reinforces the need to focus on more than one aspect of occupation during the therapeutic process to help shape one's identity.

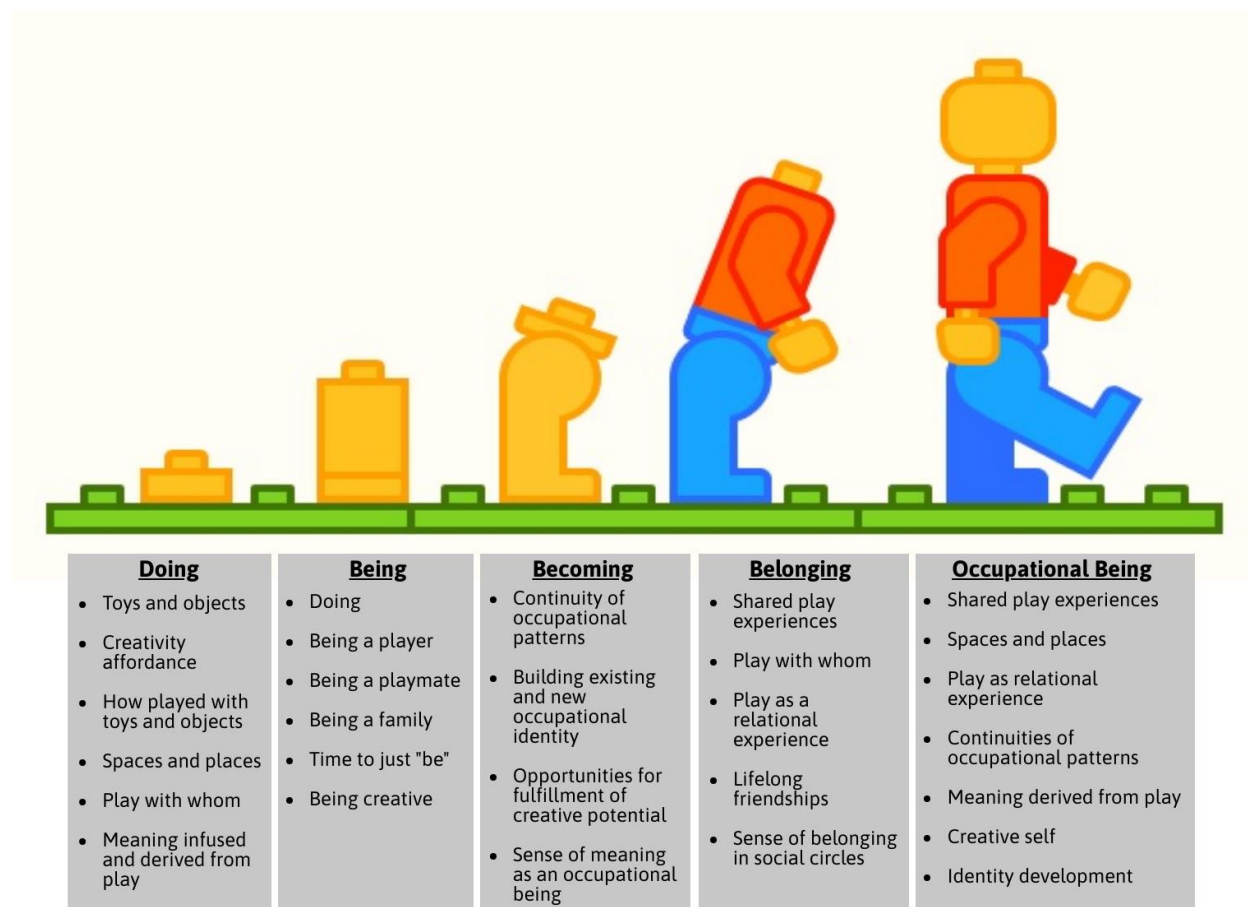


Figure 7. Evolution into an occupational being through play.

Moving forward, it will be imperative to focus on providing opportunities for the abetment of a person's creative potential through facilitative environments and varied play experiences in order to dramatically shift the continuous trend of existing research pointing to decreasing creativity among adults (Kim, 2011, 2017). Additionally, a paradigm shift toward facilitation of creative potential would require the encouragement of people to become motivated to be more creative as well as to be cultivated, inspired, and encouraged by creative opportunities existing in their overall home, school, and societal environments.

Relationship to Previous Literature

Data collected from adult participants in the quantitative strand and from the existing data in the qualitative strand are both supportive and inconsistent with earlier research on children's play and its relationship to adult character. Additionally, the findings from this study add insight into the importance of occupational engagement in childhood play.

The prominent finding of the first quantitative research question was the statistically significant difference in the types of toys used during childhood across adults of all three generations as measured by the Retrospective Childhood Play Inventory. The qualitative findings of this study provided an unintended, but additional layer of meaning to the quantitative results related to insights on childhood play across generations. Themes from the nostalgic play memories elucidated a sense of temporality and generational comparisons between how older participants recollected their own play experiences and their perspectives on current children's play. These integrated results are mirrored in previous literature (Chudacoff, 2007; Henniger, 1994; Nicholson, Shimpi, Jevgiovikj, Kurnik, & Ufoegbune, 2015; Sandberg & Vuorinen, 2008) and in national reports (Ginsburg, 2007; Healey et al., 2019) concluding that considerable differences exist in contemporary children's play and previous generations. There is a general consensus among these scholars that modern childhood play is more sedentary, passive, structured by others, more likely to be indoors versus outdoors, and less likely to be active or creative than in previous generations.

Salient descriptions from the qualitative play narratives corroborate the previous literature marking differences in play across generations, including: fewer opportunities for younger children to engage in outdoor play, fewer opportunities for hands-on play to promote imaginative and creative abilities, the influence of easier access to technology, less risk-taking in

play, more toys that are influenced by consumerism and marketing, as well as societal norms influencing a more structured nature of play with an increase in adult supervision and decrease in autonomy in children of all ages (Brown, 2009; Ginsburg, 2007; Gray, 2011; Russ & Dillon, 2011; Yogman et al., 2018). Previous literature (Chudacoff, 2007; Ginsburg, 2007; Yogman et al., 2018) did find additional generational differences that were less represented in this study, including pressured lifestyles and changes in play for children living in diverse countries outside of the United States of America (Singer & Singer, 1990).

While results from the Retrospective Childhood Play Inventory were not intended to indicate the rationale for the change in toy use across generations, the results do support the aforementioned previous literature regarding decreasing engagement in outdoor play, play with toys that promote spontaneous and physical movement, and play with everyday objects and made-up games to promote imagination than previous generations. This was seen on the Retrospective Childhood Play Inventory as a steady linear decline in the use of Move toys and Non-Play Items Used as Toys from the Baby Boomer generation to the millennial generation (see Figure 5). This steady linear decline was also reported for the category of Non-Toy Games, which also promotes opportunities for unstructured play, creativity, imagination, and outdoor play with peers (see Figure 5). Changes resulting in an increase in toy use or play patterns may also have positive effects, as play is often perceived as being supplemented with more technology-based toys. For example, there are mixed reports of the use of technology being linked with increased intelligence; although, some health professionals correlate technology and play with a more sedentary lifestyle and health outcomes (Glass, Maddox, & Love, 2013; Grover, 2017).

Previous research has explored modern barriers to facilitating a variety of play experiences in today's society, including an increased focus on academic achievement reducing the amount of unstructured time or recess during the school day, more caregiver involvement in over-scheduling of adult-structured activities in lieu of unstructured child autonomy, increased time consuming technology, parental fear of predators and crime in outdoor play environments, and the overall reduction of play spaces in community environments (Brown, 2009; Ginsburg, 2007; Gray, 2011; Russ & Dillon, 2011; Yogman et al., 2018). The qualitative findings of this study were supportive of previous research regarding barriers to play. Although a specific prompt was not given to participants who shared their retrospective play memories, barriers to play were still recollected in some of the qualitative narratives of this study. Adults recollected barriers that challenged their ability to play including, bullying by other children, living in a rural area with limited access to play spaces or other children to play with, as well as a lack of desirable toys or play items. Inconsistent with previous literature, participants in the qualitative portion of this study perceived these barriers in a positive manner. For instance, one participant reminisced of how he did not have a desired toy growing up as a child. However, since the only way to play with the desired toy was to seek out and engage in play with other children who had the toy, this barrier was viewed positively by the participant as a way to facilitate social engagement with others. Similarly, when no toys were available, participants often recollected how this provided opportunities to engage in imaginative play to creatively construct a play world similar to what was desired. Rather than being perceived as a barrier, these qualitative findings support studies such as Sandberg and Vuorinen (2008) that eluded to how perceived barriers to play, such as a lack of readily available toys or neighborhood friends to play with,

could be considered a prerequisite for the development of childhood creativity, critical thinking, initiative, and social skills.

Participants in the qualitative strand also recollected the influence of society's current barriers to play when comparing their own childhood play to that of younger and current generations. For instance, many participants recalled how the increase in adult-directed activities have replaced their own fond memories of child-directed free play, 'pickup' games, and simple unstructured time to just "be." Additionally, many older participants recalled the enjoyment, value, and learning opportunities that stemmed from risky and dangerous toys or play experiences in their own childhood. Participants were reflective of how opportunities for this type of play seemed to be diminishing in younger generations due to an increase in adult supervision and overall overprotectiveness of children due to a variety of societal fears.

A surprise in this dissertation study was the lack of significant findings between types of toys used during childhood and adult creative potential among a sample of adults across three generations. Despite numerous experts supporting the value of play and toys, there remains a dearth of literature in specific areas related to the critical role of toys to human growth and development or the effect of toys on divergent thinking across the lifespan (Healey et al., 2019; Sutton-Smith, 1986). Most research on play and creativity has focused specifically on the connection between one type of play, pretend play, and divergent thinking in childhood (Russ, 2013; Russ & Wallace, 2013). This study involved the creation of the Retrospective Childhood Play Inventory to capture quantitative data related to the toys used by a participant in childhood. Through the pilot study and use of the Delphi method, play items were assigned a creativity affordance index, with higher scores indicating a higher level of creative opportunities afforded by the particular play item. The creativity affordance index scores from the Retrospective

Childhood Play Inventory support Guilford's (1967) contention regarding close-ended and open-ended play materials. On the Retrospective Childhood Play Inventory, higher creativity affordance index scores were given to open-ended play items (e.g., Play-Doh and blocks) and lower scores were assigned to more closed-ended play items (e.g., puzzles and board games). The pilot study for the Retrospective Childhood Play Inventory included a question related to the intrinsic property of the play item to assign a creativity affordance index to each play item. Therefore, results of the Delphi method completed for the Retrospective Childhood Play Inventory supports Guilford's contention that closed-ended materials lead to single or prescribed use and open-ended materials (e.g., Play-Doh and blocks) provide opportunities for multiple use and non-intended use of the play item. Complementary to previous research regarding pretend play and divergent thinking, the quantitative portion of this study did find that toys frequently used to foster pretend play, those categorized in this study as Non-Toy Games, Imagine, and Create, received the highest median and mean creativity affordance index of all the seven play categories on the Retrospective Childhood Play Inventory. Guilford and other researchers (DuBois, 1997; Lloyd & Howe, 2003) also hypothesized that open-ended play materials may facilitate divergent thinking and closed-ended play materials had the potential to promote convergent thinking, which was a central research questions of this study. Findings of this study were inconsistent with previous scholars as little to no correlation or predication were found between the creativity affordance index of what a participant played with in childhood and creative potential in adulthood as measured by the RIBS-S.

Differing sharply from the literature supporting the pretend play-creativity hypothesis, Lillard et al. (2013) performed a review of evidence from experimental studies and concluded that evidence for the effect of play on creativity was not convincing. Findings from this mixed

methods dissertation study both support and dispute the conclusions of Lillard et al. For instance, similar to the review by Lillard et al., the quantitative strand of this study did not report any convincing or significant findings linking the types of toys played with in childhood to adult creative potential. Another reason for Lillard et al. debunking the link between play and creativity was the possibility that play's effect on creativity could be moderated by one or more variables. Results from the qualitative strand of this study support this aspect of the findings from Lillard et al. related to a variety of constructs influencing play and creativity that were elucidated in the theme of the kaleidoscope of play. However, this study differs in that it perceives this finding as supportive of the play-creativity hypothesis.

One possible reason for this contrast is due to Lillard et al. (2013) discounting other methodologies in the review of literature. Scholars have documented play memories for decades and noted the value of capturing play histories as an opportunity to illuminate not only important individual elements of a person's history, but also to the variety of contexts of a person's learning and development from childhood to adulthood (Brown, 2009; Henniger, 1994; Nicholson et al., 2015; Russ, 2013; Sandberg, 2001, 2003; Sandberg & Pramling Samuelsson, 2003; Sandberg & Vuorinen, 2008; Wang & Peterson, 2014; Wells et al., 2014). Play memories add a rich layer of meaning and purpose to the subject of play and development. The enriched meaning gleaned from the qualitative strand in this study is what led the results to diverge from the work of Lillard et al. The results from this dissertation study demonstrated that when qualitative play memories are used to support quantitative data it provides the possibility for enhancement of results from both methodologies and an enriched understanding of the research questions.

The play memories from this study highlighted variables other than creative potential that were influenced by play. For example, a person's sense of belonging as well as identity development were constructs highlighted in the qualitative strand. These variables, either singularly or collectively, had a part in the development of participants' occupational being into adulthood. Rather than being dismissed, the textured analysis of human meaning and growth could serve as a foundation for future studies of similar hypotheses. Although play with toys and creative potential/divergent thinking are not essential or the sole source of the development of the creative thought processes, they do contribute to the greater whole of development. The converging evidence from this study builds upon previous research in suggesting that play with toys does help children develop creatively through various ways into adults.

Relationship of Results to Guiding Theoretical Perspectives

A variety of theoretical perspectives were used to guide this study's analysis of the multifaceted dimensions of creativity and play across the lifespan as well as to how childhood play contributes to the development of creative potential in adulthood. Theoretical perspectives used to frame this study included the Occupational Behavior frame of reference (Reilly, 1974), the Theory of Creativity: An Innate Capacity (Schmid, 2005), and the Framework of Doing-Being-Becoming-Belonging (Wilcock, 2006; Wilcock & Hocking, 2015).

Occupational Behavior

This study used the knowledge of occupation as highlighted in Occupational Behavior as an organizing theoretical perspective. Since the literature supports play as a primary occupation of childhood, it serves as a major medium for assessment. Therefore, the researcher-developed Retrospective Childhood Play Inventory utilized in the quantitative strand of this study was grounded in the theoretical constructs of occupational behavior. The instrument functioned as

anticipated and was effective in enabling the researcher to gather information regarding participants' retrospective toy use during childhood.

A major hypothesis of the Occupational Behavior theoretical perspective is that childhood play serves as a vital foundation and prerequisite for the development of the adaptive skills and competency necessary for later demands in daily living and the occupational roles of adulthood (Reilly, 1974). As a result of analysis of the qualitative data, unanticipated but rich findings were gleaned. One emergent theme, the continuity of play across the lifespan, included categories related to the relational aspects of play, meaning derived and infused from play, identity development through play, and how play came full circle from childhood to adulthood. The results reflected in this theme are supportive of the major hypothesis of the occupational behavior theoretical perspective as illustrated in how adult character, competence, and a sense of self as an adult occupational being was grounded in the occupational engagement of play during childhood.

Theory of Creativity: An Innate Capacity

This mixed methods study used the Theory of Creativity: An Innate Capacity to intentionally guide the creativity portion of this study, specifically the link between creativity, occupation, play, and health. This theoretical perspective is grounded in occupational therapy and occupational science, and provides an occupation-based lens to view creativity within the capacity of all people and an opportunity that exists within everyday occupations (Schmid, 2005). Recruitment of participants for this study included international (quantitative) and a nationwide (qualitative) sample, which was based on the core construct of this theory that purports that creativity through everyday occupations can be valuable and meaningful to every type of person and not just specific individuals considered talented or gifted. The quantitative

results of this study, which indicated that creative potential was present in all three generational cohorts, lends itself to support the theoretical perspective's construct that creativity is an innate capacity in all humans. Although the creative potential in adult participants were not shown to be influenced by the toys a person played with in childhood, the results still indicated that while creative potential was stronger in some individuals more than others, each person did have the core construct of creative capacity mentioned by this theoretical perspective. Expression of the participant's creative potential was not measured in the quantitative portion of this study. However, the qualitative findings did reveal expressions of creativity through the occupation of play during childhood.

Everyday occupations provide opportunities for self-expression and the creation of an occupational identity (Christiansen, 1999; Schmid, 2005). The qualitative findings from this study indicated that adult participants demonstrated expressions of the self through either their current occupational engagement in play in adulthood or when reflecting upon a meaningful play moment that originated in childhood. According to Schmid (2005), when creativity is expressed through everyday activities, health and well-being are fostered. This was supported through the participant's qualitative descriptions of the experiential qualities of creative play occupations.

This study supports the model's premise that, when humans express creativity through everyday occupations, it can be an essential and influential element in the promotion of health and well-being (Schmid, 2005). This was illustrated in the qualitative strand of this study when participants engaged in the process of nostalgia, linking their childhood occupation of play to the development of their own adult occupational being. Furthermore, through their retrospective play memories, participants wove together a textured depiction of how childhood play occupations helped to sow the seeds of life satisfaction, adaptation as well as infused and derived

life meaning through the context of each participant's occupational identity over time. In doing so, making an important contribution to a person's overall health and well-being (Christiansen, 1999; Schmid, 2005).

The Framework of Doing-Being-Becoming-Belonging

Wilcock and Hocking (2015) conceptualized occupation as the dynamic relationship among the things people do, who they are as human beings, and their constant transformation into becoming someone different. The constructs of doing-being-becoming-belonging (Wilcock, 2006; Wilcock & Hocking, 2015) provided this study with a structural framework to explore play as a primary and essential occupation of childhood. Utilization of this framework also provided a means to comprehensively capture the continuity of the experience of childhood play across the doing-being-becoming-belonging continuum, from childhood to adulthood. The constructs of doing-being-becoming-belonging were elucidated in the qualitative strand of this study, primarily in the continuity of play across the lifespan theme, which encompassed the breadth of participants' occupational play experiences during childhood. This emergent theme depicted how childhood play is an integral part of who and how we are as adults because of how play shaped what we do, what we prefer to do based on the meaning derived from play, the occupational beings we have become, and to which social circles we belong.

Participants in the qualitative strand of this study expressed the dimensions of doing-being-becoming-belonging, not only as singular dimensions as mentioned in the results chapter, but also as dimensions that were continuously interacting and influencing one another during occupational engagement; specifically, during childhood play occupations. This is similar to the directional relationships presented in the review performed by Hitch, Geneviève, and Stagnitti (2014). The multidimensional relationships that were prominent in the qualitative portion of this

dissertation study included the following: doing-being, doing-becoming, doing-belonging, doing-being-belonging, being-becoming, being-belonging, and becoming-belonging. These findings allow for the conclusion that the occupation of *being* a player required features that were prominent in the kaleidoscope of play theme, including space and place, the social context of play, and objects to play with, as a way to support *doing*. Additionally, it appeared that *doing* and *being* complemented one another and were often inseparable in the qualitative themes.

The continuity of play across the lifespan theme included reflections of people's sense of *belonging* in relationships that stemmed from shared *doing* in collaborative play experiences. Relational experiences during play were evident through salient statements related to *being* a friend, having a sense of *belonging* in a social context, and *becoming* lifelong friends that were formed in childhood through play. The continuity of play across the lifespan theme also embodied the importance of meaning to the doing-being-becoming-belonging process. For instance, what participants did or preferred as an adult was often a result of the meaning derived from a favored childhood play experience. Identity development was also a category related to the interconnectedness of the doing-becoming-becoming-belonging process. Several participants identified *doing* as a vehicle for change (*becoming*), especially when the doing created or was in accordance with the person's sense of meaning as an occupational being. Finally, the interrelationship of the doing and becoming relationship and the lesser identified becoming and belonging relationship, was most prevalent than when participants described how play had come full circle into their adult life when reminiscing about the temporality of play, the enduring qualities of play into adulthood, and the interrelationship of the doing and becoming process from childhood to adulthood.

The results from the adult retrospective play memories related to how engagement in play during childhood shaped adult occupational being, support the fluid notion of the Framework of Doing-Being-Becoming-Belonging (Wilcock, 2006; Wilcock & Hocking, 2015), as well as the reciprocal, multidimensional, and interconnectivity of its constructs as a developmental trajectory across the lifespan. Due to this simultaneous contribution from all dimensions to occupational engagement, a holistic perspective to practice and research is recommended that acknowledges the intricacies of both the individual and interdependence of the four dimensions of this framework.

Implications for Practice

While generalizations cannot be made based on study findings, this dissertation study does offer many broad considerations for occupational therapy practice in relationship to assessment tools and the use of nostalgia and storytelling as a core of clinical practice and a therapeutic vehicle to relate childhood occupations to adult character. The study also highlights general considerations regarding play and a focus on health promotion and occupational justice that can easily be incorporated to drive meaningful transformation in occupational therapy practice.

The Challenge of Measurement

This study was unable to conclusively prove quantitatively if the types of toys played with during childhood were a predictor of adult creative potential. However, the influence and contribution of occupational engagement to the developmental trajectory of adults was indisputable in the qualitative findings of this study. This study gleaned very rich examples of new ways of doing and new occupational identities formed across the lifespan that were infused and derived with meaning. Unfortunately, there is currently no way to effectively measure these

types of constructs that are often conveyed through intermediary mechanisms. Attempts can be made to capture this quantitatively, as seen in how this study aimed to extrapolate the singular construct of creative potential. However, using a creative potential scale as in this study, or other similar method, did not provide a differentiated profile of the participants to do justice to how much growth and acquisition actually occurred in a person's life and occupational being through engagement in occupation.

Former Slagle lecturer, Mary Reilly (1962), posited that “the wide and gaping chasm which exists between the complexity of illness and the commonplaceness of our treatment tools is, and always will be, both the pride and anguish of our profession” (p. 1). Coinciding with Reilly, the results from the assessment methods used in this study create a juxtaposition that demonstrates how the view of occupational engagement can be considered commonplace, yet simultaneously so complex to quantify, as illustrated through the multiple dimensions influencing occupation and the changeability of occupation across a range of contexts and associated meaning. This crux, to simplify very complex occupational constructs through the application of numbers, is one of the most pressing challenges faced by occupational therapy practitioners in research and in practice when providing quality assessments and interventions. In many areas of practice, the use of quantitative measures are often driven by various policy and reimbursement and the requirement of practitioners to document the need for and outcome of occupational therapy services. Coster (2008) considered this thought process to be incongruent with the profession's holistic philosophical values and encouraged practitioners to become more aware of the biases inherent in common occupational therapy measurement tools.

These findings and interpretations offer significant implications for occupational therapy practice. Occupational therapy has the opportunity to build upon the work and suggestions of

previous scholars (Christiansen, 1999; Clark, 1993; Coster, 2008; Gillen, 2013) who have advocated for the profession to embrace the ambiguity that exists as a way to reconcile the need to develop and utilize creative assessment measures. These measurement tools should emphasize the richness and complexity of a person's occupational being and the degree of progress made toward important goals through engagement in occupation (Christiansen, 1999; Clark, 1993; Coster, 2008; Gillen, 2013). Establishing ways to document and demonstrate the clinically significant and meaningful changes of the developmental trajectory across the lifespan as people develop competence and grow as occupational beings is a unique opportunity for occupational science inquiry and for the development of innovative assessment tools. This study has offered compelling epistemological perspectives for why qualitative methods are a good fit for occupational science and occupational therapy practice. The ability to innovatively assess these complex and textured descriptions of people's experiences and satisfaction with engagement in occupation and as occupational beings has significant implications for practice in the areas of documentation, reimbursement, and justification for occupational therapy services. Consequently, this would provide occupational therapy the potential to lessen the vast chasm mentioned by Reilly (1962).

This study explored people's occupation specific to the occupation of play in childhood. The findings suggest the importance of including occupation-based assessment and to expand beyond overly focused, skill-based or development-based assessments. It is important to recognize where a person is to determine if they are experiencing a delay in development. However, it is equally as important to understanding the person's repertoire of occupational engagement. Obtaining this information could offer considerable developmental implications based on whether the person is engaging in a diverse array of occupations and the possible effect

on their future development. This information should embolden occupational therapy practitioners intentionally infuse occupation-based assessments into evaluation processes. Having assessments that derive measurable meaning from daily experiences and in interpreting lives over time allows occupational therapy practitioners to begin to affirm Vision 2025 for the profession, which states, “Occupational therapy maximizes health, well-being, and quality of life for all people, populations, and communities through effective solutions that facilitate participation in everyday living” (AOTA, 2017, p. 1).

The Process of Nostalgia and Occupational Storytelling

This study was grounded in the assumption of occupational science that adult character and competence is shaped through childhood occupations (Clark et al., 1991; Yerxa et al., 1990). A portion of the findings from this research showed that participants shape their identities, in part, through the childhood play occupations, which are performed in various social contexts and which provide meaning. In Charles Christiansen’s (1999) Eleanor Clarke Slagle lecture on personal identity, he theorized that a person’s ever-evolving identity and actions are full of occupations that serve as life strands, woven together across time, to create a meaningful life story. The centrality of occupations, especially those of childhood play, in shaping occupational identity and creating life meaning, offer powerful implications for occupational therapy practice.

While occupational therapy practice typically focuses on functional gains, the profession has a unique opportunity to focus on more than just the doing component of therapy, but also on the processes of being and becoming that scholars (Wilcock, 2006; Wilcock & Hocking, 2015) have purported shape identity through daily occupations. One strategy for incorporating this therapeutic process is by enhancing the use of reflective practice. This study demonstrated the value of reflective occupational therapy practice through the process of nostalgia and use of

personal narratives. The process of creating and interpreting self-narratives could be used as a form of clinical reasoning and mechanism of understanding lived experiences as a wealth of knowledge to actively engage with throughout the occupational therapy process. Clark (1993) hypothesized that everyone has meaningful memories of childhood occupations that influenced who they are as adults. Through the use of Mattingly's (1991) storytelling component of clinical reasoning, Clark (1993) proposed the exercise of occupational storytelling that is appropriate for any practice setting and ages capable of reflection. Grounded in nostalgia, occupational storytelling provides a therapeutic means for a person to explore past identities and occupations while the practitioner is able to co-create a connectedness between a person's old self and the new self that is aiming to be recomposed as part of the therapeutic process (Clark, 1993).

Utilizing occupational storytelling as the main form of clinical reasoning, practitioners can co-explore a client's occupational history. This process could offer practitioners the opportunity to identify a client's values, meaningful occupations across the lifespan, and other rich information that can be used to frame how occupation can be integrated during therapy sessions. More specifically, the quantitative results of this study showcased the differences and similarities of preferred childhood toys across all three generations of participants that could be beneficial when selecting client-centered and motivating occupations for therapeutic engagement for adult clients in these particular age groups. The qualitative findings of this study demonstrate how the practitioner could encourage the client to explore their occupational play history and to utilize the identified preferred play activities as a tool to nurture engagement in a wide array of meaningful occupations that enrich or move beyond the functional goals of therapy. This strategy provides occupational therapy practitioners the opportunity to engage clients in intrinsically motivating activities, which has been identified as an essential aspect of practice

(AOTA, 2020b). Relevant to this study, play has been described as an intrinsically motivating occupation that leads to active engagement and discovery (Brown, 2009; Yogman et al., 2018). Determinants of intrinsic motivation were interwoven throughout the qualitative results of this study. Intrinsic motivation was noted in the power of play to offer the ability to engage in a meaningful experience, to facilitate motivation, to nourish creativity, to provide opportunities for a sense of personal autonomy and control, as well as for the generation of competence, the promotion of meaning, and the freedom to create or recreate one's own sense of self.

The knowledge gleaned from this study regarding how the experience of play and the processes of creativity contribute to development has the potential to empower occupational therapy and occupational science to redesign areas of practice and provide a type of guide for health promotion at the population level. The results of the study could serve as a tool for teachers of children who are interested in facilitating playful learning environments or fostering creativity through play. Corresponding with society's increasing focus on health and wellness in the workplace, this study could also be utilized at the population level by groups such as private industry or large corporations as a way to support their employee's sense of or enhancement of well-being.

Utilizing a client's narrative to reshape occupational therapy practice offers additional implications for practice with individuals across the lifespan whether in a clinic setting or as part of the general public. Often people could benefit from strategies to redesign their lives as a way to achieve a better sense of occupational balance. Occupational therapy has a longstanding belief that a healthy lifestyle is dependent on the balance between work, play, rest, and sleep (Meyer, 1922). The results of this study that were focused on providing a better understanding of play as a child's primary occupation and as a conduit for health promotion can provide

strategies to help facilitate a person's adapted balance in daily occupations. For instance, this study demonstrated that the use of nostalgia for personal storytelling of childhood play experiences could be helpful in affording the opportunity to reminisce about previous occupations of enjoyment. These self-narratives could provide the practitioner and client with an array of rich occupations for engagement to help facilitate a state of personal well-being. To facilitate occupational balance through the process of nostalgia and occupational storytelling allows occupational therapy to promote the health-enabling and restorative potential of occupational engagement in play. Overall, the results of the personal exposés of play memories that were analyzed for the qualitative portion of this study affirms Christiansen's (1999) view that "occupations are more than movements strung together, more than simply doing something. They are opportunities to express the self, to create an identity" (p. 552).

Health and Wellness Promotion

Another implication for practice that is related to enhancing occupational therapy's role and contribution in the areas of health and wellness promotion of individuals, communities, and populations through development and implementation of occupation-based interventions designed for the well pediatric population. The rich descriptions of meaningful childhood play were captured by the qualitative data in this study. These findings provided insight and highlighted the important link between a person's health and well-being while engaged in person-determined, meaningful play occupations during childhood. This knowledge can enhance occupational therapy practitioners' awareness that the construct of doing may not be the only important aspect of a person's daily living. In fact, the retrospective play stories provided critical evidence of the need for practitioners to also attend to other aspects of occupation, including a client's sense of being, becoming, and belonging, to address the client's overall

health and well-being (Wilcock, 2006; Wilcock & Hocking, 2015). This awareness could create opportunities for occupational therapy practitioners and clients to collaborate on more than just remediation of problems, but also to focus on health promotion and prevention (Pizzi & Richards, 2017). This type of service delivery model emulates the type of practice that is consistent with the core values of occupational therapy practice (AOTA, 2020a, 2020b).

Considering these factors, it may be of benefit to have occupational therapy practitioners as direct service providers in specific areas where occupation-based health promotion programs and interventions could be developed and delivered. For example, occupational therapy practitioners could create a varied repertoire of health-promoting play activities for children to enhance social skills and physical well-being. This focus could also enable the occupational therapy practitioner to educate caregivers or childhood educators on child development through play while offering opportunities to learn how to actively participate in play with their child or students, how to use toys as an instrument of play and interaction, and how to incorporate varied play-based experiences into their daily routine. Another example would be putting an occupational therapy practitioner as a direct service provider in a prekindergarten environment where the aforementioned examples could be easily integrated into existing educational experiences for children. Creating strategic partnerships is another way occupational therapy can serve as a catalyst for change in the area of population health. For instance, considering how occupational therapy could partner with toy companies such as Lego, Fischer-Price, or Mattel, as well as organizations focused on healthy and holistic childhood development, such as the Sesame Workshop of Sesame Street.

The suggested implications provide an opportunity for meaningful transformation in occupational therapy practice. Ensuring the highest quality and most innovative services could

require practitioners to serve with a focus on advocacy and policy. For example, occupational therapy practitioners can advocate for the protection of children's unstructured playtime, including the protection of time for recess, due to the developmental benefits including foundational motor and cognitive skills that may have lifelong benefits. Of equal importance is advocating to educators, educational administrators, policymakers, legislators, and the broader public for an increased refocus on playful learning rather than a strict focus on didactic learning and academic achievement. Ultimately, the type of advocacy required would be individualized to geographical region and specific legislative issues. The main objective is to not lose sight of the need for legislative champions in the federal and state governments. Persistent advocacy efforts for policies that ensure accountability and quality as well as those that reimburse for occupational therapy services in health promotion and prevention will continue to be needed for the profession to stay relevant in a dynamically changing health care environment (Pizzi & Richards, 2017).

Occupational Justice

Occupational injustice refers to situations or a setting that restricts certain individuals or groups from participating in an occupation, limited citizenship, or social exclusion (Townsend & Wilcock, 2004). Townsend and Wilcock (2004) identified four associated concepts of occupational injustice, including occupational alienation, occupational deprivation, occupational marginalization, and occupational imbalance. Given the importance of play in the childhood occupational experience and development (Kohlberg, 1987; Piaget, 1962; Reilly, 1974; Sutton-Smith, 1992; Vygotsky, 1979), examining the occupation of childhood play from an occupational justice perspective can offer numerous implications for occupational therapy's client-centered practice.

It is important for practitioners to be cognizant of how occupational injustices can influence a child's being, sense of belonging, and becoming via the world of play. Previous research has discussed a variety of current challenges that fail to support the occupation of play, resulting in some extent to occupational deprivation, marginalization, and alienation. Such examples include less access to play spaces in community environments, an increased concern for safety from crime and predators in outdoor play environments, and lack of universally designed play spaces with simple toys for all abilities, just to name a few (Brown, 2009; Ginsburg, 2007; Gray, 2011; Prellwitz & Skar, 2016; Russ & Dillon, 2011; Yogman et al., 2018). Poverty can also result in occupational deprivation by restricting choices in regard to play opportunities that are typically age appropriate or culturally appropriate (White, Arthanat, & Crepeau, 2008). For instance, poverty may require children to begin working at a young age, jeopardize one's nutrition that can influence the energy required to engage in play, or decrease access to safe play spaces for low income families that may live in predominately unsafe neighborhoods (Prellwitz & Skar, 2016; White et al., 2008).

Using an occupational justice lens, occupational therapy professionals can help enable childhood play possibilities at the population and individual level by reducing barriers resulting from occupational injustices through professional knowledge related to human functioning, disability, and the person-environment interaction (Nilsson & Townsend, 2014). These provide unique opportunities for occupational therapy practitioners to innovate creative solutions to help curb any effects that may stem from these types of occupational injustices. For example, developing a peer buddy program to facilitate participation with peers at playgrounds could help decrease stigmatization resulting from exclusion in play activities or use of playgrounds that are not accessible. Occupational therapy practitioners can also provide programming involving

caregiver education on the importance of play and development, while also providing community resources, as a way to develop more effective parenting skills. Such programming could be available to all caregivers or targeted toward areas experiencing higher levels of injustices, such as low-income families.

The creation of safe play spaces for areas with less opportunities for outdoor play or designated safe play spaces is another implication for occupational therapy practice. Yogman et al. (2018) described a community enhancement program developed to provide opportunities for social engagement through playful learning in everyday environments. Activities included prompts throughout environments where children may frequent, including the supermarket or laundromat to facilitate conversation. Lights at bus stops that project games onto the ground, such as hopscotch, promote opportunities for children to actively engage in play experiences (Yogman et al., 2018). Additionally, advocating for the importance of play spaces designed around the concepts of universal design would be a strategy for promoting occupational justice for a large group of individuals. Ideas could include an accessible environment with ground coverings, contrasting colors, and varying levels of difficulty of equipment and toys that are made available to be accessible for all ability levels. Actively consulting with and involving parents and children in the development and building of these accessible, while valuing their views and experiences is an important aspect of occupational justice and another area for focus of occupational therapy.

Advocacy to promote public awareness of the occupational injustices that exist in an area as well as the ramifications on child development and life course trajectory is another important implication for occupational therapy. Certain political policies exist to protect play for all children. Therefore, occupational therapy practitioners and families can advocate to ensure the

actual implementation of such laws and policies while educating others on the benefits and effects play behavior can have on a person's life course trajectory. Those persons considering advocating to others can reference Prellwitz and Skar (2016), who found that advocacy aimed at persons in high-level positions and with a positive attitude regarding change implementation showed an increased collaboration with community members toward policies that promoted access of play opportunities for all.

Diverse Play Experiences

This study found that who a person played with during childhood, where they played, what a person played with, and how they played with it, generated meaning and influenced their doing, being, becoming, and belonging in adulthood. These findings reinforced existing research and ideals regarding the importance for children to have opportunities for well-rounded and diverse play experiences throughout childhood. Reilly (1974) stated that play should be viewed as a means to discover and develop individual capacities that are required for adaptation as a productive human being. Therefore, it is imperative for occupational therapy practitioners to provide diverse play experiences in therapy and educate others on the provision of play experiences and toys that will contribute to the development of individual capacities as adult occupational beings as found in this study. Implications for practice extends to the play milieu where learning for adult competencies take place and are dependent upon the quantity and quality of the child's play experiences (Reilly, 1974). The results of this study provide information to all parties responsible for the care and development of young children to recognize the importance of providing a balanced, yet diverse repertoire of play experiences. Occupational therapy practitioners can also use the information from this study to promote the benefits of play and healthy child development.

The qualitative findings of this study, specifically, the *kaleidoscope of play* theme, support earlier research suggesting the developmental benefits of varied childhood play experiences. The *kaleidoscope of play* theme highlighted how the play experience is like a kaleidoscope, comprised of changing glass beads representing the objects played with, the meaning infused, as well as aspects of the context including the places and spaces where play occurred, people, culture, and time. The resultant play experience is a dynamic, complex configuration of the parts which were always different and generated meaning for the participant. Per findings from this study, children could benefit from a diverse play environment that offers opportunities to play with *others*, a safe *space* allowing for physical movement in the outdoor environment with time to just be, and play with a variety of developmentally appropriate *objects* to facilitate high-quality play experiences that produce *meaning*. Developed for consideration in occupational therapy practice, Figure 8 illustrates a conceptual framework, the ever-changing glass beads in the kaleidoscope of play, highlighting the various contexts influencing a person's play experience as represented in the qualitative strand of this study.

Play with others. Social engagement with others during play influences development and the overall play experience. Developmental theorists (Bandura, 1977; Erickson, 1950; Vygotsky, 1962, 1979) have produced strong historical evidence regarding social learning theories that underscore the importance of children's social interactions during play as highly valuable and contributing to all domains of child development. The *kaleidoscope of play* theme illustrated how childhood play experiences influenced and was influenced by the social context, including interaction with friends, parents, siblings, other important family members, oneself, and animals.



Figure 8. Conceptual framework of various contexts influencing the childhood play experience. *Note.* NPIUT represents the toy category of Non-Play Item Used as Toy.

These interactions also illustrated how engagement in collaborative play experiences supported a person's sense of belonging and connection to friends and family members, and often served as lifelong bonding experiences forged through play. Furthermore, the provision of

the play environment to include engagement in play with other children or adults allow for the learning of social behaviors required of adaptation in the adult world. Social behaviors learned through play that were mentioned in this study included, self-control, social conformity, problem-solving, as well as psychosocial factors such as sharing, cooperativeness, and sportsmanship.

Practical implications for occupational therapy practitioners working with children or educating those responsible for the care and development of children includes consideration of the social context. This includes the importance of offering plenty of play opportunities to facilitate a variety of types of social interaction, including child-child, child-adult, child-self, and child-pet engagement during play and throughout everyday activities. One strategy to accomplish this is to perform an activity analysis of the toy or play activity and to monitor the associated level of social interaction and possible social behaviors afforded by the particular toy or play experience. For example, consider how a child playing independently with an electronic video game might look different than a small group of three children building with blocks on the floor or look different from two children engaged in a competitive board game. In addition to group play experiences, it is also important to provide opportunities for solitary play so children are afforded the benefits from engaging in a variety of play experiences. Although social play activities were identified for the majority of play memories in this study, participants who engaged in solitary play did benefit from the play experience. For many participants solitary play offered opportunities to decompress, regroup to prepare to rejoin the group again, as well as opportunities to be creative through imaginative play.

Considerations of the type of social affordances offered by the toy or play experience and how to incorporate others into the play experiences to address social skills such as friendships,

turn-taking, communication, and conflict resolution is a crucial recommendation for practice. Other examples to enhance child-adult social discourse during play while also tapping into a child's creativity is for the adult to ask open-ended questions, such as "tell me about your drawing" rather than just "what did you draw?," which might result in the child simply replying "a person." Play with toys that offer opportunities for social engagement with others and the chance for extended types of discourse is integral for development and the learning of social behaviors and norms. This also facilitates child-initiated and child-directed social play experiences, which were salient descriptions throughout the qualitative findings. Opportunities for unstructured play with friends, siblings, and others, are being reported to be on the decline due to the high level of structured activities and fast-paced lifestyles of adults and children in today's society. Therefore, it is recommended that practitioners educate caregivers on the importance of making an intentional effort to plan unstructured play time among children. Solitary play with toys should not be a common substitute for child-adult or child-child engagement during play, as these experiences alone, as found in the qualitative themes, were not reflective of the holistic social engagement that is deemed critical for healthy child development (Healey et al., 2019).

Play spaces and places. Participants recalled play that took place within indoor, outdoor, virtual, and imaginary environments. A very prominent theme in both strands of this study was the extension of the play environment to the outdoor environment. Activities involving sports, imaginative play, outdoor pick-up games, and unstructured exploration of the non-human environment were recollected by adults as providing a pathway toward the development of childhood autonomy. The qualitative play memories allowed for discovery of at least one reason the outdoor environment was remembered so fondly by participants, including

that the play was far less restrictive than other environments and offered opportunities for risk-taking. The memories of outdoor play were flooded with imagery of children running, jumping, and shouting, with low parental supervision, and with toys created from items and creatures found in nature. These prominent characteristics, all of which are far more unstructured than what is typically allowed indoors, seemingly gave outdoor play enjoyment and a strong sense of meaning to participants. Additionally, many outdoor play memories discussed the value and importance of risk-taking while engaged in well-intended play experiences that were in a safe and supportive environment. For instance, participants discussed playing haphazardly with firecrackers and lawn darts, and if not careful, significant injuries could, and did, occur. Participants described meaningful socio-behavioral life lessons learned through play involving risk-taking, such as problem solving, safety awareness, resiliency, and self-confidence.

Reilly (1974) held play in the outdoor environment in high regard, considering it a valuable “link to one’s past and as a reminder of the continuity of one’s identity” (p. 295). For numerous reasons in this study, the high percentage of participants identifying outdoor play as a favored childhood play experience suggests that this environment should be strongly considered for inclusion in the diverse repertoire for creative play experiences. This recommendation could span from incorporating opportunities for outdoor play into everyday routines to specific areas such as intentional placement within early childhood and educational curriculum.

Objects played with. The qualitative findings of this study highlighted the importance of play with a variety of developmentally appropriate toys to facilitate high-quality play experiences that produces meaning. The findings indicated that creative potential and the process of growth as an adult occupational being was not limited to only a few types of toy categories; rather, it was a combination of multiple forms of play in all seven toy categories

included in this study. For instance, the integrated findings highlighted interest in the category of Compete toys. For participants, engagement with these toys and play experiences demonstrated the importance of competitive games, recreational, or athletic activities in establishing the concept of “winners” and “losers” and how achievement can be contingent upon decision-making skills and facilitate development of a sense of individual competency or self-esteem in play. This study also indicated basic components from a variety of play experiences that should be considered for play, including imagination, hands-on experimentation, the opportunity to create, to make decisions, and to problem-solve. Examples of toys and play experiences with these basic components include simple building or fabrication activities with blocks or other construction toys, toys or activities that involve taking things apart and putting them back together, and hands-on craft activities.

One apparent finding in both strands of this study was that adult participants remembered using Non-Play Items Used as Toys in creative ways as they engaged in childhood play occupations. For instance, this study brought to light the value all generations placed on everyday play things, such as a box, pots and pans, and dirt in offering a variety of imaginative and creativity affordances through play. Play memories were filled with fond recollections of participants making mud pies with family members and creating elaborate play environments using cardboard boxes. Play with simple Non-Play Items Used as Toys provided participants opportunities to use their childhood imagination to create a variety of uses for the play item since the object did not already have a specific and narrow intended use. More modern, elaborate, and expensive toys, such as computers and electronic toys, were mentioned by some participants, but were not considered necessary for creative play experiences.

Occupational therapy practitioners should recommend the inclusion of everyday playthings in existing play environments. These types of toys tend to grow with the child, as demonstrated by being valued by various ages and across all generations in this study. The toys also foster social engagement with others, encouraging exploration and imagination, and spark creativity and problem-solving. In fact, the category of Non-Play Items Used as Toys received the highest creativity affordance indices on the Retrospective Childhood Play Inventory. Therefore, when selecting developmentally appropriate toys, it would be beneficial to consider the creativity affordances provided by the specific toy.

As mentioned in Chapter 1, each toy on the Retrospective Childhood Play Inventory was assigned a creativity affordance index using three questions as a rubric. Each question on the creativity affordance rubric was scored either zero or one point totaling a four-point scale ranging from zero to three for each creativity index. Questions from the creativity affordance rubric included the following: “Can the toy be played with in more than one way?,” “Based on its intended use, are there specific written or unwritten rules or social/cultural norms on how to play with the toy?,” and “Does the toy require the child to develop a scenario for play (e.g. context for play, their own ideas and rules, etc.)?” As an example, when completing the pilot study for the Retrospective Childhood Play Inventory, panel experts scored Play-Doh as having a perceived creativity affordance index of three, as indicated by receiving one point due to the toy being able to be played with in more than one way, receiving one point due to there being no written or unwritten rules or social/cultural norms on how to play with the toy, and receiving one point as the toy requires the child to develop a scenario for play. It would be beneficial for occupational therapy practitioners to recommend toys with a higher creativity affordance index to foster creative potential during play. Practitioners could also educate those responsible for the

care and development of children in the aforementioned three questions to determine the creativity affordances of specific toys so that they can be more intentional when selecting toys for their loved ones. Additionally, occupational therapy practitioners can advise others regarding toys that are appropriate for children of all ages in regard to stage of development, learning opportunities, and safety.

The findings of this study also indicated the value of play experiences that afforded opportunities through toys and games that encouraged imagination. Imaginatively taking the perspective of another via role-playing through play schemes such as dress-up, cops and robbers, and playing school were frequently selected by participants of all ages on the Retrospective Childhood Play Inventory. These types of imaginative play experiences were also recollected in the play memories as contributing to the child's exploration of various occupational roles, some of which were said to have planted the seed for future occupational careers in adulthood. These findings were supportive of Reilly's (1974) hypothesis that simulated role-playing of this type of imaginative play can greatly contribute to the child's exploration, identification with, and future competence of the adult worker role. Additionally, developmental theorist, Erickson (1950) recognized role-playing with others around imaginative play schemes, such as war and superheroes, served as a catalyst for moral development and as an outlet for the expression of feelings. Therefore, provisions in the play environment to include the kinds of toys, games, and play experiences that encourage children to project themselves into occupational roles and work role experimentation is recommended.

Meaning. The qualitative play memories were filled with expressions of meaning. It is recommended that occupational therapy practitioners attempt to identify themes of meaning that occur during the play of their clients. Focusing on the meaning infused and derived from play

will allow practitioners to expand upon those themes of meaning to co-create a motivating therapeutic environment focused on quality of life, health, and a satisfying lifestyle.

Implications for Education

This study offers general implications for occupational therapy education in regard to college admission criterion and entry-level occupational therapy curriculum design that is focused on the importance of play while facilitating creative potential and critical thinking in future practitioners.

College Admission Criteria

Implications of this study have potential to influence occupational therapy and occupational science by furthering the understanding of the importance of creativity and critical thinking as valuable qualities for occupational therapy practice and leadership. Findings of this study have potential to contribute to the development or enhancement of occupational therapy admission criterion and occupational therapy curriculum design.

The ability to think critically is becoming increasingly more important as occupational therapy practitioners embark upon new roles in emerging practice areas, gain greater access to complex technology, are pushed into larger advocacy roles in political arenas, confront complex ethical issues, and attempt to stay abreast and contribute to an ever-growing knowledge base that is striving to keep up with a constantly changing health care environment. Occupational therapy practitioners who possess creative critical thinking skills are needed to demonstrate the profession's distinct and unique value in health care by problem-solving creative occupational solutions to some of the world's greatest occupational challenges of the twenty-first century. Strategies could include addressing the needs of marginalized groups, occupational injustices, social and human rights, disaster relief, youth violence, homelessness, employment, addictions,

immigration, global warming, and social inclusion, just to name a few (Townsend & Rappolt, 2014). Implementing this type of change will require occupational therapy practitioners to possess skills beyond that of entry-level clinician to solve the issues related to an ever-changing health care environment (Lamb, 2017).

Despite the need for critical thinking in occupational therapy, an increased focus on academic and cognitive measures, such as grade point average, are often used for admission into occupational therapy programs and has the possibility to favor convergent thinkers (Bathje, Ozelie, & Deavila, 2014; Gutman & Falk-Kessler, 2016). If the profession aims to focus on producing innovative and creative thinking practitioners, then it could be beneficial for the admission criteria for occupational therapy education programs to reflect intentionality in seeking candidates with potential in these areas. An example of an intentional step could be for programs to incorporate a creative thinking question from a valid assessment tool, such as from the Runco battery of divergent thinking tests, into admission interviews.

More broadly speaking, a change in college admission criteria, could have the potential for a trickle-down effect in all forms of education, as all education is focused toward college admission. Re-consideration of college admission criteria is important, as previous research has shown that for many families the focus on achievement, after-school enrichment programs, academic performance, and college acceptance, often results in less play opportunities and expression of creative potential (Ginsburg, 2007). If the focus of college admission criterion could change from a focus on cognitive testing scores then it could potentially shift its focus to measuring a person's expertise grounded in their personal interests. Many play and creativity researchers have called for an educational and societal shift in focus from achievement, testing, and didactic learning to more playful learning in early childhood (Brown, 2009; Ginsburg, 2007;

Kim, 2011, 2017; Yogman et al., 2018), which can facilitate development of the soft skills required for employment. Re-allotment of how children spend their time could allow for activities to be facilitated to work on decision-making skills, problem-solving skills, and the accumulation of more knowledge to grow their own interests and passions into areas of expertise. Cultivating creative potential and other skills, such as autonomy, leadership, and physical activity through playful learning, instead of solely focusing on academic skills in early childhood, may provide a way to also facilitate the joy of learning through play while also encouraging long-term academic success. The importance of play as a childhood occupation is greatly supported in theory and literature; however, reality with regard to the growing focus on academics throughout childhood does not seem to reflect that importance or reflect the pedagogical value of play.

A change in the admission criteria in occupational therapy programs would only have the potential to provide a small step toward this overall vision of an alternate model of college admission criteria that could influence academia. However, it is also important to maintain a focus on the big picture that a change in college admission criteria that is focused on innovation and creativity could have potential long-term effects in influencing the national education movement and the overall experiences of childhood, including childhood play experiences and the fulfillment of one's creative potential across the lifespan.

Occupational Therapy Entry-Level Curriculum

Results of the quantitative strand of this study indicated that the youngest generation had the most creative potential of all three generational groups. However, higher levels of creative potential do not mean a person will ever fulfill his or her creative potential to perform in a creative fashion and think divergently (Runco, 2008, 2014b; Runco et al., 2000-2001). The

study of divergent thinking as an indicator for creative potential is only an estimate because how a person will perform in the future is always unknown (Runco, 2008, 2014; Runco et al., 2000-2001). Implications of these results indicate the importance of infusing opportunities for occupational therapy students to tap into and utilize their own creative potential through creative and critical thinking activities that are intentionally designed as a significant component of occupational therapy curriculum. The Accreditation Council for Occupational Therapy Education (2018) has established standards for entry-level education evident of critical thinking, including the expectation for students to demonstrate adaptability in a multitude of practice settings, the ability to problem-solve and create alternative solutions to a variety of clinical scenarios while infusing evidence-based practice, and the ability to demonstrate entry-level expertise with new and emerging technologies.

Purposeful course and curriculum design. Despite the need for occupational therapy practitioners to possess characteristics of creativity, such as flexibility, adaptability, and divergent thinking, there remains a dearth of exploration into the construct of creative potential in the occupational therapy and occupational science literature (Schmid, 2004, 2005). Additionally, there is minimal research into how creative potential is fostered in occupational therapy students in relation to purposeful course or curriculum design (Schmid, 2004, 2005). Supporting the findings of this study, it is recommended that occupational therapy educators support the development and use of creative potential through purposeful curriculum and course design to empower the critical thinking of students. One strategy could be that occupational therapy curriculum focuses on developing more opportunities to utilize the highest level of the cognitive process in Bloom's Taxonomy in which the term *create* involves the compilation of information as a way to develop new or alternative solutions to problems, thus corroborating

literature that states creative potential can be fostered and developed in individuals (Graham, 1983; Hasselkus, 2002; Runco et al., 2010; Schmid, 2005). Studies such as Sahni (2011), indicated positive changes in student abilities following training in creativity and critical thinking through intentional course design that incorporated problem solving scenarios and a safe environment for scholarly discourse and active engagement in the learning process.

An example of utilizing higher levels of Bloom's Taxonomy, is a unique assignment developed by Otty (Otty & Milton, 2019). The HOT (Higher Order Thinking) Sheet assignment is multi-purposed and aims to "assess students' understanding for a particular diagnosis or condition through a developed visually aesthetic reference guide for their peers to be used during clinical experiences" (Otty & Milton, 2019, p. 4). This assignment requires each student to develop an original document that is later presented through an interactive presentation to peers that requires the inclusion of an engaging 'doing' component. The HOT Sheet is based upon the strategy of intentionally placing ambiguity within the assignment through teacher directives to support use of creative potential and facilitation of critical thinking. This assignment also reinforces the idea that instructors shift from a directive, transmittal model of learning where the students are passive learners engaged in lecture-note taking situations to a more facilitative approach in which students are active learners engaged in the process of discussion of ideas and individualized meaning-making of the material (King, 1993). This teaching method stems from a constructivist theory of learning, in which the instructor facilitates learning where students are encouraged to do something with the information as a way to construct meaning and create a more in-depth understanding of the content, based on their prior experiences and knowledge (Dewey, 1983).

The associated grading rubrics for the HOT Sheet were intentionally designed to elicit high levels of critical thinking in students, including “decision making, creativity encouraged through self-directed actions, and interpersonal skills and engagement” (Otty & Milton, 2019, p. 8). Originality and the creativity to determine the best possible solution, is a central element of this assignment as students are given autonomy to the solution-finding process, the visual presentation of an original and creative design in how the content is presented on the HOT Sheet, and the ability to teach peers (Otty & Milton, 2019). This type of learning activity, has the opportunity to provide students with opportunities to move beyond knowing information on a factual level and to utilize their own creative, divergent, and out-of-the box approach to the assignment outcome rather than utilizing a convergent thinking approach that focuses solely on what the student believes the instructor wants or what may be considered the socially acceptable right answer to a given problem.

Purposeful course design can also include educational components related to working for occupational justice through client-centered practice that could facilitate play for those vulnerable to injustices. For example, occupational therapy educators could incorporate projects that enable students to critically analyze power, economic, cultural, social, and political issues that influence equity of play opportunities from an occupational justice lens.

Inclusion of experiences with the well pediatric population. This study focused on people’s engagement in occupation during childhood specific to play and the relationship to a person’s overall development and life course trajectory. Specific to the findings of this study are the implications regarding the importance of occupational therapy pedagogical approaches when teaching the subject of human development and the need to be diligent in connecting these subjects to occupational engagement. An approach to organizing curriculum, courses, and class

design so that the focus is not solely on distinct subject topics but also focused on how those topics intersect with the concept of occupation that occurs within context is the process of subject-centered education (Hooper, 2010; Palmer, 1998).

In some cases, human development is a topic taught as foundational knowledge, and it is assumed that students need an understanding of this topic before being able to apply the information to the core subject of occupation. This has potential to be a missed opportunity for students to connect concepts of human development to daily occupation while understanding how this content relates to the philosophy and practice of occupational therapy (Hooper, 2010; Palmer, 1998). Instead of solely concentrating on students' mastery of learning outcomes related to the understanding of developmental stages across the lifespan, instructional design utilizing a subject-centered education approach (Hooper, 2010; Palmer, 1998) could also focus on the entire realm of occupational engagement of occupational beings at different life stages and how that contributes to, facilitates, and shapes human development.

Through a subject-centered approach to learning, students are able to acquire knowledge on topics such as human development and its interconnectedness with occupational engagement, especially regarding the importance of play on development across the lifespan. This approach can also be combined with hands-on learning experiences to provide occupational therapy students opportunities to understand the importance of context in relation to the engagement in the occupation of play. For instance, providing educational experiences focused on the context of play and the supports and barriers of play that include people, toys, and the play environment, all need to be a part of instructional design and decision making in occupational therapy education.

Scholars have found that everyday scenarios encountered in occupational therapy practice often present themselves as indeterminate, with no clear solution, and have links to clinical reasoning and creativity (Fein, 1987; Graham, 1983; Mattingly & Fleming, 1994; Schmid, 2004; Schon, 1987). Subject-centered education is congruent with facilitating divergent thinking in response to the myriad of situations in practice contexts (Hooper et al., 2015). Divergent thinking is the primary foundation for creativity and creative thinking (Guilford, 1950). Juxtaposed to convergent thinking, which typically involves educational experiences that elicit solutions that are deemed correct or that conform to rules and social norms, divergent thinking encourages thinking outside of the box and beyond normal rules or regulations (Lloyd & Howe, 2003; Runco, 2004, 2010; Runco & Acar, 2012).

As experiential learning opportunities and service-learning are an integral component of occupational therapy education (Accreditation Council for Occupational Therapy Education, 2018), a way to incorporate these experiences could be through hands-on learning with the well-pediatric population. This learning environment could provide opportunities to build links between topics such as human development, occupations such as play, and real-world contexts, by requiring students to respond in the moment to situations in which there could be more than one right answer or correct way of knowing. Utilizing a population such as the well-pediatric population, learning experiences could be designed to facilitate opportunities for students to witness and observe play in a natural environment, explore play, facilitate play, and engage in the process of facilitating play by educating parents and families in this important area of childhood development. The benefits to furthering education in this area or with this instructional model include opportunities to facilitate divergent thinking and professional reasoning in occupational therapy students. Additionally, there is the potential for occupational

therapy graduates to carry this important knowledge of connectivity of engagement in occupation through play and human development into practice in which a priority may be placed on these areas.

Occupational therapy, creativity, and critical thinking have been implicitly linked throughout the profession's history and education. Occupational science forms the conceptual basis for occupational therapy and has the potential to contribute new knowledge to society by informing pedagogical approaches to teaching the philosophical foundations of the occupational therapy discipline. By including critical thinking and creative opportunities in occupational therapy curriculum while fostering these characteristics in future practitioners, the profession has the potential to enhance development of occupational scientists who are equipped to move the profession into the twenty-second century by applying their occupational lens to larger population challenges.

Limitations

Several limitations were present in this mixed methods study. A limitation in the quantitative strand of this study included instrumentation. Although numerous steps were taken to establish the Retrospective Childhood Play Inventory as a strong data collection instrument, there are currently no established psychometric properties for the tool. While the Retrospective Childhood Play Inventory provided a useful way to collect information about participants' retrospective toy use in childhood, the instrument could benefit from further revision and expansion of the repertoire of play items included on the instrument in order to fully contribute as a data collection tool for future research. The results of this study also have potential for gender bias, as 91.2% of participants in the quantitative phase were reported as female and only 8.6% identified as male and 0.2% preferred not to answer.

Qualitative analysis of existing data presents its own methodological limitations (Cheng & Phillips, 2014; Johnston, 2014). The most obvious methodological consideration is that the data utilized for this study was collected for another purpose rather than for the specific research questions of this study. Utilization of existing data was a slight limitation to the study, as information specific to the research questions related to creativity could have been beneficial if included in the current study. For instance, the outcome variable of creative potential was not an explicit salient theme demonstrated in the qualitative data analysis. For the narrative play stories, inclusion of interview prompts related to how and when adults described their childhood play occupations as creative as well as what the adult's experience of creativity was in childhood could have provided more in-depth and direct information related to the research questions of this study.

Another limitation related to the use of existing data is that, while useful information was provided by the metadata from The Strong National Museum of Play's *America at Play: Play Stories Video Archive* used for the qualitative portion of this study, the race, ethnicity, and socioeconomic status of participants were not reported. Lack of metadata potentially limits the transferability in this study because the sample could not be fully described; therefore, potentially reducing trustworthiness of the findings. Additionally, those participants who reported where they resided in their play story reported living in Rochester, New York, or the surrounding area. These participants also reported having had the opportunity to visit the Strong Museum of Play on one or more occasions. The assumed homogeneity of the sample provides only a limited view of the sociocultural complexities that encompass play in the lived experiences of individuals. Future research could address these limitations by including a larger, more diverse population across multiple locations.

Recommendations for Further Research

The results of this mixed methods study illuminated the multi-dimensional aspects of the occupation of play, allowing for various recommendations for continued research in this area. Considering the strengths and limitations of this study, it is recommended that another proxy for divergent thinking be used other than the construct of creative potential. The results of the quantitative portion of this study yielded insufficient information regarding divergent thinking; therefore, future studies should consider examining more overt divergent thinking behaviors or through use of other proxies. Additionally, further studies could also explore research questions related to the possibility of generational differences in experiences and memories of play.

While the quantitative results of this study indicated little to no relationship between the type of toys used during childhood and creative potential as measured by the RIBS-S, the qualitative findings highlighted how play was an instrumental aspect of occupational engagement that contributed in a variety of areas to people's developmental trajectory into their adult occupational self. Therefore, grounded in the qualitative findings of this study, recommendations for future research can aim to extrapolate the various dimensions of play, including the context of play, whom played with, objects used, characteristics of objects used, and the environment of play, just to name a few, to explore how these various dimensions potentially contribute to a person's development as an adult occupational being. The constructs of play could be explored singularly or collectively to determine contributions to development. This recommendation also includes exploring one or more other type of developmental outcomes. For example, future studies should consider examining what constructs of play influence development in a variety of areas other than cognition, including areas such as social-emotional skills, motor skills, and language skills. The recommendation to considering the

various dimensions of play and the myriad of developmental outcomes, could lead to the creation of an infinite amount of future studies.

Future research focusing on creating a different type of play profile from this study using information from the Retrospective Childhood Play Inventory could be advantageous. The Retrospective Childhood Play Inventory was an online survey consisting of 140 toys and play experiences. The survey included a total of 10 questions with 14 total toys or play experiences (two toys/experiences from each of the seven play categories) in each question. For each of the 10 questions, participants were asked to select four toys and/or experiences most frequently played with during their childhood. Future research could make all the toys/experiences on the Retrospective Childhood Play Inventory available, without any grouping into individual questions, and allow participants to select all the toys/and experiences played with. This area of future research has potential to allow for the creation of a more comprehensive play profile that could allow the researcher to focus on specific toy categories or developmental outcomes, such as the ratio of the number of toys focused on cognition or motor skills.

As discussed in Chapter 1, numerous disciplines have contributed to the rich connection between play, creativity, and divergent thinking. Therefore, it is recommended that future research consider completing this type of study with the collaboration of an interdisciplinary team to truly capture the power and health promoting benefits of occupational engagement. While it is believed that the focus of this type of study is on childhood play occupations, the constructs of play, toys, development, and divergent thinking involve many processes that overlap one another. Future studies could focus on correlational, longitudinal, and experimental studies of these processes. Collaborating with an interprofessional team would allow for various perspectives regarding the different dimensions of play as well as the different developmental

opportunities afforded through engagement in play. Based upon expertise and the ability to contribute to expanding the knowledge of play, toys, development, and divergent thinking, potential disciplines to consider for interdisciplinary collaboration on this type of study could include professionals in the fields of: developmental psychology, psychology, early childhood specialists, education, neuroscience, programming and design, toy collection, history, sociologists, anthropologists, and cultural anthropologists.

Conclusion

How can social injustice be reduced in communities? How can the world climate crisis be solved with a focus on sustainability for future generations? What would the world be like if fair and ethical artificial intelligence was widely utilized? Grappling with these types of 21st-century occupational challenges, which are typically open-ended questions with more than one right answer, requires use of divergent thinking for solution-finding. Creative solutions for such questions require ideation and out-of-the box thinking that challenge assumptions, shift people's thinking, and ultimately challenge the status quo. There is much agreement among scholars, educators, as well as business and economic leaders regarding the universal importance of creativity and creative potential and the ability for these attributes to enable future success in the adult world.

This study focused on the link between creative potential and play. As the primary occupation of childhood, play, especially play with toys, serves as a creative elixir for childhood and beyond. This mixed methods study sought to explore the relationship between the types of toys frequently used during childhood and adult creative potential. Additionally, utilizing adults' retrospective play stories, the study sought to understand how the contribution of childhood play to human development aligned with the constructs of the Framework of Doing-Being-Becoming-

Belonging (Wilcock, 2006; Wilcock & Hocking, 2015). Although every participant in the study possessed creative potential, there was no conclusive evidence that the types of toys used during childhood had a significant relationship or prediction on creative potential in adulthood.

However, this study did highlight that the childhood play experience served as a meaningful link to who people became as adult occupational beings. Play with toys and the overall play experience was heavily influenced by the temporal context; however, regardless of generational age, it was found that what people played with, how they played with the toys or objects, whom they played with, where and when the play occurred, and the meaning infused and derived from play all shaped who the participants became as adult occupational beings.

This study provides an important perspective that play assumes more than simply a functionalist view, in which play serves an important role in development of certain functions such as cognitive development or the development of creative potential into the creative adult self. Rather, play was also purported as important for the purpose of play itself, as demonstrated through the expressions of joy, meaning, and humanistic values across the lifespan which are important components of a person's health and quality of life. This study provides encouraging results to support the notion that creative potential that is yet untapped can be facilitated and be extremely useful to society as a catalyst for meaningful change. Adding knowledge and value to the profession of occupational therapy, this study broadens the understanding of play as a child's primary occupation and generates knowledge regarding how the experience of play and how the processes of creativity contributes to development and health. Additionally, knowledge from this study serves to empower occupational therapy and occupational science to influence development through play at a population level through advocacy, and collaborating about public policy and with private industry for the enhancement of health, well-being, and development

across the lifespan for individuals, communities, and populations. Results of this study further support the role of occupational therapy to study and learn from play and from the medium of toys. Most importantly, occupational therapy should continue to provide opportunities for everyone to have the time and space to create and contribute to the creation of their own occupational self through the childhood occupation of play.

References

- Accreditation Council for Occupational Therapy Education. (2018). 2018 accreditation council for occupational therapy education (ACOTE®) standards and interpretive guide (effective July 31, 2020). *American Journal of Occupational Therapy*, 72. doi:10.5014/ajot.2018.72S217
- American Academy of Pediatrics. (2018). *The power of play - How fun and games help children thrive*. Retrieved from <https://www.healthychildren.org/English/ages-stages/toddler/fitness/Pages/Caution-Children-at-Play.aspx>
- American Occupational Therapy Association. (2008). AOTA's societal statement on play. *American Journal of Occupational Therapy*, 62. doi:10.5014/ajot.62.6.707
- American Occupational Therapy Association. (2014). Occupational therapy practice framework: Domain and process (3rd ed.). *American Journal of Occupational Therapy*, 68(Supplement_1), S1-S48. doi:10.5014/ajot.2014.682006
- American Occupational Therapy Association. (2015, May 22). *Articulating the distinct value of occupational therapy*. Retrieved from <https://www.aota.org/Publications-News/AOTANews/2015/distinct-value-of-occupational-therapy.aspx>
- American Occupational Therapy Association. (2017). Vision 2025. *American Journal of Occupational Therapy*, 71, 1. doi:10.5014/ajot.2017.713002
- American Occupational Therapy Association. (2020a). Occupational therapy in the promotion of health and well-being. *American Journal of Occupational Therapy*, 74. doi:10.5014/ajot.2020.743003

- American Occupational Therapy Association. (2020b). Occupational therapy practice framework: Domain and process - Fourth edition. *American Journal of Occupational Therapy*, 74. doi:10.5014/ajot.2020.74S2001
- Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice Hall.
- Barbot, B., Besancon, M., & Lubart, T. (2015). Creative potential in educational settings: Its nature, measure, and nurture. *Education*, 43(4), 371-381. doi:10.1080/03004279.2015.1020643
- Bathje, M., Ozelie, R., & Deavila, E. (2014). The relationship between admission criteria and fieldwork performance in a master's-level OT program: Implications for admissions. *The Open Journal of Occupational Therapy*, 2(3). doi:10.15453/2168-6408.1110
- Bergen, D., & Fromberg, D. (2009). Play and social interaction in middle childhood. *Phi Delta Kappan*, 90(6), 426-430. doi:10.1177/003172170909000610
- Birks, M., & Mills, J. (2015). *Grounded theory: A practical guide* (2nd ed.). London, England: Sage.
- Blake, C. (2019, January 8). *IBM earns record 9,100 patents in 2018, tops U.S. patent list* [Press release]. Retrieved from <https://newsroom.ibm.com/2019-01-08-IBM-Earns-Record-9-100-Patents-in-2018-Tops-U-S-Patent-List>
- Brown, S. (2009). *Play: How it shapes the brain, opens the imagination, and invigorates the soul*. New York, NY: Penguin Books.
- Chand O'Neal, I., & Runco, M. A. (2016). Uncover & unleash students' creative potential. *Principal Supplement: Champion Creatively Alive Children*(September/October).

- Chand O'Neal, I., Runco, M. A., & Paek, S. H. (2015). Comparison of competing theories about ideation and creativity. *Creativity Theories Research Applications*, 2(2), 145-165. doi:10.1515/ctra-2015-0018
- Charmaz, K. (2014). *Constructing grounded theory: Vol. 2*. London, England: Sage.
- Chawla, L. (2006). Research methods to investigate significant life experiences: Review and recommendations. *Environmental Education Research*, 12(3-4), 359-374. doi:10.1080/13504620600942840
- Chen, N., Roth, K., & Todhunter, J. (2015). I can do it! The effect of belief in stable luck on employee creativity. *Business Creativity and the Creative Economy*. doi:10.18536/bcce.2015.07.1.1.04
- Chenail, R. J. (2009). Interviewing the investigator: Strategies for addressing instrumentation and research bias concerns in qualitative research. *The Qualitative Report*, 13(4), 14-21.
- Cheng, H. G., & Phillips, M. R. (2014). Secondary analysis of existing data: Opportunities and implementation. *Shanghai Archives of Psychiatry*, 26(6), 371-375.
- Christiansen, C. H. (1999). Defining lives: Occupation as identity: An essay on competence, coherence, and the creation of meaning (Eleanor Clarke Slagle lecture). *American Journal of Occupational Therapy*, 53, 547-558. doi:10.5014/ajot.53.6.547
- Chudacoff, H. P. (2007). *Children at play: An American history*. New York: New York University Press.
- Clark, F. A. (1993). Occupation embedded in a real life: Interweaving occupational science and occupational therapy (Eleanor Clarke Slagle Lecture). *American Journal of Occupational Therapy*, 47, 1067-1078. doi:10.5014/ajot.47.12.1067

- Clark, F. A., Parham, D., Carlson, M. E., Frank, G., Jackson, J., Pierce, D.,...Zemke, R. (1991). Occupational science: Academic innovation in the service of occupational therapy's future. *American Journal of Occupational Therapy*, 45(4), 300-312.
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112, 155-159.
- Corbin, J., & Strauss, A. (2007). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (3rd ed.). Thousand Oaks, CA: Sage.
- Coster, W. J. (2008). Embracing ambiguity: Facing the challenge of measurement [Eleanor Clarke Slagle Lecture]. *American Journal of Occupational Therapy*, 62, 743-752.
- Coury, K., & Wolfgang, C. (1984). An overview of the measurement methods of toy and play preference studies. *Early Child Development and Care*, 14, 217-232.
- Cramond, D., Matthews-Morgan, J., Bandalos, D., & Zuo, L. (2005). A report on the 40-year follow-up of the torrance tests of creative thinking: Alive and well in the new millennium. *Gifted Child Quarterly*, 49, 283-291.
- Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). Thousand Oaks, CA: Sage.
- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). Los Angeles, CA: Sage.
- Creswell, J. W., & Plano Clark, V. L. (2011). *Designing and conducting mixed methods research* (2nd ed.). Thousand Oaks, CA: Sage.
- Cropley, A. J. (1996). Recognizing creative potential: An evaluation of the usefulness of creativity tests. *High Ability Studies*, 21(4), 203-219.
- Csikszentmihalyi, M. (1996). *Creativity: The psychology of discovery and invention*. New York, NY: HarperCollins.

- Dalkey, N. C. (1969). *The Delphi method: An experimental study of group opinion*. Santa Monica, CA: RAND Corporation.
- de Bono, E. (1970). *Lateral thinking: Creativity step by step*. New York, NY: HarperCollins.
- Dewey, J. (1983). *Experience and education*. New York, NY: Macmillan.
- Donohoe, H., & Needham, R. G. (2009). Moving best practice forward: Delphi characteristics, advantages, potential problems, and solutions. *International Journal of Tourism Research, 11*, 415-437. doi:10.1002/jtr.709
- DuBois, S. A. (1997). Playthings: Toy use, accessibility, and adaptation. In B. E. Chandler (Ed.), *The essence of play: A child's occupation* (pp. 107-128). Bethesda, MA: American Occupational Therapy Association.
- Erikson, E. H. (1950). *Childhood and society*. New York, NY: Norton.
- Fein, G. (1987). Pretend play: Creativity and consciousness. In P. Grolitz & J. Wohlwill (Eds.), *Curiosity, imagination and play* (pp. 281-304). Hillsdale, NJ: Erlbaum.
- Gillen, G. (2013). A fork in the road: An occupational hazard? (Eleanor Clarke Slagle lecture). *American Journal of Occupational Therapy, 67*(6), 641-652. doi:10.5014/ajot.2013.676002
- Ginsburg, K. R. (2007). The importance of play in promoting healthy child development and maintaining strong parent-child bonds. *Pediatrics, 119*, 182-191.
- Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Piscataway, NJ: Transaction.
- Glass, B. D., Maddox, W. T., & Love, B. C. (2013). Real-time strategy game training: Emergence of cognitive flexibility trait. *PLoS ONE, 8*(8). doi:10.1371/journal.pone.0070350

- Graham, J. (1983). Occupational therapy: Is it the creative problem-solving process which the profession claims? *Australian Occupational Therapy Journal*, 30, 89-102.
- Grant, A. (2016). *Originals: How non-conformists move the world*. New York, NY: Penguin Books.
- Gray, P. (2011). The decline of play and the rise of psychopathology in children and adolescents. *American Journal of Play*, 3(4), 443-463.
- Grover, S. (2017). How technology lowers emotional intelligence. *Psychology Today*. Retrieved from <https://www.psychologytoday.com/us/blog/when-kids-call-the-shots/201707/how-technology-lowers-emotional-intelligence-in-kids>
- Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 105-117). Thousand Oaks, CA: Sage.
- Guilford, J. P. (1950). Creativity. *American Psychologist*, 5, 444-454.
- Guilford, J. P. (1967). *The nature of human intelligence*. New York, NY: McGraw-Hill.
- Gutman, S. A., & Falk-Kessler, J. P. (2016). Development and psychometric properties of the emotional intelligence admission essay scale. *Open Journal of Occupational Therapy*, 4(3). doi:10.15453/2168-6408.1233
- Hasselkus, B. R. (2002). *The meaning of everyday occupation* (2nd ed.). Thorofare, NJ: Slack.
- Hasselkus, B. R. (2006). The world of everyday occupation: Real people, real lives (Eleanor Clarke Slagle lecture). *American Journal of Occupational Therapy*, 60, 627-640.
- Healey, A., Mendelsohn, A., & AAP Council on Early Childhood. (2019). Selecting appropriate toys for young children in the digital era. *Pediatrics*, 143(1), 1-10. doi:10.1542/peds.2018-3348

- Henniger, M. L. (1994). Adult perceptions of favorite childhood play experiences. *Early Child Development and Care, 99*(1), 23-30.
- Hitch, D., Geneviève, P., & Stagnitti, K. (2014). In the footsteps of Wilcock, part two: The interdependent nature of doing, being, becoming, and belonging. *Occupational Therapy in Health Care, 28*(3), 247-263. doi:10.3109/07380577.2014.898115
- Hocevar, D. (1980). Intelligence, divergent thinking, and creativity. *Intelligence, 4*, 25-40.
- Holland, J. L. (1961). Creative and academic achievement among talented adolescents. *Journal of Educational Psychology, 52*, 136-147.
- Hooper, B. (2010). On arriving at the destination of the Centennial Vision: Navigational landmarks to guide occupational therapy education. *Occupational Therapy in Health Care, 24*, 97-106. doi:10.3109/07380570903329636
- Hooper, B., Mitcham, M. D., Taff, S. D., Price, P., Krishnagiri, S., & Bilics, A. (2015). Energizing occupation as the center of teaching and learning. *American Journal of Occupational Therapy, 69*(Suppl. 2), 1-5. doi:10.5014/ajot.2015.018242
- Howes, J. L., & Katz, A. N. (1992). Remote memory: Recalling autobiographical and public events from across the lifespan. *Canadian Journal of Psychology/Revue canadienne de psychologie, 46*(1), 92-116. <https://doi.org/10.1037/h0084311>
- IBM. (2010). IBM 2010 global CEO study: Creativity selected as most crucial factor for future success. Retrieved from <http://www03.ibm.com/press/us/en/pressrelease/31670>
- IBM Institute for Business Value. (2010). *Capitalizing on complexity: Insights from the global chief executive officer study*. Retrieved from <https://www.ibm.com/downloads/cas/1VZV5X8J>

- Johnston, M. P. (2014). Secondary data analysis: A method of which the time has come. *Qualitative and Quantitative Methods in Libraries*, 3, 619-626.
- Jorm, A. (2015). Using the Delphi expert consensus method in mental health research. *Australian & New Zealand Journal of Psychiatry*, 49(10), 887-897. doi:10.1177/0004.867415600891
- Kaufman, J. C., & Sternberg, R. J. (Eds.) (2019). *The cambridge handbook of creativity* (2nd ed.). Cambridge, England: Cambridge University Press.
- Kim, K. H. (2011). The creativity crisis: The decrease in creative thinking scores on the torrance tests of creative thinking. *Creativity Research Journal*, 23(4), 285-295. doi:10.1080/10400419.2011.627805
- Kim, K. H. (2017). *2017 creativity crisis update: How high-stakes testing stifles innovation*. Retrieved from https://www.creativitypost.com/article/the_2017_creativity_crisis_update_how_high_stakes_testing_has_stifled_innov
- King, A. (1993). From sage on the stage to guide on the side. *College Teaching*, 41(1), 11-19.
- Kohlberg, L. (1987). The development of moral judgement and moral action. In L. Kohlberg (Ed.), *Child psychology and childhood education: A cognitive development view* (pp. 113-118). New York, NY: Longman.
- Lamb, A. J. (2017). Presidential address, 2017: Unlocking the potential in everyday occupations. *American Journal of Occupational Therapy*, 71(6), 1-8. doi:10.5014/ajot.2017.716001
- Lieberman, J. (1965). The relationship between playfulness and divergent thinking at the kindergarten level. *Journal of Genetic Psychology*, 107, 219-224.
- Lieberman, J. (1967). A developmental analysis of playfulness as a clue to cognitive style. *Journal of Creative Behavior*, 1, 391-397.

- Lillard, A. S., Lerner, M. D., Hopkins, E. J., Dore, R. A., Smith, E. D., & Palmquist, C. M. (2013). The impact of pretend play on children's development: A review of the evidence. *Psychological Bulletin, 39*(1), 1-34. doi:10.1037/a0029321
- Lloyd, B., & Howe, N. (2003). Solitary play and convergent and divergent thinking skills in preschool children. *Early Childhood Research Quarterly, 18*, 22-41. doi:10.1016/S0885-2006(03)00004-8
- Louv, R. (2008). *Last child in the woods: Saving our children from nature-deficit disorder*. Chapel Hill: NC: Algonquin Books.
- Lubart, T., Zenasni, F., & Barbot, B. (2013). Creative potential and its measurement. *International Journal for Talent Development and Creativity, 1*(2), 41-50.
- Mattingly, C. F. (1991). The narrative nature of clinical reasoning. *American Journal of Occupational Therapy, 45*, 998-1005.
- Mattingly, C. F., & Fleming, M. H. (1994). *Clinical reasoning: Forms of inquiry in a therapeutic practice*. Philadelphia, PA: FA Davis.
- Mergen, B. (1982). *Play and playthings: A reference guide*. Westport, CT: Greenwood Press.
- Meyer, A. (1922). The philosophy of occupational therapy. *Archives of Occupational Therapy, 1*, 1-10.
- Milgram, R. M., & Milgram, N. (1978). Quality and quantity of creative thinking in children and adolescents. *Child Development, 49*, 385-388.
- Missiuna, C., & Pollock, N. (1991). Play deprivation in children with physical disabilities: The role of the occupational therapist in preventing secondary disability. *American Journal of Occupational Therapy, 45*(10), 882-888.

- Mouchiroud, C., & Lubart, T. (2001). Children's original thinking: An empirical examination of alternative measures derived from divergent thinking tasks. *Journal of Genetic Psychology, 162*(4), 382-401.
- Myers, T. P. (1999). *The soul of creativity: Insights into the creative process*. Novato, CA: New World Library.
- Nayar, S. (2012). Grounded theory: A research methodology for occupational science. *Journal of Occupational Science, 19*(1), 76-82. doi:10.1080/14427591.2011.581626
- Nicholson, J., Shimpi, P. M., Jevgiovikj, M., Kurnik, J., & Ufoegbune, V. (2015). Cycling on abandoned Second World War airfields and Jugando a Las Escondidas en el Parque: Examining play memories from adults growing up around the world. *Early Child Development and Care, 186*(6), 895-914. doi:10.1080/03004430.2015.1068767
- Nilsson, I., & Townsend, E. (2014). Occupational justice: Bridging theory and practice. *Scandinavian Journal of Occupational Therapy, 73*(1), 21-31.
- Okoli, C., & Pawlowski, S. D. (2004). The Delphi method as a research tool: An example, design considerations, and applications. *Information & Management, 42*, 15-29.
- Otty, R., & Milton, L. (2019). Promoting soft skills with the HOT (Higher Order Thinking) sheet assignment. *Journal of Instructional Pedagogies, 22*, 1-20.
- Paek, S. H., Park, H. P., Runco, M. A., & Choe, H. (2016). The contribution of ideational behavior to creative extracurricular activities. *Creativity Research Journal, 28*(2), 144-148. doi:10.1080/10400419.2016.1162547
- Palmer, P. J. (1998). *The courage to teach: Exploring the inner landscape of a teacher's life*. San Francisco, CA: Jossey-Bass.

- Parham, L. D. (1996). Perspectives on play. In R. Zemke & F. Clark (Eds.), *Occupational science: The evolving discipline* (pp. 71-80). Philadelphia, PA: Davis.
- Parham, L. D., & Fazio, L. S. (2008). *Play in occupational therapy for children* (2nd ed.). St. Louis, MO: Mosby.
- Patton, M. Q. (2015). *Qualitative research & evaluation methods* (4th ed.). Thousand Oaks, CA: Sage.
- Peloquin, S. M. (1997). The spiritual depth of occupation: Making worlds and making lives. *American Journal of Occupational Therapy, 51*, 167-168.
- Perrin, T. (2001). Don't despise the fluffy bunny: A reflection from practice. *British Journal of Occupational Therapy, 64*(3), 129-134. doi:10.1177/030802260106400304
- Pew Research Center. (2015, September 3). *The whys and hows of generations research*. Retrieved from <https://www.pewresearch.org/politics/2015/09/03/the-whys-and-hows-of-generations-research/>
- Pew Research Center. (2019). *Internet surveys*. Retrieved from <http://www.people-press.org/methodology/collecting-survey-data/internet-surveys/>
- Piaget, J. (1952). *The origins of intelligence in children*. New York, NY: International Universities Press.
- Piaget, J. (1962). *Play, dreams, and imitation in childhood*. New York, NY: Norton.
- Piffer, D. (2012). Can creativity be measured? An attempt to clarify the notion of creativity and general directions for future research. *Thinking Skills and Creativity, 7*, 258-264. doi:10.1016/j.tsc.2012.04.009

- Pizzi, M., & Richards, L. (2017). Guest editorial - Promoting health, well-being, and quality of life in occupational therapy: A commitment to a paradigm shift for the next 100 years. *American Journal of Occupational Therapy, 71*. doi:10.5014/ajot.2017.028456
- Plucker, J. A., Runco, M. A., & Lim, W. (2006). Predicting ideational behavior from divergent thinking and discretionary time on task. *Creativity Research Journal, 18*, 55-63.
- Portney, L. G., & Watkins, M. P. (2015). *Foundations of clinical research: Applications to practice* (3rd ed.). Philadelphia, PA: Davis.
- Prellwitz, M., & Skar, L. (2016). Are playgrounds a case of occupational justice? Experiences of parents and children with disabilities. *Children, Youth and Environments, 26*(2), 28-42.
- Reilly, M. (1962). Occupational therapy can be one of the great ideas of 20th century medicine (Eleanor Clarke Slagle lecture). *American Journal of Occupational Therapy, 16*, 1-9.
- Reilly, M. (1974). *Play as exploratory learning*. Beverly Hills, CA: Sage.
- Richards, L., & Morse, J. M. (2013). *Readme first for a user's guide to qualitative methods* (3rd ed.). Thousand Oaks, CA: Sage.
- Roberts, D. L., & Kovacich, J. (2018). Modifying the qualitative Delphi technique to develop the female soldier support model. *The Qualitative Report, 23*(1), 158-167.
- Royeen, C. B. (2003). Chaotic occupational therapy: Collective wisdom for a complex profession (Eleanor Clark Slagle Lecture). *American Journal of Occupational Therapy, 57*(6), 609-624. doi:10.5014/ajot.57.6.609
- Runco, M. (2003). Education for creative potential. *Scandinavian Journal of Educational Research, 47*(3), 317-324. doi:10.1080/0031383032000079272
- Runco, M. (2004). Creativity. *Annual Review of Psychology, 55*, 657-687. doi:10.1146/annurev.psych.55.090902.141502

- Runco, M. (2008). Commentary: Divergent thinking is not synonymous with creativity. *Psychology of Aesthetics, Creativity, and the Arts*, 2(2), 93-96.
- Runco, M. (2010). Divergent thinking, creativity, and ideation. In J. C. Kaufman & R. J. Sternberg (Eds.), *Developmental approaches to creativity* (pp. 413-446). New York, NY: Cambridge University Press.
- Runco, M. (2011). Divergent thinking. In S. Pritzker & M. A. Runco (Eds.), *Encyclopedia of creativity* (Vol. 1, pp. 577-583). New York, NY: Elsevier.
- Runco, M. (2014a). "Big c, little c" creativity as a false dichotomy: Reality is not categorical. *Creativity Research Journal*, 26, 131-132.
- Runco, M. (2014b). *Creativity: Theories and themes: Research, development, and practice* (2nd ed.). New York, NY: Elsevier.
- Runco, M. (2016). Commentary: Overview of developmental perspectives on creativity and the realization of potential. *New Directions for Child and Adolescent Development*, 151, 97-109.
- Runco, M., & Acar, S. (2012). Divergent thinking as an indicator of creative potential. *Creativity Research Journal*, 24(1), 66-75. doi:10.1080/10400419.2012.652929
- Runco, M., Millar, G., Acar, S., & Cramond, B. (2010). Torrance tests of creative thinking as predictors of personal and public achievement: A fifty-year follow-up. *Creativity Research Journal*, 22(4), 361-368. doi:10.1080/10400419.2010.523393
- Runco, M., Plucker, J., & Lim, W. (2000-2001). Development and psychometric integrity of a measure of ideational behavior. *Creativity Research Journal*, 13(3-4), 393-400. doi:10.1207/S15326934CRJ1334_16

- Runco, M., Walczyk, J. J., Acar, S., Cowger, E. L., Simundson, M., & Tripp, S. (2014). The incremental validity of a short form of the ideational behavior scale and usefulness of distractor, contraindicative, and lie scales. *Journal of Creative Behavior, 48*(3), 185-197. doi:10.1002/jocb.47
- Russ, S. W. (2013). *Pretend play in childhood: Foundation of adult creativity*. Washington, DC: American Psychological Association.
- Russ, S. W., & Christian, K. M. (2011). Play. In M. Runco & S. Pritzker (Eds.), *Encyclopedia of Creativity* (Vol. 2, pp. 238-243). San Diego, CA: Academic Press.
- Russ, S. W., & Dillon, J. A. (2011). Changes in children's pretend play over two decades. *Creativity Research Journal, 23*(4), 330-338. doi:10.1080/10400419.2011.621824
- Russ, S. W., & Fiorelli, J. A. (2010). Developmental approaches to creativity. In J. C. Kaufman & R. C. Sternberg (Eds.), *Cambridge handbook of creativity* (pp. 233-249). Cambridge, England: Cambridge University Press.
- Russ, S. W., Robins, A. L., & Christiano, B. A. (1999). Pretend play: Longitudinal prediction of creativity and affect in fantasy in children. *Creativity Research Journal, 12*(2), 129-139. doi:10.1207/s15326934crj1202_5
- Russ, S. W., & Wallace, C. E. (2013). Pretend play and creative processes. *American Journal of Play, 6*(1), 136-148.
- Sahni, L. (2011). The impact of soft skill training induction programme on new enterants. *Management Edge, 4*(2), 40-47.
- Sandberg, A. (2001). Play memories from childhood to adulthood. *Early Child Development and Care, 167*(1), 13-25. doi:10.1080/0300443011670102

- Sandberg, A. (2003). Play memories and place identity. *Early Child Development and Care*, 173(2-3), 207-221.
- Sandberg, A., & Pramling Samuelsson, I. (2003). Preschool teachers' play experiences then and now. *Early Childhood Research & Practice*, 5(1), 1-17.
- Sandberg, A., & Vuorinen, T. (2008). Dimensions of childhood play and toys. *Asia-Pacific Journal of Teacher Education*, 36(2), 135-146. doi:10.1080/13598660801975790
- Sansanwal, S. (2014). Pretend play enhances creativity and imagination. *Journal of Arts and Humanities*, 3(1), 70-83.
- Schmid, T. (2004). Meanings of creativity within occupational therapy practice. *Australian Occupational Therapy Journal*, 51, 80-88.
- Schmid, T. (2005). *Promoting health through creativity: For professionals in health, arts and education*. London, England: Whurr.
- Schon, D. (1987). *Educating the reflective practitioner*. San Francisco, CA: Jossey-Bass.
- Singer, J. L., & Singer, D. G. (1990). *The house of make-believe: Children's play and the developing imagination*. Cambridge, MA: Harvard University Press.
- Snape, D., Kirkham, J., Preston, J., Popay, J., Britten, N., Collins, M.,...Jacoby, A. (2014). Exploring areas of consensus and conflict around values underpinning public involvement in health and social care research: A modified Delphi study. *BMJ Open*, 4(1), 1-10. doi:10.1136/bmjopen-2013-004217
- Sobaih, A. E., Ritchie, R., & Jones, E. (2012). Consulting the oracle? Applications of the modified Delphi technique to qualitative research in the hospitality industry. *International Journal of Contemporary Hospitality Management*, 24(6), 886-906. doi:10.1108/09596111211247227

- Sobel, D. (1990). A place in the world: Adults' memories of childhood's special places. *Children's Environments Quarterly*, 7(4), 5-12.
- Starkweather, E. K. (1964). Problems in the measurement of creativity in preschool children. *Journal of Educational Measurement*, 1, 109-113.
- Stewart, D., Gibson-Smith, K., MacLure, K., Mair, A., Alonso, A., Codina, C.,...Wiese, B. (2017). A modified Delphi study to determine the level of consensus across the European Union on the structures, processes, and desired outcomes of the management of polypharmacy in older people. *PLoS ONE*, 12(11), 1-17. doi:10.1371/journal.pone.0188348
- Surowiecki, J. (2004). *The wisdom of crowds: Why the many are smarter than the few*. London, England: Abacus.
- Sutton-Smith, B. (1986). *Toys as culture*. New York, NY: Gardner Press.
- Sutton-Smith, B. (1992). The role of toys in the instigation of playful creativity. *Creativity Research Journal*, 5(1), 3-11. doi:10.1080/10400419209534418
- Teddlie, C., & Tashakkori, A. (2009). *Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioral sciences*. Thousand Oaks, CA: Sage.
- The Strong. (2010-2013). *Play histories [Play histories summaries]. America at play: Play stories video archive. (AAP-RS). Brian Sutton-Smith Library and Archives of Play*. Rochester, NY: Author.
- The Strong. (2010-present). *America at play: Play stories video archive. (AAP-RS). Brian Sutton-Smith Library and Archives of Play*. Rochester, NY: Author.

- The Strong. (2011). *Resource space manual, style guide, and lexicon [Resource space style guide]*. *America at play: Play stories video archive*. (AAP-RS). Brian Sutton-Smith Library and Archives of Play. Rochester, NY: Author.
- The Strong. (2015a). *America at play: Play stories video archive, 2010-present [style guide]*. *America at play: Play stories video archive*. (AAP-RS). Brian Sutton-Smith Library and Archives of Play. Rochester, NY: Author.
- The Strong. (2015b). *Toy halls of fame exhibit script*. Rochester, NY: Author.
- The Strong. (2019). *About*. Retrieved from <http://www.museumofplay.org/about>
- The Strong. (2020). *About the national toy hall of fame*. Retrieved from <https://www.museumofplay.org/press/fact-sheets/about-national-toy-hall-fame>
- Townsend, E., & Rappolt, S. (2014). Visions of possibility: Creative occupational solutions for today's occupational challenges. *Occupational Therapy Now*, 16(2), 3-4.
- Townsend, E., & Wilcock, A. A. (2004). Occupational justice and client-centred practice: A dialogue in progress. *Canadian Journal of Occupational Therapy*, 71(2), 75-87. doi:10.1177/000841740407100203
- Trien, S., & Appel, A. (2013, June 25). *Highlights of national toy hall of fame and toy industry association hall of fame at The Strong* [Press release]. Retrieved from <https://www.museumofplay.org/content/halls-fame-highlights>
- United Nations. (2012). *The universal declaration of human rights*. Retrieved from <http://www.un.org/en/documents/udhr/index.shtml#a23>
- University of South Florida. (2020). *Generational differences chart*. Retrieved from <https://www.usf.edu/hr-training/documents/lunch-bytes/generationaldifferenceschart.pdf>

- U.S. Embassy. (2008). *The regions of the United States*. Retrieved from <https://usa.usembassy.de/travel-regions.htm>
- Vespa, J. (2018, March). *The graying of America: More older adults than kids by 2035*. Retrieved from <https://www.census.gov/library/stories/2018/03/graying-america.html>
- von der Gracht, H. A. (2012). Consensus measurement in Delphi studies: Review for implications and future quality assurance. *Technical Forecasting and Social Change*, 79(8), 1525-1536. doi:10.1016/j.techfore.2012.04.013
- Vygotsky, L. S. (1962). *Thought and language*. Cambridge, MA: MIT Press.
- Vygotsky, L. S. (1979). Consciousness as a problem in the psychology of behavior. *Soviet Psychology*, 17, 3-35.
- Vygotsky, L. S. (1990). Imagination and creativity in childhood. *Soviet Psychology*, 28(1), 84-96.
- Wallach, M. A., & Kogan, N. (1965). *Modes of thinking in young children*. New York, NY: Holt, Rinehart & Winston.
- Wang, M., Hao, N., Ku, Y., Grabner, R. H., & Fink, A. (2017). Neural correlates of serial order effect in verbal divergent thinking. *Neuropsychologia*, 99, 92-100. doi:10.1016/j.neuropsychologia.2017.03.0
- Wang, Q., & Peterson, C. (2014). Your earliest memory may be earlier than you think: Prospective studies of children's dating of earliest childhood memories. *Developmental Psychology*, 50, 1680-1686.
- Washburn, D. (1987). *Final report: Doll oral history project*. Rochester, NY: The Strong.

- Wells, C., Morrison, C. M., & Conway, M. A. (2014). Adult recollections of childhood memories: What details can be recalled? *The Quarterly Journal of Experimental Psychology, 67*, 1249-1261.
- White, B., Arthanat, S., & Crepeau, E. (2008). Perspectives about occupational justice: Can poverty and occupational deprivation influence child development? *The University Dialogue, 37*, 11-13.
- Wilcock, A. A. (2006). *An occupational perspective of health* (2nd ed.). Thorofare, NJ: Slack.
- Wilcock, A. A., & Hocking, C. (2015). *An occupational perspective of health* (3rd ed.). Thorofare, NJ: Slack.
- World Health Organization. (2013). *Definition of key terms*. Retrieved from <http://www.who.int/hiv/pub/guidelines/arv2013/intro/keyterms/en/>
- Yamkovenko, S. (2019). *AOTA members help design Xbox adaptive controller: You might cry watching its super bowl ad* [Blog post]. Retrieved from <https://communit.aota.org/blogs/stephanie-yamkovenko/2019/02/01/aota-members-help-design-xbox-adaptive-controller>
- Yerxa, E. J. (1991). Nationally speaking — Occupational therapy: An endangered species or an academic discipline in the 21st century? *American Journal of Occupational Therapy, 45*, 680-685.
- Yerxa, E. J., Clark, F., Frank, G., Jackson, J., Parham, D., Pierce, D.,...Zemke, R. (1990). An introduction to occupational science, a foundation for occupational therapy in the 21st century. *Occupational Therapy in Health Care, 6*(4), 1-17. doi:10.1080/J003v06n04_04
- Yogman, M., Garner, A., Hutchinson, J., Hirsh-Pasek, K., & Golinkoff, M. (2018). The power of play: A pediatric role in enhancing development in young children. *Pediatrics, 142*(3), 1-16.

Zemke, R. (2004). Time, space, and the kaleidoscopes of occupation. *American Journal of Occupational Therapy*, 58, 608-620. doi:10.5014/AJOT.58.6.608

Appendix A: Research Recruitment Online Invitation for Social Media

a research study on
TOYS AND CREATIVITY
the funnest online survey you'll ever take!



Time commitment:
20 minutes or less

Must be:
22-73 years old to participate

Study conducted by:
Brittany Saviers
Primary Investigator
Nova Southeastern University
Department of Occupational Therapy
Contact: bs1419@mynsu.nova.edu















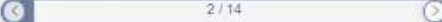
The purpose of this study is to explore the relationship between the types of toys frequently used during childhood and adult creative potential.

Appendix B: Retrospective Childhood Play Inventory

Question 1

Retrospective Play Inventory
The Funnest Online Survey You'll Ever Take!

▲ 04
Please select the 4 toys you most frequently played with during childhood.

			
The Game of Life	Mr. Potato Head	Paint	Puppet
			
Fisher Price Little People	Roller Skates	Jump Rope	Tree
			
Computer	Leap Frog	Ring Around the Rosy	Blocks
			
Paper Airplane	Uno		

Question 2

Please select the 4 toys you most frequently played with during childhood.



Jigsaw Puzzle



Electric Train



Memory Game



Monopoly



Paper, Pencil, Pen



Silly Putty



Little Green Army Men



Bicycle



Water Hose



Flashlight



Peek-A-Boo



Tag



Dress Up



Nerf Toys

Question 3

Please select the 4 toys you most frequently played with during childhood.



Lincoln Logs



Hot Wheels



Wikki Stix



Action Figures



Ball



Blanket



Bubble Wrap



Rock, Paper, Scissors



Simon Says



Chemistry Set



Strategy Games



Scooter



Stuffed Animal



Paper Football

Question 4

Please select the 4 toys you most frequently played with during childhood.



Dominoes



Checkers



Crayons



Toy Gun



Musical Toys



Barbie



Trampoline



Sled



Hand Clapping Games



Marco Polo



Fireworks



String



Pop Beads



Toy Tool Kit

Question 5

Please select the 4 toys you most frequently played with during childhood.



LEGO



Sand Toys



Marbles



Play-Doh



Books



Spirograph



Multi-Piece Playset



Hula Hoop



Slinky



Apple Electronics



Pots and Pans / Containers



Mother May I



Wheelbarrow Races



Party Games

Question 6

Please select the 4 toys you most frequently played with during childhood.



Erector Set



Candy Land



Easy-Bake Oven



Sidewalk Chalk



Matchbox Cars



Kite



Dogs or Other Pets



Sprinklers



Red Rover, Red Rover



Arm Wrestling



Riding Toys



Toy Tea Set



Ping Pong



Magnetic Construction Toys

Question 7

Please select the 4 toys you most frequently played with during childhood.



Video Game Consoles



Colored Markers



Big Wheel



Yoyo



Stick



Tire



Piggy Back Rides



School



Magnetic Drawing Toys



Race Games



Toy Cars, Trucks, and War Toys



Circuit Toys



Toy Kitchen/Dishes Set and Pl...



Build-A-Bear















Question 8

Please select the 4 toys you most frequently played with during childhood.

			
K'nex	Rubik's Cube	Bed Jumping	Duck, Duck, Goose
			
Etch-A-Sketch	G.I. Joe	Battleship	Stickers
			
Imaginary Friend	Radio Flyer Wagon	Fort	Dirt / Sand
		<input type="button" value="←"/> 9 / 14 <input type="button" value="→"/>	
Frisbee	Pillow		









Question 9







Please select the 4 toys you most frequently played with during childhood.

			
Handheld Electronic Games	Colorforms	Pull Toys	Lite-Brite
			
Hide-and-Seek	Puddles	Marble Runs	Remote Controlled Vehicle
			
Cops and Robbers	Dolls	Games of Skill	Chalk
		<div style="text-align: center;"> < 10 / 14 > </div>	
Rubber Band	Playground		

Question 10

Please select the 4 toys you most frequently played with during childhood.

	
Tinkertoy	Clue
	
Dollhouse	Bubbles
	
Skateboard	Snow / Snowballs
	
Cardboard Box	Cowboys and Indians

	
Card Games	Walkie-Talkie
	
Coloring Book	Loom Activities
	
Red Light, Green Light	Crafts

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Appendix C: Agreement for Use of Runco Ideational Behavior Scale – Short Form

Agreement for Services 2019

Creativity Testing Services, LLC is giving permission to Brittany Saviers, (OTR/L Clinical Instructor, Department of Occupational Therapy, University of Central Arkansas), to use several divergent thinking tests from the *Runco Creative Assessment Battery* (rCAB) during the Spring of 2019.

By signing this Agreement Brittany confirms that all tests will be administered in accordance with CTS and APA guidelines.

She takes all responsibility for following Human Subjects guidelines and for the ethical treatment of examinees. She also takes all responsibility for the ethical and appropriate use and publication of the data (including but not limited to the confidentiality of the examinees).

All assessments and use of the data must be consistent with the standards of the American Psychological Association. Ms Saviers agrees that CTS tests are not to be shared, described, nor reproduced except for this one academic project. Scores are not to be shared with other than qualified personnel.

CTS is in no way involved with the actual administration of the tests and is thus not responsible for the actual data collection nor any problems that arise with data collection.

Signed agreement

A large black rectangular box redacting the signature of the individual.

Date:

A black rectangular box redacting the date.

Appendix D: Runco Ideational Behavior Scale: Short Form (RIBS-S)

Part of the *Runco Creativity Assessment Battery (rCAB)*
Copyright 2011 Creativity Testing Services, LLC.

RUNCO IDEATIONAL BEHAVIOR SCALE: SHORT FORM (RIBS-S)

Part of the Runco Creativity Assessment Battery (rCAB)
Copyright 2011 Creativity Testing Services, LLC.

Directions:

Use the 0-4 scale (given below) to indicate how often each of the phrases describes your thinking. Note the focus on your thinking, which might be different from your actual behavior. Also, you may need to approximate. Please indicate how you really think, not how you believe you should act. Remember--no names are used. Your responses are confidential.

Again, you may need to approximate. For each item, **select** the response option that is THE CLOSEST to being accurate. **Here are the options:**

0 = Never

1 = **approximately** once a year

2 = once or twice each month (**approximately**)

3 = once or twice each week (**approximately**)

4 = Just about every day, and sometimes more than once each day.

Remember:

The focus is on your thinking, which might be different from your actual behavior. Please indicate how you really think, not how you believe you should act.

*

I have ideas for arranging or rearranging the furniture at home.

- 0 = Never
- 1 = Yearly
- 2 = Monthly
- 3 = Weekly
- 4 = Daily

I have ideas for making my work easier.

- 0 = Never
- 1 = Yearly
- 2 = Monthly
- 3 = Weekly
- 4 = Daily

I think of a new, better, or funny name for something that already has a name.

- 0 = Never
- 1 = Yearly
- 2 = Monthly
- 3 = Weekly
- 4 = Daily

*

I have ideas about what I will be doing in the future.

- 0 = Never
- 1 = Yearly
- 2 = Monthly
- 3 = Weekly
- 4 = Daily

*

I consider alternative careers (or career changes).

- 0 = Never
- 1 = Yearly
- 2 = Monthly
- 3 = Weekly
- 4 = Daily

*

I have trouble sleeping at night, so many ideas keep showing themselves keep me awake.

- 0 = Never
- 1 = Yearly
- 2 = Monthly
- 3 = Weekly
- 4 = Daily

*

I make plans (e.g., going to a particular restaurant or movie), but something messes it up—yet it is easy for me to find something to do instead.

- 0 = Never
- 1 = Yearly
- 2 = Monthly
- 3 = Weekly
- 4 = Daily

I have ideas about a good plot for a movie or TV show.

- 0 = Never
- 1 = Yearly
- 2 = Monthly
- 3 = Weekly
- 4 = Daily



Remember:

The focus is on your thinking, which might be different from your actual behavior. Please indicate how you really think, not how you believe you should act.

*

I have ideas about a new invention.

- 0 = Never
- 1 = Yearly
- 2 = Monthly
- 3 = Weekly
- 4 = Daily

*

I have ideas for stories or poems.

- 0 = Never
- 1 = Yearly
- 2 = Monthly
- 3 = Weekly
- 4 = Daily

*

I have an idea about a new route between home and school (or work).

- 0 = Never
- 1 = Yearly
- 2 = Monthly
- 3 = Weekly
- 4 = Daily

*

I have ideas for a new business or product.

- 0 = Never
- 1 = Yearly
- 2 = Monthly
- 3 = Weekly
- 4 = Daily

*

I see a cloud, shadow, or similar ambiguous figure and have SEVERAL ideas about what the shape or figure could be.

- 0 = Never
- 1 = Yearly
- 2 = Monthly
- 3 = Weekly
- 4 = Daily

*

I have ideas about what I will be doing 10 years from now.

- 0 = Never
- 1 = Yearly
- 2 = Monthly
- 3 = Weekly
- 4 = Daily

*

I have trouble staying with one topic when writing letters because I think of so many things to say.

- 0 = Never
- 1 = Yearly
- 2 = Monthly
- 3 = Weekly
- 4 = Daily

*

I often see people and think about alternative interpretations of their behavior.

0 = Never

1 = Yearly

2 = Monthly

3 = Weekly

4 = Daily

*

When reading books or stories I have ideas of better endings.

0 = Never

1 = Yearly

2 = Monthly

3 = Weekly

4 = Daily

*

When reading the newspaper or a letter that someone wrote, I often have ideas for better wording.

0 = Never

1 = Yearly

2 = Monthly

3 = Weekly

4 = Daily

*

I hear songs and think of different or better lyrics.

- 0 = Never
- 1 = Yearly
- 2 = Monthly
- 3 = Weekly
- 4 = Daily



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[Submit Survey](#)

Appendix E: NSU Participant Letter for Anonymous Surveys



**DR. PALLAVI PATEL COLLEGE O
HEALTH CARE SCIENCE**
3200 South University Driv
Fort Lauderdale, Florida 33328-201
WEB: nova.edu/chc

Participant Letter for Anonymous Surveys NSU Consent to be in a Research Study Entitled

Childhood Play as a Predictor for Development of Creative Potential in Adulthood: A Mixed Methods Study

Who is doing this research study?

This person doing this study is Brittany Saviers, MS, OTR/L with Dr. Pallavi Patel College of Health Care Sciences in the Department of Occupational Therapy. They will be helped by Dr. Wendy Stav, PhD, OTR/L, FAOTA.

Why are you asking me to be in this research study?

You are being asked to take part in this research study because you are an adult aged 22-73; understand the written and/or verbal English language; and have access to Wi-Fi or Internet connection.

Why is this research being done?

The purpose of this study is to explore the relationship between the types of toys frequently used during childhood and adult creative potential. Additionally, utilizing adults' retrospective play stories, the study will seek to understand the contribution of play to human development by identifying themes of childhood play experiences specific to the constructs of the doing-being-becoming-belonging framework (Wilcock, 2006; Wilcock & Hocking, 2015).

What will I be doing if I agree to be in this research study?

You will be taking a one-time, anonymous survey. The survey will take approximately 20 minutes or less to complete.

Are there possible risks and discomforts to me?

This research study involves minimal risk to you. To the best of our knowledge, the things you will be doing have no more risk of harm than you would have in everyday life.

What happens if I do not want to be in this research study?

You can decide not to participate in this research and it will not be held against you. You can exit the survey at any time.

Will it cost me anything? Will I get paid for being in the study?

There is no cost for participation in this study. Participation is voluntary and no payment will be provided.

How will you keep my information private?

Your responses are anonymous. Information we learn about you in this research study will be handled in a confidential manner, within the limits of the law. The information obtained through this survey should not contain identifying or confidential information about the participant. However, the confidentiality of participants in this study will be assured by de-identifying any personal information via assigning a number code to each participant. This data will be available to the researcher, the Institutional Review Board and other representatives of this institution, and any granting agencies (if applicable). All confidential data will be kept securely in a locked filing cabinet in the researcher's office in the Department of Occupational Therapy at the University of Central Arkansas. Electronic files will be stored on the researcher's password-protected computer. All data will be kept for 36 months from the end of the study and destroyed after that time by use of irreversible methods to ensure the data is no longer usable. Non-digital data will be physically destroyed through a secure destruction service (e.g. paper shredding company) and any digital data will be destroyed utilizing software to permanently erase the related data.

Who can I talk to about the study?

If you have questions, you can contact Brittany Saviers, MS, OTR/L at 501-850-0984 or Dr. Wendy Stav at 954-262-1243.

If you have questions about the study but want to talk to someone else who is not a part of the study, you can call the Nova Southeastern University Institutional Review Board (IRB) at (954) 262-5369 or toll free at 1-866-499-0790 or email at IRB@nova.edu.

Do you understand and do you want to be in the study?

If you have read the above information and voluntarily wish to participate in this research study, please access the online survey about childhood toys and creativity from this link: <https://www.surveylegend.com/s/15cj>

Appendix F: Sociodemographic Questions

Participant Background Information

Prior to beginning the surveys, please complete the following five questions on yourself. All answers will remain anonymous and confidential.

*

What year were you born?

*

To what gender identity do you most identify?

- Female
- Male
- Transgender female / Transgender woman
- Transgender male / Transgender man
- Gender Non-Conforming
- Not Listed
- Prefer not to answer

*

What is your ethnic background?

If you live in the United States of America, please indicate the state where you currently reside (please type out the entire name of the state). If you do not currently live in the United States, please leave this question blank and refer to the next question.

If you live outside of the United States of America, please indicate the country where you currently reside (please type out the entire name of the country). If you reside in the United States of America, leave this question blank.

**Appendix G: Examples of Kiosk Questions for *America at Play: Play Stories Video Archive*
Project**

New Kiosk Questions

May 28, 2013

What makes your favorite toy or game great?

What's your best memory of summer vacation?

What's the best thing about your favorite sport?

How did you and your best friend play together?

Did you ever change the rules of a game, or make up your own rules?

What kinds of games do you play while traveling?

How do you play with your pets?

Who won the big game?

How do you spend the holidays?

What did you do last summer?

What's your all-time favorite vacation memory?

What's the best thing about playing sports?

How have you spent your summers?

Describe the most memorable game you've won or lost.

What do you like most about your favorite sport?

Why do dolls make good companions?

Halloween Play Histories **October 22, 2010**

Possible Interview Locations

- Between *National Geographic Maps* and the Caterpillar atrium
- Across from the Sesame Street steps
- By the Gelser library desk
- Between *Comic Book Heroes* and *Dancing Wings*
- Inside One History Place

Possible Questions

- What was your favorite Halloween costume?
- What was the worst Halloween costume you ever wore?
- What are you going as this Halloween?
- Tell me about your costume.
- What's the best thing you got trick-r-treating?
- What's your favorite fall activity?
- Tell me about your favorite holiday?

Supplies/Equipment

- Host shirt
- Clipboard with release forms
- Kodak pocket camcorder (with extra memory card)
- A sign explaining what's going on/encouraging participation

Other Information for Saturday

- There'll be a DJ in the Caterpillar
- On Sunday, the craft tables by Sesame Street might be a good place to talk to parents while their kids are busy
- The main lobby will have recorded music playing—might make interfering background noise
- Art Express might be a place for interviews, slightly out of the traffic flow

Appendix H: Use of Collections Materials Agreement for the Strong National Museum of Play



One Manhattan Square
Rochester, NY 14607
585-263-2700
museumofplay.org

Use of Collections Materials Agreement

Name Saviers Brittany Nicole
(first) (middle)
Street [REDACTED]
City [REDACTED] State [REDACTED] Zip [REDACTED] Country [REDACTED]
Phone [REDACTED] Email [REDACTED]
Institutional Affiliation (if any) Nova Southeastern University - Dept. of Occupational Therapy
Purpose of Research PhD Research Residency
Plans for Publication or Other Use Possible use in dissertation; Research experience will fill needs for specific study area of interest.

1. Food, beverages, and chewing gum are prohibited in the reading room of the Brian Sutton-Smith Library and Archives of Play, the ICHEG Lab, and collections storage areas of The Strong.
2. The collections at The Strong often consist of unique, rare, and fragile items and should be handled with care. Pens, markers, and highlighters are not permitted. Please use a #2 pencil for all note taking. (Spare pencils are available from library staff upon request.) Do not lean on, write on, fold, or trace over materials. Cotton gloves are not required for handling library and archives materials, though some museum objects may necessitate the use of gloves as determined by a curator. Museum staff will provide users with gloves if needed.
3. The proper order of archival materials within file folders, portfolios, and boxes must be maintained. Only one box from a collection can be used at a time. One folder at a time should be removed from its box, examined, and then returned to the box before the next folder is removed. Archival paper strips for place holders will be provided. If any material seems to be filed incorrectly, please notify a staff member.
4. Advanced notice may be required to access museum objects. Researchers studying museum objects must meet with a curator to discuss proper handling procedures. If an object appears damaged beyond the scope previously identified by a curator, or if an object is accidentally damaged while it is being studied, please notify a staff member immediately.
5. The use of a personal digital camera or scanner is allowed only for the purpose of private study, scholarship, or research. Use of a flash is strictly prohibited. Requests for reproductions for any purpose other than for private study, scholarship or research must be made in accordance with the museum's Image Rights and Reproductions Fee Schedule. (Please note: The preservation needs of the materials outweigh the technical

Home to: [International Center for the History of Electronic Games](#) | [Brian Sutton-Smith Library and Archives of Play](#) | [National Toy Hall of Fame](#) | [American Journal of Play](#) | [Woodbury School](#)

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limitations of the camera or scanner. Materials must remain flat on the desk or in the stand/cradle provided. Researchers may not push on bindings, stand on tables or chairs, or hold up materials in order to obtain a better quality image. No pressure may be applied to the object. Materials may not be removed from protective sleeves or enclosures by researchers; for assistance, please consult a staff member.)

6. Staff members of The Strong are responsible for all photocopying. In order to conserve limited staff resources, we ask that you request for copy only those materials which have been examined and have relevance to your research. (Please note: The preservation needs of the materials outweigh technical limitations of the photocopier or scanner. If museum staff determine that a book or document is too fragile for photocopying, other arrangements may be made so as to prevent damage to the material.) The Strong reserves the right to limit the number of pages copied from any item to one-third of its total content or 30 pages, whichever is less. This applies to bound volumes and to individual files.
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I have read the regulations above regarding the Use of Collections Materials at The Strong and agree to abide by them.

Signature  Date 

Driver's License or Other ID 
(Library staff will make a photocopy and attach to this form.)

Date Research Approved ____ / ____ / ____ Staff Member _____

Appendix I: Permission to Use LEGO Mini Evolution Figure



Brittany Saviers <bbrown@uca.edu>

Re: Permission to Use Lego Mini Figure Evolution

1 message

Zivile Zickute <zivile.zickute@gmail.com>
To: Brittany Saviers <bbrown@uca.edu>

Sun, Apr 25, 2021 at 2:02 AM

Hello Brittany,

Thanks for reaching out to me. I really appreciate you asking my permission.

I give you permission to use that illustration in your dissertation study and dissemination. I attached a static version of it.

Congrats on finishing your dissertation.

All the best,
Zivile

On Sat, Apr 24, 2021 at 9:09 PM Brittany Saviers <bbrown@uca.edu> wrote:

Greetings!

I am reaching out in regards to your Lego Mini Figure Evolution design I have found on Pinterest and Dribble. I am a PhD student at Nova Southeastern University in Fort Lauderdale, Florida and am completing my dissertation on the topic of toys and creativity. I have found your Lego Mini Figure design to be the perfect way to represent the data in my study. I hope to get your permission to use the design (in the final static version - not dynamic/moving) in the written dissemination of my manuscript. Of course, I will acknowledge and give credit as appropriate. Are you OK with me using your Lego Mini Figure Evolution design for my dissertation study and dissemination?

I appreciate your consideration,
Brittany Saviers

Brittany Saviers, M.S., OTR/L

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AVID: UCA dedicates itself to Academic Vitality, Integrity, and Diversity

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Zivile Zickute
Graphic Designer / Art Director





Lego-Evolution-by-Zivile-Zickute.png
30K