EARLY CHILDHOOD GENDER SOCIALIZATION: IMPLICATIONS OF SEX-TYPED TOYS AND PLAY ON ADULTHOOD CAREER OUTCOMES

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Abstract

Sex-typed childhood toys are used as indicators of parent-child gender socialization. Sex-typed toys indicate gender roles and expectations parents expose their young children to. The present study's purpose is to test whether early childhood gender socialization is related to adulthood academic, career and family expectations. Gender role ideologies and gender schemas are hypothesized to mediate these relationships. Two hundred and seventy-seven university students volunteered to complete surveys. The surveys measured the frequency of play in feminine and masculine toys and games, neutral toys, and with each parent. The dependent variables measure the number of women enrolled in respondents' declared university majors (specializations), as well as their expected commitment to future occupation, parenting, marital, and home care roles. Expected role commitments are measured using the Life Role Salience Scale (Amatea et al., 1986). Gender role ideologies are measured by using the short version of the Attitudes Towards Women Scale (Spence, Helmreich, & Stapp, 1973), and gender schemas are measured by using Bem's (1974) short version of the Bem Sex Role Inventory. The results of the study found that exposure to sex-typed toys in early childhood is related to expected commitment levels to future occupational, parenting, marital, and home care roles, as well as to enrollment in female dominated university majors. Gender role ideologies and gender schemas mediate more of the relationships tested in the male sample than in the female sample.

Table of Contents

List of Tables

List of Figures

Introduction

Despite fluctuations in interest, gender research has been a popular area for psychologists and sociologists, particularly in the 1980's (Ruble & Martin, 1998). All known societies have established gender roles through sex-typed labor divisions (Eagly, Wood, & Diekman, 2000), which makes this area universal and interesting to social scientists. The process of learning and acquiring these sets of social rules originates from the primary social unit. As parents are one of the most influential agents of social information for young children (Maccoby, 1992; Schwartz & Markham, 1985), parents become a key socializing agent to gender development. The earliest example begins at birth, when sons and daughters are subjected to differential sex socialization. Parents perceive their children differently according to the sex of the child (Fagot & Leinbach, 1987). Gender and sex-typed behaviors become observable in children as young as 18 months (O'Brien & Huston, 1985; Caldera, Huston, & O'Brien, 1989; Fagot, 1974). The family context provides children with the earliest sex role socialization (Fagot & Leinbach, 1987), and is thus a popular focal point of gender research.

Toys are used by parents and children to learn about gender rules and expectations. Toys have been used in many studies to indicate how children learn gender (e.g., Giuliano, Popp, & Knight, 2000; O'Brien & Huston, 1985; Eisenberg, Wolchick, Hernandez, & Pasternack, 1985; Langlois & Downs, 1980; Roopnarine, 1986; Fisher-Thompson, 1993). Much research has been implemented to assess the process of how gender socialization occurs through the encouragement of sex-typed toy play, but some questions still remain. These questions ask what the importance of this vast body of research is, and what the outcomes of variations in this process mean for individuals. One significant effect of childhood gender socialization is that women who played with masculine toys as children are more likely to be athletic. Giuliano, et al. (2000) conducted a study that analyzed what toys and play groups

female athletes and non-athletes were exposed to in childhood. They found that, compared to female non-athletes, female athletes were more likely to have played with masculine toys, and to have had support and encouragement from peers and siblings. The findings of this study describe how childhood gender socialization can influence adult outcomes. The Giuliano et al. (2000) study outcomes indicate the importance of gender socialization in childhood through the use of toys is a topic needing further research.

Research Questions

The purpose of this study is to examine what the possible adulthood outcomes of childhood gender socialization are. The questions for this study are as follows: Do childhood sex-typed toys affect career or academic choices? Does the sex of play groups in childhood predict these choices in adulthood? Does parent-child play predict academic and career choices? Is this process mediated by gender schemas or gender ideologies? These research questions will be tested in this study in order to assess the possible outcomes of parent-child gender socialization. The proposed research will examine how social indicators of parent-child gender socialization can be linked to gender specific outcomes in adulthood. Toys, play groups, and parental play in early childhood will be the indicators of gender socialization. University majors and career expectations will be the adulthood outcomes. The following sections will discuss the theoretical issues behind this research, the past research, and the research methods.

Theoretical Issues of Gender Socialization

Many theories have been applied and developed to guide gender socialization research. However, many of these theories apply only to certain areas of gender development, as no theory thus far can account for the entire developmental process (Fagot & Leinbach, 1989). Theories from where the research questions are rooted will be discussed in the next section.

These theories focus on parental gender socialization and its impact on later life outcomes, such as career choices.

Learning Theory

Learning theory can be used to explain how individuals learn gender. The assumptions of learning theory postulate that we learn gender appropriate, or sex-typed, behaviors and roles through punishments and rewards (Ruble & Martin, 1998; Bem, 1983, 1981). Rewards and punishments in this paradigm must be conceptualized in the social context; such responses to sex-typed behaviors, whether congruent or incongruent with the individual's sex, can range from facial expressions, to involvement of play, to verbal cues (Roopnarine, 1986; Langlois & Downs, 1980). Children imitate sex-typed behaviors that parents, or other authority figures, model (Ruble & Martin, 1998). As an example, if a female child chose to play with a doll, or any other feminine-typed toy, this behavior would be met with positive reactions. Any other congruent sex-typed play would also receive positive reactions. However, should this same female child play with a masculine toy, parents and others would frown, state their disapproval, or engage in another form of social punishment.

Although this theory identifies the sources of gender information, social learning theory implies that children are relatively inactive participants in the socialization process (Bem, 1983). Parents are seen as the information providers and modelers, while children are simply absorbing gender information. Many studies that apply this inactive assumption to observe the process of parental socialization on young children forget that gender socialization is a process, not a sequence. For example, Fagot and Hagan (1991) observed parent-child toy selections and coded video recordings of children's selections, followed by parents' reactions (rewards and punishments). This sequence of events assumes that the process ends when a parent reacts. This sequence omits the possibility that children may be observing the parents' reactions while

making the toy selection in the form of social referencing. In assuming that children are not engaging in social referencing, children appear to be unmotivated to seek gender information. Although social learning theory is used in many infancy and early childhood gender socialization studies (e.g., Fagot & Hagan, 1991), it fails to explain why gender information is so readily processed, why gender is the first and largest categorical system that children learn, or if factors affect gender development beyond early childhood and into adulthood. This theory does not account for the variation in children's gender development, and arguably not within multi-sibling families. Despite these issues, social learning theory has been an important paradigm to assess the gender socialization of infants and young children.

Gender Schema Theory

Gender schemas are the networks that contain gender and gender-related information (Ruble & Martin, 1998; Bem, 1981). Gender schemas help to seek out information related to gender and organize new information to be related to gender (Bem, 1981). Sex typing is created from individual gender-schematic processing capabilities of organizing information into gender categories (Bem, 1983; Roopnarine & Mount, 1987). The focus on individual abilities allows for variations in gender development. This can explain why siblings can have varying levels of masculinity and femininity, even though they grew up in the same family environment. Gender schema theory assumes that appropriate sex-typed norms come from the surrounding social environment, which acknowledges the learning processes involved in gender development (Bem, 1983). Parents create the social environment for their infants and young children, by providing gender information to them. Children learn to use their developing gender schemas to understand and organize information. Societal gender expectations give children sex-typed information they will in turn relate to their own sense of gender, which is also related to their self concept (Bem, 1983). Children will learn information

relevant to their own gender prior to information of the opposite gender. Girls possess schemas with greater female knowledge, and boys will hold more masculine knowledge (Levy, 1999).

The cognitive and learning elements of gender schema theory combine the concepts of learning and cognitive development theories to create a more comprehensive theory that applies to more areas of gender development. This theory explains how and why children learn from the gender related information provided by their family. As gender schema theory is a theory of process (Bem, 1983), it can be critiqued for its lack of accounting for the content of schemas. However, the lack of content description explains differences in gender development within families and across social definitions of gender. The accumulation of gender-related information can be explained, but the gender information cannot be. Gender schema theory also fails to explain when, or if the process of gender schema development is completed. The flexibility of gender schemas is also not explained. Gender schema theory does not explain if gender schemas change over time, or if there is a point at which they are completed. This theory does not say whether gender schemas receive information throughout the life course that continues to shape them.

Theories in General

Learning theory and gender schema theory are only two perspectives on gender. The concept of gender is a complex topic for social research, where many perspectives and theories have tried to study its many facets. Connell (1995) describes the complexity of studying masculinity (and gender) in social research and discusses the rationale that masculinity exists only where femininity exists. The idea that each gender must exist in order for the concept to be real adds to the complexity of the concept, as not all perspectives view masculinity and femininity as being polar opposites. For example, Eagly (1987) argues that the maintenance of sex differences depends on gender roles, that are occupied strongly by one of the sexes. The

gender roles serve as a guideline for what type of employment, social role, and status either sex should hold. Gender roles are not necessarily viewed as being opposite from one another, but masculine and feminine roles must exist together in order for gender roles to be a valid concept.

Connell (1995) describes four main areas of thought for where most of the gender perspectives can be categorized into. Essentialism focuses on one aspect of the definition of masculinity and defines male life in terms of that definition only. These perspectives are too vague to applied to the process of gender socialization. Positivism relies on the factual findings of social research to define masculinity and femininity in order to describe how men and women are. This perspective relies on scales and statistics that allow for the concept of gender to be quantified. Gender schema theory falls into this category, as gender is assumed to be relative in terms of the quantity of masculine and feminine traits the individual holds. Learning theory can also be quantified by measuring gender role ideologies, but also relies on normative definitions of gender roles. Normative perspectives interpret gender difference in terms of how each gender should behave (Connell, 1995). The assumptions of learning theory fall into this category, where children learn what gender roles are appropriate for themselves as well as for others. The fourth perspective, known as the semiotic perspective, defines one gender in terms of not being the other gender; the symbolic differences between the genders are compared in contrast to the other. Connell's (1995) categorization of gender perspectives demonstrates that there are many theories surrounding gender, however, these perspectives emphasize different aspects of the concept.

There are many theories that are applied to gender research, however they do not explain the process of acquiring gender in early childhood, and how this process affects one's gender in adulthood. Tajfel and Turner's (1978) social identity theory posits that individuals

within a social group will act and behave as other members of that group do. Individuals are assessed based on how they identify with a social category. From this perspective, being a man would cause men to act and behave in similar fashions that other men do (Ruble & Martin, 1998). This theory explains the learning of gender in broad and general terms, but takes on a macro-level explanation of how gender exists, instead of explaining the specific parent-child gender socialization process. This theory also does not explain how differences of gender exist within a group. For example, in a group of adult women, why do some describe themselves as being more 'feminine' than other members of the group? Another contextual theory that does not explain the process of acquiring gender information is the situation-based context perspective. This perspective views the context of the situation as an important contributor to the development of gender.

West and Zimmerman (1987) explain that gender is something that is "done" and expressed through actions, such as behavior, speech, and thought. Doing gender is a theory that can only be applied to those who already have an individual sense of their gender, and cannot be used to explain the process of gender learning or processing. This perspective is not applicable to early childhood socialization where children do not have a sense of what gender is. Some theories, such as evolutionary schools of thought, base their understanding of masculinity and femininity on the reproductive restraints that men and women hold (Ruble & Martin, 1998). These theories argue that gender roles originate from these reproductive differences. These theories ignore the social factors that influence the development of gender through socialization, and do not take into consideration the evolution of gender roles themselves.

Gender is a complex and vast concept that is not only debatable in definition, but also in the use of the concept in research. There are many more theories and perspectives on gender

which can be applied to specific areas of the development of gender. Learning theory and gender schema theory are two competing theories in the paradigm of early childhood gender socialization, and are appropriately applied to the research questions in this study. Past research has used these theories in this area of study, and will thus be used in this present study. Given the complicated nature of gender, and the many ways of defining and measuring the concept, it is clear that all facets will not be able to be included in this study. The idea that gender is a socially constructed concept is an assumption that holds for many of the social theories discussed, and will be an assumption in this study. This means that any biological influences will not be tested.

Gender Research to Date

Although there have been some changes in the distinctions between sex and gender, for this discussion, gender will be defined as the amount of masculine and feminine characteristics, including preferences, behaviors, and aspirations. Masculine characteristics are the attributes that social norms deem to be appropriate for males and feminine characteristics are the attributes deemed appropriate for females. Sex will be defined as the biological classification that is used to distinguish males from females, characterized by sex organs. Sex-typed behaviors are actions congruent with either masculine or feminine characteristics. For example, putting on makeup is considered to be a feminine sex-typed behavior, and fixing a car is considered to be a masculine sex-typed behavior.

Gender has been distinguished from "sex" in that it develops through social and cultural processes, and is thus an acquired description, rather than biologically determined (West & Zimmerman, 1987). However, from infancy, biological sex determines how parents, and others, will react to us as children and adults (Fagot & Leinbach, 1987; Pomerleau, Bolduc, Malcuit & Cossette, 1990). For example, parental personality expectations for daughters are

different from those held for their sons (Maccoby & Jacklin, 1974). Research continues to support the idea that parents assume their children are predisposed to developing sex-typed characteristics. Parents in turn respond to the sex of infants in sex-typed manners according to the infant's sex (Pomerleau et al., 1990). Parents and others must hold certain gender related assumptions in order to provide appropriate gender information to children.

As parents usually provide the most care for their infants, they become the largest source of social information to their children. Children learn gender roles from the sex-typed behaviors that parents model (Schwartz & Markham, 1985). Parents model sex-typed behaviors through implicit and explicit demonstrations. Explicit modeling occurs in such ways as when parents vocalize what is appropriate for girls and boys. Such explicit gender information reflects the gender expectations that parents hold and practice. For example, traditional parents engage in orating stories with achievement themes tied to masculinity; these themes are reflective of parents' gender expectations for masculine roles (Fiese & Skillman, 2000). Implicit modeling occurs when parents do not directly communicate ideas of gender. For example, parents can display their gender ideologies with daily routines such as driving. When the father drives the car and the mother sits in the passenger seat, gender in this context is modeled implicitly. These sex-typed roles that are learned from parental models are assumed by researchers in this area to be used and displayed in social contexts outside the family context (Lindsey & Mize, 2001).

Children's bedrooms are an important gender rich environment parents create. Homes have been found to have children's bedrooms containing sex-typed colors, clothing (Pomerleau et al., 1990), and toys (O'Brien & Huston, 1985). By surrounding children's bedrooms with information regarding their gender, girls develop interests in feminine items, and boys in masculine items. Parents assume that their daughters are predisposed to appropriate sex-typed

behaviors. This assumption becomes a logical explanation for the parents to account for their daughters' interests in the color pink, rather than to assume the responsibility for creating the feminized environment of a pink bedroom filled with pink bears and Barbie dolls. However, it cannot be assumed that infant bedrooms are the only gender environments that parents create for their children.

Toys and Parental Influences

Research in the area of parent-child gender socialization has relied heavily on toys as a measure of both parental gender roles and expectations, and of children's gender development. Toys occupy a large amount of time in children's lives and are important to gender socialization.

Parents can interact with their children in the form of play, which can also involve the use of toys. This interaction provides children with messages regarding which behaviors are appropriate for their gender. Children are discouraged to engage in cross gender play and with cross gender toys; parents encourage their children to play with toys that are congruent with their sex (Fisher-Thompson, 1990), and to play in congruent sex-typed play styles (Lindsey & Mize, 2001). Parents provide social information that will guide their children's toy selections

Important Ages

The majority of research in the parent-child gender socialization in the play context looks at children as young as 12 months old. In a longitudinal study, Fagot and Hagan (1991) found 18 months was the age at which parents used the most rewards and punishments, compared to other age groups in their longitudinal study. They argue that parents feel a need to educate their children at 18 months of age regarding the appropriate social norms of their society. By 3 ½ years of age, children can make sex appropriate play decisions and toy selections in peer interaction settings where parents are not influencing the children (Fagot &

Leinbach, 1987). Subsequently, Fagot and Hagan (1991) found that parents displayed fewer reactions to the appropriateness of sex-typed play for their 5 year-old children, compared to when their children were 18 months old. Fagot and Huston (1991) argue that the decrease of attention to sex-typed play guidance through rewards and punishments is no longer required at this age. Children should have learned the basic gender rules and be able to maintain them.

The Importance of Sex-Typed Toys

Given the research on toy selections and play styles presented, the question remains: why are toy and gender related research findings important? In order to answer this question, sex-typed toys must properly be defined and understood. Masculine toys are what a given set of social norms rules as being appropriate for boys to play with, and vice versa for girls' toys. Guns, army toys, weapons, football uniforms and cards, airplanes, vehicles (cars, trucks, trains), sports balls, weight lifting gear, and tools are examples of toys that past research has found to be masculine toys; jewelry boxes, dolls and soft dolls, sewing kits, kitchen gadgets, hair dryers and telephones are feminine toys (Fisher-Thompson, 1990; Idle et al., 1993). Upon closer analysis of the common sex-typed toys in this list, it becomes apparent that masculine toys promote spatial movement.

Sparfkin, Serbin, Denier and Connor (1983) summarized research findings that provided strong evidence that children who play more often with masculine toys outperform on various spatial tests children who play most often with feminine toys. Trucks (mobile toys) allow children to utilize their play space to its full extent and have been found to elicit the greatest amount of movement (Liss, 1983), just as sports equipment promotes physical movement of the entire body. Feminine toys promote domestic and imaginative play; dolls are the only toys that elicit nurturing play (Liss, 1983). The majority of feminine toys do not take children's imaginations beyond the domestic paradigm. While feminine toys do not encourage

spatial abilities, they teach girls about traditional female roles. As children are learning about what toys are appropriate for them to play with, their gender schemas are becoming more concrete. Parents will control which toys children have access to, and these toys help to shape and become a part of children's gender schemas. Children will develop a sense of femininity or masculinity from their toy exposure, and the toys will become recognized as congruent with their own gender schemas. Both learning and gender schema theories can argue what role toys have in the development of gender in childhood. However, it is not clear if gender schemas or ideologies of these theories mediate adulthood outcomes from these early gender experiences.

Masculine toys in girls' lives have been found by Giuliano et al.'s (2000) study to be related to adult outcomes of athletic abilities. When female athletes and non-athletes were asked to give retrospective accounts of their play styles and toys from their childhood, the female athletes were found to have had more access to masculine toys. Playing with masculine toys was related to personal athletic confidence, orientations towards winning, and competitiveness. The encouragement these female athletes were receiving in their childhood indicates that encouragement in sports participation (sports usually being masculine) affected their athletic careers. Giuliano et al. (2000) also found that women who played with masculine toys and participated in male play groups were more likely to become varsity athletes. The results of this study provide support for the argument that masculine toys and play groups affect specific developmental outcomes. The implications of the sex of play groups are important considerations when assessing later life choices. The findings that relate masculine toy play in early childhood athletic careers compared to non-athletes make this study an important element to the proposed research. The strong relationships that Giuliano et al. (2000) found with masculine toys is evidence that toys and play groups have a significant effect in the process of gender socialization. The findings of this study are crucial when considering the

research on gender socialization with sex-typed toys. Although Giuliano et al. (2000) were measuring concepts related to athleticism, the relations between childhood toys and play groups to adulthood suggest that toys may affect other adulthood outcomes. For example, career expectations and post-secondary fields of study could be mediated by childhood gender socialization. It is also unclear as to whether gender role ideologies or gender schemas are mediating factors in this process. The past research on the parent-child gender socialization process through the use of toys has failed to look beyond the childhood stage and to assess the implications and outcomes of this socialization.

Parental Influences

Rewards and Punishments. Facial expressions that parents display upon the presentation of toys have been found to be a mechanism that parents use to socialize gender in their young children. Twelve month old boys receive more positive reactions to masculine play, and negative assertive behaviors, while mothers give more positive reactions to twelve month old girls who played with feminine toys than did fathers (Fagot & Hagan, 1991). Caldera, Huston and O'Brien (1989) found that when parent-child dyads were presented with toys in a laboratory setting, both parents and children exhibited excited facial expressions if the toy was consistent with their own sex. Toys that were inconsistent with the sex of the parent were received with less excitement, especially for fathers. These same parents responded verbally to feminine toys with more teaching and praise, while masculine toys elicited more animated sounds and negative comments. Caldera et al.'s (1989) and Fagot and Hagan's (1991) studies demonstrate how toys are used as tools of gender socialization by parents. However, they do not imply that parents are consciously aware of the information provided in their reactions to toys.

Parental Toy Influences. Parents are most likely not aware of how they are reacting to

their children and their toys. Fagot's (1974) study had three of their twelve family sample show displeasure and upset when asked about their own sex differences in reaction to girls' and boys' play. One would assume such attitudes would predict a less traditional pattern of gender socialization from these parents, however, Fagot (1974) found that the 12 to 18 month old children of these parents did not behave and play differently than the other children of the same sex in the study. Although these parents were distraught at the idea of differential treatment of boys in girls, they were not aware that they were engaging in it.

The evidence of parent-child toy play may appear to imply that the child plays a very inactive part in the toy selection process. The learning process requires those around the infant to provide information, sometimes in the form of a toy. Children have been found to accept toys from their parents almost all the time (Idle et al., 1993). The lack of opposition to parental toy selection reiterates the parental socialization influences; children are highly accepting of what parents offer them. Even for children who do not accept a toy selected by their parents, children are still likely to consider the toy, and are extremely unlikely to reject the toy (Idle et al., 1993). This occurrence illustrates the impact that parents have on sex-typed toy preferences, as children are highly likely to accept the toys their parents provide them with.

Parents are the primary toy purchasers for their children (Fisher-Thompson, 1993). However, external influences on which toys children prefer must be considered. For example, children receive toys as a gifts from relatives and family friends. Toys as gifts were just as likely to be sex-typed as non-sex-typed when people outside of the immediate family were providing them. Most of the toys that are received as gifts from parents are usually sex-typed, especially if they are requested by the child (Fisher-Thompson, 1993). However, in the event of a cross gender toy being received, the parent is still able to control the gender socialization process. As mentioned previously, parents' reactions to toys guide the toy selections of the

child. Fagot and Hagan (1991) found that parents would react after a toy was selected by the child; this reaction acts as a reference to which toys are thought to be appropriate. A cross gender toy that is given to a child would be met with the same negative reactions as did all other cross gender toy presentation studies found.

Gender of the Parent. Mothers and fathers have different gender expectations for their children. The sex of the parent has implications on the gender socialization of their children. Fagot (1974) found that fathers generally identify more activities as being sex appropriate than mothers do. In play situations, fathers spend equal amounts of time playing with masculine and neutral toys, whereas mothers spend more time with neutral toys (Caldera et al., 1989). When ranking toys along a desirability scale, fathers and men were found to give the highest (and extreme) ratings to masculine toys, and the lowest ratings to feminine toys (Idle et al., 1993; Fisher Thompson, 1990). Idle et al., (1993) found that mothers had similar ratings as fathers, while Fisher-Thompson (1990) found that female subjects considered more toys as neutral, rather than sex-typed. Preferences toward certain toys should also indicate what types of toys parents would want to use in play with their children.

Fathers also engage in more physical play with their sons, while mothers do not show any differences in physical play with sons or daughters (Lindsey & Mize, 2001). These sex differences parents exhibit demonstrate how fathers and mothers assert their gender by displaying, or doing, sex-typed behaviors. Fagot and Hagan's (1991) male subjects gave the least amount of positive reactions to cross sex play to their 18-month old sons, while mothers made no distinction. Parents overall gave more positive responses to sons who were engaging in masculine-typed play. When selecting toys as gifts, males are more likely to purchase sex-typed toys than non-sex-typed toys, especially when buying for children other than their own (Fisher-Thompson, 1993). These findings suggest that fathers provide and display more

stereotypical masculine gender information to sons. Fathers hold stronger gender stereotypes than mothers, and thus, give more sex-typed messages to their sons. In contrast, daughters appear to be receiving more neutral than sex-typed messages, compared to the sex-typed information that sons receive overall. Men appear to display their gender through interacting with children in sex-typed manners (e.g., toys purchasing, play styles), especially with their sons, indicating that men receive more social rewards for their gender appropriate behavior

Context of Gender and Sex-typed Toys. The context of social interaction is also important to the socialization process. Parents can define the context in terms of gender appropriateness by choosing when to interact with their children (Lindsey & Mize, 2001). Research in the area of parent-child toy selection has found that associative play and activities are valid measures of positive social interaction (e.g., Fagot & Hagan, 1991). As an example, when a father asks a son to help fix the family car, he is choosing the context of interaction outside of the house to teach his son a new skill. If the father does not interact with his son on the same level inside the house doing domestic work, the father has defined auto mechanics as a masculine context. Lindsey and Mize (2001) found that parents were more likely to choose to engage in pretense play (a form of play that involves using objects to represent other objects) with daughters, while choosing to engage in physical play with their sons more often than any other form of play. Parents in these contexts were teaching their children how certain types of play styles are more appropriate for girls or for boys. Toys in these play situations are also used by parents to define sex-typed play styles, as well as to indicate which toys are meant for boys, and which are meant for girls. Children learn a large amount about gender from their toys (Schwartz & Markham, 1985). Idle, Wood, and Desmarais (1993) found that fathers in play situations with their children would choose to spend more time with toys that were masculine typed, while mothers chose neutral toys. These findings exemplify how parents create sex-

typed contexts for learning. However, both the sex-typed contextual and environmental influences that parents create for their children may be very detailed and meticulously researched, but the questions pertaining to the effects and outcomes of varying gender socialization must be addressed. Questions or studies pertaining to the importance of gender information in early childhood must be addressed in order to validate the importance of these studies.

Career Expectations and University Specializations

Career expectations are also affected by gender. Gender roles and gender role expectations appear to influence career paths that are taken. For example, women who place high salience on personal and family life, compared to those women who did not, have been found to be less likely to choose the sciences as university specializations (Ware & Lee, 1988). However, mathematically oriented university majors (which are male dominated) for men are positively related to personal and future familial obligations (Ware & Lee, 1988). This gender difference suggests that perhaps male dominated domains of study are helpful in pursuing full time careers that require, or are thought to require, a higher priority over family obligations.

Both male and female college students report equal desire for having children at some point in their lives (Schroeder, Blood, & Maluso, 1993). However, male and female careers offer different paths; female career paths usually entail considering time off for rearing and raising children. A de-emphasis on familial responsibilities would deter traditional females from pursuing such fields of study. Jackson, Gardner, and Sullivan (1992) found that on average women, compared to men, expect to take more time off from their careers in order to focus on child care. These women reported they expected an average of 3 years away from their paid work, while men only predicted 1 year away from their jobs. Family related gender

differences also exist within the careers themselves. Women have reported that accommodating jobs to family life and development opportunities are more important than men perceive to be (Jackson et al., 1992).

While both men and women want to have children, women tend to face more career interruptions to accommodate these responsibilities. Men who pursue masculine careers are more interested in extrinsic job features, such as money, little supervision, leadership and prestige; women are concerned with intrinsic features such as creativity, working with people, and steady progression (Lyson, 1984). Women have reported that they want both a career and a traditional family life (Schroeder et al.,1993), which is more attainable through intrinsic careers. Since intrinsic careers are not as focused on independence and leadership, they are easier to leave and to return to. The features of intrinsic careers allow women to accommodate their familial goals. Despite the desire to have a career that accommodates child rearing, undergraduate women assume that they will endure more role frustration when they become parents, compared to the levels of role frustration men predicted their future wives would face (Schroeder et al., 1993). Although women are preparing for maternal roles by choosing careers that accommodate this desire, they are still aware that this could conflict with their career goals.

Family Influences. The influence of the gender role expectations of female social and familial responsibilities may be linked to the gender socialization process. According to Lewko et al. (1993), family support and encouragement predicted daughters enrolling in science specializations, while internal factors, such as motivation, predicted male participation in the sciences. This study indicates that careers in scientific domains are expected to be filled by males, who rely on their own motivation to seek these careers. Women must be socialized through family encouragement and away from traditional female roles to choose masculine

fields. Fathers appear to have a large influence in this process. Tilleczek and Lewko (2001) found that females whose fathers were employed in the sciences were 3.5 times more likely than other females to pursue science careers themselves. Maternal science occupations did not predict daughters' science specializations. However, having a mother who was employed predicts more egalitarian attitudes towards parenting roles (Schroeder et al., 1993). These findings reiterate the amount of influence that fathers have over the gender socialization and career choices of their children. Although these fathers were employed in traditionally masculine fields where the mothers were not, family support, as indicated by Lewko et al. (1993), influences female participation in male dominated careers. In the past, families were less likely to pay for their daughters to go to post-secondary institutions, and then in the late 1980's, were less likely to provide computer training for their daughters (Eccles, 1987). In these instances, parents were using their gender ideologies to guide their behaviors in relation to their daughter's education careers, and steer them away from non-traditional careers. In doing this, traditional roles, such as motherhood, are emphasized.

Application of Theory. Both gender schemas and gender ideologies are important factors in sex-typed career decisions. Eccles' (1987) literature review describes how specific elements of these theories account for many variables in career decisions for men and women. For example, the perception of available fields of study and employment are influenced by individual gender schemas. While some career options may not be considered due to being unaware of their existence, many options simply do not fit into individuals' gender schemas, and are therefore not considered when a decision is made. When a career or academic option matches their gender schema, individuals will consider these options. Conversely, gender roles affect career choices by influencing perceptions of careers. Eccles (1987) reported that gender role socialization has a negative effect on women's confidence in their abilities compared to

men's confidence. This confidence deficit leads women to feel the need to work harder in order to attain similar career goals that men have. Perceptions of success are important variables, as they predict levels of performance. Gender role socialization was also reported by Eccles (1987) to impose different personal priorities on career decisions. Women are more likely to prioritize children over careers than men.

Some individuals choose career fields that are not considered to be gender appropriate. For example, when a woman decides to enter into mechanical engineering, or when a man decides to enroll in nursing in university, these sex-typed choices are incongruent with the individuals' behaviors. Lyson (1984) found that men and women who pursue fields that are incongruent with their sex hold work value orientations that fall between those of traditional men and women. However, the men and women in the fields that are incongruent with their sexes were more similar in attitudes to traditional men and women, compared to each other. In other words, women in non-traditional fields have similar values as traditional women. Women in non-traditional fields do not have similar attitudes to men in non-traditional fields. Men and women in non-traditional areas of study and work still hold more traditional values. In this instance, gender schemas might mediate the career and field decisions that are being made. The non-traditional careers might be congruent with their gender schemas, but their gender role ideologies could be more traditional. If an individual's gender schema is more similar to a career that is not congruent with their gender, the work value orientations are accounted for by their traditional gender role ideologies. From these examples, it is unclear whether gender schemas or gender role ideologies mediate career decisions.

In relation to the toy research, the questions that remain ask whether toys in early childhood are true predictors of later life career choices, such as university specializations. Learning theory would hypothesize that children learn career and academic gender roles from

their parents. For example, when a daughter's academic performance is equal in math and English, parents will still assume that her academic performance in English exceeds her performance in math (Eccles, 1987). Parents socialize their children through the assumptions of their own gender role ideologies. These gender roles should predict which university majors students register in. In contrast, gender schema theory would argue that university and career choices are reflections of individual's masculinity or femininity. Regardless of which theoretical perspective mediates career decisions, the gendered environments that parents provide in early childhood need further examination. The toys and play styles that parents controlled in childhood are important elements of the process of gender formation. Career choices are likely to be predicted by the sex-typed nature of childhood toys and play environments. The path that leads to career decisions is as follows: parents socialize gender in their children in early childhood through toys and play; children learn gender ideologies and create their individual gender schemas; in adulthood, career and educational choices are reflections of gender ideologies or gender schemas that were learned and created in childhood.

Replication

The majority of the cited research on parental gender socialization with the use of toys and play is over fifteen years old. The research designs and findings of these study are still important contributions to this field of research. However, as gender ideologies towards female and family roles change over time, these studies are in need of replication and re-evaluation. The proposed research combines the findings of the parent-child toy studies with the Eccles' (1987) review findings. This study is guided by the findings on gender role and gender schema influences on career and adulthood outcomes.

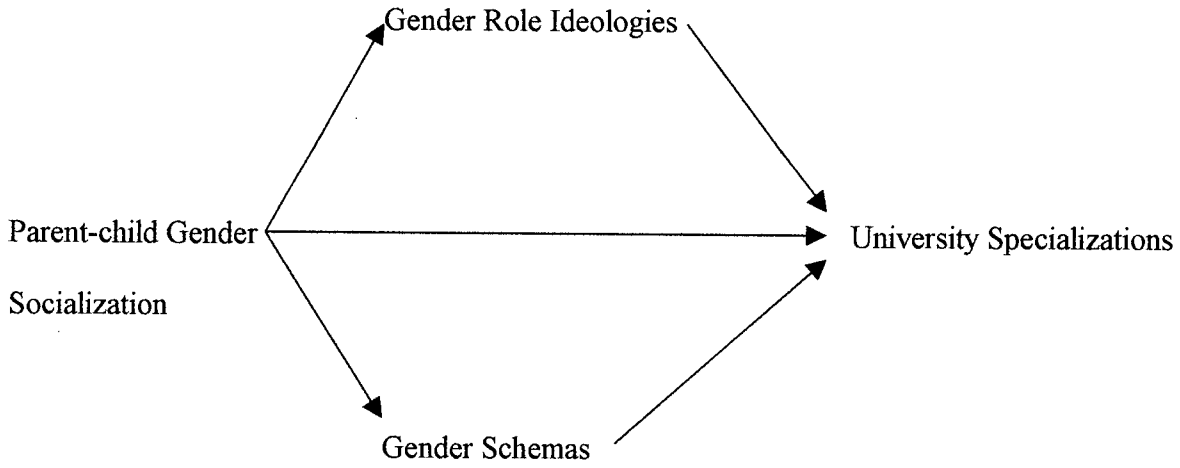
Theoretical Model

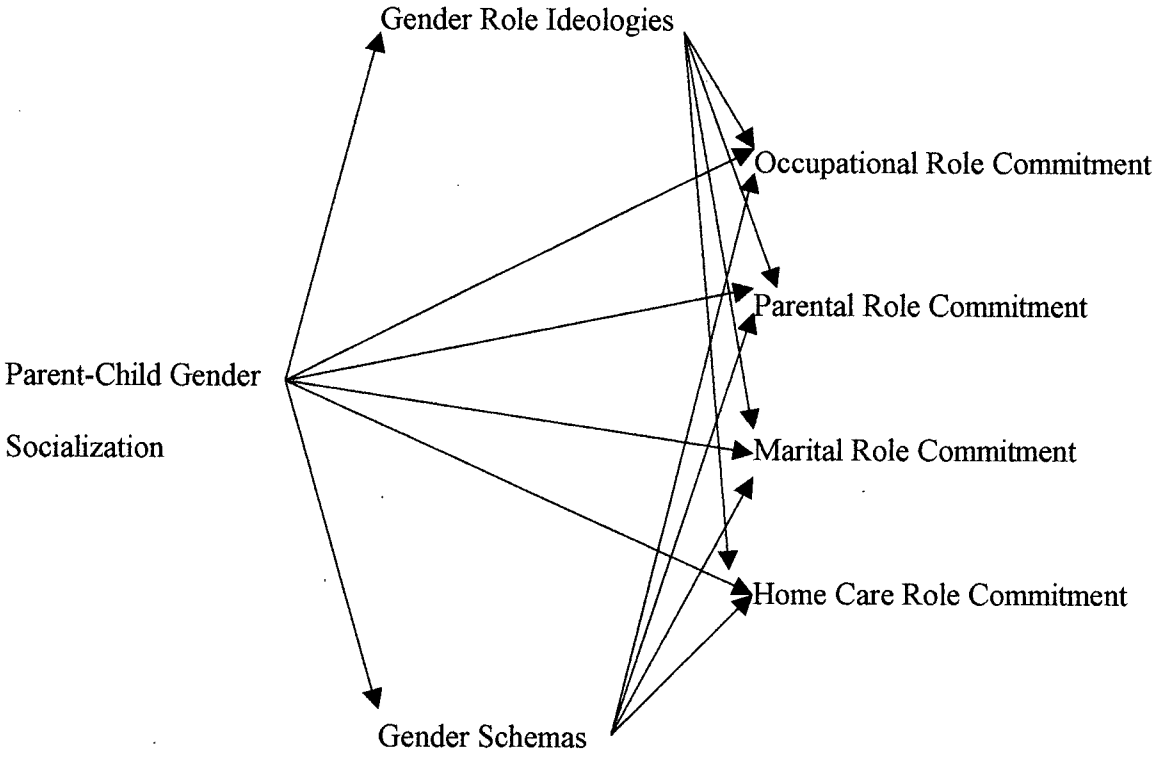
Figure 1 is an illustration of the models that represent the relationships between early

childhood gender influences and the type of university major that has been declared. The outcome variable in model one is defined as the percentage of female students enrolled in the declared major. The more females that are enrolled in the declared fields indicate feminine academic fields, and lower female enrollment indicates higher masculine fields of study. The previously discussed research has indicated that parents create gender environments for their children through toys, play groups, and reactions to their children's behaviors. These components of children's gendered environments serve as indicators of parental gender and gender role expectations for their children. All together, these are considered as the independent variables in both models. However, with the abundance of research done in this field, the question remains, does this phenomenon have any influence on children beyond childhood? And specifically, do the gender messages learned in childhood influence later life behaviors? As Giuliano et al. (2000) found, predictors of athleticism and confidence included sex of play groups and toys. However, no research so far has found whether or not academic and career choices are influenced or predicted by early childhood gender socialization. For these reasons, the outcome variables in model tow are career expectations and university specializations. The models in Figure 1 illustrate the hypothesis that there is a connection or relationship between parental gender socialization through play media, and later life decisions, such as career expectations and academic fields of study. For example, for those children that do play with masculine toys more often, are they more likely to choose masculine university majors?. Would they also be more likely to assume a masculine role in work and family life? And do feminine toys predict the opposite? The models in Figure 1.0 illustrate the direction of these proposed relationships.

Model 1 predicts the path that links early childhood gender socialization to declared specializations. This model is testing whether the theories can explain the relationships to the

Figure 1. *Models 1 and 2 of Hypothesized Relationships.*





action of declaring and pursuing academic fields that may be sex-typed. Model 2 is predicting the commitment to future family and work roles that may be related to early gender socialization.

The path of this relationship may be described or predicted better by various theoretical frameworks. While learning theory and gender schema theory are both able to describe the gender developed in childhood, neither theory has attempted to explain how this process mediates adulthood outcomes. Both models illustrate how parent-child gender socialization can be mediated by either theoretical paradigm. If the childhood serves as a time where information is sorted into the mind through schematic processing, then gender schema theory would be best suited to describe the mediated effects of gender socialization into adulthood. Gender categories would influence later life decisions by basing career, family, and academic interests on what is considered congruent with individuals' gender schemas. However, if learning theory's assumptions that children learn through observations, models, rewards and punishments, then the learned gender roles would mediate the relationship between gender socialization and adulthood outcomes. The individual would thus rely on their gender role ideologies in order to make the decisions that are congruent with it. Both of these theoretical assumptions must be tested in order to understand this process. Thus, the question of which theoretical paradigm can explain the effects of childhood gender socialization is asked in this study.

While other variables are not able to be measured in this study, this model is testing the relationship between parent-child gender socialization and academic and career outcomes. For example, media influences are not measurable within the parameters of this retrospective research study. However, despite the lack of measures available to consider media and other influences on gender socialization, the strength of the model's assumptions will indicate the

amount of influence parents have.

Hypotheses

The following hypotheses have been derived from models one and two:

H1: Sex-typed childhood toys predict sex-typed university specializations.

H2: Parent-child play predicts sex-typed university majors.

H3. The sex of play groups predicts sex-typed university majors

H4: Sex-typed childhood toys predict sex-typed career choices and expectations.

H5: Parent-child play predicts sex-typed career choices and expectations.

H6: The sex of play groups predicts sex-typed career choices and expectations.

H7: Gender role ideologies mediate the relationships tested in hypotheses 1 through 6.

H8: Gender schemas mediate the relationships tested in hypotheses 1 through 6.

Methods

Dependent Variables.

University Major/Specialization. University majors or specializations are the areas in which students have registered as their primary field of study. Students at the university are required to have declared their specialization at the end of their second year of study. Specializations indicate which area of interest the student will be focusing on for the larger part of their academic careers. The surveys had an open ended response item where respondents were asked to indicate their declared specialization. The university's Planning and Institutional Research (PAIR) office provided a list of all specializations with their respective breakdown by sex of students who are enrolled in the program. The percentage of female enrollment in the declared specialization of the respondents was used for analysis.

Career Expectations. Career expectations are the assumptions that respondents hold about their future employment and earnings beyond the university setting. The measures for

career expectations determine whether individuals place salience to occupational and familial responsibilities. The Life Role Salience Scale (LRSS) (Amatea, Cross, Clark & Bobby, 1986) consists of items that measure role expectations for work and family, based on the levels of importance and commitment to each of the roles (see Appendix B to view survey).These items are applicable to both sexes. All of Amatea et al.'s (1986) four life role constructs in the LRSS are used for the purposes of this study. These constructs are occupational, parental, marital and homecare roles. Only the role commitment dimension of these constructs will be included. The role reward value dimension of this scale does not apply to this research. An example of how the scale measures career expectations is as follows: higher levels of commitment to the occupational role indicate masculine gender ideologies. In contrast, higher parental role commitment to parenthood indicates more feminine traits. These four dimensions of the constructs are measured by using a five-point Likert-type attitude scale on levels of agreement. Respondents were asked to indicate the extent to which the statements about these constructs best describes their attitudes out of five forced choice options. Examples of these questions are: 'If I choose not to have children, I will regret it', and, 'I expect to devote whatever time and energy it takes to move up in my job/career field'. The LRSS's validity has been tested across student and married couple populations (McCutcheon, 1998).

Independent Variables

Sex-Typed Childhood Toys and Play. Sex-typed childhood toys are toys that are categorized to being appropriate for one sex. Subjects were be asked to recall which toys they owned and played with during their childhood years. Although events in infancy cannot be recalled from memory of experience, the subjects should have some knowledge of the toys they were exposed to. For instance, photographs of the child with the toy, or if the toy has been kept as a keepsake of early childhood, should allow the respondent to recall such toys.

Childhood toys are measured in the survey by giving respondents the opportunity to indicate toys that they played with in childhood. The toys that appear in the survey in the forced choice list include popular sex-typed toys that would be congruent with the era of when respondents were young children. The sex-typed toys are toys that past research has found to appropriate for one sex, and not the other. The toys in the survey are based in Fisher-Thompson's (1990) extensive inventory of adult sex-typed toy categorizations. Only toys from Fisher-Thompson's (1990) inventory that correspond with those used in Giuliano et al.'s (2000) survey research were used and adapted to attain a universal interpretation of what sex-typed toys should be classified for this research. Those toys that correspond from the Fisher-Thompson (1990) assessment with the Giuliano et al. (2000) research have maintained nearly the same sex-typed categories twenty years prior to this research (e.g., O'Brien & Huston, 1985). All items measuring toys and play will have an option labeled "other" where the respondents can write a toy or a form of play not on the list.

The mean scores for the toys and game play variables are used in the analysis. The bivariate correlation between the feminine toy play and feminine game play variables is .80, $p = 0$, and the reliability analysis alpha is .89. Feminine toy play average is combined with feminine games average to create one variable, feminine toys and game play. The bivariate correlation between masculine toy play and masculine game play is .67, $p = 0$, and the reliability analysis alpha is .81. Masculine toy play average was combined with masculine games average to create one variable, masculine toy and game play. Neutral toy play is calculated by taking the mean score for the frequency of neutral toy play.

Parent-child play. Parent child play is defined as the amount of time and gender based play that subjects recall playing with in early childhood. Participants were asked in the survey to indicate which parent they remember playing with more. Respondents answered on a 5 point

scale whether they played each with their mothers and fathers never (1) to very often (5). These items measure which parent was more readily available for gender information in early childhood. As the research indicates, fathers and mothers provide different levels of sex-typed information in play sessions.

Sex of Play Groups. The sex of play groups is defined as which sex of playmates children had in early childhood. The sex of the play groups will help to measure another aspect of what other types of gender information children were exposed to. If the child engaged to play with children of the opposite sex, then this could create a different gendered environment than children who played only with same-sex peers. The cross sex-play could allow access to toys that are not congruent with their sex. The survey asked what play groups respondents played in when they were younger. The survey asked respondents to recall the frequency of play with each gender around the time when they were in preschool and first grade, when children are around 6 ½ years of age, and far more likely to have opposite sexed friends (Maccoby, 1990). However, these two measures do not have enough variation when gender is controlled for. Respondents report playing with only same-sexed peers in their early childhood. The lack of variance in measures indicates that they cannot be defined as variables, and were therefore dropped from the analysis. Hyppotheses 3 and 5 could not be tested.

Control Variables

Parents' Occupations. Parents occupations are defined as what type of careers parents have. The survey asked respondents which occupations both their mothers and fathers hold, and what type of category the occupations fall into (e.g., trades, health professions). Responses are coded into a new variable based on employment and stay at home professions. These control variables are tested to indicate whether having employed or stay at home parents has an effect on the outcome variables. This variable is included to ascertain whether fathers' and/or

mothers' occupations (as seen in Tilleczek & Lewko's (2001) study) can predict academic paths, or career expectations.

Parent's Level of Education. Parents' education levels are controlled for in all regressions. Respondents are asked to indicate the highest level of education both their mothers and fathers have obtained. The responses range from some elementary school to post-graduate degrees, and are coded hierarchically.

Mediating Variables.

Gender Role Ideologies. Gender ideologies are the belief systems of how men and women should behave and interact with the social world. Gender ideologies are learned through imitation of gender roles, which are learned in early childhood. These ideologies are products of learning that children engage in from infancy. Learning theory assumes that children learn gender roles and behavioral social expectations from parental interactions in infancy. Learning theory should be measured with a scale that reflects ideologies and beliefs of roles, which reflect their learning environments as children. The brief 15 item version Attitudes Towards Women Scale (AWS) (Spence, Helmreich, & Stapp, 1973) was included in the survey to measure gender and gender role ideologies. The AWS is the most frequently used scale of gender role attitudes (McHugh & Frieze, 1997) and has more than satisfactory psychometric properties in measuring gender-role ideologies (Spence & Hahn, 1997). The shorter version was used as it has been found to have reliability scores in the mid -.80s and higher, as well as having a unifactorial structure (Spence & Hahn, 1997; Spence et al., 1973). In the fifteen item scale, respondents are asked to respond to statements about women's roles. The forced choice responses are asked on a four point scale the degree to which they agree to the statements. Scores are calculated to give an overall gender ideology score.

Gender Schemas. Gender schema theory's assumption that gender is learned through a

categorizing schema system will be tested. Using the short version of Bem's (1974) Bem Sex Role Inventory (BSRI), respondents gender schemas in adulthood were measured. The short version of the BSRI measures different components of the gender schema and was tested if the gender schema was a better predictor of gender decisions regarding sex-typed academic specializations and career toys. The original 60-item version was not used, as it is considered by many as being less psychometric than the short version (Hoffman & Borders, 2001). The items from the BSRI are scored on a 7 point scale. Respondents use this scale to indicate how items describe them. Hoffman and Borders (2001) did a twenty-five year review of the BSRI and found that the short version has higher internal consistency than the original version, and demonstrates reliability and validity. The standardized scores are used in the analysis.

Procedure

Permission to enter into undergraduate courses was obtained prior to recruiting participants from university classes. Students were approached during class time with a brief presentation outlining the research without giving away the hypotheses and assumptions behind the research. The surveys were given in addressed envelopes with prepaid postage. If the respondents did not want to mail the surveys, the researcher came to the following 2 scheduled classes. Classes in various departments were surveyed in order to obtain variation in declared specializations in the sample.

Data Analysis

The principle statistical tests are OLS regression. As most of the survey consists of scale variables, regression is needed to interpret the varying levels of the independent variables to the levels of dependent variables. Multiple regression is used to test the relationships in the models. Baron and Kenny's (1986) explanation of how to measure mediating effects is used to measure the gender ideology and gender schema effects on the outcome variables. By

definition, variations in independent variables must account for variations in the mediator, which in turn accounts variations in the outcome variables, or criterion (Baron & Kenny, 1986; Holmbeck, 1997). From the models' descriptions, variations in socialization account for variations in gender ideologies and gender schemas. These mediators may account for variations in career and university decisions. Multiple regression is used in four conditions to test each independent variable. The first analysis assesses the significance of the relationship between the independent variables and the mediating variables. The significance of the path between the independent variables and the outcome variables are assessed next. Then both the independent variables and the mediators are used in the third equation to predict the outcome variables, where Baron and Kenny (1986) recommend simultaneous entry as opposed to hierarchical regression. This is recommended so that the mediator is controlled for when assessing the effect of the independent variable on the outcome variables, and the independent variable is controlled for when assessing the effect of the mediators on the outcome variables. When the mediator is controlled for, the relationship between the independent variables and the outcome variables should be smaller than the relationship when it is not controlled for (in the second equation) (Holmbeck, 1997).

Relationships that do not attain statistical significance will be reported. Due to the small sample size, p levels up to .10 will be reported. The focus will be on the relationships between the variables that are found within the sample. As the target sample consists of respondents that have volunteered to participate in the study, the sample is a non-probability sample. The respondents are not randomly selected, and are not representative of a population. The nature of non-probability samples limits inference to a larger population, for both statistically significant and non-significant relationships. Relationships that do not reach significance cannot be inferred beyond to other populations.

For all of the relationships tested, parental occupation and level of education are controlled. To enhance clarity, the control variables are not reported in the tables. The models are tested for their overall relationships with all five independent and mediating variables. When a dummy variable for gender is used in the regressions, many of the relationships do not hold for the overall sample, indicating that the gender of the respondent changes the relationships. The models are thus also tested for female only and male only respondents. As the sample was not randomly selected from the general population, regressions that yield relationships that are not significant will be discussed in this section. The issue of the significance levels will be discussed in the limitations sections.

Results

Sample Description

Three hundred and sixty-eight surveys were handed out to nine senior level courses, and one lower level course. Of the 368 surveys, 279 were returned and 277 were useable. The overall response rate is 75.8%. The courses that were surveyed were from varying departments and subjects (Table 1).

The sample is comprised of 175 women and 102 men. The average age of the respondents is 21.9 years. The sample's ethnic origin is mainly Asian and North American (see Table 1). The respondents have highly educated parents: the majority of mothers and fathers had post-secondary training. The majority of the respondents (79.1%) have declared their majors, while 20.2% have not. The respondents that had not declared their majors indicated which majors they will be declaring. Referring to Table 1.1, over half of the sample indicated they have declared specializations that have between 50 and 75 percent females registered in their majors.

Table 1.

Sample Description.

Independent Variable	Total	Percent
Class Surveyed		
Family Studies	106	38.3%
Civil Engineering	53	19.1%
Mathematics	20	9.0%
Sociology	19	7.2%
Electrical Engineering	14	5.1%
Computer Science	14	5.1%
History	14	5.1%
Philosophy	12	4.3%
Ethnic Origin		
Asian	111	40.1%
North-American	90	32.5%
European	26	9.4%
Mixed Background	22	7.9%
South-East Asian	20	7.2%
Middle Eastern	6	2.2%
African	2	0.7%
Mother's Highest Level of Education		
Post-Graduate Degree	19	6.9%
University Degree	115	41.5%
Some Post-Secondary	62	22.4%
Highschool Diploma	49	17.7%
Some or no Highschool	27	9.8%
Father's Highest Level of Education		
Post-Graduate Degree	53	19.1%
University Degree	112	40.4%
Some Post-Secondary	47	17.0%
Highschool Diploma	32	11.6%
Some or no Highschool	31	11.2%

Note. n=277.

Table 2.

Percentages of Females Enrolled in Declared Majors/Specializations.

Independent Variable	Total	Percent
Women	175	63.2%
Percent female enrolment In Specialization	-	64.6%
Men	102	36.8%
Percent female enrolment In Specialization	-	43.2%
Declared Specialization	219	79.1%
Specialization Enrollment		
25% or less female	40	14.6%
25-50% female	41	14.9%
50-75% female	145	52.3%
75-100% female	48	17.1%

Note. n = 277.

H1: Sex-typed Childhood Toys and Play Predict Sex-typed University Specializations.

Overall. The beta for overall regression between the feminine toys and play variable and the percent female enrollment in specializations is .41 (p = 0) (Table 3). Playing with feminine toys and games explains 17.2% of the variance in the relationship. There is a moderate, negative relationship between the masculine toys and play variable and the percent female enrollment variable (ß = -.27, p = 0) for the overall sample. Masculine toys and game play explains 7.8% of the variance in the specialization variable. Neutral toy play was also positively related to the percent of females in the declared major for the overall sample. These relationships indicate that overall, there is a positive relationship between playing with feminine toys and in feminine games and choosing female dominated university specializations. Playing more frequently with feminine toys and games, and with neutral toys, is related to declaring a specialization with a higher female to male ratio. Higher frequency of

play with masculine toys is related to being enrolled in specializations with lower female enrollment. Sex-typed childhood toys predicts enrolling in sex-typed university majors, confirming hypothesis 1 for the overall sample.

Women. When the direct relationship for the women in the sample is tested, the correlation is very small and not significant between feminine toy and game play and traditionally female specializations (Table 4). Among female respondents, an extremely weak direct negative relationship between masculine toy and game play and the number of females enrolled in declared majors. The relationship between neutral toy play and female enrollment in university specializations is positive, but weak and not significant. These results indicate that playing with any sex-typed toys in childhood for women does not predict enrolling in sex-typed university majors in adulthood. Hypothesis 1 does not hold for the women in this sample.

Men. The beta for the relationship for the men in the sample between feminine toys and play and traditionally female majors is .20, and is close to significance (p =.06) (Table 5). Playing with feminine toys and games explains 7% of the variance in declaring a female dominated major for the men in the sample. A higher reported frequency of playing with feminine toys and games in childhood is related to enrolling in university specializations that are more traditionally female. Masculine toy and game play and neutral toys are not significantly related to enrolling in sex-typed majors. Hypothesis 1 only holds true for men for feminine-typed play.

H2: Parent-child Play Predicts Sex-typed University Majors.

Overall. The strength of the overall relationship between the frequency of playing with mother and enrolling in female dominated specializations is very weak and not significant (Table 3). There is no relationship for the overall model between playing with fathers and enrolling in female dominated university specializations. Hypothesis 2 does not hold true for

the overall model, as playing with mothers and fathers does not predict sex-typed university majors.

Women. For women, playing more frequently with their mothers is negatively and weakly related to enrolling in female dominated specializations (Table 4). This relationship is not significant. Playing with fathers is not related to sex-typed specialization. There is no correlation between the frequency of playing with fathers and the sex-typed nature of the university majors for women. Hypothesis 2 is not supported for the women in the sample.

Men. The frequency of play with mothers and with fathers in childhood are both weakly related sex-typed specializations (Table 5). The relationship for playing with fathers is stronger, and explains 4.7% of the variance in declaring female dominated university majors. However, neither relationship is significant. Despite the significance level, playing with both mothers and fathers more often in childhood is weakly related to enrolling in more feminine-typed majors for men, which provides evidence that hypothesis 2 holds for men.

H4: Sex-typed Childhood Toys and Play Predict Sex-typed Career Choices and Expectations.

Overall. In the overall model, playing with feminine toys and games has a weak negative relationship to the occupational role commitment, a weak positive relationship to both parenting and marital role commitments, and a moderate positive relationship to home care commitment. The relationship to the home care role is the only significant relationship. However, feminine play explains only 1.9% of the variance in home care commitment levels. Playing with masculine toys and games has only one significant relationship to any of the role commitment variables. Masculine toy and game play in childhood is positively related to occupational role commitment. Neutral toy play is negatively related to occupational role commitment. Neutral play is has a weak, positive relationship to the home care role commitment, though not significant (.11, p =.09). Playing more frequently with neutral toys in

Table 3

Regressions for the Overall Sample Between Childhood Socialization Variables and Adulthood Outcome Variables

Independent Variables	Female Major		Occupation Role		Parenting Role		Marital Role		Home Care Role	
	B	ß	*B*	ß	*B*	ß	*B*	ß	*B*	ß
Toy Variables										
Feminine Toys and Games	8.89**	.41	-.07	-.10	.05	.06	.04	.07	.08*	.12
R^2	.17		.02		.03		.01		.02	
Masculine Toys and Games	-7.47**	-.27	.14**	.16	-.02	-.02	-.05	-.07	-.09	-.10
R^2	.08		.03		.03		.01		.01	
Neutral Toy Play	5.08**	.20	-.12*	-.15	.08	.10	.02	.04	.09†	.11
R^2	.04		.03		.04		.01		.02	
Parent Play Variables										
Playing with Mother	.85	.04	-.05	-.08	.04	.07	.07*	.14	.12*	.16
R^2	.01		.01		.03		.03		.03	
Playing with Father	-.47	-.02	-.08*	-.12	.12**	.17	.05	.09	.11*	.15
R^2	.01		.02		.06		.02		.03	

Note. All regressions controlled for parent education and employment variables; †p≤0.10; *p≤0.050; **p≤0.01, $n = 277$.

Table 4

Regressions for Women's Relationships Between Childhood Socialization Variables and Adulthood Outcome Variables

Independent Variables	Female Major				Parenting Role		Marital Role		Home Care Role	
	B	ß	*B*	ß	*B*	ß	*B*	ß	*B*	ß
Toy Variables										
Feminine Toys and Games	1.02	.04	.06	.06	.12	.11	.15 *	.17	.05	.05
R^2	.01		.02		.04		.03		.01	
Masculine Toys and Games	-.51	-.02	.08	.06	.10	.08	.00	.00	-.05	-.04
R^2	.01		.02		.03		.00		.01	
Neutral Toys and Games	1.93	.09	-.01	-.01	.14 †	.15	.05	.07	.05	.06
R^2	.01		.02		.05		.01		.01	
Parent Play Variables										
Playing with Mother	-1.62	-.10	.02	.04	.07	.10	.07	.13	.04	.06
R^2	.01		.02		.04		.02		.01	
Playing with Father	-.35	-.02	-.11*	-.17	.16 **	.22	.03	.05	.09†	.13
R^2	.01		.04		.07		.01		.02	

Note. All regressions controlled for parent education and employment variables; †p≤0.10; *p≤0.050; **p≤0.01, n = 175.

Table 5

Regressions for Men's Relationships Between Childhood Socialization Variables and Adulthood Outcome Variables

Independent Variables	Female Major		Occupation Role		Parenting Role		Marital Role		Home Care Role	
	B	ß	*B*	ß	*B*	ß	*B*	ß	*B*	ß
Toy Variables										
Feminine Toys and Games	10.16†	.20	-.13	-.08	-.23	-.13	-.06	-.05	.22	.13
R^2	.07		.03		.05		.03		.03	
Masculine Toys and Games	5.40	.15	.18	.15	-.07	-.06	-.21*	-.24	-.04	-.03
R^2	.05		.04		.04		.08		.01	
Neutral Toys and Games	2.12	.09	.21*	-.26	-.02	-.02	.00	-.01	.09	.11
R^2	.04		.08		.03		.03		.02	
Parent Play Variables										
Playing with Mother	2.48	.11	-.19**	-.27	-.01	-.01	.08	.16	.23**	.30
R^2	.04		.09		.03		.05		. 10	
Playing with Father	2.70	.13	-.08	-.11	.08	.12	.09	.17	.16*	.23
R^2	.05		.03		. 05		.05		.06	

Note. All regressions controlled for parent education and employment variables; †p≤0.10; *p≤0.050; **p≤0.01, $n = 105$.

childhood is correlated with having lower occupational role commitment, and is weakly related to having higher commitment to home care roles. Similarly, playing more often with feminine toys and games in childhood is moderately related to being less committed to future occupational roles, and moderately related to having higher commitment to caring for future homes.

Women. Women's scores on the feminine toys and game play variable are significantly and positively related to the marital role variable; all other relationships were not significant. There are no significant relationships between playing with masculine toys and games in childhood and any of the LRSS role dimensions. These relationships are also very weak. Playing with neutral toys in childhood is positively related to parental role commitment, though this relationship did not reach significance (ß =.15, p =.051; R^2 = .03). For the women in the sample, playing more frequently feminine with toys and games is correlated to higher commitment to future marital roles. Playing with more frequently with neutral toys is related to women's higher commitment to future parenting roles.

Men. Men's feminine toy and game play scores are not significantly related to the LRSS dimensions; however, there is a moderate negative correlation with the parental role (R^2=.05), and a positive correlation with the home care role (R^2=.03). Playing with masculine toys and games in childhood is negatively related to marital role commitment, and explains 8.2 % of the variation in the marital commitment. This is the only significant relationship for masculine toys and games on the LRSS dimensions for the men; however, there was a positive relationship to occupational role commitment (ß=.15, p =.14). Childhood neutral toy play produces a negative relationship to occupational role commitment. The relationships to the other role commitment variables are not significant. Playing in feminine play is related to lower parenting role commitment, and higher home care commitment for men. Masculine toy

and game play for men is related to lower commitment to future marital relationships. Neutral toy play predicts higher occupational role commitment for men.

H5: Parent-child Play Predicts Sex-typed Career Choices and Expectations.

Overall. Playing with mothers in childhood is positively related to marital role commitment and home care role commitment. Playing with fathers was related to three of the of the four LRSS role dimensions. Playing more often with fathers in childhood was related to lower occupational role commitment, and higher for both parenting and home care role commitment in adulthood.

Women. The female respondents have two moderate relationships between playing with their mothers and being committed to future parenting and marital roles. Playing with fathers for women is negatively related to occupational role commitment, and positively to parental role commitment. Playing with fathers explains 4.2 % of the variance of occupational role commitment scores, and 7.2% of the variance in the parenting role commitment scores. There is a moderate positive relationship to the home care role, though it is not significant (ß =.13, p =.09). Higher frequency of play with mothers in childhood is correlated with holding higher commitment to being a parent and maintaining a marital relationship for the women in the sample. Women who played more often with fathers in childhood are more likely to be more committed to being a parent, and are less likely to be committed to future employment.

Men. For the male respondents, playing with mothers in childhood is negatively related to occupational role commitment, and explains 8.8% of the variance in the role. There is a moderate positive relationship to the marital role commitment, but it was not significant (ß=.16; p =.12). Playing with both mothers and fathers in childhood was positively related to the home care role commitment (R^2 = .10; R^2 = .06). The positive relationships to the martial and parenting roles are moderate in size, though not significant. There was a weak negative

relationship to the occupational role. Less commitment to future occupational roles is related to playing more frequently with both parents in childhood, especially with mothers. Playing more frequently with both parents in childhood is also related to being more committed to maintaining a marital relationship and maintaining future homes in adulthood. Playing with fathers is moderately related to being committed to being a parent.

H7: Gender Role Ideologies Mediate the Relationships tested in Hypotheses 1,2,4,and 5.

Overall. There is no relationship between playing with fathers and gender role ideologies, which discounts any mediating relationships with this independent variable for the overall sample (Tables 6 & 7). When the percent female enrollment is tested as a dependent variable, the regression analysis indicates that gender ideologies have a mediating effect on the following independent variables: feminine and masculine toy and game play, neutral toy play, and the frequency of play with mothers, though this relationships is weak and not significant. Compared to the direct relationship, playing with masculine toys and games in childhood explains more of the variance (12.4%) in enrolling in female dominated majors when gender ideologies are tested as a mediator. Gender role ideologies mediate only one other relationship, which is between feminine toy and game play and the occupational role. The direct relationship is not significant, but the relationship decreases close to zero in the mediating regression. The perception of what gender appropriate roles should be mediates relationships for the overall sample between sex-typed childhood toy play and declaring traditionally female university majors. This perception also explains part of the relationship between childhood feminine play and being committed to future employment.

Women. For the women in the sample, gender role ideologies cannot be tested as a mediator, as there is no relationship between neutral toys and gender role ideologies. The weak positive correlation between playing with feminine toys in childhood is not significant, but

Table 6
Regressions for Overall Sample's Mediating Regression Between Neutral Toy Play and Adulthood Outcome Variables

Independent Variables	Female Major		Occupation Role		Parenting Role	
	B	ß	*B*	ß	*B*	ß
Feminine Toys and Games	8.03**	.37	-.08†	-.02	.07	.09
Gender Role Ideologies	7.95*	.14	.06	.04	-.17	-.09
R^2	.19		.02		.04	
Feminine Toys and Games	8.50**	.39	-.05	-.08	.01	.02
Gender Schemas	.14	.08	.00	-.09	.01**	.18
R^2	.18		.03		.06	
Masculine Toys and Games	12.50**	.22	.14 **	.16	-.02	-.02
Gender Role Ideologies	.02	.00	.04	.02	-.13	-.07
R^2	.12		.03		.03	
Masculine Toys and Games	-.62**	-.23	.12 *	.14	.03	.03
Gender Schemas	.21*	.12	.00	-.08	.01**	.19
R^2	.09		.04		.06	
Neutral Toy Play	3.50*	.15	-.13 *	-.16	.10†	.12
Gender Role Ideologies	12.22**	.22	.06	.04	-.17	-.09
R^2	.09		.03		.04	
Neutral Toy Play	4.50**	.18	-.11 *	-.13	.06	.07
Gender Schemas	.25*	.14	.00	-.09	.01**	.17
R^2	.06		.04		.06	

Note. All regressions controlled for parent education and employment variables; †p≤0.10; *p≤0.050; **p≤0.01, $n = 277$.

Table 6 Continued

Regressions for Overall Sample's Mediating Regression Between Childhood Socialization Variables and Adulthood Outcome Variables

Independent Variables	Marital Role		Home Care Role	
	B	ß	*B*	ß
Feminine Toys and Games	.04	.08	.11*	.15
Gender Role Ideologies	-.06	-.04	-.20†	-.11
R^2	.01		.03	
Feminine Toys and Games	.01	.03	.07	.09
Gender Schemas	.01*	.15	.01†	.11
R^2	.03		.03	
Masculine Toys and Games	-.05	-.07	-.10†	-.11
Gender Role Ideologies	-.04	.00	-.14	-.08
R^2	.01		.02	
Masculine Toys and Games	-.02	-.03	-.06	-.07
Gender Schemas	.01*	.15	.01†	.12
R^2	.03		.03	
Neutral Toy Play	.03	.05	.11*	.13
Gender Role Ideologies	-.04	-.03	-.17	-.09
R^2	.01		.02	
Neutral Toy Play	.01	.02	.07	.08
Gender Schemas	.01*	.15	.01*	.12
R^2	.03		.03	

Note. All regressions controlled for parent education and employment variables; †p≤0.10; *p≤0.050; **p≤0.01, $n = 277$.

Table 7

Regressions for Overall Sample's Mediating Relationships Between Parent Play and Adulthood Outcome Variables

Independent Variables	Female Major		Occupation Role		Parenting Role		Marital Role		Home Care Role	
	B	ß	*B*	ß	*B*	ß	*B*	ß	*B*	ß
Playing with Mother	.01	.00	-.06	-.08	.06	.08	.08*	.14	.12**	.17
Gender Role Ideologies	14.12**	.25	.03	.02	-.15	-.08	-.06	-.04	-.17	-.09
R^2	.06		.01		.04		.03		.04	
Playing with Mother	.51	.02	-.05	-.07	.04	.05	.07*	.12	.01*	.14
Gender Schemas	.30**	.17	-.01†	-.11	.01**	.18	.01*	.15	.02*	.13
R^2	.04		.03		.06		.05		.05	
Playing with Father	-.67	.03	-.08*	-.12	.12**	.17	.05	.09	.11*	.16
Gender Role Ideologies	14.26**	.25	.01	.01	-.13	-.07	-.03	-.02	-.13	-.07
R^2	.07		.02		.06		.02		.03	
Playing with Father	-.13	-.01	-.09*	-.13	.13**	.19	.05†	.10	.11**	.17
Gender Schemas	.30**	.17	-.01*	-.12	.01**	.20	.01**	.17	.01*	.15
R^2	.03		.04		.10		.04		.05	

Note. All regressions controlled for parent education and employment variables; †p≤0.10; *p≤0.050; **p≤0.01, $n = 277$.

Table 8

Women's Regressions for Mediating Relationships Between Childhood Socialization and Adulthood Outcome Variables

Independent Variables	Female Major		Occupation Role		Parenting Role	
	B	ß	*B*	ß	*B*	ß
Feminine Toys and Games	.75	.03	.04	.04	.13	.11
Gender Role Ideologies	4.93	.09	.31*	.16	-.12	-.06
R^2	.01		.04		.04	
Feminine Toys and Games	.39	.01	.08	.07	.11	.09
Gender Schemas	.20†	.14	.00	-.08	.01	.11
R^2	.02		.03		.05	
Masculine Toys and Games	-1.01	-.03	.04	.04	.12	.09
Gender Role Ideologies	5.41	.10	.31†	.16	-.13	-.06
R^2	.02		.04		.03	
Masculine Toys and Games	.02	.00	.07	.06	.12	.09
Gender Schemas	.20†	.14	.00	-.06	.01†	.13
R^2	.02		.02		.05	
Neutral Toys and Games	1.76	.08	-.02	-.02	.15*	.16
Gender Role Ideologies	4.73	.09	.32*	.17	-.12	-.06
R^2	.02		.04		.05	
Neutral Toys and Games	1.64	.07	-.01	.00	.13†	.14
Gender Schemas	.19†	.13	.00	-.07	.01	.11
R^2	.03		.02		.06	

Note. All regressions controlled for parent education and employment variables; †p≤0.10; *p≤0.050; **p≤0.01, $n = 175$.

Table 8 Continued

Women's Regressions for Mediating Relationships Between Childhood Socialization and Adulthood Outcome Variables

Independent Variables	Marital Role		Home Care Role	
	B	ß	*B*	ß
Feminine Toys and Games	.16*	.18	.06	.06
Gender Role Ideologies	-.20	-.12	-.26	-.13
R^2	.04		.02	
Feminine Toys and Games	.14*	.15	.04	.04
Gender Schemas	.00	.08	.00	.06
R^2	.04		.01	
Masculine Toys and Games	.02	.02	-.03	-.02
Gender Role Ideologies	-.17	-.10	-.24	-.12
R^2	.01		.02	
Masculine Toys and Games	.01	.01	-.05	-.04
Gender Schemas	.00	.10	.00	.06
R^2	.01		.01	
Neutral Toys and Games	.06	.08	.06	.07
Gender Role Ideologies	-.18	-.11	-.26	-.13
R^2	.02		.02	
Neutral Toys and Games	.04	.06	.05	.05
Gender Schemas	.00	.09	.00	.06
R^2	.02		.01	

Note. All regressions controlled for parent education and employment variables; †p≤0.10; *p≤0.050; **p≤0.01, $n = 175$.

Table 9

Women's Regressions for Mediating Relationships Between Parent Play and Adulthood Outcome Variables

Independent Variables	Female Major		Occupation Role		Parenting Role		Marital Role		Home Care Role	
	B	ß	*B*	ß	*B*	ß	*B*	ß	*B*	ß
WOMEN										
Playing with Mother	-1.7	-.10	.02	.03	.07	.11	.07†	.13	.04	.07
Gender Role Ideologies	5.4	.10	.32*	.16	-.11	-.05	-.18	-.11	-.26	-.13
R^2	.02		.04		.04		.03		.02	
Playing with Mother	-1.75	-.10	.03	.05	.01	.10	.07	.12	.04	.06
Gender Schemas	.21†	.14	.00	-.08	.01	.12	.00	.10	.00	.07
R^2	.03		.02		.05		.03		.01	
Playing with Father	-.27	-.02	-.10*	-.16	.15**	.22	.02	.04	.09†	.13
Gender Role Ideologies	5.04	.10	.31*	.16	-.07	-.03	-.16	-.10	-.23	-.12
R^2	.01		.07		.07		.02		.03	
Playing with Father	-.10	-.01	-.12*	-.18	.17**	.23	.03	.06	.10†	.14
Gender Schemas	.20†	.14	-.01	-.09	.01*	.15	.54	.12	.00	.09
R^2	.02		.05		.09		.02		.03	

Note. All regressions controlled for parent education and employment variables; †p≤0.10; *p≤0.050; **p≤0.01, $n = 175$.

Table 10

Men's Regressions for Mediating Relationships Between Childhood Socialization and Adulthood Outcome Variables

Independent Variables	Female Major		Occupation Role		Parenting Role	
	B	ß	*B*	ß	*B*	ß
Mediating: Feminine Toys and Games	8.77†	.17	-.10	-.06	-.20	-.11
Gender Role Ideologies	9.12	.17	-.21	-.12	-.19	-.10
R^2	.10		.04		.06	
Feminine Toys and Games	10.08†	.20	-.09	-.06	-.33	-.18
Gender Schemas	.02	.01	-.01	-.12	.02*	.30
R^2	.07		.04		.13	
Mediating: Masculine Toys and Games	5.39	.15	.18	.15	-.07	-.06
Gender Role Ideologies	10.66†	.20	-.23	-.13	-.22	-.12
R^2	.09		.06		.05	
Mediating: Masculine Toys and Games	5.90	.16	.15	.13	.00	.00
Gender Schemas	.13	.08	-.01	-.11	.02*	.26
R^2	.06		.05		.10	
Mediating: Neutral Toys and Games	.88	.04	-.19*	-.24	.01	.01
Gender Role Ideologies	10.10†	.19	-.12	-.07	-.23	-.12
R^2	.07		.09		.05	
Neutral Toys and Games	2.00	.08	-.19 *	-.24	-.05	-.07
Gender Schemas	.05	.03	-.01	-.09	.02**	.28
R^2	.04		.09		.11	

Note. All regressions controlled for parent education and employment variables; †p≤0.10; *p≤0.050; **p≤0.01, $n = 102$.

Table 10 Continued

Men's Regressions for Mediating Relationships Between Childhood Socialization and Adulthood Outcome Variables

Independent Variables	Marital Role		Home Care Role	
	B	ß	*B*	ß
Feminine Toys and Games	-.08	-.07	.25	.14
Gender Role Ideologies	.15	-.12	-.15	-.09
R^2	.04		.03	
Feminine Toys and Games	-.13	-.10	.16	.09
Gender Schemas	.01**	.29	.01†	.19
R^2	.11		.06	
Masculine Toys and Games	-.21*	-.24	-.04	-.03
Gender Role Ideologies	.14	.11	-.11	-.06
R^2	.09		.02	
Masculine Toys and Games	-.17†	-.20	.01	.01
Gender Schemas	.01*	.23	.01*	.21
R^2	.13		.05	
Neutral Toys and Games	-.02	-.04	.12	.14
Gender Role Ideologies	.15	.12	-.18	-.10
R^2	.04		.03	
Neutral Toys and Games	-.03	-.06	.06	.08
Gender Schemas	.01**	.28	.01†	.20
R^2	.10		.06	

Note. All regressions controlled for parent education and employment variables; †p≤0.10; *p≤0.050; **p≤0.01, $n = 102$.

Table 11

Men's Regressions for Mediating Relationships Between Parent Play and Adulthood Outcome Variables

Independent Variables	Female Major		Occupation Role		Parenting Role		Marital Role		Home Care Role	
	B	ß	*B*	ß	*B*	ß	*B*	ß	*B*	ß
Mediating: Playing with Mother	1.51	.07	-.18	-.25	.02	.03	.08	.14	.25**	.33
Gender Role Ideologies	9.73†	.18	-.12	-.07	-.24	-.13	.09	.07	-.26	-.15
R^2	.07		.09		.05		.05		.11	
Playing with Mother	2.40	.11	-.06	-.09	.11	.16	.08	.16	.18*	.26
Gender Schemas	.05	.03	-.19	-.11	-.30	-.16	.09	.07	-.23	-.13
R^2	.04		.04		.07		.06		.07	-.19
Mediating: Playing with Father	1.79	.09	-.06	-.09	.11	.16	.08	.16	.18*	.26
Gender Role Ideologies	9.48	.18	-.19	-.11	-.30	-.16	.09	.07	-.23	-.06
R^2	.08		.04		.07		.06		.07	
Mediating: Playing with Father	2.8	.13	-.07	-.11	.08	.11	.08†	.17	.16 *	.23
Gender Schemas	.08	.05	-.07	-.13	.02 **	.26	.01**	.27	.01 *	.21
R^2	.05		.05		.12		.11		.10	

Note. All regressions controlled for parent education and employment variables; †p≤0.10; *p≤0.050; **p≤0.01, $n = 102$.

Figure 2. *Women's Relationships.*

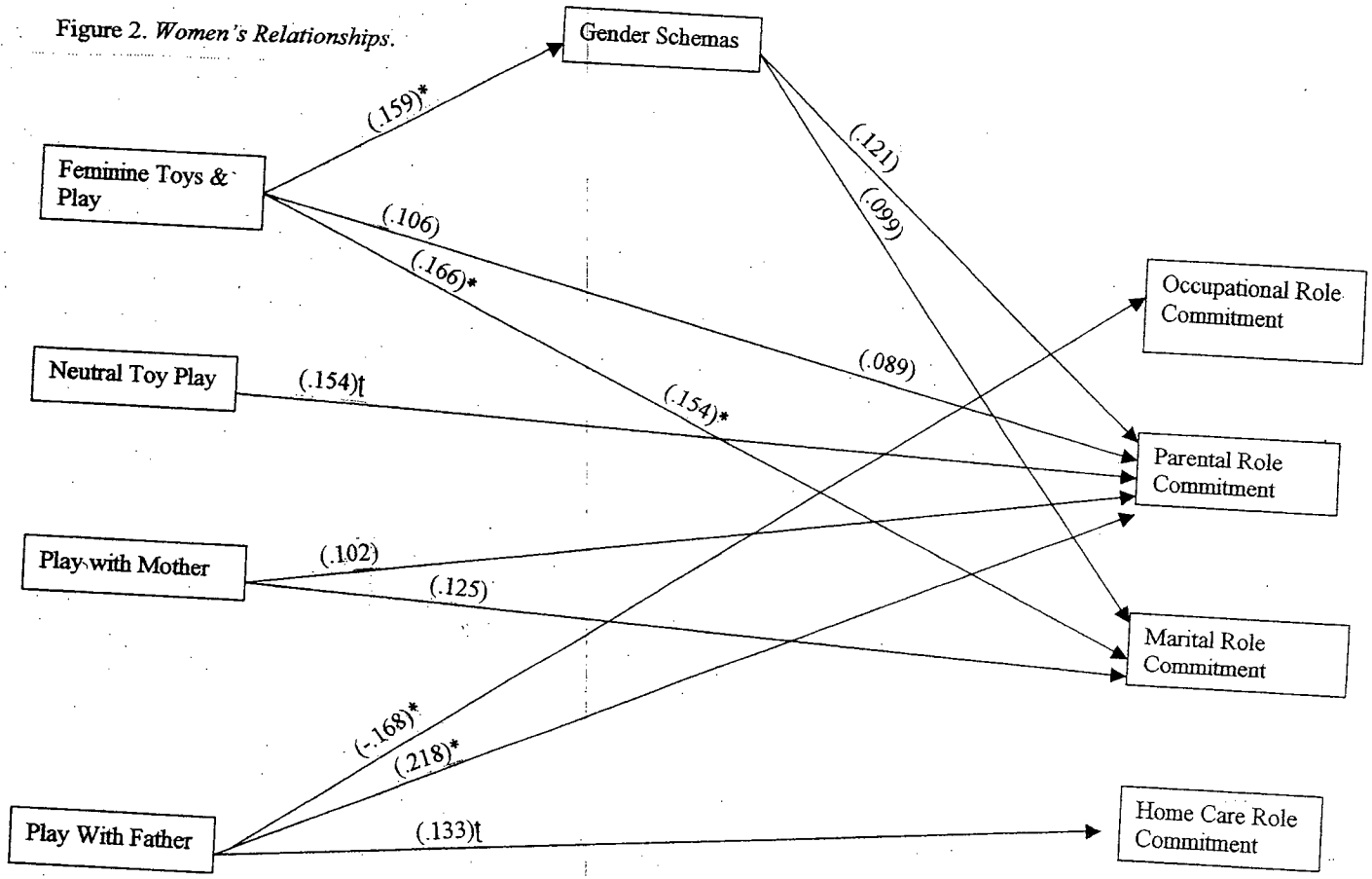
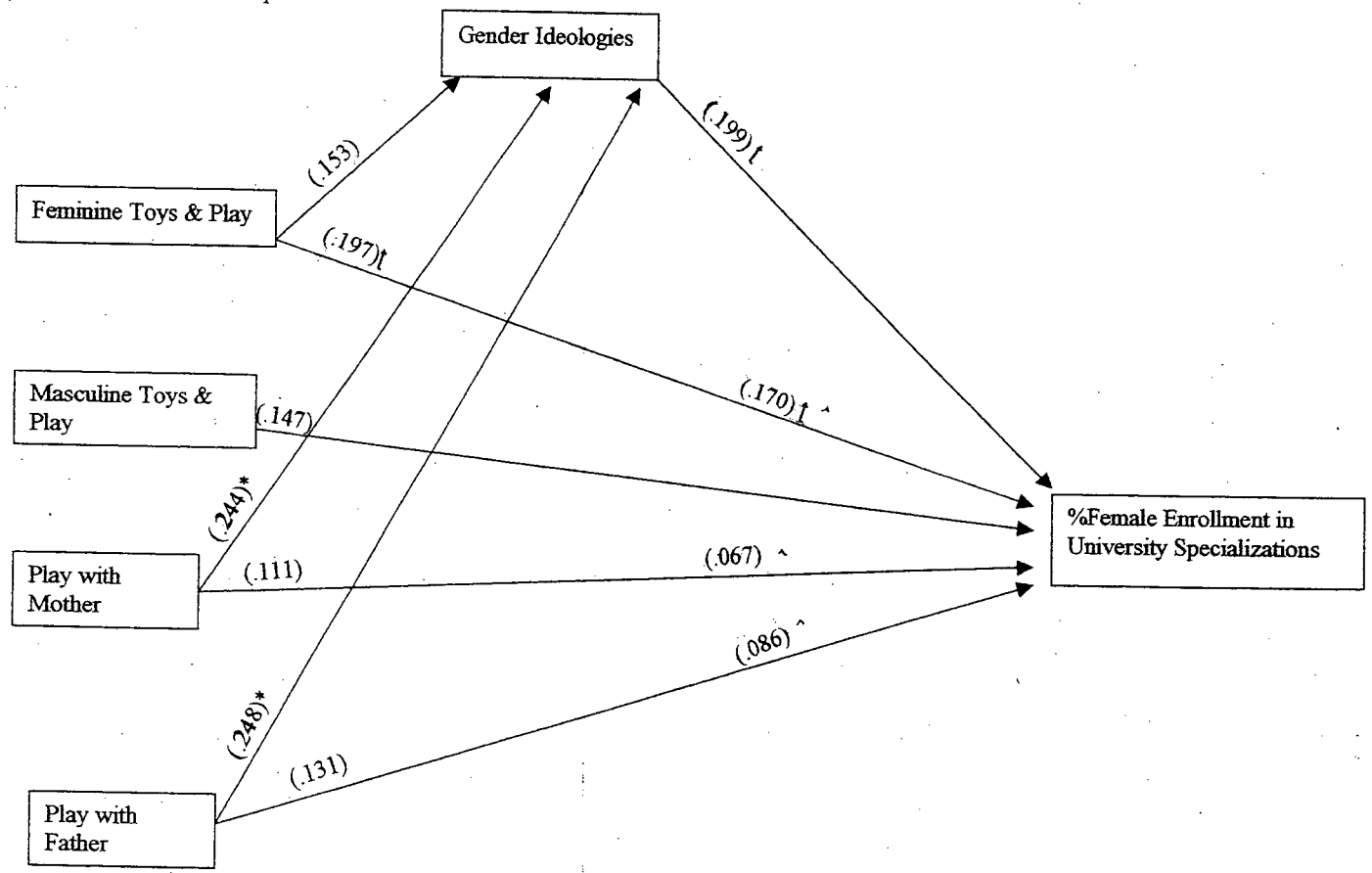
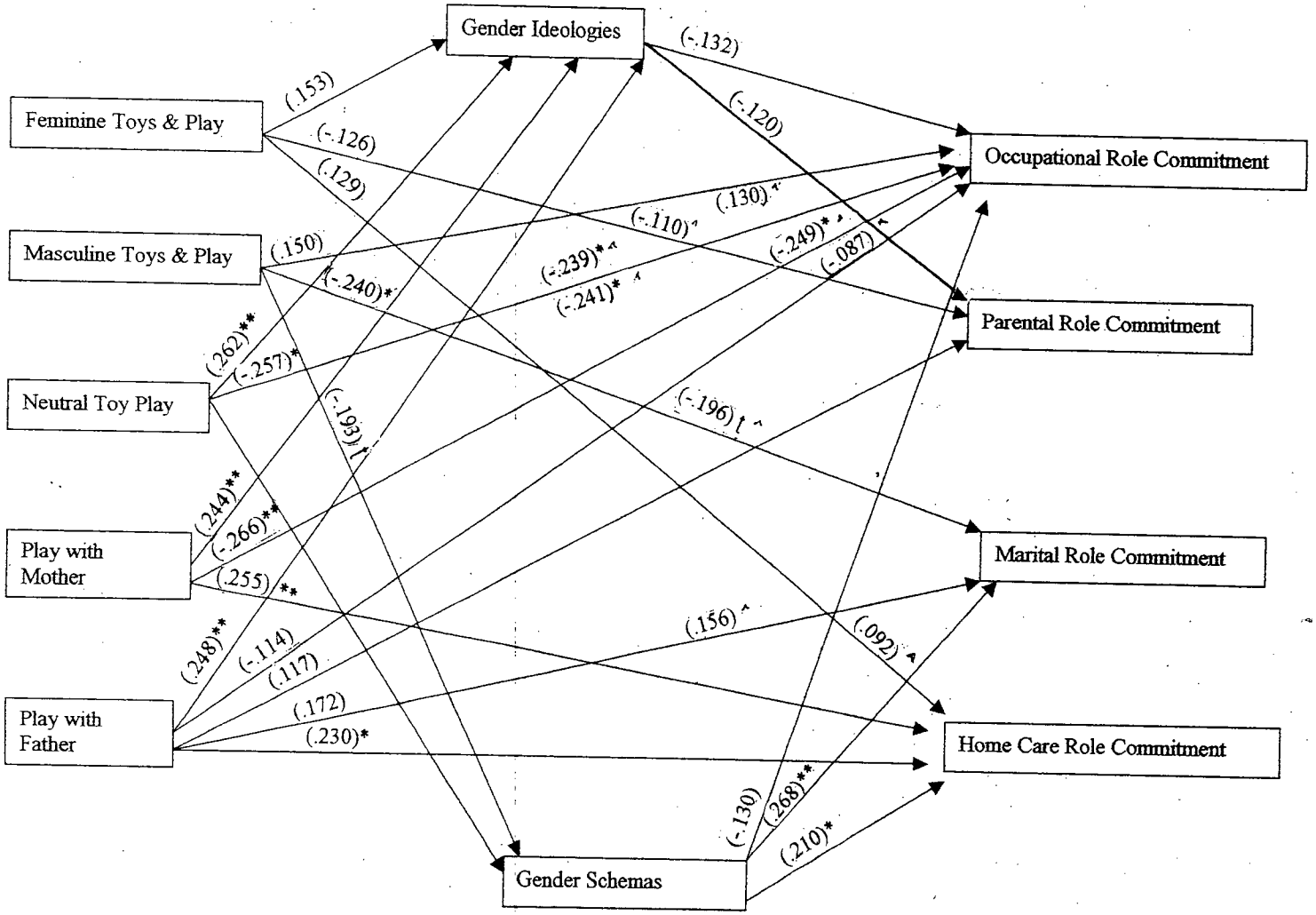


Figure 3. *Men's Relationships: Model 1.*



†p≤0.10; *p≤0.050; **p≤0.01; ^mediated relationships

Figure 4. *Men's Relationships: Model 2*



†p≤0.10; *p≤0.050; **p≤0.01; ^mediated relationships

strong enough to test mediating relationships (Tables 8 & 9). Gender role ideologies have a mediating effect only on the relationship between feminine toy and game play and the percent female enrollment. The direct relationship is too small (and not significant) to conclude a mediating relationship. Gender role ideologies do not mediate any of the relationships between sex-typed toy play in childhood and declaring traditionally female or male majors in university. The direct relationships between masculine toy and game play and occupational and home care commitments are weak and not significant, but are mediated by gender role ideologies as well.

Men. For the male respondents, there was no relationship between masculine toy play and gender ideologies, thus it cannot be defined as a mediator. Though the relationship from feminine toy play to gender ideologies is not significant, the size of the relationship gives justification to test it as a mediator (Tables 10 & 11). When the regressions that test the percent female enrollment in majors as the dependent variable are conducted, the independent variables that are mediated by gender role ideologies are feminine toy and game play, neutral toy play, and the frequency of play with both parents. However, the feminine toy play relationship is the closest to significance ($\beta = .200, p = .06$).

The impact of playing with feminine toys and games and childhood on parental role commitment is partially mediated by gender role ideologies, though the direct relationship is not significant. The meditating model explains 5.9 % of the variation in the parenting role. Gender role ideologies explain part of the relationship between neutral toy play and occupational commitment, but no other relationships to the other LRSS roles. The impact of the frequency of playing with parents on being committed to future employment is mediated by gender role ideologies, though only the frequency of play with mothers' direct relationship is significant. There is also a mediating (but not significant) effect between frequency of play with mothers and the marital role commitment. Being committed to future occupational roles

and being committed to maintaining future marital roles is related to time spent playing with mothers and fathers in childhood, as well as by individuals' gender role ideologies. Playing more with feminine toys for men in childhood is related to lower commitment to parenting roles, and is mediated by gender role ideologies.

H8: Gender Schemas Mediate the Relationships tested in Hypotheses 1,2,4,and 5.

Overall. In the overall sample, gender schemas mediate the relationships between feminine toys and game play and the following variables: the percentage of females enrolled in declared specializations, the occupation role, and the home care role. The weak relationships to the parenting and marital roles are also mediated by gender schemas, but these relationships are not significant. Although none of these relationships decrease to zero when the mediator is added into the regression equations, mediating effects are still found. Gender schemas mediate the relationships the overall sample has between engaging in feminine play in childhood, and the extent to which their chosen majors are traditional, as well as their commitment to their future occupational and home care roles.

Gender schemas also mediate the relationships between childhood masculine toy and game play and neutral toy play on the percent of females enrolled in declared majors. Masculine toy play and gender schemas explain 8.6% of the variance in declaring female dominated majors, which is less than the gender ideologies explain. The relationship between masculine play and occupational role commitment is also mediated by gender schemas: the direct relationships to the parenting and marital roles are weak and not significant, but gender schemas still act as mediators. Gender schemas mediate all relationships between neutral toy play and the four role dimensions, though only the direct relationship to the occupational role was significant. None of these are perfect mediating relationships, as the direct relationships do not decrease to zero.

Neither the frequency of play with mothers nor, the frequency of play with fathers produce relationships strong enough to define gender schemas as a mediator. Though gender schemas do produce mediating effects on some of the tested relationships with the parent play measures, by definition, a mediator must be caused by the independent variable. These weak causal relationships are too small to definitively argue that gender schemas are mediators.

Women. The women's frequency of play with mothers is not related to gender schemas, and thus gender schemas do not mediate any relationships with the mother play variable. Gender schemas have a mediating effect on the three sex-typed toy play independent variables when regressions are run to the percent female enrollment in university majors (Figure 2). However, it must be noted that none of the direct relationships are significant, and are weak. This indicates that gender schemas, or individual self-perceptions of masculinity and femininity, explain a small part of the relationships between playing with sex-typed toys in childhood and whether respondents chose to enroll in traditionally female or male university majors.

The positive relationship between playing with feminine toys and games in childhood and marital role commitment is mediated by gender schemas. This effect is small; feminine play explains 4.4% of the variance in the marital role. Although the parenting role commitment variable does not have a significant relationship with feminine toys and games, gender schemas have a small mediating effect on the correlation. Masculine toys and games for the women in the sample did not create any significant relationships to the LRSS dimensions, though there is a mediating effect on the occupational role. Neutral toy play has a direct relationship to the parenting role commitment, but not significant (ß = .14; p =.051) and is slightly mediated by gender schemas. Gender schemas do not mediate any relationships between playing with fathers and the LRSS roles.

Men. For the men in the sample, only the toy play variables are related to gender schemas, though masculine play and neutral toy play are not significant (ß= -.19; p =.06, = 17: p =.10). Despite the significance levels, the strength of the relationships and the small size of the male sample are considerations for testing gender schemas as mediators. Out of the three toy play variables, only the relationship between neutral toy play and percent female enrollment in declared specializations is mediated by gender schemas; this mediating effect is not very strong. This indicates that self-perceptions of masculine and feminine traits have a small impact on the relationship to how traditionally female the declared university specialization.

Gender schemas mediate the relationship between feminine toys and game play on the home care role, though the direct relationship is not significant. The relationships between all three toy variables to the occupational role commitment variable are also mediated by gender schemas, however, only the direct relationship from neutral toy play is significant. The effect of masculine toys and game play on the marital role for men is mediated by gender schemas, as the direct relationship decreases. The relationship to occupational role commitment is not significant (.15, p =.14), but is mediated by gender schemas. Gender schemas explain part of the relationship between feminine childhood play and declaring traditionally female major, as well as the relationship between playing in masculine play and the extent to which men are committed to future marital roles. Neutral toy play effects on occupational role commitment is mediated by gender schemas

Discussion

The purpose of this study is not to find direct relationships between sex-typed toys and play and adulthood career choices, but rather to find out if early childhood gender socialization predict specific adulthood outcomes. Sex-typed toys are used as indicators of the gender

socialization subjects were exposed to in early childhood. These indicators are tested in relation to adulthood career and university expectations and outcomes to find whether early childhood gender socialization matters in terms of outcomes. The questions are centered around finding out if childhood variables are important factors that carry through to adulthood. The focus of this study was to understand the gender socialization process from infancy into adulthood. The parameters of this research only allow for certain variables to be tested, and it must be made clear that there are many intervening variables that affect gender development from childhood into adulthood.

Feminine socialization on young children does matter for some adults and their career outcomes. Men are particularly sensitive to this type of socialization, as it can predict their chances of enrolling in traditionally female university specializations. Being exposed to feminine socialization in early childhood may be an indicator that parents are more willing to expose these boys to other types of feminine socialization such as feminine academic options, which opens the doors for the men to be comfortable to pursue these academic fields. For men, however, masculine socialization also has the same effect on their academic outcomes. This relationship can be explained by the fact that boys receive more sex-typed messages in their childhood, and masculine play may be a universal part of growing up as a boy.

However, there is strong evidence that masculine socialization for men and feminine socialization for women predicts marital relationship expectations and commitment levels. Being exposed to gender appropriate socializing agents, and neutral toys for women, teaches children about the relationship roles they should expect in adulthood. Women's traditional roles include maintaining the emotional climate in marriages, which mirrors the findings of this study. These early socializing agents could be reflections of the gender roles that were instilled in the respondents in childhood. Specific toys such as dolls and dollhouses teach women to

expect to be involved in maintaining their marriages, while the lack of these toys in men's development may inhibit the sense of obligation to take responsibility for relationship maintenance.

Research has shown that neutral toy play is encouraged more often in girls than in boys (e.g., Caldera et al., 1989). Not only are girls encouraged to play more frequently with neutral toys, and mothers play more frequently with neutral toys with their children (Idle et al., 1993). Mothers' neutral toy play serves as a model of feminine-typed behavior. In the case of being committed to future marital roles, neutral toy play is associated with higher role commitment for women. These results follow the findings from previous research, and emphasize the role of neutral toys in feminine socialization. Playing more frequently with neutral toys for men is associated with being less committed to future employment and careers. The 'feminine' nature of the neutral toys suggests that more exposure to these toys for boys teaches feminine roles, or fewer masculine roles. Commitment to careers is traditionally a masculine role, and increased exposure to neutral play is related to a decrease in the desire to maintain a career for men. These findings then pose more questions about the definition of neutral toys. If neutral toys are encouraged more for girls, and less for boys, and considering the findings regarding occupational commitment for men, then neutral toys may be another description for feminine toys. Neutral toys may be a term that describes feminine toys that do not hold the same degree of feminine qualities as feminine toys, but are categorically recognized as being more appropriate for girls than for boys. The implications of the findings regarding neutral toy play add to the complexity of defining and testing gender in social research. The feminization of neutral toy play also suggests that masculinity and femininity are not absolute categories along a dichotomous dimension, but can be conceptualized in varying degrees. If neutral toys are milder forms of feminine toys, then the question of what is defined as a milder form of

masculine toys also arises.

Playing with parents also raises some questions about how gender roles are being taught and learned. To date, it is known that fathers will choose sex-typed toys in play situations more often that mothers, who prefer neutral toys (Idle et al., 1993); these play interactions with toys teach children about gender roles (Schwartz & Marham, 1985). For the men in the study, the more they played with mothers, the more committed they were to their future careers as well as their marital roles. Playing with their fathers was slightly related to lower occupational commitment, and higher marital commitment. It can be hypothesized that for boys who play more often with their mothers, less importance on maintaining a career and more emphasis on marital roles may be taught. For the fathers who spent more time playing with their sons, they could have been stepping out of their role as the family 'breadwinner' to emphasize the importance of having other roles, such as a stronger involvement in parenting. For girls, more time spent with fathers is associated with lower occupational commitment. This association might stem from gender-appropriate play that fathers engage in, which emphasizes gender roles and would educate girls on their future roles as women. Playing more with fathers in childhood also predicts stronger desires for parenting roles in women. The more time spent with fathers in childhood is related to higher parenting expectations. Lindsey and Mize (2001) found the context of the parent-child interactions is also important factors in parent-child gender socialization. The context of the play situations respondents had with their parents, especially with their fathers, may an important variable that can explain the findings from this study.

Playing with both parents increases the desire for men to maintain their future homes; however, the home care role dimension can be interpreted as either a traditionally female or a traditionally male task. The nature of these questions does not specify what type of home care

is desired to maintain. The context of the upkeep of the home is debatable, as the traditionally feminine context resides within the home (laundry, cleaning, cooking) and the traditionally masculine context is centered around the exterior of the home (lawn care, garbage, painting, roofing). The desire for commitment to home care roles may be linked to the contextual research, where Lindsey and Mize (2001) found that parents choose to interact with their children in sex-typed contexts. Both mothers and fathers may have contributed to their children's commitment levels to home care by defining certain home care tasks as being sex-typed. For example, mothers may emphasize the necessity for a clean house, and fathers may emphasize the need for regular lawn care.

Gender ideologies and gender schemas are important variables that were considered in the execution of this study. The extent to which one defines their own masculinity and femininity as well as one's interpretations of what appropriate gender roles are, both account for adulthood career choices and expectations. Just as sex-typed toys cannot be considered as perfect predictors of adulthood gender-related decisions, gender ideologies and schemas cannot be considered as perfect mediators. Neither schemas nor ideologies are found to mediate all of the tested relationships. Gender schemas and gender role ideologies are also cannot be defined as perfect mediators. For example, gender schemas mediate both relationships between women who played more with feminine toys and for men who played more with masculine toys to their expected levels of marital commitment. Personal reports of masculine and feminine traits account for some respondents' marital commitment levels. Gender ideologies explain part of the relationship between men playing more with feminine toys in childhood and their increased likelihood of enrolling in female dominated majors in university. The fact that the mediating effects for both gender ideologies and schemas are not consistent over adulthood outcomes or for both genders reiterates the complexity of the concept of gender and is not easily quantified

or measured. Gender development and socialization are difficult to describe in finite terms of development processes. The mediating relationships exemplify the fact that gender socialization is dependent upon many different variables and factors, as well as context.

To understand the process of how gender schemas and ideologies affect adulthood decisions in relation to early childhood socialization, the findings of the tested mediated relationships must be understood. Thus far, it has been found that gender ideologies do not mediate women's relationships between any childhood sex-typed toy and game play and any of the tested adulthood outcomes, nor any of the relationships between playing with parents and adulthood outcomes. Men's gender ideologies have some mediating effects between the frequencies of childhood feminine toy play to both enrolling in female dominated majors, as well as to their commitment to being parents. The relationship between neutral toy play and enrolling in female dominated majors is also mediated by men's gender ideologies. The relationships between playing with both parents to enrolling in female dominated majors and to being less committed to careers and more committed to marital roles are mediated by gender ideologies for men. Men's ideas of what appropriate gender roles are can explain only some of these relationships, in contrast with the lack of influence ideologies have for women's adulthood outcomes. For men, gender role ideologies are important factors in gender-related adulthood career decisions, and not for women.

Gender schemas do have a mediating effect on the women's correlation between playing more with feminine and neutral toys and being more committed to marital roles. Men are more influenced by their gender schemas than women are when describing their career and family expectations. Men's relationships between feminine play and home care role commitment, neutral play and enrolling in female majors, and masculine play and occupational and marital commitments are all influenced by their gender schemas. Men's childhood gender

socialization and adulthood outcomes are affected by their sense of masculinity and femininity, and in more contexts than for women. In general, men's academic paths and career and family expectations are dependent upon both their gender ideologies and their gender schemas. In comparison, gender schemas affect only some of women's adulthood outcomes, while their gender role ideologies are not influential variables in those relationships.

To conclude, it is apparent from this study that early childhood gender socialization matters where adulthood academic and career paths are concerned. The gender of the individual, their time spent playing with sex-typed toys and their parents, as well as the specific outcomes are important variables in the socialization process. Personal perceptions of masculinity and femininity as well as gender ideologies explain some of these relationships, and more so for men than for women. It is also evident that the path from early childhood gender socialization to adulthood gender-based decisions is not direct. The complexity of the path of gender socialization is related to the complexity of the concept of gender itself, where the concept has yet to be clearly defined and understood.

Limitations

A select number of relationships that did not reach statistical significance were reported in the results section. Relationships that had a p level between .05 and .10 were reported. These relationships were reported and considered to be important to the models tested for several reasons. The participants were not randomly selected from their population, as the respondents voluntarily participated in the study. The sample in the study is not a representative sample of the population as all are university students, and the majority of them are in their third and fourth years of study. This non-probability sample creates limitations to inference of findings to a population beyond the sample in the study. The results of this study are confined to the selected the sample. These results may occur only within the tested sample. The sample size of

each gender category is a likely contributor to the fact that some relationships did not reach significance. The male sample was smaller than the female sample.

The concepts of masculinity and femininity can also raise some concerns. The concepts of masculinity and femininity within this study are based on previous literature that defines gender in their own words. For example, to Bem (1981, 1983) the concept of being 'masculine' is relevant to a coefficient that is derived from the number of feminine and masculine traits the individual reports owning. By quantifying their traits, the BSRI can give a raw score to an individual's perceptions of their own sense of masculinity and femininity, and place their score on a gender continuum to describe their gender. Gender ideologies are simply measures of how the individual assumes social roles are appropriate for both sexes. The measure of a feminine career path within this study is the number of female students in a declared university specialization. While these examples define facets of the concept of gender, each can also be considered as being separate from the other. The discrepancy in the continuity of the definitions of gender can be a limitation of the research, as they may not be defining the exact same concept. Both theoretical perspectives approach the concept of gender as being a categorical concept, and not fluid. This limits the findings as this approach implies that gender can be sorted into discrete categories, further implying that there is no overlap between the categories. Applying a fluid approach to the concept of gender may have yielded different results and definitions of sex-typed behaviors. This is an issue for all gender research, but also defines the variations that are seen within gender itself. This study may be missing any new definitions of gender currently held by the participants of the study, as well as the cultural definitions held within the community of the participants.

Certain variables that contribute to the gender socialization development from infancy to adulthood cannot be measured within the parameters of this study. Effects of the media, such

as television, video games, internet and magazines are factors that cannot be measured in this proposed research. Despite research that indicates the importance of the family's influence on childhood socialization (e.g., Maccoby, 1992), the importance of increasing external media influences cannot be captured in this model. Some unique variables in individual families are other limitations. While this study can ask about the number and sex of siblings, the effects of these factors cannot be measured. Having older sisters as opposed to being the oldest brother or coming from a cultural system that has different expectations for gender appropriate behavior could mediate the influences of family and mainstream cultures. Personality and other individual variations are also other possible factors in the model.

The retrospective nature of the study also creates some concern over the reliability of the accounts of toy and play styles. Respondents will be asked about details of their lives from over 15 years ago. These detailed events act as cued recall, which helps the retrieval of memories that have been stored for periods of time. Engaging in recall facilitates more recall with similar information (Schwarz, Hippler, & Noelle-Neumann,1994). The questions in the survey are designed to act as cued recall, instead of open-ended responses, and the questions regarding toys and play in childhood are similar, and should thus make the memory retrieval of childhood play experiences more readily available.

The reliability of the Giuliano et al. (2000) study indicates that this method is acceptable. Gilmartin (1987) also conducted a retrospective study where male respondents were asked if they played with masculine and feminine toys when they were 5 and 12 years of age. The range of ages of the respondents ranged from 19 to 50 years of age. These respondents were asked to recall toys they had as long as 45 years prior to the study. These studies are only two examples of how research uses recall to get an account of childhood experiences. Overall, normative childhood experiences are reliably recalled (Maughan &

Rutter, 1997). Adults appear to be reliable in their accounts of their episodic memories, which includes childhood memories. However, normative memory decay and distortions are variables that cannot be measured in this study. Forgetting events and not remembering events accurately are common issues in retrospective recall. For example, forgetting about certain toys one had, and distortions such as highly emotional events are factors that cannot be controlled for. Maughan and Rutter (1997) point out that questionnaires have been found to generate more accurate and detailed responses than interviews in some cases. While some recalled information may be forgotten or distorted, toys and friendships that had significant meaning in childhood are memorable experiences.

Gender schemas may also affect the retrospective nature of this study, and could affect the validity of recalling childhood experiences. Gender schemas act as information processors that organize information into gender categories, and could thus create false recollections of the frequency of play with toys, parents, and games. For example, highly sex-typed individuals may readily recall childhood play that congruent with their gender more than cross-gender play. The accuracy of recalling gender-related information may be subject to individuals' salience of their own gender schemas.

Neither gender ideologies nor gender schemas can be considered as perfect mediators between early parent-child gender socialization and adulthood career and academic outcomes. There are many other external and mediating factors that were outside of the parameters of this study that could affect adulthood career choices and expectations. Gender schemas appear to have more of a mediating effect on the relationships between childhood gender socialization and adulthood academic and career paths and expectations. The sense of holding masculine and feminine traits can explain more relationships between sex-typed childhood gender socialization and holding traditional and non-traditional expectations about future career and

family roles, compared to gender role ideologies. Ideologies about how the genders should behave are not as strong a variable in the gender socialization process. Despite the degree of the impact of gender ideologies and gender schemas as mediators, it is important to note that both affect certain aspect of the gender socialization process.

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Part1 : Background information

1. What is your gender? ☐ Male ☐ Female

2. What category best describes your background? Check (X) ONE:

☐ North American
☐ South American
☐ Central American
☐ African
☐ Western European
☐ Eastern European
☐ Middle Eastern
☐ Asian
☐ South East Asian
☐ Australian
☐ Other:_____

3. How old are you? _____ Years

4. What is your parents' Highest Level of Education? Please put a check one box for EACH parent:

MOTHER'S highest level of education:
☐ Some Highschool
☐ Highschool Diploma
☐ Some Post Secondary
☐ University/College Degree
☐ Post-Graduate Degree(MD.,PhD.,Law...)

FATHER'S highest level of education:
☐ Some Highschool
☐ Highschool Diploma
☐ Some Post Secondary
☐ University/College Degree
☐ Post-Graduate Degree(MD.,PhD..)

5. What type of occupations do your parents currently hold? If they are retired, what was the last position they held?

MOTHER'S Occupation
☐ Business/Finance/Administration
☐ Trades/Transport/Equipment Operations
☐ Science Related (Chemist, Social...)
☐ Management Occupation
☐ Sales and Service
☐ Health Occupation
☐ Stay at Home
☐ Other

FATHER'S Occupation
☐ Business/Finance/Administration
☐ Trades/Transport/Equipment Operations
☐ Science Related (Chemist, Social...)
☐ Management Occupation
☐ Sales and Service
☐ Health Occupation
☐ Stay at Home
☐ Other

What is the Title of your mother's occupation?_____
(Ex: Nurse, doctor.....)
What is the Title of your father's occupation?_____

6. What academic year are you currently in?

☐ **First** ☐ **Second** ☐ **Third** ☐ **Fourth** **Other:**_____

7.a) Have you declared your major (specialization)? ☐ **Yes** ☐ **No**

7.b)What major (specialization) have you declared? (Ex.: Psychology, Marketing, Nursing...). If you have not declared a major, please indicate what major you will be declaring:

_____

8. Which Degree Program are you pursuing? Check one:

☐ Bachelor of Science
☐ Bachelor of Applied Sciences
☐ Bachelor of Sci.(Natural Res.Cns.)
☐ Bachelor of Arts
☐ Bachelor of Commerce
☐ Bachelor of Education (Elementary)
☐ Bachelor of Education (Middle)
☐ Bachelor of Education (Secondary)
☐ Bachelor of Environmental Design
☐ Bachelor of Fine Arts
☐ Bachelor of Human Kinetics
☐ Bachelor of Laws
☐ Other:_____
☐ Bachelor of Medical Lab Sciences
☐ Bachelor of Midwifery
☐ Bachelor of Music
☐ Bachelor of Science (Agroecology)
☐ Bachelor of Science (Global Resources)
☐ Bachelor of Science (FNH)
☐ Bachelor of Science (Forestry)
☐ Bachelor of Science (Occup. Thrpy.)
☐ Bachelor of Science (Phys. Thrpy.)
☐ Bachelor of Science (Nursing)
☐ Bachelor of Science Pharmacy
☐ Bachelor of Social Work

Part 2: Personality Measures

9. Directions: For the following words listed below, rate the extent to which you think the trait (word) describers you. Write the number in the box next to each word to indicate your response. Use the scale provided:
EXAMPLE:

Emotional	**1 2 3 4 5 6 7**	**Aggressive**	**1 2 3 4 5 6 7**

1	2	3	4	5	6	7
Almost never true	Usually not true	Sometimes,but Infrequently true	Occasionally true	Often true	Usually true	Almost always

Defend My Own Beliefs	1	2	3	4	5	6	7
Affectionate	1	2	3	4	5	6	7
Conscientious	1	2	3	4	5	6	7
Independent	1	2	3	4	5	6	7
Sympathetic	1	2	3	4	5	6	7
Moody	1	2	3	4	5	6	7
Assertive	1	2	3	4	5	6	7
Sensitive to needs of others	1	2	3	4	5	6	7
Reliable	1	2	3	4	5	6	7
Strong Personality	1	2	3	4	5	6	7
Understanding	1	2	3	4	5	6	7
Jealous	1	2	3	4	5	6	7
Forceful	1	2	3	4	5	6	7
Compassionate	1	2	3	4	5	6	7
Truthful	1	2	3	4	5	6	7
Have leadership abilities	1	2	3	4	5	6	7

1	2	3	4	5	6	7
Almost never true	Usually not true	Sometimes,but Infrequently true	Occasionally true	Often true	Usually true	Almost always

Eager to soothe hurt feelings	1	2	3	4	5	6	7
Secretive	1	2	3	4	5	6	7
Willing to take risks	1	2	3	4	5	6	7
Warm	1	2	3	4	5	6	7
Adaptable	1	2	3	4	5	6	7
Dominant	1	2	3	4	5	6	7
Tender	1	2	3	4	5	6	7
Conceited	1	2	3	4	5	6	7
Willing to take a stand	1	2	3	4	5	6	7
Love children	1	2	3	4	5	6	7
Tactful	1	2	3	4	5	6	7
Aggressive	1	2	3	4	5	6	7
Gentle	1	2	3	4	5	6	7
Conventional	1	2	3	4	5	6	7

Please go to the next page!

10. Indicate the extent to which you agree with the following statements. Please CIRCLE the number that corresponds to you response according to the following scale.

Disagree	Somewhat Disagree	Neither Disagree Nor Agree	Somewhat Agree	Agree
1	2	3	4	5

I want to work, but do <u>not</u> want to have a demanding career.	1	2	3	4	5
I expect to make many sacrifices as necessary in order to advance my career.	1	2	3	4	5
I value being involved in a career and expect to devote the time and efforts needed to develop it.	1	2	3	4	5
I expect to devote a significant amount of my time to building my future career and developing the necessary skills to advance it.	1	2	3	4	5
I expect to devote whatever time and energy it takes to move up in my future career field.	1	2	3	4	5
It is important to me to have some time for myself and my own development rather than have children and be responsible for their care.	1	2	3	4	5
I expect to devote my time to the rearing of my children.	1	2	3	4	5
I expect to be very involved in the day-to-day matters of rearing children of my own.	1	2	3	4	5
Becoming involved in the day-to-day care details of rearing children involves costs in other areas of my life which I am unwilling to make.	1	2	3	4	5
I do <u>not</u> expect to be very involved in child rearing.	1	2	3	4	5
I expect to commit whatever time is necessary to making my marriage partner feel loved.	1	2	3	4	5
Devoting a significant amount of my time to being with or doing things with a marriage partner is <u>not</u> something I expect to do.	1	2	3	4	5
I expect to put a lot of time and effort into building and maintaining a marital relationship.	1	2	3	4	5
Really involving myself in a marriage relationship involves costs in other areas which I am <u>not</u> willing to accept.	1	2	3	4	5

Disagree	Somewhat Disagree	Neither Disagree Nor Agree	Somewhat Agree	Agree
1	2	3	4	5

I expect to work hard to build a good marriage relationship even if it means limiting my opportunities to pursue other personal goals.	1	2	3	4	5
I expect to leave most of the day-to-day details of running a home to someone else.	1	2	3	4	5
I expect to devote the necessary time and attention to having a neat and attractive home.	1	2	3	4	5
I expect to be very much involved in caring for a home and making it attractive.	1	2	3	4	5
I expect to assume the responsibility for seeing that my home is well kept and well run.	1	2	3	4	5
Devoting a significant amount of my time to managing and caring for a home is <u>not</u> something I care to do.	1	2	3	4	5

11. The statements listed below describe attitudes toward the roles of women in society which different people have. Please indicate the extent to which YOU agree with each statement. Circle the number that corresponds with the following scale:

Strongly Disagree	Disagree Mildly	Agree Mildly	Strongly Agree
1	2	3	4

Swearing and obscenity are more repulsive in the speech of a women, rather than of a man.	1	2	3	4
Under modern economic conditions with women being active outside the home, men should share in the household tasks such as washing the dishes and doing laundry.	1	2	3	4
It is insulting to have the "obey" clause remain in the marriage service.	1	2	3	4
A woman should be free as a man to propose marriage.	1	2	3	4
Women should worry less about their rights and more about becoming good wives and mothers.	1	2	3	4

Strongly Disagree	Disagree Mildly	Agree Mildly	Strongly Agree
1	2	3	4

Women should assume their rightful place in business and all professions along with men.	1	2	3	4
Women should <u>not</u> expect to go to exactly the same places or to have quite the same freedom of action as a man.	1	2	3	4
It is ridiculous for a woman to drive a train and for man to knit a sweater.	1	2	3	4
The intellectual leadership of a community should be largely in the hands of men.	1	2	3	4
Women should be given equal opportunity with men for apprenticeship in the various trades.	1	2	3	4
Women earning as much as their dates should bear equally the expense when they go out together.	1	2	3	4
Sons in a family should be given more encouragement to go to college than daughters.	1	2	3	4
In general, the father should have greater authority than the mother in the bringing up of children.	1	2	3	4
Economic and social freedom is worth far more to a woman than acceptance of the ideal femininity which has been set up by men.	1	2	3	4
There are many jobs in which men should be given preference over women in being hired or promoted.	1	2	3	4

Please go to the next page!

12. How often did you play with the following toys when you were younger? Using the scale below, please circle the number that corresponds to your response in the box next to each toy.

1	2	3	4	5
Never	Rarely	Occasionally	Often	Very Often

Toy Guns	1	2	3	4	5
Barbies	1	2	3	4	5
Dishes/Tea Sets	1	2	3	4	5
Army Toys & Soldiers	1	2	3	4	5
Weight Lifting Toys	1	2	3	4	5
Sewing Kits	1	2	3	4	5
Painting Sets	1	2	3	4	5
Baby Dolls	1	2	3	4	5
Doll House	1	2	3	4	5
Play Doh & Modelling Clay	1	2	3	4	5
Tools & Carpentry Sets	1	2	3	4	5
Balls(footballs, soccer balls, baseballs..)	1	2	3	4	5
Jewellery/ Jewellery Boxes	1	2	3	4	5
Cars/Trucks/Airplanes	1	2	3	4	5

13. When you were younger, how often did you play the following games? Using the scale below, please circle the number that corresponds to your response in the box next to each game.

1	2	3	4	5
Never	Rarely	Occasionally	Often	Very Often

House	1	2	3	4	5
Team Sports (soccer, baseball...)	1	2	3	4	5
"Teacher"	1	2	3	4	5
Video Games	1	2	3	4	5
"War"	1	2	3	4	5
Dress-up	1	2	3	4	5
Make-Believe or Pretend	1	2	3	4	5
Jump Rope	1	2	3	4	5
Hopscotch	1	2	3	4	5

14. Think back to when you were a young child, when you were in the ages between preschool and first grade. How often did you PLAY WITH:

	Never 1	Rarely 2	Occasionally 3	Often 4	Very Often 5
BOYS	1	2	3	4	5
GIRLS	1	2	3	4	5
MOTHER	1	2	3	4	5
FATHER	1	2	3	4	5

Thank you for your participation!
Katherine Rhodes will come to your next class to pick up this survey. If for some reason you didn't bring this survey to that time, please either place this survey in the self addressed and postage paid envelope provided and put it in the mail,or, email Katherine Rhodes, and she will arrange to pick up this completed survey.

Appendix B

Table 12
Mean Response Scores

Variable	WOMEN	MEN
Feminine Toy Play*	3.28	1.31
Feminine Game Play*	3.66	2.01
Masculine Toy Play*	2.20	3.42
Masculine Game Play*	2.53	3.73
Neutral Toy Play*	3.91	3.33
Frequency of Play with Mother *	3.36	3.12
Frequency of Play with Father*	2.84	3.10
Occupational Role Commitment*	3.67	3.87
Parental Role Commitment *	3.76	3.65
Marital Role Commitment*	4.33	4.30
Home Care Role Commitment*	3.71	3.57
Gender Ideology (ATW)**	3.48	3.26
Gender Schema (BSRI)†	3.49	-1.92

*Note: * five point scale; ** four point scale; † standardized t score; n = 277*

Table 13

Regressions Between Childhood Socialization Variables and Mediators

Independent Variable	Gender Ideologies		Gender Schemas	
	B	ß	*B*	ß
Overall				
Feminine Toys and Games	.11**	.28	3.15**	.25
R^2	.14		.07	
Masculine Toys and Games	-.06†	-.11	-3.83**	-.24
R^2	.08		.06	
Neutral Toy Play	.10**	.22	2.57**	.18
R^2	.11		.03	
Playing with Mother	.06**	.16	1.11	.09
R^2	.09		.01	
Playing with Father	.01	.04	-.94	-.08
R^2	.07		.01	

Note. All regressions controlled for parent education and employment variables; †p≤0.10; *p≤0.050; **p≤0.01, *n* = 277.

Table 14

Women's and Men's Regressions Between Childhood Socialization Variables and Mediating Variables

Independent Variable	Gender Ideologies		Gender Schemas	
	B	ß	*B*	ß
WOMEN				
Feminine Toys and Games	.06	.10	3.09*	.16
R^2	.09		.04	
Masculine Toys and Games	.11*	.17	-2.60	-.12
R^2	.11		.03	
Neutral Toy Play	.04	.08	1.57	.10
R^2	.08		.02	
Playing with Mother	.02	.06	.65	.06
R^2	.08		.01	
Playing with Father	-.01	-.05	-1.20	-.10
R^2	.08		.02	
MEN				
Feminine Toys and Games	.15	.15	5.52†	.19
R^2	.09		.05	
Masculine Toys and Games	.00	.00	-4.02†	-.19
R^2	.06		.05	
Neutral Toy Play	.12**	.26	2.40	.17
R^2	.13		.04	
Playing with Mother	.10*	.24	1.20	.10
R^2	.12		.02	
Playing with Father	.10*	.25	.16	.01
R^2	.12		.01	

Note. All regressions controlled for parent education and employment variables; †p≤0.10; *p≤0.050; **p≤0.01, *Women: n = 175; Men: n = 102.*

Table 15

Correlations Between all Independent and Dependent Variables

Variables	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. Feminine Toys and Games												
2. Masculine Toys and Games	-.50											
3. Neutral Toy Play	.43	-.06										
4. Play with Mother	.19	.01	.26									
5. Play with Father	-.03	.19	.18	.52								
6. Percent Female Enrollment	.41	-.28	.20	.04	-.02							
7. Occupational Role Comm.	-.10	.16	-.13	-.09	-.12	-.07						
8. Parenting Role Comm.	.07	-.03	.12	.08	.18	.12	-.09					
9. Marital Role Comm.	.07	-.07	.05	.13	.08	.08	-.01	.41				
10. Home Care Role Comm.	.11	-.10	.10	.16	.15	.06	-.05	.26	.27			
11. Gender Role Ideologies	.27	-.11	.24	.16	.06	.23	.02	-.03	.01	-.07		
12. Gender Schemas	.25	-.25	.17	.08	-.07	.17	-.11	.18	.17	.14	.18	