

**Mothers, Fathers, Sons, and Daughters:
Gender Schematicity in the Family Context**

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Submitted to the Faculty of Graduate Studies

By Laura Sokal

In Partial Fulfillment of the Requirements

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Mothers, Fathers, Sons, and Daughters: Gender Schematicity in the Family Context

BY

Laura Sokal

**A Thesis/Practicum submitted to the Faculty of Graduate Studies of The University
of Manitoba in partial fulfillment of the requirements of the degree**

of

DOCTOR OF PHILOSOPHY

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Abstract

Gender schematicity was studied in 178 kindergarten and grade four children and their parents. Children were administered a computerized measure that used response latencies to differentiate gender schematic from gender aschematic children. Parents were administered the Bem Sex Role Inventory, and their scores were classified into four categories of parental gender type combinations. A series of analyses of variance were used to determine differences in children's gender schematicity based on their sex, age, and parental classifications. Results showed that boys were more gender schematic than girls. No age effects were found. Simple comparisons indicated that boys with gender-typed fathers and non-gender-typed mothers were more schematic than girls with the same parent gender classification, than girls with non-gender-typed mothers and gender-typed fathers, and than boys with two non-gender-typed parents. Implications in educational settings and suggestions for future research were discussed.

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Chapter One: Introduction

Statement of the Problem

Although gender development has been of interest to social scientists for over 70 years, as yet, no single theory gives a coherent account of this process (Fagot, 1995). While sex can be defined as biological maleness or femaleness, gender refers to the social and psychological characteristics associated with each sex. Research in the area was stalled in the 1970's because the psychoanalytic approach (Freud, 1925), the social learning approach (Mischel, 1966), and the cognitive developmental approach (Kohlberg, 1966) had all proved to be inadequate in describing children's gender development. Theory generation had been constrained by viewing gender as a bipolar, uni-dimensional construct where people were seen as either masculine or feminine.

The tenets of gender schema theory, however, offered a provocative new way to examine gender. Early versions of gender schema theory (Bem, 1981; Martin & Halverson, 1981), posited that gender was actually two-dimensional and that masculinity and femininity were best represented by two orthogonal scales within the same individual. People could demonstrate high or low levels in either or both masculinity and femininity. Those with high levels of both masculine and feminine characteristics were said to be *androgynous*. Those with low levels of both masculine and feminine characteristic were *undifferentiated*. Those high in masculine characteristics and low in feminine were called *masculine*, and those who were high in feminine traits and low in masculine were said to be *feminine*

(see Figure 1). These classifications fit within two general gender type classifications. Males and females may be gender-typed (masculine or feminine) or non-gender-typed, a label used inclusively for androgynous and undifferentiated individuals.

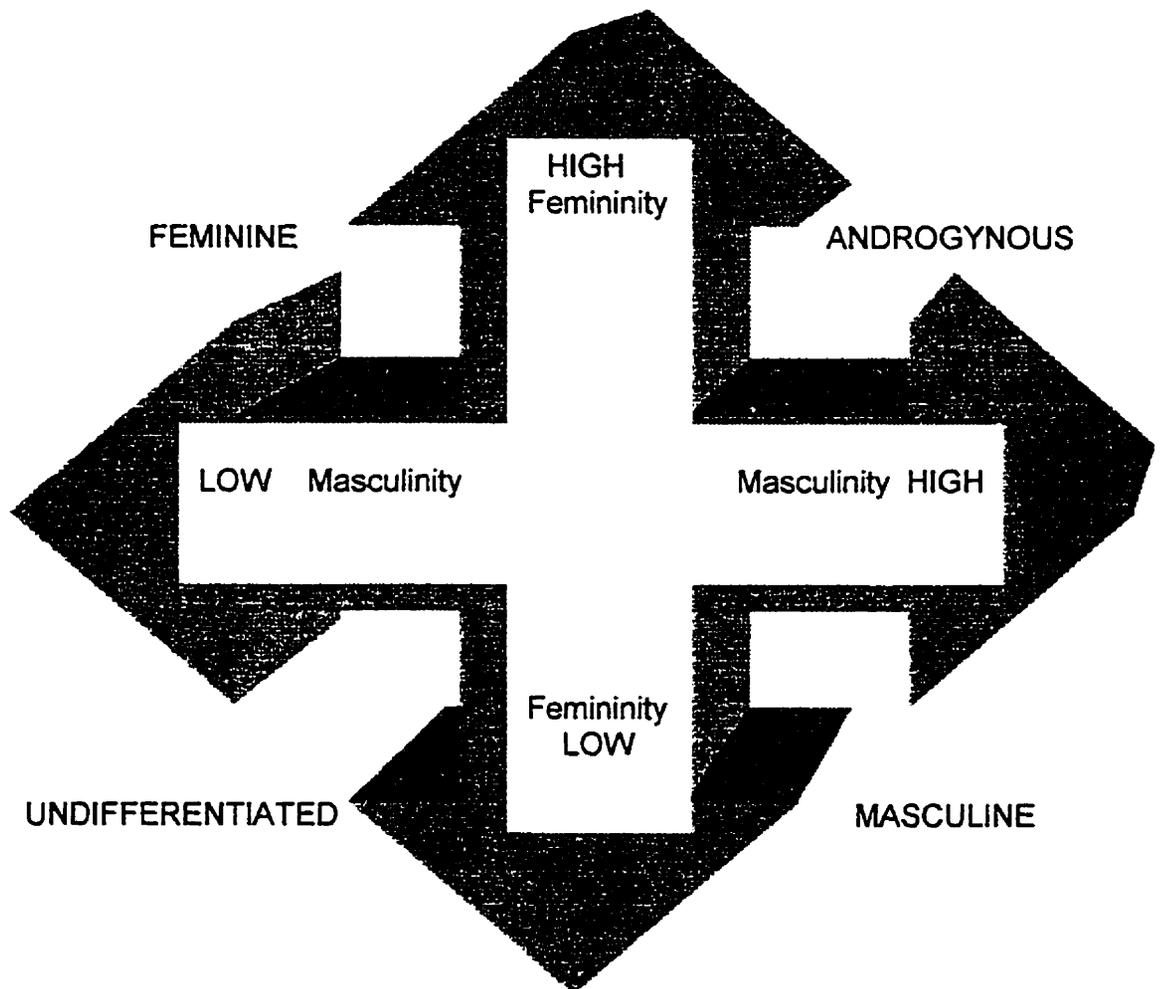


Figure 1. The Four Quadrants of Gender

While gender schema theory held promise, it still failed to encompass the process by which gender develops- the "...complex, often enigmatic, developmental phenomena called gender development " (Levy, 1993). Recent research *has* supported masculinity and femininity as variables independent of one another. But the research also proposed that gender development includes much more than the two constructs of masculinity and femininity. Current gender schema theory proposed that gender is multi-faceted (Martin, 1993), and includes gender roles, gender identity, gender knowledge, gender flexibility, and gender schematicity. Each of these constructs evolves distinctly from the others, and in response to the child's interactions with his or her environment. In time, the interactions affect the ways that children attend to, interpret, and process future social information.

This more complex way of looking at gender removed many of the constraints of earlier theory, but it also necessitated the development of new methodologies. Since gender schema emphasized the interactions between experience and the development of cognitive structures, most new methodologies focused on how to access the structures. Researchers have therefore examined children's gendered preferences (Bradbard, Martin, Endsley, & Halverson, 1989), recall of gender-consistent information (Levy & Fivush, 1993), word recall (Fagot, Hort, & Fagot, 1997) and inference and prediction (Martin & Little, 1990). Especially plentiful research has looked at the ways that parental behaviours may influence children's development of gender. As new

methodologies were developed, studies clarified differences among the dimensions that make up gender, and clarified the relationships between the dimensions and the child's environments.

Ironically, the more diverse approach to gender research also revealed important gaps in knowledge of gender. Relationships established through testing gender as a uni-dimensional construct have not been thoroughly reviewed in light of the other "newer" gender dimensions or through use of the new methodologies. The current research attempted to fill in one of the gaps created by the recent reconceptualization of gender, namely the relationship between children's gender schematicity and parental gender types. In essence, it investigated the following question: Is there a relationship between children's inclination to interpret social information through gender schema, termed *gender schematicity*, and the gender type classification of their mothers and fathers in context? While social scientists have become very aware of the multi-dimensional nature of gender in children, they have failed to give attention to these dimensions in the salient people in children's environments. Most research has focused on establishing a causal relationship between mothers' or fathers' attitudes and behaviours, and their children's gender development. The current research, however, does not follow this pattern. It does not try to establish a causal link between parent behaviours and child gender schematicity, but simply to determine if a relationship exists between parental gender types and child gender schematicity.

While the effects of other socializing agents such as peers, siblings, teachers and the media are potentially as important as the socializing effects of parents, they are outside the scope of this study. The impact of heritable factors and cultural factors, including socio-economic status, has also been given some attention by the research community. Neither of these variables were studied directly, however, the latter was investigated only as a potential confounding variable. Instead, the relationship between parents' gender roles and children's gender schematicity was the focus of this investigation. Given the assumed importance of parental influences in children's gender development, and the attention it has received in other theories of gender development, it seemed prudent to seek a better understanding of this relationship. Prior research has been inconclusive, and common sense deemed it necessary to revisit this important research topic in light of the new theoretical and methodological approaches now available.

The contribution of this research was threefold. First, it examined the gender type classification of mothers and fathers separately but *in the context of the children's family environment*. That is, children's data are not compared separately to the mothers' or the fathers', but to the various dyadic combinations of parental gender roles. Second, in order to conduct this research, an established children's measure of children's gender schematicity (Carter & Levy, 1988) was modified for administration by computer in order to insure greater accuracy in data collection. Third, while previous research has looked at how

parental behaviours affect children's gender schematicity, this study moves one more step back, by examining the indirect relationship between child cognitive processes and parental gender types.

Chapter Two: Review of the Literature

Tenets of Gender Schema Theory

Gender schema theory is based on the idea that children understand and interact with their worlds with "packets of gender-relevant information, understanding, knowledge, and beliefs" (Levy & Fivush, 1993, p. 132). Gender schemata affect the way individuals process information about the environment, and how they respond to information through behaviour. Martin and Halverson (1983, p.563) posited, "the basic idea is that stereotypes are 'schemata,' or naive theories that are relevant to the self, and function to organize and structure experience by telling the perceiver the kinds of information to look for in the environment and how to interpret such information." According to Bem (1983), schemata are more general than categorical knowledge in two ways. First, unlike a cognitive category, a schema is linked in its social contexts to many other areas, such as attributes, behaviours, concepts, and categories. Second, a schema has broad functional significance within the culture's norms, institutions, and taboos. A schema serves as a guide to individuals' interactions with their environments.

Martin and Halverson (1981; Martin, 1993) posited three functions of gender schemata. First, gender schemata regulate gender-related behaviours by providing a basis by which children learn to anticipate events and carry out gender-related routines. Children demonstrate the regulation in testing situations

through their preferences for novel objects labeled gender -appropriate (Bradbard & Endsley, 1983; Bradbard, Martin, Endsley & Halverson, 1986). In these studies children showed sustained interest in unknown objects that had same-sex models on their packaging and those introduced as appropriate to their sex.

The second function of gender schemata is to organize and direct attention. Children pay more attention to information relevant to their own sex (Bradbard & Endsley, 1983), and as such, develop a more elaborate understanding of gender knowledge relevant to their own sex, as compared with their gender knowledge about the other sex (Bradbard, Martin, Endsley & Halverson, 1986; Martin 1989; 1993; Martin & Halverson, 1983). This has been shown to be true of both sexes, but especially of boys. While both sexes demonstrate greater gender knowledge of their own sex, girls demonstrate greater knowledge about boys than boys demonstrate about girls (Boston & Levy, 1991). Children have also demonstrated this function by the enhanced recall of gender-consistent information as opposed to gender-inconsistent information (Carter & Levy, 1988; Koblinsky, Cruse & Sugawara, 1978). In the more recent study, children were shown illustrations where the characters behaved in either gender stereotype-consistent and stereotype-inconsistent ways. The children were then asked to recall and then recognize the pictures they had previously seen from a larger group of pictures. Children's age and gender schematicity were related to their recall of gender inconsistent pictures.

Children were more likely to falsely remember the characters doing stereotype-consistent actions than to falsely remember them doing stereotype inconsistent actions. Furthermore, with increasing age children had better recall of the gender stereotype-consistent actions.

The third function of gender schemata is to assist children in filling in details when information is vague or incomplete. Children have demonstrated that they use schemata in this way when they infer and predict the gender-related preferences of another person (Berndt & Heller, 1986; Gelman, Collman & Maccoby, 1986). Martin, Wood, and Little (1990) showed that children viewed the sex of a hypothetical child as salient when predicting the toys that child would prefer. Thus, the content knowledge of gender schemata assists children in anticipating and predicting others' behaviours.

Gender schema theory (Martin & Halverson, 1981) offers a model of cognitive organization that influences the kind of information children attend to, explore, and remember (Bradbard et al., 1986). The processing model proposed involves two schemata organized in a hierarchical fashion. The super ordinate schema is rather general and simply helps the child categorize traits, objects, behaviours, and gender roles as either "like me" or "unlike me." This schema allows individuals to learn about both categories, albeit at a general level. The subordinate schema relates to the individual's own sex and is elaborately detailed with traits, behaviours, objects, and gender roles (see Figure 2).

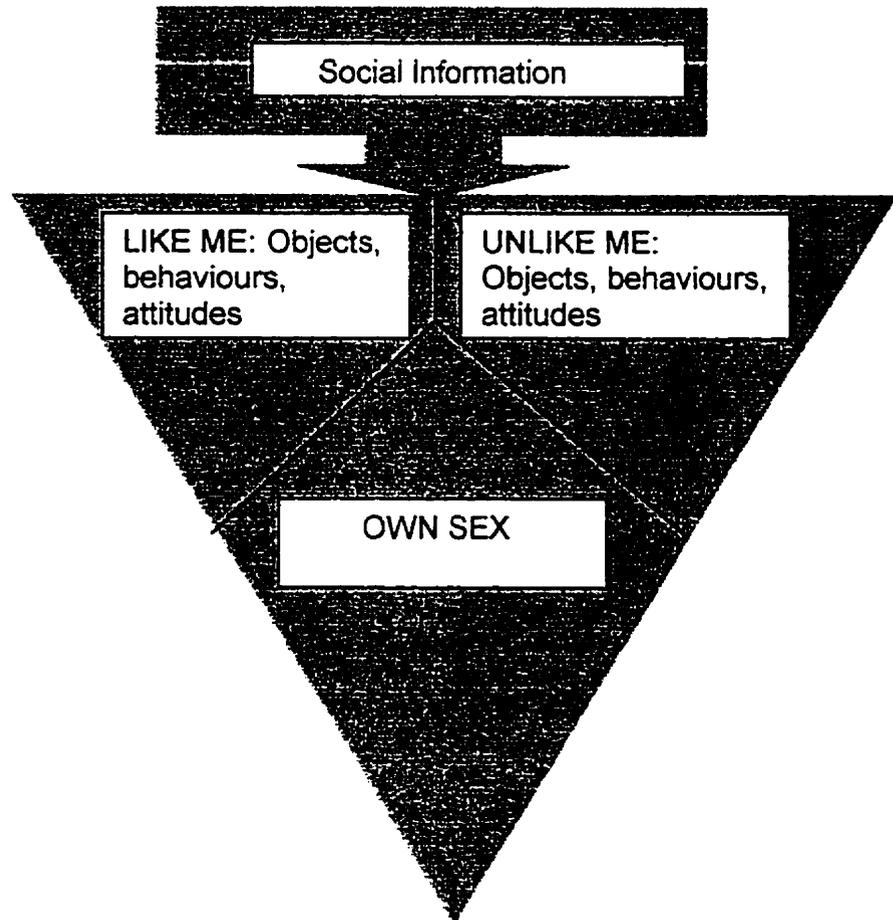


Figure 2. A Gender Schema Knowledge Hierarchy

Gender schema theory also offers a developmental model. According to original gender schema theory (Martin & Halverson, 1981), after children are able to determine their own sex at about the age of two and three years, children

begin to perceive objects and people as belonging to one of the two groups in the super ordinate schema. They perceive others as being in the "in" group, who possess a sex consistent with that of the child, or in the "other" group, who are of the other sex. Alongside the people in these groups, the child also groups the objects, behaviours, and attitudes consistent with each group. Children's environmental observations and reinforcement facilitate classification of information into the two groups. Thus, children are immersed in a process of learning society's gender schema by living in that society (Bem, 1981). "For children, sex-typing (sic) schemas are quite salient. For adults, the salience of these schemas appears to vary" (Martin & Halverson, 1981, p. 1127).

Later conceptualizations of the organization of gender schema built on the original model challenged the claim that *all* information is processed in a hierarchical manner. Martin (1993) proposed that gender knowledge in the super ordinate schema is organized into two categories- male/masculine and female/feminine with each category further delineated into components associated with it. Components include role behaviours, occupations, traits, and physical appearance. Martin called for research to investigate the label-components links, including both intra-component and well as inter-component links (see Figure 3).

Once children recognize their sex, they become very motivated to define the attributes and characteristics that define gender-appropriate behaviour. In this way, the children's search for gender knowledge becomes very salient, and

information about their own sex is of particular interest. As such, children develop a far greater interest in, and therefore knowledge of, their own

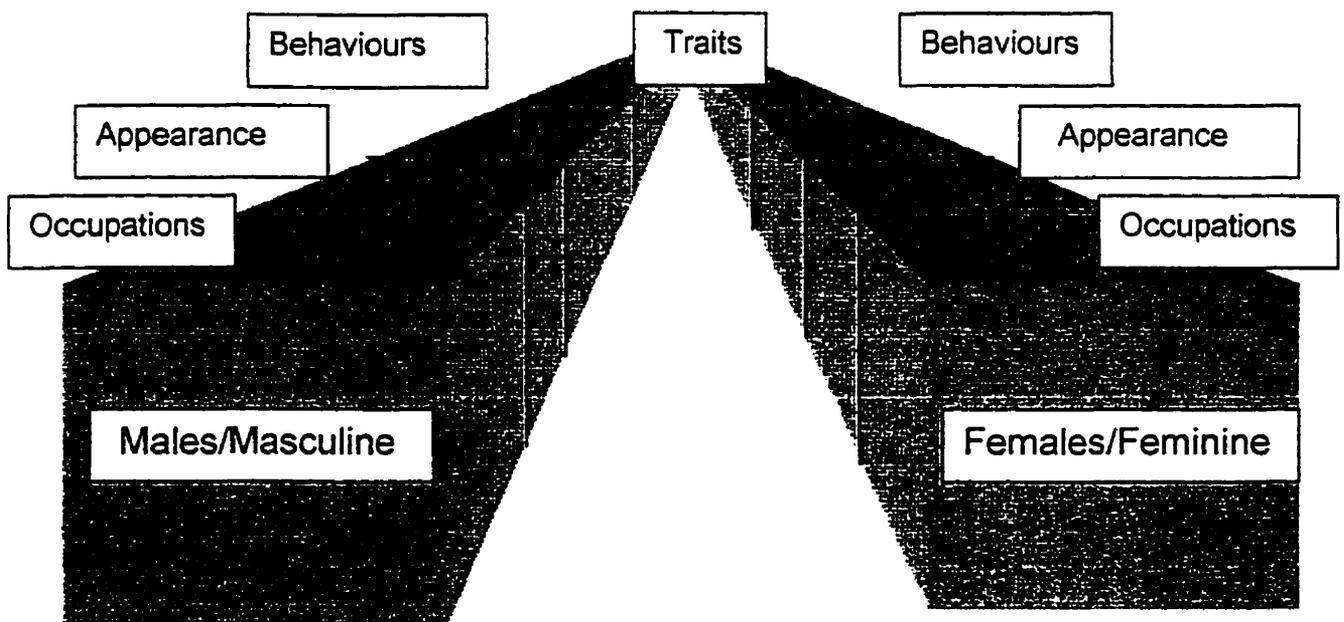


Figure 3. A Conceptualization of Martin's 1993 Model of Gender Knowledge

gender (Bauer, 1992). Although cognitive-developmental theory also suggested that children would pay more attention to their own sex (Kohlberg, 1966), the cognitive threshold for this tendency was set much higher in Kohlberg's theory. Kohlberg posited that the increased interest in same-sex information followed children's achievement of gender constancy. Specifically, children must not only recognize their gender, but also must realize that their gender is constant over

time and situation. In contrast, gender schema theory suggests that children need only possess a categorical knowledge of gender and a sense of their own sex in order to pay differential attention. Fagot (1995) conducted extensive research on gender-labeling in young children and concluded that the cognitive-developmental model greatly overestimated the level of understanding necessary for children to begin to notice and imitate same-sex behaviours. Even before children can consistently label their sex correctly, they possess a tacit knowledge and perceptual discrimination of gender categories (Fagot, 1995).

Bem (1983) posited that children try to match their behaviours to their understanding of society's gender roles. Because children's self-esteem is tied to feeling positively about themselves, including their gender, children attempt to meet what they perceive to be society's expectation of them. They strive to be a stereotypical boy or a stereotypical girl. That is, children believe that they have learned the attributes of a "good" boy or a "good" girl and strive to fit with this mental model, or schema, as a way of maintaining a sense of their own adequacy as people. Their observations and behaviours are organized in a very simplistic fashion in early childhood, and are observable in children's strong adherence to stereotypes and the salience of gender roles to younger children (Levy & Fivush, 1993). In time, children develop the ability to apply these rigid gender stereotypes in a more flexible way. That is, while they are still very much aware of the stereotypes, they are able to recognize that there are exceptions to these rigid definitions and roles (Berndt & Heller, 1986; Katz & Ksansnak, 1994;

Martin, 1989; Serbin, Powlishta & Gulko, 1993). Girls, in particular, seem to demonstrate greater gender role flexibility with age (Signorella, Bigler & Liben, 1993).

An important observation, at this point, is to acknowledge that cognitive-developmental theory and gender schema theory look at cognitive processes in very different ways. Cognitive-developmental theorists posit a prescribed series of developmental stages: gender identity, gender stability, and gender constancy. These transformations are innate to the individual and are supported by environmental experiences, but are not determined by these experiences.

Gender schema theory takes a different approach to children's cognition and development in regard to gender. Rather than proposing a series of inevitable landmarks or stages, gender schema theory simply proposes that experiences are gradually partitioned into two distinct categories, male and female. Individuals who tend to perceive and process the environment based on gender concepts are said to be *highly gender schematic*. Individuals who tend not to perceive and process the environment based on gender concepts are said to demonstrate *low gender schematicity*. Individuals with low gender schematicity still acknowledge gender categories, but they do not perceive gender as a priority for classification of experiences.

Gender schema theorists believe that gender category content is culturally determined. In every culture, anatomical differences are accompanied by other distinctions made between males and females (Fagot, 1995); the attributes

bestowed on males and females differ greatly from one culture to the next. That is, the characteristic behaviours expected of males in one culture will be expected of females in another culture. Children learn the content of the gender roles through experiences with their own culture.

More importantly than learning gender content, however, is that children in every culture learn that gender as such is salient and important. When a child is born, for example, the attribute of most interest to parents is often the child's sex (Basow, 1992). Children are immersed in a world that supports the differential expectations of females and males, including their clothes, toys, language, peer relationships, and recreational activities. Children learn to process their experiences under these same criteria. This is the point at which cognitive-developmental and gender schema theorists differ in terms of their interpretations of cognition. Gender schema theorists posit that, had the human cultures not organized themselves by gender criteria, they would not be such salient criteria for information processing in children (Bem, 1983). A gender-free world, in other words, would lead to gender aschematic children, whereas cognitive-developmental theorists predict gender-related cognitions would still develop. Gender schema theory explains the origins of gender development, and places the origins within the child's experiences, as moderated by culture and maturity.

The most innovative claim of gender schema theory is that gender is a multi-dimensional construct, including gender role knowledge, gender identity, gender role flexibility, gender attitude, and gender schematicity (Martin, 1993).

Unfortunately, various authors have used these terms interchangeably at different times, a practice that interferes with reviewing the literature by obscuring the relationships among the findings of different studies (Signorella, Bigler, & Liben, 1993).

For the purpose of the current research, the various terms related to gender schematicity will be defined as follows. *Gender roles*, similar to gender stereotypes, will refer to societal expectations of individuals based on the individual's sex (AAUW, 1995). *Gender role knowledge* will refer to an individual's knowledge of these expectations. *Gender identity* refers to one's perceptions of him or herself as male or female. This perception has been studied as it related to children's ability to correctly label their own sex (Fagot & Leinbach, 1993). *Gender role flexibility* refers to one's ability to extend his or her understanding of others outside the society's gender role. This dimension ties in closely with the gender attitudes dimension, in that it is, in essence, an attitude about stereotypes. For example, a child may realize that most boys *usually* do not play with dolls, but would still recognize that a boy *could* play with dolls, if he so chose. *Gender role attitudes* refer to affective components related to one's beliefs about gender roles. The final dimension, *gender schematicity*, refers to the inclination to use gender as a salient schema for processing social information (Levy, 1989). Gender schematicity will be the dimension of interest in the present study. The concept of gender schematicity supports Bem's (1981a) contention that gender schema theory is a theory of process rather than content.

It is gender schematicity that represents the actual cognitive processes used in gender development.

Gender schema theory not only proposed that the cognitive construct is made of several dimensions, but also that these dimensions develop at different rates as results of children's experiences. This claim led to expansion of research from looking not only at the relationship between experience and cognition, but also at the relationship of the various dimensions with one another and with the child's experiences (see Figure 4). Innovative and precise methodology was developed to examine the various dimensions both separately and in combination. Because gender schema theory is essentially a theory of cognition, several aspects of cognition have been studied in detail using this theory. The first was memory. Initial tests of memory were based on participant's order of recall of feminine words, masculine words, and neutral words from a large mixed group of words. Bem (1981a) found that gender schematic individuals tended to cluster words into gender groups when recalling them. Although these initial tests were conducted using post-secondary students, findings have been supported by research with children and youth (Fagot, Leinbach, Hort & Strayer, 1997; Leinbach, Hort & Fagot, 1997).

Memory distortions have also been explored. Martin and Halverson (1983) conducted an experiment where children aged three to five were shown pictures of males and females performing gender stereotype consistent and gender stereotype inconsistent activities. One week later, children's recall was tested

and indicated that they distorted information by transforming the sex of the people performing gender stereotype inconsistent activities. These transformations did not occur in the children's recall of gender stereotype consistent stimuli.

The second cognitive facet of gender schema theory studied was individual's use of gender scripts. *Gender scripts* are temporally organized sequences of events where the gender of the actor is significant (Levy, 1989). For example, shaving one's face would qualify as a gender script, because the gender of the actor is a defining characteristic of the script. In this case, the actor is usually male. Driving a car is a script, where the gender of the actor (driver) is not significant. Gender scripts have been studied as a way of understanding the way children develop gender role schemata. Boston & Levy (1991) measured three- to six -year-old children's performance in unscrambling pictures of sequenced events. The depicted events were those usually associated with a particular gender. It was found that boys were more able to sequence events that were masculine, while girls were able to sequence both masculine and feminine events. Other studies (Bauer, 1992; Levy & Fivush, 1993) have supported the finding that children are selective in their learning, pay more attention to gender typed behaviours, and therefore have better knowledge of events associated with their own gender.

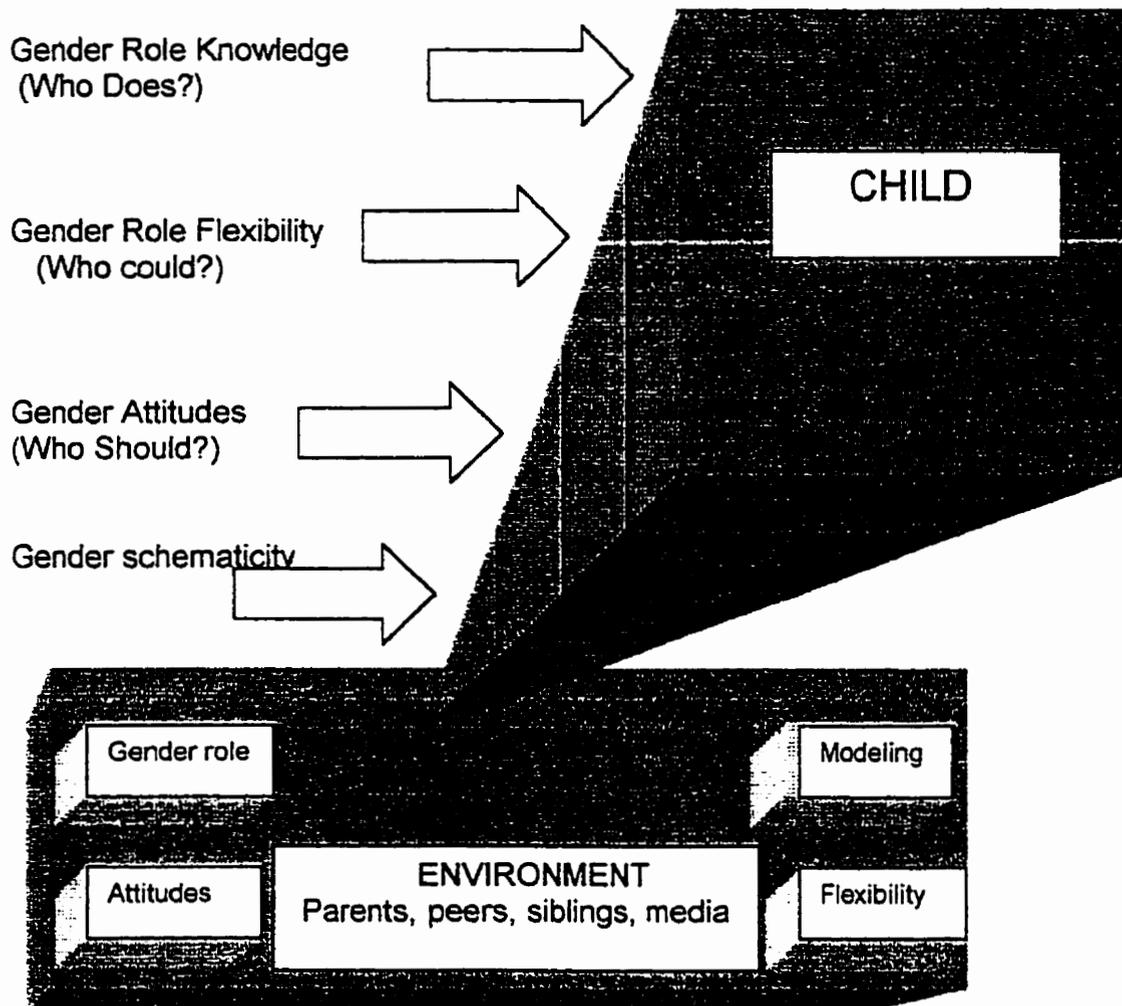


Figure 4. A Conceptualization of Gender Facets in Context of Environment

Bem (1981a) sought to explore the relationship between gender schemata and judgment. In this study, undergraduate students were asked to indicate whether the stimuli were "like me" or "not like me." The stimuli were comprised of sixty attributes, projected on a screen one at a time. It was found that gender-

typed individuals were able to determine more quickly whether the attributes displayed were like them or not. This led Bem to conclude that gender-typed individuals have more ready access to gender schemata as a resource in making judgments than do non-gender-typed individuals. Use of response latencies in relation to gender was also explored by Markus and her colleagues (1982) and was instrumental in the development of a measure of children's level of gender schematicity (Carter & Levy, 1988). Past research has supported the contention that highly gender schematic and individuals low in gender schematicity process social information differently (Katz, 1986).

Thus, gender schema theory has gained some support in the research community, and the main tenets have been empirically supported. In this regard, gender schema theory holds promise. Gender schema theory considers many variables in the child's gender development: child's cognition, cultural norms, gender stereotyping, gender attitudes, gender roles, effect of media, effects of parents, children's self-esteem, transition from categorical knowledge to schema, and maturation. As such, it has provided a fertile foundation on which to base a multitude of research enquiry. Furthermore, innovations methods to access cognitive processes have been fruitful in contributing to our knowledge of the various dimensions.

Ironically, the complex and multi-faceted definition of gender that is offered by gender schema theory has also impeded comprehensive research, in that the various facets of gender have been studied in a fragmented fashion. Further, few

studies have tried to examine multiple components of gender schema in a way that corrects fragmented interpretation. Gender schema researchers have recently called for a revolution in gender research. Researchers have recognized the futility of measuring a multi-dimensional construct in a uni-dimensional way (Carter & Levy, 1988; Downs & Langlois, 1988, Hort, Leinbach, & Fagot, 1997; Serbin & Sprafkin, 1986). Research has supported the claim that gender is in fact multi-dimensional (Downs & Langois, 1988, Hort, Leinbach, & Fagot, 1997; Raag, Letizia, Rackliff, Randolph, & Bissoon, 1999; Signorella, Bigler, & Liben, 1993; Turner & Gervai, 1995) and the research community is now called upon to explore each dimension as well as the relationships between the dimensions. Furthermore, the relationship of these cognitive structures to children's behaviours needs clarification, as do the environmental factors associated with their gender development. The current study will examine the relationship between child gender schematicity and environmental variables, specifically mothers' and fathers' gender roles. In this way, the relationship between two distinct components of gender, namely gender schematicity and gender roles, can be examined as they relate the child and his or her environment.

Martin (1993) challenged researchers to abandon their study of label-component skills and to turn their attention to the multiple components of gender. Further, she stressed that true understanding of children's development will not only come from studying the various components of gender, but through studying the within-component and between-component links. Hyde (1996) encouraged

researchers to correct their over-dependence on pencil and paper tests, and to explore the process of gender typing behaviour, rather than participant's perceptions of attitudes and knowledge. Signorella, Bigler, and Liben (1993) proposed that careful examination of the components of gender is necessary to paint an accurate picture of the development of gender schemata. The continued evolution of gender schema theory will depend on attempts to meet these challenges.

Differences in Children's Gender Development

Is Gender Schematicity Related to Age?

Research has been done on age-related differences in child gender knowledge, behaviours, gender role flexibility, and preference, but it does not address this particular question. In deference to the uniqueness of each dimension, it is prudent to ask whether age is important in determining whether a child uses gender as a salient schema for processing social information. If gender schematicity is a stable trait, no change would be expected. However, because Bem (1983) suggests that children's gender schematicity is the result of exposure to a gendered society, it might be expected that this inclination would change based on the environment to which a child is exposed. Bem suggested that gender "aschematic" children could be raised within a gender schematic world, suggesting the possibility of changes are reasonable. As previously stated, research does not support the claim that children with more gender knowledge will necessarily act on that knowledge. Furthermore, preferences and flexibility

are not equivalent to gender schematicity. Therefore, Serbin, Powlisha, and Gulko (1993) warned that direct comparisons across gender domains should be made with caution. It should not be inferred that children who are less flexible, have more stereotyped toy preferences, have greater gender knowledge, or have more conservative gender attitudes are necessarily more gender schematic.

Gender schematicity needs to be studied directly. Carter and Levy (1988) attempted to do so using latency responses to measure child gender schematicity in children aged 33-68 months. They found no evidence that gender schematicity was significantly different among children at different ages (Carter & Levy, 1988; 1991). It should be noted, that these studies were not longitudinal. Rather, they compared children's gender schematicity in children of different ages. Their findings of no significant gender schematic differences in children of various ages, however, could be an artifact of the age of children studied. Serbin and Sprafkin's (1986) suggested that true flexibility does not emerge until the school years, an age grouping that some of this sample is just entering. It is possible that the developmental trajectory of gender schematicity is similarly related to school years.

Interestingly, Carter and Levy also examined flexibility, gender role knowledge, and toy preferences in their study. They found that gender role knowledge and gender role flexibility did increase with age, as did children's gender-typed toy choices. The fact that the study examined multiple cognitive dimensions of gender within each child is unusual, and points to the errors that

arise when gender schematicity is thought to be equivalent to flexibility or knowledge. Carter and Levy concluded by stating that the measurement of gender role knowledge, which is part of the super ordinate "like me/unlike me" level of schema, is not a direct measurement of gender schematic processing. Other research has used these terms interchangeable, therefore obscuring the trajectory of the various dimensions of gender development.

In a similar study, Levy (1989) also looked at multiple dimensions of gender, and found that with increasing age, gender role knowledge increases for boys, while gender role knowledge and flexibility increase for girls. Gender schematicity did not increase or decrease with age for either sex. In later research using gender scripts, however, Boston and Levy (1991) found that gender role knowledge and gender script knowledge were not significantly correlated. They conclude that these two dimensions of gender are different types of understanding. Furthermore, other research has shown that gender knowledge is unrelated to gender preferences (Carter & Levy, 1988; Leinbach & Fagot, 1991), thus supporting the conceptualization of knowledge, flexibility, preferences, and gender schematicity as separate components of gender.

Most research that has distinguished and measured preferences, knowledge, flexibility, and gender schematicity as distinct components has focused on preschool children. Developmental trends in gender schematicity in children beyond the preschool years remain speculative. One might predict that children's gender schematicity during the school years would evolve along the

same lines as gender flexibility discussed by Katz and Ksansnak (1994). Despite the uniqueness of these two gender dimensions and the confusion resulting in the dimensions being viewed as interchangeable, they may be related. Katz and Ksansnak (1994) explore several possible developmental trajectories for gender flexibility development. These possibilities may have implications for gender schematic development as well. First, as children reach puberty and become more interested in romantic relationships, their perceptions of gender differences intensify. Thus, a decrease in gender flexibility would be predicted. This might be accompanied by an increase in the salience of gender, as these perceived differences are salient schemas for information classification. One might also postulate that flexibility would increase with age, as children realize that rigid gender constructs are unreliable for predicting social behaviour. In this case, children's use of gender schematic processing would decrease as they grew more flexible. Children would realize that due to its flexible nature, gender is not a reliable category on which to make judgments, and therefore gender may lose its salience as a tool for interpreting social information. Curvilinear relationships are also possible, with children's increased interests in courtship and sexuality during adolescence fostering a resurgence in the salience of gender. This conceptualization is supported by Erickson's model of adolescent development, where adolescents are seeking their identities through defining their gender and occupation (Erikson, 1968). Unfortunately, none of these possibilities have been studied systematically.

Given the lack of information about gender schematicity in middle childhood, it is difficult to predict gender schematicity levels. However, given that the younger children involved in this study are still gathering gender knowledge and the older children are at the stage when it is consolidated, it would seem reasonable to suggest that younger children pay more attention to gender than do older children, a trend demonstrated in research by Boston & Levy (1991). Therefore, the first hypothesis of the current study is that children at the kindergarten level will have higher gender schematicity than the children in grade four.

Is Gender Schematicity Related to Child's Sex?

Most studies suggest that gender is more salient to boys than to girls, but few have actually studied gender schematicity. Instead, they have studied other components of gender, usually flexibility and preferences, and inferred that boys are more gender schematic. Most studies support the notion that boys are less flexible in their gender roles and toy preferences than girls (Bussey, 1983; Katz & Ksansnak, 1993; Katz & Boswell, 1984, Welsch-Ross & Schmidt, 1996) and have more rigid gender attitudes (Katz & Boswell, 1984). This finding is unremarkable, in light of the fact that fathers are more likely to punish cross gender-typed play in their sons than in their daughters (Fling & Manovetz, 1972). Even in the absence of punishment, boys perceive more social constraints on their cross gender-typed play than do girls and play less with cross-gendered toys (Raag, Letizia, Rackliff, Randolph, & Bisson, 1999). Boys, to a greater degree than girls, pay attention to

information relevant to their own sex, and as such, develop a more elaborate understanding of gender knowledge relevant to their own sex as compared with their knowledge about the other sex (Martin 1989;1993). While both genders demonstrate greater knowledge of their own gender, girls demonstrate greater knowledge about boys than boys demonstrate about girls (Bauer, 1992; Boston & Levy, 1991).

The few studies that have measured gender schematicity have had contradictory findings. Carter and Levy (1991) found no significant correlations between the gender schematicity of children ages three to six and sex. However, in earlier research (Carter & Levy, 1988), these authors found significant correlations between child sex and gender schematicity in children in these age groups.

Despite the contradictory findings, research regarding the other dimensions of gender has shown overwhelming support that gender flexibility, attitudes, and preferences are much more constrained in boys. Why might this be so? One possibility is that cross-gendered play in boys is viewed more negatively than cross-gendered play in girls (Feinman, 1974; Martin, 1990). Since transgressions of gender roles by boys are more likely to be punished, it stands to reason that boys would strive to develop an awareness of the boundaries of "acceptable" behaviors as a means of avoiding punishment. A second reason for gender salience in boys is that in order to avoid punishment, boys engage in cross-gender play far less than girls (Bauer, 1992; Huston, 1983). Levy and

Fivush (1993) suggested that these differential experiences provide extensive experiences with masculine activities and less knowledge of feminine activities, thus explaining the differences in their gender knowledge levels in the two categories. Greater awareness of gender in boys compared to girls has been shown in children as young as three (Weinraub et al., 1984). Since parents are more disapproving of cross gender-typed play in younger children than in older children, it would be expected that the effects of these attitudes would be evident in young children.

Another interpretation of higher gender schematicity in boys than in girls is offered by feminist theory through the concept of *hegemonic masculinity*. Hegemonic masculinity is the idea that there is a socially determined hierarchy to gender relations, with masculine qualities holding higher status than feminine qualities. In a recent study by McGuffey and Rich (1999), it was shown that high status boys within mixed sex and same sex play groups of children in middle childhood are the "gender patrols", or the guardian of gender role traditionalism. These authors use the concept of hegemonic masculinity to support their interpretations of the boys' behaviors. McGuffey and Rich interpreted the boys' behaviors as showing boys' unwillingness to allow transgression of gender boundaries because the boys thought transgressions might result in two outcomes. First, other boys would become effeminate and therefore lower the superior status of males. Second, girls would become more like boys and

therefore usurp the superior status of boys. The rigid gender roles demonstrated by boys are, in these authors' views, demonstrations of turf protection.

Another recent study, also written from a feminist perspective, supports this interpretation. Warner and Steel (1999) looked at paternal support of gender equity issues and its relationship to fathers' child rearing. They found that fathers with only daughters are more supportive of initiatives that provide more opportunities to females. Warner and Steel posited that this was a result of increased awareness of how these initiatives would affect their children. In contrast, fathers of only sons showed significantly less support for initiatives aimed at increasing gender equity, presumably because these fathers viewed initiatives as challenges to their sons' opportunities. These researchers concluded that fathers may control an important mechanism for social change. That is, fathers who are committed to the outcomes of their daughters are more open to challenging the manifestations of patriarchy. Like McHuffy and Rich, Warner and Steel propose that greater salience of gender to both fathers and sons is a manifestation of the desire to preserve hegemonic masculinity. Given the strong evidence that boys are more gender-typed than girls, the second hypothesis of the current study is that boys at all ages will have high levels of gender schematicity.

Parents and Their Children's Gender Development

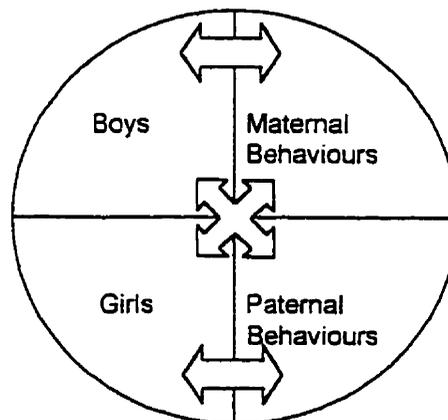
The influence of parents as agents of socialization has been of interest throughout the theoretical exploration of gender development. Psycho-analytic

theory (Freud, 1924, 1925, 1931, 1933), social learning theory (Bussey & Bandura, 1999; Mischel, 1966), and cognitive-developmental theory (Kohlberg, 1966) all considered the influence of parents within their theoretical approaches. Gender schema theory is no exception and in particular has examined the relationship between parental behaviours and children's gender schema development. In contrast to the other classic theories, however, gender schema theory assigns parents an importance no higher than other socializing forces, such as media or peer influences. Relatively greater importance of parents as agents of gender socialization has only limited support. Although Basow (1992) contends that parents are the major socializing agents for children's gender development, other researchers in the gender schema tradition place parents within the context of other environmental factors and children's age. Katz (1986; Katz & Ksansnak, 1994) suggested that the influence of parental gender socialization may be greatest during the preschool years. Basing her position on the observation that children's gender continues to develop during the schools years, Katz posited that other environmental factors such as peers and siblings may be just as influential on children's development. Fagot (1995) and McHale, Crouter, and Tucker (1999) suggested that children's gender development must be studied in context, and include their siblings, peers, and teachers. Whether parents are the most important socializing force or whether they are one or two of many forces, both the literature and theory suggest that parents do influence

their children's gender development to some degree and that the degree of this influence requires clarification.

In examining the relationship between parents and children as it relates to children's gender development, the multi-dimensional nature of gender cannot be ignored. Perhaps the most overt evidence of gender typing is found in simply observing parent/child interactions. Are sons and daughters treated differently by their parents? Furthermore, do the sex of both the parent and the child effect gender typing behaviours? These questions will be of interest in the first part of this section, which discusses the relationship between parental behaviors and

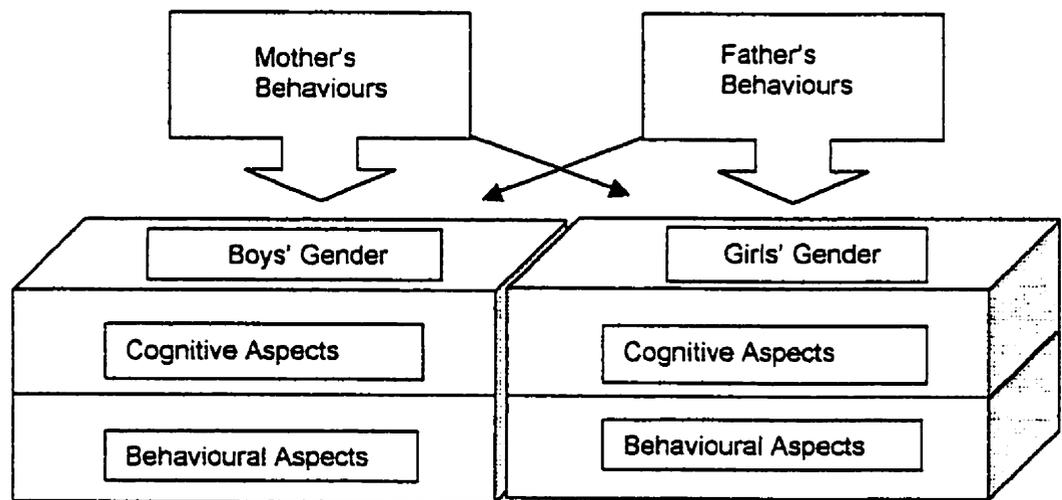
Figure 5: Links Between Parental Behaviors and Children's Gender Development



children's sex (see Figure 5). In this next part of the section, the perhaps more important relationships between parent socialization behavior and children's behaviours and cognitions are discussed (see Figure 6). Do children who are

socialized in traditional homes exhibit different levels of gender role knowledge, gender roles flexibility, gender-typed behaviours, and gender schematicity? The final part of this section will review the most indirect relationship between parents and children. Is there a relationship between the cognitive aspects of gender in children and the cognitive aspects of their parents' gender? What is the relationship between parental gender roles and children's gender schematic development?

Figure 6: Parental Treatment and Children's Behaviors and Cognitions



Do Mothers and Fathers Treat Boys and Girls Differently?

Although initial findings regarding this question were obscured because parental socializing behaviours were combined for statistical analyses in many studies (Bradley & Gobbart, 1989), subsequent research that considered

mothers and fathers separately has done little to clarify the situation. Contentions that parents socialize their children differentially by sex (Bronstein, 1994; Gjerde, 1988) were refuted by equally convincing claims of few differences (Belsky, 1979; Roopnarine, 1986). Adding to the debate was the proposal that parents might treat each sex differently and therefore require separate examination of socialization within the four family dyads: mother/daughter, mother/son, father/daughter, father/son (Dumas, LaFreniere, & Serketich, 1995; Russell & Saebel, 1997). Fagot (1995), observed that "...there is still considerable controversy over the strength of parental differences in the socialization of the sexes" (p. 5).

Research has supported the claim of differential treatment for sons and daughters by parents. Even before a child is born, parents often have gendered hopes and expectations for their children (Basow, 1992). Immediately after birth, gender typing behaviours have been observed, with girls being described by parents as softer and littler, and boys described as stronger and more alert (Rubin, Provenzano & Luria, 1974). Fathers make more stereotypical comments than mothers, a finding that occurs throughout childhood (Barry, 1980; Block, 1973). In terms of expectations, most parents expect sons to be relatively independent agents of action and daughters to be relatively communal, selfless, and other-oriented (Antill, 1987). When asked the causes of these expected differences, one half of parents attribute them totally or mostly to socialization. One third view the differences as caused by a combination of biological and

socialization factors, and less than 20% view biology as the sole cause of perceived differences (Antill, 1987).

Differences in actual treatment within the home have been shown in three main areas- toy selection, reaction to children's behaviours, and chore assignment. While most children are exposed to a variety of stereotypically masculine and feminine toys, boys in particular are discouraged from playing with cross gender-typed toys (Fagot, 1977; 1989; Lytton & Romney, 1991). While mothers appear to be more tolerant and encouraging of cross gender-typed play, fathers in particular encourage stereotypical toy selection, especially in their sons (Basow, 1992). Bradley and Gobbart (1989) looked at differences in parents' toy selection for their children. They studied 20 children, ages one to three years, and their parents. Children and each parent were observed in a playroom that included masculine, feminine, and gender neutral toys. Observations were made about the toys parents chose for their children. Later, each parent filled out a sex role survey. Results demonstrated that fathers made more stereotyped toy selections for both their sons and daughters than did mothers. Further, gender roles in fathers effected their toy selection in that gender-typed fathers made more stereotyped toy choices for their sons and daughters than did non-gender-typed fathers. Gender roles in mothers did not affect their choices of toys for their children.

These findings gain significance when linked with Serbin, Powlishta, and Gulko's (1993) findings that children's activity choices during the school years

were related to the traditionalism of their homes. Bradley and Gobbart (1989) concluded that fathers may be primarily responsible for the emergence of gender-typed play by their children, a conclusion that suggests the importance of examining maternal and paternal influences separately. Further, this is one of very few studies that has related parental socializing behaviours to parental gender schema, although it failed to examine the relationship between the parental gender roles and gender schematicity in the children.

Jacklin, DiPietro, and Maccoby (1984) conducted a similar but larger study that looked at types of play engaged in by the different dyads. They found that father/daughter, father/son, and mother/daughter dyads engaged in stereotyped play based on the sex of the child, while mother/son dyads engaged in equal amounts of masculine and feminine play. Father/son dyads engaged in the highest amount of rough and tumble play. These authors also concluded that fathers are the discriminating influence in children's choices of sex-appropriate play. Unfortunately, these authors did not examine parental gender types and their relationship to parents' gender-typed play initiation.

A recent study (Lindsey, Mize & Pettit, 1997) found parents not only influenced in children's toy selections, but also their styles of play. The authors found that both boys and girls were more likely to take part in dramatic play with their mothers than with their fathers. Mothers and fathers of girls were more likely to follow their children's leads in initiating play, and mothers were more likely than fathers to follow a child's lead. Unfortunately, the authors also failed to

examine the parental cognitive underpinning related to the types of interaction they had with their children.

The second area of possible differences in treatment is parental reactions to children's behaviors. Fathers demonstrate greater concern with gender role conformity in sons, and selectively reinforce behaviours deemed appropriate while punishing cross gender-typed behaviours (Heilbrun, Wydra, & Friedburg, 1989). Whereas mothers treat daughters and sons in similar ways, fathers treat them differentially by sex, therefore exerting stronger influence (Block, 1976). Women in general have been shown to be more accepting of cross-gender behaviours than men (Martin, 1990). These findings were recently replicated by Leve and Fagot (1997).

Chore assignment is the third area where differences have been observed. As young as age five, boys are assigned more maintenance chores and girls are assigned more domestic duties (Bums & Homel, 1989; Goodnow, 1988). Gender-typed division of labour between parents, while not directly involving children, also sends strong messages to children regarding the appropriateness of males or females carrying out specific chores. Children may learn as much about gender roles within the home through observing the chores done by each parent as they do by the chores directly assigned to sons or daughters.

In addition to the studies previously mentioned, others that have investigated differential treatment of children have highlighted the behaviour of

fathers (Fagot & Leinbach, 1989; Katz & Ksansnak, 1994; Serbin, Powlishta, & Gulko, 1993). Siegal (1987) reviewed 39 studies that looked at maternal and paternal behaviour toward children. In half of the studies, differences were found in how fathers treated sons and daughters. Differential treatment by mothers was rarely found. Some of the studies revealed that fathers engage in more rough and tumble play with sons than daughters (Jacklin, DiPietro, & Maccoby, 1984; Power, McGrath, Hughes, & Manire, 1994). Fathers also tended to show more sympathy for dependence in their daughters than in sons (Russell & Russell, 1987), and have more gentle communication styles with their daughters (Maccoby & Jacklin, 1983). As mentioned, fathers react more negatively to their sons engaging in cross gender-typed play than do mothers (Langlois & Downs, 1980). Interestingly, a recent study of parental perceptions of stereotyping of children's toys indicated that paternal reactions to cross gender-typed play were significantly different between fathers with only sons, with only daughters, and with both sons and daughters (Campenni, 1999). The findings of this study suggest that raising daughters socializes fathers differently than raising sons.

When differential treatment by mothers and fathers is considered, several assumptions must be explored. The first involves primacy of care giving to children within the family. Research has shown that even in families who claim to be egalitarian (Weisner, Garnier, & Loucky, 1994), mothers still have the major responsibility for child care (Fagot & Leinbach, 1995; Pederson, 1980). It could be concluded that mothers are therefore more influential on their children. For

several reasons, caution should be taken in making assumptions based on this finding. While research has supported the claim that time spent with the same-sex parent fosters gender role development (Levy, 1989; Fagot & Leinbach, 1987; 1988; Weinraub, Clemens, Sockloff, Ethridge, Gracely, & Meyers, 1984), significant results were also found for time spent with the other sex parent (Levy, 1989). The influence of the other sex parent should therefore not be ignored. Furthermore, Heilbrun, Wydra, and Friedberg (1989) proposed that it is untimely to suggest that gender roles are portrayed in stereotypical ways by mothers and fathers, or that identification with the same sex parent is necessary to healthy gender development. That is to say, we must be careful to avoid assuming that all mothers possess feminine gender roles and all fathers possess masculine gender roles, and that time spent with or identification with the same-sex parent will necessarily result in a traditional gender roles in children. Finally, by assuming that each parent possesses the traditional gender role, the variation in gender-typed and non-gender-typed mothers and fathers is ignored.

Strong opposition has also been offered to the claim of differential parental treatment of children by sex. Some researchers assert that claims of differential treatment are greatly overstated (Maccoby, 1998). Bright and Stockdale (1984) found no gender differences in the duration of different types of play between children and their parents. Stevenson, Leavitt, Thompson, and Roach (1988) also failed to find differential treatment. In her recent book, The Two Sexes: Growing up Apart, Coming Together (1998) Eleanor Maccoby

concluded that differential parental treatment has been greatly overstated. Maccoby cited her own and Jacklin's earlier research that found no parental differences for warmth displayed, the restrictions placed on activities, or the parental responses to children's initiations (Maccoby & Jacklin, 1974). The only differences found in their review related to the greater amount of rough and tumble play that boys engaged in with their parents, and parental inclination to offer children gender-typed toys. Interestingly, these variables are two of those most frequently cited as evidence of differential parental treatment. Lytton and Romney (1991) completed a more recent review and uncovered only one consistent area of differential treatment- play as measured by rough and tumble play and toy selection in both mothers and fathers. From this observation, it might be argued that parents treat children the same regardless of child sex. However, fathers differed more in how they treated boys and girls than did mothers. Furthermore, the two special cases of differential treatment, namely rough and tumble play and toy selection, may be related. Leaper & Gleason (1996), and Maccoby and Jacklin (1983) found that the type of toys selected mediated the types of play that followed. When the parents selected active toys, more active types of play ensued. The father-son dyad was by far the most active dyad.

Fagot (1995) suggested that while some differential treatment by fathers has been reported, the differences related mainly to attitudes rather than behaviours, were contradictory across studies, and were relatively small. She

explained the contradictory findings in several ways. First, there may have been cultural differences in the populations sampled in the various studies. Gender roles have been shown to differ from culture to culture (Harris, 1994). Second, the ages of children studied were inconsistent, and parent-child interactions have been shown to change over time dependent on children's age. Parents are more gender-typed in their reactions to the cross-gendered play of toddlers than they are to the cross-gendered play of five-year-old children (Fagot & Hagan, 1991; Lytton & Romney, 1991). Third, the location and time of day may have served to encourage or suppress rough and tumble play in some studies (Stevenson, Leavitt, Thompson and Roach, 1988). That is, a clinical setting or an evening observation may have inhibited rough and tumble play while a naturalistic setting may have failed to suppress it. Although the effect sizes found for these behaviours are usually small, larger effect sizes have been found when data was collected in naturalistic settings (Fagot, 1995). Fourth, children's play styles may be influenced by factors other than parents, such as siblings and peers. While these socialization agents are not present in the testing situation, they may still influence outcomes. Children may play with their parents in much the same manner that they play with others who are not present in the testing situation. Finally and most importantly, there may have been real differences in the gender typing of parents taking part in the various studies. The last possibility remains speculative, however, because parental cognitive underpinnings have been confounded with other variables in many research studies. Thus, it is unclear

how much, if at all, parents treat their sons and daughters differently. There is, however, general agreement that play activity and toy selection are two areas where differential treatment occurs.

Does Differential Treatment Affect Children's Gender Development?

Research has produced inconsistent results about the relationship between parental treatment and children's gender development, including cognitive and behavioral aspects (see Figure 6). After reviewing the research, Maccoby concluded that the level of gender-typed behaviours found in children's homes is not related to the level of gender typing in the children (Maccoby & Jacklin, 1983). The conclusion is supported by Fling and Manosevitz (1972), and Weinraub et al. (1984). Fling and Manosevitz (1972) used parent questionnaires and child interviews to determine the relationship between parental socialization and 4-year-old children's reported behaviours. Parents were asked to report on their attempts to influence their child's play behaviours. Researchers found that parents did discourage cross gender-typed behaviours in their preschoolers, but that the level to which they did so was unrelated to children's choices of gender-typed toys. This finding is ambiguous, however, in light of the research methodology. Fling and Manosevitz did not observe children playing, but instead interviewed the children in their bedrooms at home. Children were asked to pick their ten favorite toys from those in their rooms. The children's play behaviours were rated as feminine or masculine based on the stereotypical classifications of the toys that children indicated were their favorites. One

wonders what differences the research would have shown had the choices not been restricted to the toys purchased by the children's parents. That is to say, were the choices limited for some children by gender-typed toy purchases made by their parents?

Weinraub et al. (1984) found a similar lack of relationship between adult socialization and younger children's gender development. These authors showed that children who were aware of gender role differences in adults were also able to classify adult possessions by gender (knowledge). Interestingly, high awareness levels in these two classifications in adults were unrelated to awareness of sex role differences in children's toys. These children apparently did not extrapolate their parent's gender-typed behaviours to their own play behaviours. This finding points to the importance of considering whether differential parental behaviours are stored in a super ordinate classification level of "like me" or "unlike me", or whether they are truly internalized into the child's concept of "own sex" (see Figure 2).

Other research, however, found that gender-typed parental behaviours *were* related to gender-typed behaviours in children. Levy (1989) studied 60 children aged 33-60 months. He found that boys who interacted more with their fathers were more highly gender schematic, exhibited greater gender role flexibility, and possessed more gender role knowledge. The latter finding was also related to sons' time spent with mothers. Girls who interacted more with both parents had more gender role knowledge and greater gender role flexibility than

those who interacted less. Having a mother who worked outside the home was associated with greater gender flexibility in girls, but not in boys.

Weisner, Garnier, and Loucky (1994) looked at the relationship between the gender typing of children who were raised in non-conventional families including single mothers, common law relationships, and groups living in communes, and compared them with children living in two-parent families. Weisner and his colleagues found that children's gender role flexibility was correlated to the familial environment in which they were raised. The children in the non-conventional families, especially the girls, demonstrated the lowest levels of gender-typing. Interestingly, a stronger relationship was found between parents' egalitarian attitudes and children's flexibility than between parental behaviours and children's gender role flexibility. Note, however, that all parent information used in the analyses was collected from mothers.

Katz (1987) suggested that differential treatment may not effect all children the same way. She posited that different children may attach different levels of salience to gender typing behaviours. Children who have high levels of gender knowledge due to socialization may not express differential gendered preferences. The distinction between knowledge and preferences cannot be overstated as these two measures are not equivalent (Katz, 1987; Liben & Signorella, 1980). Gender schematicity would appear to be the mediating dimension of gender in this case. That is, while two children may possess the same degree of knowledge about what descriptors, behaviors, and traits are

usually associated with males or females, they do not necessarily both think that the distinction is meaningful in moderating their choices. Highly gender schematic children would be more likely to view these distinctions as meaningful.

Are Child Gender Schematicity and Parental Gender Types Related?

Gender Schema theory implies that children would be far less likely to become gender schematic and hence gender-typed if the society were to limit the associative network linked to sex and to temper its insistence on the functional importance of the gender dichotomy. It should be noted that gender schema theory's claims about the antecedents of gender schematic processing have not yet been tested empirically. Hence it is not possible at this point to state whether individual differences in gender schematic processing do, in fact, derive from differences in the emphasis placed on gender dichotomy in individuals' socialization histories. (Bem, 1983, p. 609)

Until recently, parental gender types were rarely considered in children's gender schematic development. In 1987, Katz discussed parental personality patterns and their relationship to children's gender schematicity, but the only two studies she cited (Spence & Helmrich, 1978; Baumrind, 1979) had contradictory findings. Recent research has begun to look beyond parental behavior and sex when linking parents and children in the process of gender development. As well, research has begun to correct the previous assumption that mothers are feminine stereotypes and fathers are masculine stereotypes for their children.

Recently, Russell and Saebel (1997) conducted a review of the literature regarding gender development and relationships within the four family gender dyads. They presented a multitude of contradictory research findings regarding whether or not the four dyads were distinct. In concluding, Russell and Saebel

suggested that one reason for the lack of consensus may be a lack of correspondence between sex and gender roles in parents. They suggest that assuming that mothers as a group and fathers as a group possess and model different gender roles is shortsighted, and that more attention must be paid to gender characteristics of the individuality of the parents than to the sexes of those individuals.

A recent article by McHale, Crouter, and Tucker (1999) highlighted the robust information that is possible when parental gender roles are considered alongside parental sex. McHale et al. found that fathers with masculine gender roles are pivotal in socializing children, but found no evidence that mother's gender roles influenced children's gender development. Interestingly, the effects of gender typing were more evident in children's behaviours, such as activities and interests, than they were in children's personality or attitudes. The relationship between the cognitive aspects of parents' gender and children's behaviors were also supported in a recent study by Raag, Banos, and Puza (1999). These researchers showed that children who perceived parental disapproval of cross gender-typed toys limited their play with those toys. They concluded that children's perceptions of parental attitudes might moderate children's behaviour to a greater extent than actual parental behaviours.

Fagot and Leinbach (1989) looked at the relationship between the traditionalism of their homes, the gender roles of their parents, and children's ability to label gender. The notion was that children whose parents behave in

gender-typed ways would have earlier salience of gender and therefore would label gender earlier than other children. This longitudinal study looked at children from 18 months until the age of four. They found that fathers with traditional gender attitudes were more likely to have children who labeled gender early. When these same children were tested at four years of age, they were shown to have more knowledge about gender, but not to prefer gender-typed toys more than other children did. Thus these authors linked cognitive aspects of parental gender with children's like me/unlike me super ordinate schema, and with later levels of gender knowledge, but not with children's behaviors (see Figure 2). In a follow up study, Fagot and Leinbach (1995) proposed that while parental attention to gender does foster gender schematicity and greater gender role knowledge in children, it does not necessarily affect their preferences in toy and play behaviours. They suggested that these behaviours are predicted by influences of the peer group and the media. These ideas support Hort, Leinbach and Fagot (1991) and Serbin and Sprafkin (1986), who suggested that gender role knowledge is not always acted upon. That is, even though children may experience an environment where dichotomous gender knowledge is robust, and may have rich schemata for male and female labels, they do not necessarily demonstrate rigid preferences or gender-typed behaviors.

This possibility was supported by a recent study by Turner and Gervai (1999), who compared the gender knowledge and preferences among children whose parents possessed a variety of gender roles. They found that fathers and

mothers who held less traditional gender roles had children who had less awareness of the stereotypes associated with their own gender. Parental attitudes were also compared to children's awareness of gender roles. While parental gender attitudes were related to children's awareness of gender stereotypes, with more traditional parental attitudes being associated with children's greater knowledge of stereotypes, there was no relationship between parental attitudes and children's gender role flexibility, gender-typed play, or same sex playmate preference.

An earlier study looking at this relationship was conducted by Weinraub et al. (1984). These authors looked at how parental classification on the Bem Sex Role Inventory is related to various gender dimensions in children. Interestingly, there were significant relationships between the fathers' scores and 42% of the children's gender variables, but there was no relationship between the mothers' scores and the children's gender variables. Fathers who scored higher on the Femininity scale had sons who showed less gender-typed toy preference. Fathers who scored lower on the Femininity scale had children who scored higher on gender identity tasks. Thus, this study linked cognitive aspects of parental gender with children's both behavioral and cognitive aspects of children's gender. It should be noted that the children taking part in this study were very young-26 months, 31 months, and 36-month-old children. The sample size ($N=71$) was quite small considering the number of analyses performed and the authors cautioned that the correlations found should be treated cautiously.

Considered together, these studies highlight the multi-dimensional nature of gender and the need to determine gender schematicity with criteria other than toy preferences. Effects of gender-typed parental behaviours may be masked when toy selection or gender-typed behaviours are the only criteria used to measure gender typing in children. The studies also point to the limited scope by which gender socialization by parents has been studied. Not only have parents been assumed to be gender prototypes of masculinity and femininity, but the multi-dimensional nature of gender that has been so important in studies of children has been largely ignored in the study of parents. Instead, parental socialization has been defined by parent sex, parental behaviours, parent toy selection, and parental attitudes. Furthermore, it has been assumed with parents that behaviour and cognition are congruent. As with children, this is not necessarily the case (Gervai, Turner, & Hinde, 1999). Other aspects of parental gender schemata, such as gender schematicity, flexibility, and gender knowledge have been neglected. As suggested by Raag et al. (1999), children are aware of parental attitudes that have never been directly taught. Are other parental cognitions subtly passed along to children as well? Do parental gender types influence the child in direct ways, such as direct instruction and modeling, as well as tacit ways such as directing children's attention?

Given the research supporting differential parental treatment of children and the links established between the cognitive aspects of parent and child gender, the third and fourth hypotheses will therefore be as follows: Children

whose parents are both gender-typed will demonstrate higher levels of gender schematicity than children whose parents fall into other gender role classifications; and children whose parents are both non-gender-typed will demonstrate lower gender schematicity than children whose parents fall into other gender role classifications.

Given the attention given to paternal influences in the gender typing of children and the research supporting greater salience of gender in boys than in girls, the relationship between fathers' gender roles and sons' gender schematicity will be given special attention.

The fifth and final hypothesis attempts to distinguish the relationship between fathers' gender roles and sons' gender schematicity. The final hypothesis is that boys with gender-typed fathers and non-gender-typed mothers will have higher gender schematicity than girls with gender-typed fathers and non-gender-typed mothers, than girls with gender-typed mothers and non-gender-typed fathers, and than boys with gender-typed mothers and non-gender-typed fathers. This hypothesis was proposed to investigate the claim that the relationship between gender-typed fathers and their sons is distinct from the relationship between gender-typed mothers and their sons or daughters.

To summarize, the review of the literature has led to five hypotheses:

- 1) Children at the kindergarten level will have higher gender schematicity than grade four children.
- 2) Boys will have higher levels of gender schematicity than girls.

- 3) Children whose parents are both gender-typed will demonstrate higher levels of gender schematicity than other children.
- 4) Children whose parents are both non-gender-typed will demonstrate lower levels of gender schematicity than other children.
- 5) Boys with gender-typed fathers and non-gender-typed mothers will have higher gender schematicity than girls with gender-typed fathers and non-gender-typed mothers, and than boys and girls with gender-typed mothers and non-gender-typed fathers.

Chapter Three: Method

Participants

The sample studied included 178 children (90 girls and 88 boys) drawn from seven elementary schools in a central Canadian city, their mothers ($N=178$), and their fathers ($N=178$). The schools included both schools where English was the language of instruction and French immersion schools, where Anglophone children are taught in French. Participants included kindergarten ($n= 88$) and grade four ($n=90$) children. These ages were selected due to their significance in the developmental trajectory of other aspects of gender development. It has been shown that gender flexibility increases from early to middle childhood (Weinraub et al., 1984; Trautner et al., 1989) and that gender knowledge is virtually complete by age six. By examining gender schematicity in children bordering these age groups, elucidation of the potential age related differences in gender schematicity could be examined. The kindergarten sample averaged 5 years 5 months of age ($SD=4.42$ months, range 4 years 10 months to 6 years 3 months). The grade four sample ($n=90$) averaged 9 years four months of age ($SD= 3.24$ months, range 8 years 10 months to 10 years three months). The wide range of ages is the result of ongoing data collection. Some families participated in the spring of one year and others participated the following fall.

All children lived in homes with both their biological parents. In 167 of the 178 (93.82%) children's homes, English was the primary language spoken. All participating parents reported that they could read, write, and speak English. In

terms of attained level of education, 28.25% ($n=50$) of mothers indicated they had completed nine to twelve years of education, 54.25% ($n=96$) indicated they had completed 13 to 16 years, and 17.5% ($n=31$) indicated they had completed more than 16 years of schooling beginning with grade one. One mother did not provide this information. Fathers reported similar trends with 38.4% ($n=68$) of fathers indicating they had completed nine to twelve years of education, 41.25% ($n=73$) indicating they had completed 13 to 16 years, and 20.35% ($n=36$) indicating they had completed more than 16 years of schooling beginning with grade one. One father did not provide information regarding his education. Most families participating in the study had two children ($n=96$ or 54%) or three children ($n=58$ or 33%), although some families had only one child ($n=8$ or 5%) and one had as many as six. Annual family income before taxes placed most families at an upper middle to high level of socio-economic status, as most of the parents ($n= 128$ of the 166 families providing income information) indicated their family income was above \$55,000.

Procedure

The office of the Superintendent for the school division was approached by letter (Appendix A). The letter provided an overview of the study. It requested a meeting where the proposal could be discussed and permission secured to proceed. In response, the divisional officials forward copies of the proposal to each elementary school principal in the division, and allowed the researcher to

contact each principal directly on the condition that each principal knew that participation was voluntary.

Using a list of elementary schools obtained from the school division office, schools with both kindergarten and grade 4 children in attendance were contacted at random until the required sample size was approached as closely as possible. The minimum required sample size was set at 88 kindergarten children and 88 grade four children, as determined by a statistical power analysis.

Permission to conduct research in the schools was given by seven of the 11 principals. Of the seven schools, six were English-instruction schools and one was a French Immersion School. The seven schools had student populations ranging from less than 200 to over 600. Socio-economic status varied bi-modally. In two schools, most family's annual incomes were greater than \$55,000 (n=128). In the other schools, most family's annual incomes were in the \$25,000 to \$55,000 range (n=34). Four families indicated an annual income lower than \$25,000.

Unfortunately, the required minimum sample was not obtained initially by the approach outlined above. Follow-up was therefore done through the snowballing technique, and yielded an additional 16 participants. This approach utilizes current contacts as a source of additional participants. The final sample included in the study was therefore 178 families.

An information letter (Appendix B) was used to inform the principals of the design and intent of the study. Accompanying the letter were information packages for each of the classroom teachers who chose to participate (Appendix C). After several days, principals were contacted by telephone to determine their interest level. Most principals agreed to have the research conducted in their schools and did not request a personal meeting with the researcher.

Several days before the initial letters were sent to parents, each participating teacher was provided with an information package that explained the significance of the study, and estimated the time commitment involved, and assured participants of the voluntary, confidential nature of the study. A description of the tests and the testing procedures was also given. Parental permission for the mothers, fathers, and the children to participate was requested and accompanied an information letter and permission form for parents and grade four children to sign (Appendix D).

After the letters were distributed, teachers were contacted to determine how many families had agreed to participate as indicated by signed permission forms. The appropriate number of parent survey packages were then delivered to the school and teachers were instructed to distribute the parent survey packages the following Monday to all children who had returned the parental consent form, and in the case of grade four students, the child consent form. Teachers were instructed to give the following to each participating family: four color-coded copies of the Bem Sex-Role Inventory (BSRI), the family demographics profile

(Appendix E), and one envelope. Parents were instructed to each fill out two copies of the BSRI (Appendix F) separately and to return them to the teacher in the sealed envelope by a specific date. Mothers were requested to fill out the BSRI about themselves (yellow form) their-partner (green form), and fathers were instructed to fill out the BSRI about themselves (blue form) and about their partner (gold form). The family demographics survey (pink form) could be filled out by either parent and was to be returned in the same envelope. These envelopes contained all five surveys and were sealed by the parents and returned to the teacher.

Returned parent survey envelopes were collected the following day. The next week, the teachers were contacted to set up a day for interviews with the children. Once a day was agreed upon, the researcher arrived at the school to collect data from the children. In most schools, this took place in a quiet corner of the library, although tables outside classroom in hallways and, in one case, a storage room were also used.

During the interviews, the child and researcher sat in two chairs facing the table that held the laptop computer. On the screen, there were pictures of a dog and a cat. These pictures often elicited many interesting comments from the children, especially from those in kindergarten. This established further rapport with the children. At this point, the researcher told the child that she was a student, just like the child, and that she had a project to do for school. The project was to find out what kinds of things different children liked. The researcher told

the children that she thought it would be more fun for the children to show what they liked through a game than by simply talking about it. The children were assured that there were no "right" or "wrong" answers. The children were asked to show which of the two objects in the pictures they liked best. If they liked the picture on the left, they were to press the button on the left. If they liked the picture on the right, they were to press the picture on the right. The keyboard of the computer was shielded, except for these two keys. As well, arrows were drawn on the shield from the left key to the left picture and from the right key to the right picture. Terms such as right and left were not used to describe the picture locations. The researcher would use phrases such as, "if you like the thing in this picture best, press this button," while pointing at the appropriate places. Children were told that sometimes the choices might be easy because they really liked one thing and not the other. They were also told that sometimes the choices might be hard because they really liked both things or they did not like either very much. In each case, however, they would still be required to choose the item they liked best of the two choices.

Children were praised for their co-operation, but not for making any specific choices. The children were instructed to indicate their preferences as quickly as possible by pressing the appropriate key on the keyboard. Latency times in thousandths of seconds were recorded for each answer by the computer program. Once the test was complete, each child was shown his or her name and choices listed on the spreadsheet. They were assured that that the

researcher would not talk about their choices with anyone else. Each child was then given three things. First, they were given a letter for their parents indicating that the research had taken place that day and that the variable of interest was gender development in children. (Appendix G). A telephone number was provided in case the parents had any questions. No parent called for further clarification. The children were then given a sticker for their shirts that said. "I helped with research." They were then asked to select a small toy from the researcher's prize bag as a special thank you for helping the researcher with her homework. While the child selected the toy, the researcher set up the computer for the next child. The children were thanked and accompanied back to the classroom where they discreetly let the next child know it was his or her turn. When the data was analyzed, a short report was issued to the superintendent, principals, teachers, and parents who participated (Appendix H).

Involvement of Other People

The other people involved in the study were a superintendent, principals, secretaries, and teachers. The superintendents' and principals' function were strictly to ensure permission to carry out the study in the schools. The classroom teachers had a somewhat more active role. They were responsible for distributing the letters of introduction, distributing the BSRI and family demographics forms to parents who have completed the permission form, and collecting the sealed envelopes of completed forms from the parents. They were also valuable liaisons between the families and the researcher. Other valuable

liaisons were the school secretaries. They often acted a contact between the teachers and the researcher. The school secretaries conveyed messages and were able to ensure that the teachers collected and distributed letters according to the projected project timeline.

Measures

Piloting and Development

The research entailed completion of parental questionnaires by both parents, followed by a test of gender schematicity administered to the children.

The first step was to pilot the surveys and the computer program. The instruments and informational letters were piloted on six kindergarten and grade four students and their parents. The data was analyzed and the participants were asked for feedback on the clarity and ease of utility of the instruments.

Suggestions were made to color code the parent surveys so that mothers and fathers would be very clear on which surveys they were to complete. This suggestion was very helpful, in that the four parental surveys appeared very similar, differing in only a few words.

The piloting and the revision of the Child Gender Schematicity Measure (CGSM) was much more involved and time consuming. Initial investigation into a parallel measure to accompany the parental surveys (Bem Sex Role Inventory) was conducted through a literature review. Several instruments were considered, but failed to be appropriate for children in both kindergarten and grade four. Contact with Dr. Gary Levy resulted in Dr. Levy's offer to provide the line

drawings from Carter and Levy's (1988) test of gender schematicity. This test was much superior to the others explored because it relies on pictures rather than print. This made it accessible to both kindergarten and grade four students. As well, it went beyond the premise of measuring children's gender roles by simply looking at toy preference. This test instead used response latencies in toy selections to determine whether children were using gender as a salient schema for making the choices. The conceptualization of gender schematicity as a process-oriented rather than a classification-oriented concept was very appealing, and lent itself to the information-processing model of gender schema.

Once the line drawings were obtained, a computer programming student named Paul Lau was contracted to develop the software. The purpose of developing the computer program was to give greater ease in administering the measure and greater accuracy in the measurement of latencies. Paul Lau worked on developing a program that would record the children's demographic data, their choices, and their latencies for each choice. It was later determined that the program would be more useful and user-friendly if it were able to calculate the inhibited and facilitated scores for each child, and to place all this data into a spreadsheet that could be easily exported into a data processing program such as SAS or SPSS. Over a number of months, Paul Lau made changes as requested. Several draft programs were forwarded to Gary Levy and his students Barbara Zimmerman and Adrienne Sadovsky. Each made helpful comments that resulted in the final version of the instrument. One difficulty that

surfaced was the calculation of the inhibited and facilitated scores. The original program was based on the instructions for calculation outlined in Carter and Levy's (1988) initial publications based on the measure. However, later modifications and refinements of the calculations had been made by Dr. Levy. Modifications resulted in the current instrument that reflects the most current computation of the two results. Other improvements included the inclusion of three pairs of training pictures. These pictures are not used in calculating latencies, but simply allow children the opportunity to become comfortable using the computer and the program before being administered the testing portion. In August, 1999 the instrument was registered with the Canadian Intellectual Property Office with the permission of Gary Levy, and D. Bruce Carter.

Bem Sex Role Inventory

The first of two instruments used in the study was the Bem Sex Role Inventory- Short Test (Bem, 1981b). The Bem Sex Role Inventory (BSRI) is the most widely used test of androgyny (Myers & Gonda, 1984). This test includes 30 items comprised of adjectives. Participants were asked to indicate the degree to which they thought each adjective applied to them on a seven-point scale. Ten of the adjectives are masculine traits, 10 items are feminine traits, 5 adjectives are socially desirable gender-neutral traits, and 5 items are socially undesirable gender-neutral traits.

The original Bem Sex Role Inventory was published in 1981 as a method of distinguishing non-gender-typed individuals from gender-typed individuals

(Bem, 1981b). It originally was composed of 60 items. One hundred male and female students were given 200 hundred adjectives and asked to determine the cultural desirability level on a seven point scale for males and females for each given trait. Bem selected the 20 most highly desired male and female traits indicated by the participants, and the ten most neutral undesirable traits and the ten most neutral desirable traits. Later versions removed the term "masculine" from the masculine adjective list and "feminine" from the feminine adjective list, due to the criticism that they effected the validity of the test (Edwards & Ashworth, 1977; Pedhazur & Tetenbaum, 1979). This left the inventory with 58 adjectives. One further alteration was made to the test in 1981. The change resulted in the removal of several of the feminine adjectives such as gullible, shy, and childlike, and in more distinct masculine and feminine attribute categories. This final inventory, called the *Bem Sex-Role Inventory- Short Test* will be the instrument used in this study (Appendix F).

Test re-test reliability for the femininity, and masculinity scores were reported ranging from .76 to .91 for males and females using the Bem Sex Role Inventory- Short Form (Bem, 1981b). Internal consistency was computed using coefficient alpha for males and females. The resulting coefficient alphas ranged from .84 to .90, indicating the internal consistency was high.

Harris (1994) conducted a study of the BSRI to determine whether it is still a valid indicator of the "American" cultural definitions of masculinity and femininity. Harris asked 500 female Anglo-Americans and 500 male Anglo-

Americans to indicate the desirability of the adjectives in the BSRI. The age range of those in the sample was 30 to 39 years. He found that the definitions were still valid for mainstream American culture, but were less valid when used in American sub-cultures.

Larsen and Seidman (1986) in a review of the BSRI found that "...the psychometric behaviour of the BSRI appears to be sufficiently consistent with the propositions of gender schema theory to warrant its use in investigations of this construct" (Larson & Seidman, 1986, p.210). However, they found that the adjectives were not distinct in their inclusion as masculine or feminine traits. This finding could have been a result of their testing only the masculine and the feminine adjectives, and excluding the neutral items. Schmitt and Millard (1988) replicated the Larsen and Seidman (1986) study and included the neutral adjectives. They found that the BSRI to be a valid measure for distinguishing gender schematic from agender schematic individuals.

This test was given to each marital partner twice: once to answer by describing him/herself and once to describe his/her spouse. Thus, each marital partner was assigned two feminine scores and two masculine scores. One masculine and one feminine score was self-generated while the other reflected the judgments of that person's spouse. The analysis plan was to determine whether (a) the mother's self perceptions and her spouse's perceptions of her femininity were correlated; (b) the mother's self perceptions and her spouse's perceptions of her masculinity were correlated; (c) the father's self perceptions

and his spouse's perceptions of his femininity were correlated; (d) the father's self perceptions and his spouse's perceptions of his masculinity were correlated. If so, the aggregated score would provide power to the analysis in that the self-report scores would be supported by scores generated by the judgments of others. Levy (1989) has suggested that self report data should be viewed as tentative, citing the limitations of its use explored by Spence (1984a, 1984b).

Paternal and maternal self and spousal scores were all highly correlated ($p < .0001$). The scores were therefore aggregated through averaging the self and spousal score for each of the four scores: mother's masculinity, mother's femininity, father's masculinity, and father's femininity. This resulted in two scores for each parent: a combined masculinity score and a combined femininity score. The combined mother's masculine score was derived by finding the mean of her self report masculine score and the one assigned to her by her husband. The combined mother's feminine score was derived by finding the mean of her self report feminine score and the one assigned to her by her husband. The combined father's masculine score was derived by finding the mean of his self report masculine score and the one assigned to her by his wife. The combined father's feminine score was derived by finding the mean of his self report feminine score and the one assigned to him by his wife.

Mothers and fathers were grouped into one of two classifications based on the comparison of their masculinity and femininity scores with the combined medians, as suggested by Bem (1981b). The median split method was

introduced by Spence and her colleagues in reference to the Personal Attributes Questionnaire (Spence, Helmreich, & Stapp, 1975) and was also used in a recent study of children's gender development by McHale et al. (1999). When all the mothers' and fathers' masculinity scores were combined into one group, the median was determined to be 49.5 ($SD=7.70$, $M=49.45$). The mean for the combined group of mothers' and fathers' femininity scores was 54.5 ($SD=7.24$, $M=53.93$). When compared to these medians, mothers and fathers aggregate scores were used as follows: (a) If both scores fell above or if both scores fell below the medians, the parent was termed non-gender-typed; (b) If either score fell above while the other fell below the median, the parent was termed gender-typed.

The grouping of undifferentiated and androgynous parents into the non-gender-typed classification is somewhat contentious. Sandra Bem (Bem, Martyna, & Watson, 1976) originally combined these groups under the broad heading of *androgynous*. Less than 1% of the subjects in her study fell into the undifferentiated classification, and Bem therefore believed that "...virtually every individual whom (she) had classified as androgynous ...ha(d) achieved a sufficient level of masculinity and femininity to warrant the designation" (Bem, Martyna, & Watson, 1976, p. 49). However, subsequent research and criticism, by Janet Spence and her colleagues (1975) in particular, caused Bem to rethink this label. While androgynous and undifferentiated individuals do exhibit differences in self-esteem and behavioural inhibition, they do not differ

significantly on the Attitudes Toward Women Scale, the Internal Control Scale, the Machiavellianism Scale, the Attitudes toward Problem-Solving Scale, or in studies of nurturance toward a kitten, and nurturance toward a lonely student (Bem, Martyna, & Watson, 1976). Citing the evidence that there are still some differences between undifferentiated and androgynous individuals, Bem agreed with Spence et al. (1975) that the label *androgynous* should be used only to describe individual who are high in both masculine and feminine traits (Bem, Martyna, & Watson, 1976). Bem later used the term *gender aschematic* to describe these androgynous and undifferentiated individuals, which resulted in another public discussion. An interesting debate between Bem and Markus, Crane, Bernstien and Siladi (Bem, 1982) resulted in Bem's concluding that she and her critics "... did not share a common definition of what it means to be gender schematic, and hence, [gender schema theory and self schema theory were] not in direct opposition to each other" (Bem, 1982, p. 1192). Bem continued to use the term *gender schematic* to describe masculine and feminine gender-typed individuals and the term *gender aschematic* to describe androgynous and undifferentiated people.

In an effort to clarify this distinction, gender schematicity in the current study is based on the Carter and Levy (1988) definition of this construct and measured in children through the use of the Child Gender Schematicity Measure. The current project will therefore label the group that includes androgynous and undifferentiated individual as non-gender-typed. This is not to say that these

androgynous and undifferentiated categories are viewed as identical, nor is it intended to imply that they are both gender aschematic. The current research makes no claims in this regard. This classification is merely a way of differentiating this group from those who *are* gender-typed. "In other words, androgynous and undifferentiated individuals are *still alike* in not being sex-typed (sic)"(Bem, 1976, p. 1023). This combined classification is not problematic to the current study because the study does not claim to directly link parental behaviours (which may be affected by the role distinction between androgynous and undifferentiated individuals) to children's gender schematicity. Rather, it strives to distinguish the relationship between child gender schematicity and parental gender types. It makes no claims regarding the gender schematicity level parents in any of the four quadrants. Instead, the reference group for the current study is those parents who are gender-typed, and the "other" group is those who are not. Notwithstanding this intention, future larger studies where the sample sizes would support greater distinctions within the groups would add to our understanding of these relationships.

T- tests with a Bonferroni-adjusted alpha level were used to determine if the masculinity and femininity scores of gender-typed and non-gender-typed parents were statistically different, a result that would support that the median split method suggested by Bem did create two distinct groups. These tests showed that the aggregate masculinity scores for mothers grouped as non-gender-typed ($n=79$, $M= 49.62$) were significantly higher than the aggregate

masculinity scores of mothers grouped as gender-typed ($n=99$, $M= 46.17$). Aggregate femininity scores for mother did not differ significantly between the two groups, with non-gender-typed mothers reporting a mean aggregate score of 56.21 and gender-typed mothers reporting a mean aggregate femininity score of 57.48. For fathers, both masculinity and femininity scores yielded significant differences. Aggregate masculinity scores for non-gender-typed fathers ($n=84$, $M=49.24$) were significantly lower than the masculinity scores for gender-typed fathers ($n=94$, $M= 52.96$). Aggregate femininity scores for non-gender-typed fathers ($M=52.25$) were significantly higher than the femininity scores for gender-typed fathers ($M= 49.80$).

It was therefore determined that the median split method was valid in differentiating between gender-typed and non-gender-typed mothers and fathers, based on the masculinity and femininity scores generated by the BSRI. These delineations were further used to group mothers and fathers into the four quadrants of parental gender role dyads in which a child might be raised. If both parents were non-gender-typed, the couple was termed non-gender-typed/non-gender-typed (NN). If both were gender-typed, they were termed gender-typed/gender-typed (GG). If the mother was non-gender-typed and the father was gender-typed, they were termed non-gender-typed/gender-typed (NG). Finally, if the mother was gender-typed and the father was non-gender-typed, the couple was termed gender-typed/non-gender-typed (GN).

Child Gender Schematicity Measure

The second instrument used was based on Carter and Levy's (1988) gender schematic processing measure. This test has been shown to distinguish highly gender schematic children from children with low gender schematicity (Levy, 1989). The basis of Carter and Levy's measure is that highly gender schematic individuals will be able to process social information more quickly when they can utilize their gender schema. Individuals with low gender schematicity will not process social information more quickly when they can utilize their gender schema. This claim is based on the gender schema tenet that highly gender schematic individuals have more ready access to their gender schema than do people with low gender schematicity (Bem, 1981b).

The original test was comprised of 24 line drawings of children's toys. The black and white drawings were 10 cm X 10 cm and depicted masculine, feminine, and neutral toys. Gender-typed and neutral toys were selected based on previous research (Carter & Maclosky, 1984; Levy, 1989). For this project, the line drawings were incorporated into a computer program. The illustrations were presented in pairs on a lap top computer screen. The pairs consisted of nine masculine-feminine pairs, three masculine-neutral pairs, three feminine-neutral pairs, three pairs of masculine toys, and three pairs of feminine toys. Masculine and feminine toys appeared equally on the right and the left side of the computer screen. The *F* and *J* keys on the right and left side of the keyboard were used to select either the right or the left picture. All other keys were covered. This cover

minimized any confusion that the complete keyboard might give, especially to kindergarten children who may not yet be able to discern between particular letters of the alphabet. The children indicated their preference for the toy on the right by pressing the *J* key and indicated their preference for the toy of the left by pressing the *F* key. The computer registered both the child's choice and the time between when the images appeared on the screen and when a key was pressed.

Two separate scores are derived from this measure. The first score, termed the *schema facilitated score*, was based on the mean of the latency times children demonstrate in choosing preferred toys in the masculine-feminine pairs related to their average latencies for all types of pairs. The second score, the *schema inhibited score*, was derived from the mean of the latency times children demonstrate in choosing between two same gender toys related to their average latencies for all types of pairs. As directed by Levy in the original measure, "in both cases, the child's mean response latency was subtracted from his or her response latencies to the relevant pairings and then divided by the standard deviation of the child's response latencies" (Levy, 1989). Children's latencies in pairings where neutral items appeared were used in computing each child's overall latency, but did not enter into the two schema latency scores. In this way, children with low facilitated scores were more gender schematic than those with high facilitated scores, because the shorter latency suggested that gender schema was being used to assist in decision-making. The opposite is true in the case of inhibited scores. A high inhibited score would indicate a gender

schematic child, as the stimuli do not facilitate an easy choice when gender schema is being used as the basis of selection. In order to decrease confusion, the facilitated scores will be presented by multiplying each score by negative one. In this way, a high facilitated score will now represent high gender schematicity, as will a high inhibited score. As expected and demonstrated in past research (Carter & Levy, 1988; Levy, 1989), a child's facilitated and inhibited scores are related. However, the same research has demonstrated that each score is related to different dimensions of gender within children. These two scores are therefore examined both together and separately in the analyses.

RESULTS

Independent and Dependent Variables

The Child Gender Schematicity measure generated two dependent variables, namely the facilitated score and the inhibited score. Three independent variables were used in the analysis. The first two independent variables were the child's sex and grade. The third was the parental gender type classifications, which was classified in four ways: non-gender-typed /non-gender-typed (NN), gender-typed/gender-typed (GG), non-gender-typed mother/gender-typed father (NG), gender-typed mother/non-gender-typed father (GN).

Analysis Plan

Previous research using the manual version of the CGSM (Carter & Levy, 1988; Levy, 1989; Levy & Carter, 1989) demonstrated that children's inhibited scores and facilitated scores of gender schematicity are correlated. In the current study, facilitated and inhibited scores were also correlated ($r = .32, p < .0001$). Therefore, a 2 (child sex) X 2 (child grade) X 4 (joint parental gender type) multiple analysis of variance (MANOVA) was conducted using the facilitated and inhibited scores as the dependent variables. Main effects and interactions were examined. An Alpha level of .05 was set for the analysis.

The main effect of child sex was statistically significant, $F(2, 164) = 3.76, p = .03$. The main effect of parental gender type, $F(3, 165) = .91, p = .44$, and child grade, $F(2, 164) = 2.50, p = .08$, were not significant. There were no significant interaction effects (all F 's .01-1.70, all p 's $> .17$). The inhibited scores and

facilitated scores were then looked at separately, as past research has demonstrated they are related to different components of gender. The analyses plan involved two 2 (child sex) X 2 (child grade) X 4 (joint parental gender type) analyses of variance (ANOVAs).

The ANOVA approach was selected in keeping with the goals of the project and has several advantages. Since group differences are the main focus of the present study, ANOVAs were used to compare group differences across gender and across age (main effects) but also to examine interaction effects with parental gender schematicity combinations. Parental gender schematicity combinations were created in order to distinguish the unique perspectives of mothers and fathers. For example, the combinations of non-gender typed/non-gender-typed (NN), gender-typed/gender-typed (GG), non-gender-typed/gender-typed (NG), gender-typed/non-gender-typed (GN) compared parental dyads on the basis of specific combinations of mothers' and fathers' gender typing scores. Had the scores been blended to create one parental gender typing score, this distinction would not have been possible. Examination of mothers and fathers as separate groups would have allowed ordinal comparisons of scores, but would have lost the rich contextualization of looking at parents in dyads. Using ANOVAs and maintaining the integrity of parents as separate members of a parenting team made it possible to look at children's gender schematicity in a family context, an approach supported by gender schema theory.

As with any statistical analysis, this approach had its limitations. First, grouping the parents as gender-typed and non-gender-typed obscured subtle distinctions within each category of parents by blurring their gender roles. In particular, the non-gender-typed designation included both parents who are androgynous and those who were undifferentiated in their gender roles. The gender-typed category included parents who were masculine and who were feminine in their gender roles. While further refinement of the parental gender roles into 16 categories would illuminate the differences among these groups, the sample size was not large enough for this level of analysis. Furthermore, the goal of this project was not to link gender roles of parents with the gender roles of children, but to look at the relationships between the salience of gender to children and parental gender type combinations. For this reason, the blending of gender roles within the classifications of androgynous and gender-typed was acceptable in this study.

The second limitation of the present analysis was that categories were based on medians for the combined masculinity and femininity scores of the parents. Therefore, parents whose scores were close to the medians were grouped with parents whose scores were much greater or less than the medians. Grouping parental gender typing in this way obscured the relationship between increasing schematicity in children and increasing traditionalism of gender type in their parents. Nonetheless, the analyses gave categorical information that complemented the correlational data previously discussed. Because of this

benefit, namely contextualizing the parenting environment while allowing mothers' and fathers' scores to maintain their distinctness, ANOVAs were the analysis plan of choice.

An Alpha level of .05 was set for the analyses. As previously stated, separate ANOVA models were run for each of the types of child gender schematicity scores. Only one of the two models reached significance. The inhibited model failed to reach significance, $F(5, 177) = 1.17, p = .33$, and was therefore excluded from further analysis. The facilitated model, however, was significant, $F(5, 177) = 3.09, p = .01$.

Gender Schematicity and Children's Sex

The hypothesis stating that boys would demonstrate higher gender gender schematicity than girls was supported. The main effect for child sex was significant, $F(1, 177) = 10.19, p = .001$. A follow-up t -test, $t(176) = -3.18, p = .001$, indicated that the facilitated score mean for boys ($M = .21$) was significantly higher than the facilitated score mean for girls ($M = .12$). Recall that a higher facilitated score is representative of higher gender schematicity.

Gender Schematicity and Children's Age

The hypothesis stating that younger children would demonstrate higher levels of gender schematicity than older children was not supported, $F(1, 177) = 3.02, p = .08$. Interestingly, the mean for the grade four group ($M = .19$) was actually higher than mean for the kindergarten group ($M = .14$). This higher score indicates higher gender schematicity in the grade four group, a relationship

opposite to that predicted. However, it should be stressed that this was not a significant difference.

Child Gender Schematicity and Parental Gender Types

The hypotheses regarding the relationship between child and parental gender type were as follows: 1) In families where both parents are gender-typed, children will demonstrate high gender schematicity; 2) In families where both parents are non-gender-typed, children will demonstrate low gender schematicity.

The ANOVA for children's facilitated scores indicated no significant differences between children whose parents fell into any on the mother/father parental gender typing combinations: non-gender-typed/non-gender-typed (NN), gender-typed/gender-typed (GG), non-gender-typed/gender-typed (NG), gender-typed/non-gender-typed (GN) as indicated in Table 1. The main effect for this comparison failed to reach levels of significance, $F(3, 177) = 0.74, p = .52$. The mean facilitated scores for children classified by each parental gender type group, by sex, and by age are presented in Table 2.

Table 1

Descriptive Statistics For Children's Facilitated Scores By Parental GenderTyping Group

Parental Gender Type Grouping	Children's Facilitated Scores		
	<i>n</i>	<i>M</i>	<i>SD</i>
Non-gender-typed mother/gender-typed father	42	.21	.17
Gender-typed mother/non-gender-typed father	47	.17	.21
Gender-typed mother/gender-typed father	51	.16	.22
Non-gender-typed mother/non-gender-typed father	38	.14	.17

Note. Higher facilitated scores indicate higher gender schematicity in children.

Table 2

Descriptive Statistics of Children's Facilitated ScoresBy Parental Gender Type Classification

Parental Gender Type Grouping	Children's Facilitated Scores		
	<i>n</i>	<i>M</i>	<i>SD</i>
Boys: non-gender-typed mother/gender-typed father			
Kindergarten	9	.26	.12
Grade 4	13	.29	.20
Girls: non-gender-typed mother/gender-typed father			
Kindergarten	10	.10	.15
Grade 4	10	.19	.13
Boys: gender-typed mother/non-gender-typed father			
Kindergarten	14	.15	.21
Grade 4	14	.24	.20
Girls: gender-typed mother/non-gender-typed father			
Kindergarten	12	.05	.22
Grade 4	7	.27	.07
Boys: gender-typed mother/gender-typed father			
Kindergarten	14	.18	.22
Grade 4	10	.31	.21
Girls: gender-typed mother/gender-typed father			
Kindergarten	11	.11	.18
Grade four	16	.08	.23
Boys: non-gender-typed mother/non-gender-typed father			
Kindergarten	5	.15	.15
Grade four	9	.13	.25
Girls: non-gender-typed mother/non-gender-typed father			
Kindergarten	13	.16	.13
Grade four	11	.12	.18

Note. Higher facilitated scores indicate higher gender schematicity in children.

Children's Gender Schematicity, Children's Sex, and Parental Gender Types

The last hypothesis attempted to cast illumination on the significance of the interaction between parental gender type, children's sex, and children's gender schematicity. It was hypothesized that boys with gender-typed fathers and non-gender-typed mothers would have higher gender schematicity than girls with gender-typed fathers and non-gender-typed mothers, and than children with gender-typed mothers and non-gender-typed fathers. The main effect for ANOVA with two levels of child sex and four levels of parental gender type classification was significant, $F(1, 177) = 2.38, p = .02$. Planned comparisons were then conducted to test the hypothesis. Three planned comparisons testing the a priori hypotheses were conducted. As suggested by Keppel & Saufley (1980), the comparison-wise alpha level can be set as the experiment wise alpha level. However, the comparisons must be planned and may not exceed the degrees of freedom in number. Therefore, alpha was set at .05 for each of the three comparisons.

The planned comparisons yielded mixed results (see Table 3). The first comparison showed that boys with non-gender-typed mothers and gender-typed fathers demonstrated statistically higher gender schematicity than girls with gender-typed mothers and non-gender-typed fathers, $t(39) = -2.48, p = .02$. The second comparison showed that boys with non-gender-typed mothers and gender-typed fathers demonstrated statistically higher schematicity than girls with

non-gender-typed mothers and gender-typed fathers, $t(40) = -2.80, p = .01$. The third planned comparison was not significant; boys with non-gender-typed mothers and gender-typed fathers did not demonstrate significantly higher gender schematicity than boys with gender typed mothers and non-gender-typed fathers, $t(48) = 1.56, p = .14$.

One unplanned comparison was conducted. The decision to add this additional analysis was based on the findings of the other hypotheses that looked at child sex and parental gender role. Testing the first hypothesis found that boys with gender-typed fathers and non-gender-typed mothers were more gender schematic than girls growing up in the same family context. This finding could be interpreted to support the claim that the father/son relationship is distinct from that of fathers and daughters in terms of gender development. Testing the second hypothesis found that these same boys were more gender schematic than girls growing up with a gender-typed mother and a non-gender-typed father.

The second finding could also be interpreted to support the distinctness of the father/son relationship. However, both the first and second hypotheses compared girls to boys. Neither could conclusively show that it was the parental gender type in relation to the child's sex, rather than the child's sex alone, that influenced the child's gender schematicity. The third hypothesis attempted to clarify this distinction. However, it only looked at one of the comparisons of boys with different parental gender typing combinations. Testing of this hypothesis failed to demonstrate a significant difference in gender schematicity levels

between boys with a gender-typed mother and a non-gender-typed father and boys with a non-gender-typed mother and a gender-typed father. The third hypothesis introduced the idea that it did not matter which parent was gender-typed. That is, a threshold of having at least one gender-typed parent could be said to be related to higher gender schematicity in boys. Alternatively, this finding could be interpreted to say that parental gender typing unrelated to son's levels of gender schematicity and that child sex is the overriding influence on gender schematicity.

In order to investigate these interpretations, one further comparison was made. Boys with two non-gender-typed parents were compared to boys with a non-gender-typed mother and a gender-typed father. An alpha value of .05 was set. It was found that boys with a non-gender-typed mother and a gender-typed father were significantly more gender schematic than boys with two non-gender-typed parents, $t(34) = -2.19, p = .03$.

In summary, the planned comparisons yielded two significant results. That is, boys with non-gender-typed mothers and gender-typed fathers demonstrated higher gender schematicity than girls with non-gender-typed mothers and gender-typed fathers, and also demonstrated higher levels of gender schematicity than girls with gender-typed mothers and non-gender-typed fathers. An unplanned comparison indicated that boys with non-gender-typed mothers and gender-typed fathers were also statistically more gender schematic than boys with two non-gender-typed parents.

Table 3

Descriptive Statistics For Planned Comparisons of Children's Facilitated Scores
By Child Sex and Parental Gender Typing Group

Child Sex: Parental Gender Type Grouping	Children's Facilitated Scores		
	<i>n</i>	<i>M</i>	<i>SD</i>
Boys: non-gender-typed mother/gender-typed father	22	.27	.16
Girls: gender-typed mother/non-gender-typed father	19	.13*	.21
Girls: non-gender-typed mother/gender-typed father	20	.14*	.14
Boys: gender-typed mother/non-gender-typed father	28	.19	.20
Boys: non-gender-typed mother/non-gender-typed father	14	.13*	.22

Note. Higher facilitated scores indicate higher gender schematicity in children.

Groups where comparisons with boys with non-gender-typed mothers and gender-typed fathers were significant at the $p=.05$ are indicated with *.

DISCUSSION

The current research examined gender schematicity in children whose parents were classified into different parental gender type dyads. The approach was used to situate child gender schematicity in the context of the family. That is, children's gender schematicity was examined within the context of the parental gender types organized in such a fashion that their maternal and paternal gender roles were examined simultaneously yet distinctly. The findings of the analyses were consistent with the hypotheses in some cases, but not in others. One additional, unplanned analysis was conducted in order to clarify ambiguities resulting from the planned analysis.

Gender Differences in Gender Schematicity

The first analysis examined potential differences in gender schematicity in boys and girls. The finding that boys were more gender schematic than girls was predicted and consistent with existing gender schema theory and social learning theory. Research suggests that very limited gender roles are socially acceptable for boys, and an awareness of these very rigid limitations therefore seems adaptive to being raised as a son (Pollack, 1998; Sadker & Sadker, 1994). As early as kindergarten, boys learn that gender is important in making choices and moderating behaviour. Since the literature suggests boys are more often criticized for cross-gender play (Barry, 1980; Downs & Langlois, 1988; Fagot, 1985; Lytton & Romney, 1991), gender schematic processing is more salient to

boys than it is to girls. It makes sense that boys develop awareness for events and situations that may lead to punishment or social rejection. Girls, in contrast, are free to cross gender barriers with less fear of punishment and rejection. In this way, girls can utilize other schemata for selection of activities and behaviours. When a fear of negative consequences is not present, it is much more unlikely that children will attach salience to gendered choices.

From a gender schema perspective, boys raised in an environment where classifying by gender is less salient would demonstrate less gender schematicity (Bem, 1981a). This trend may help explain certain research findings about school outcomes. Previous research has demonstrated that gender-typed children self-select out of school activities that they view as inappropriate to their gender (Laskin & O'Neil, 1992; Baily, 1993). Girls, for example, may have traditionally trailed behind boys in math and sciences partly because of this self-selection. These subjects therefore became the focus of many interventions aimed at increasing girls' school outcomes. Recent national Canadian tests have indicated, however, that girls have caught up with, and in some cases surpassed boys, in these subject areas (Council of Ministers in Education, Canada, 1999). These findings support a gender socialization perspective rather than a biological one.

Implications of these findings come in to play when the educational performance of boys is considered. In contrast to girls, was assumed that boys were the winners in the educational system. In actuality, boys lagged behind girls

in language arts, even though concern was not usually expressed about this fact (Delamont, 1990; Golombok & Fivush, 1996). In fact, recent test scores indicate the boys have fallen even further behind girls in reading and writing (Council of Ministers in Education Canada, 1999). Could boys' language arts achievement gap be related to their higher gender schematicity? Could it be that reading, traditionally viewed as a feminine activity, is still viewed by boys as inappropriate? Higher gender schematicity in boys would predict self-selection out of activities viewed by the boys as "inappropriate." This interpretation is supported by recent work by Levy, Barth and Zimmerman (1998). These researchers recently found that boys who have high levels of gender schematicity are reported by their parents to have more masculine behaviors. The differences in gender schematicity scores as well as children's selection of activities suggest that practice effects are at work (US Department of Education, Health & Welfare, 1980).

The impact of gender schematicity on school success also has curriculum implications for the delivery of subjects. In the early years curriculum, children are given choices of subjects and activities. Despite being offered a cornucopia of educational opportunities, however, gender schematic children fail to take advantage of the diverse choices (French, 1990; US Department of Education, Health and Welfare, 1980). Instead, they choose only those that they view as gender appropriate (Sadker & Sadker, 1994). While efforts have been made to redefine the activities that are viewed as appropriate for females, little has been

done to address this same concern in boys (Pollack, 1998, Sadker & Sadker, 1994). Attention must be paid to expanding the repertoire of choices viewed as appropriate for males (AAUW, 1995; Baily, 1993; Delamont, 1990; MacNaughten, 1992). Past research has suggested that reframing the gender relevance of activities can be effective in creating positive outcomes (Anton & Humphreys, 1982; Campbell, 1990).

Age Difference and Gender Schematicity

Contrary to the hypothesis, no difference was found between gender schematicity levels between children in kindergarten and children in grade four. This unexpected finding supports the claim that gender flexibility and gender schematicity may be distinct dimensions of gender. While it has been shown that gender flexibility increases from early to middle childhood (Weinraub et al., 1984; Trautner et al., 1989), the same was not found for gender schematicity. Each of these aspects of gender may have different developmental pathways and may be related to different environmental variables.

There are two limitations to generalizing about age effects from the current study. First, only two age levels were observed. Because intermediate ages were omitted and because the research design was not longitudinal, it cannot be stated conclusively that there were no differences in levels of gender schematicity from kindergarten to grade four. Furthermore, since later ages were not studied, it cannot be assumed that level of gender schematicity is consistent across childhood. Various events, such as puberty, may increase the salience of

gender at specific periods in the lifespan. More likely than not, the subjects within the two grades studied were similar in regard to many aspects of gender development. For example, they probably shared similar levels of gender knowledge, as research has shown that gender knowledge “tops out” around age six (Edelbrock & Suguwara, 1978). Note, however, that the social aspects of pre-adolescence may have begun within some of the grade four children. Early attention to cross-sex relationships may affect gender schematicity and may explain the higher gender schematicity means in grade four children. It should be stressed, however, that these differences were not significant.

Second, it may be that gender schematicity is a stable trait, although that seems unlikely. Based on the tenet of gender schema theory that an individual’s cognitive division of experiences along gender lines is reflective of like environmental experiences, it would seem more likely that gender would vary in salience at different points in time, depending on the environments experienced. Exposure to additional elements of culture, maturity in interpreting experiences, and emerging changes in societal gender roles might all influence gender schematic levels in an individual over time. In order to clarify these possibilities, a longitudinal study must be undertaken- one that follows a group of children through their preschool, school, and adult years. The findings could be considered alongside changes to the participants’ individual environments, as well as alongside societal historical changes. Without such research, it is

impossible to make any conclusive, general statements about changes to gender schematicity within individuals over the lifespan.

Gender Schematicity and Parent Gender Types

Two hypotheses proposed links between children's schematicity and parent gender types. Surprisingly, the results did not confirm the hypotheses. Gender-typed parents did not have children with higher levels of gender schematicity, and non-gender-typed parents did not have children with lower levels of gender schematicity. These findings were unexpected and inconsistent with most theoretical accounts of socialization. Major classic theories of gender development- psychoanalytic theory, social learning theory, and cognitive developmental theory- all posit that parents are important in children's gender development. Gender schema theory also holds that parents are important socializing agents, but proposes that parent are just one agent among many affecting children's gender development. The effects of gender socialization within the home may have been reduced or exaggerated by other socializing agents. Many children experience preschool or day care of some sort. Recent reports have shown that 65% of Canadian children receive out of home care before beginning school (McCain & Mustard, 1999). In addition, peers, siblings, and the media (books, television, video games, and movies) also convey messages regarding gender. Given its broader focus, perhaps gender schema theory is most able to explain the lack of relationship between parent gender roles and child gender schematicity found in the current study.

It is even possible that gender schematicity changes when an individual changes social setting (Maccoby, 1998). Thus, the level of gender schematicity exhibited in school may be different than that exhibited within the home. The change stems both from perceptions of contrast (a child "looks" different psychologically) and from real changes in social cues (people in one setting actually expect more or different gender schematicity). Whether teachers and peers are systemically more gender-typed than parents and siblings, chances are there are some differences between the two environments. In this study, therefore, interviewing the children within the school environment, may have masked the effects of the home setting.

It should be stressed, however, that the intent of the current research was to examine the indirect cognitive relationship between parental gender roles and children's gender schematicity. This relationship is based on the assumption that parental gender roles are transmitted to children, perhaps through behavior or emotion. However, these two dimensions were not the focus of the current research. By measuring only the cognitive aspects of this relationship, other important links between parents and children's gender may have been ignored.

Had the current study been complete at this point, it would have been reasonable to conclude simply that parents are not as influential in children's gender development as once believed. Furthermore, it would be sensible to go as far as to say that there was no relationship found between the gender types of parents and the gender schematicity levels in school age children. This would

have been unfortunate. For while the premise of the study was to look at child gender development within the family context honoring the distinct roles of mothers and fathers as a team, the children thus far had been treated as a group. That is to say, while mothers and fathers were treated as distinct groups, sons and daughters had to this point been treated as a homogeneous group. Given the complex nature of gender development and the professed differences between the maternal and paternal roles, it seemed prudent to examine the other family roles with the same amount of rigor. In keeping with the remaining hypotheses, a series of comparisons were therefore conducted. These final analyses proved to be the most revealing and interesting.

Planned Comparisons

In each of the final four hypotheses, boys with gender-typed fathers and non-gender-typed mothers were compared to children in the sample. This particular group of boys was selected in order to clarify the relationship between fathers and sons that have been associated with gender development. The third hypothesis in the study looked at whether boys growing up in a home with a gender-typed father and a non-gender-typed mother would be more gender schematic than girls growing up in similar homes. The analyses confirmed that boys in this situation were more gender schematic than girls with the same types of parents. There are two ways to interpret this result. First, it might be said that boys are simply more gender schematic than girls and that the parents' gender types have little to nothing to do with it. Higher gender schematicity in boys may

be a product of socialization by society in general, or may be a true sex difference.

Second, the father/son relationship might be influential in this finding. That is to say, the father/son relationship may be distinct. However, this interpretation needs further clarification. Research on children's identification with same sex parents is inconclusive. A recent reformulation of Social Learning Theory, now called Social Cognitive Theory, has reduced its stress on children's identification with their same-sex parents (Bussey & Bandura, 1999). These theorists do not abandon their claims of parental influence all together. In fact, they criticize Lytton and Romney (1991) for their selective literature review that failed to support the influence of parents in children's gender development. However, the once strong claims of same-sex parent modeling effects are conspicuously absent from the latest theoretical development. Furthermore, Bussey and Bandura contend that the blurring of traditional gender roles within the parenting roles makes the direct modeling of gender stereotypes less likely. As such, attention must be paid not only to the sex of the parents but also to their gender roles, a distinction also made in the current research. Interestingly, although some fundamental differences still exist between gender schema theories and the reformulated social cognitive theory, the common ground between these theories has increased.

Is the father/son relationship truly distinct, or is the finding that boys with gender-typed fathers and non-gender-typed mothers are more gender schematic

than girls with the same parental classification an artifact of the identification of children with their same-sex parent? Perhaps the girls in this group were less gender schematic because they identified with their non-gender-typed mothers while the boys identified with their gender-typed fathers. However, because parental behaviours and parent-child identification were not the focus of the present study, it is unclear which interpretation is correct, or whether both are. Further research should examine the relationship of children and their same-sex parents in light of new theoretical developments.

The fourth hypothesis helped clarify this relationship to a degree. The purpose of this hypothesis was to explore the same-sex parent interpretation. This comparison looked at boys with gender-typed fathers and non-gender-typed mothers in contrast to girls with gender-typed mothers and non-gender-typed fathers. In effect, boys and girls with same-sex, gender-typed parents were compared to each other. The comparison showed that the boys were still more gender schematic than the girls. It may be that boys are simply more gender schematic than girls despite the composition of parental gender types or it may be that the father/son relationship is truly distinct; That is, the relationship between a gender-typed father and his son contributes to higher child gender schematicity than the relationship between a gender-typed mother and her daughter. If so, this finding may support the distinctness of the father as a familial socialization agent to sons found in other research. However, one cannot ignore the fact that all comparisons to this point involved son/daughter comparisons,

findings that could be interpreted from either a gender socialization or a biological perspective.

In order to clarify whether the father/son relationship was distinct from the mother/son relationship, a final planned analysis was completed. In the comparison, boys with gender-typed fathers and non-gender-typed mothers were compared to boys with non-gender-typed fathers and gender-typed mothers. Interestingly, this was the only planned comparison looking at two groups of boys raised in different types of homes. The result of this comparison was that there was no significant difference between the gender schematicity levels in these two groups of boys. Thus, boys with at least one gender-typed parent, be it the boy's father *or mother*, do not demonstrated significantly different levels of gender schematicity. This finding cast doubt on the interpretation, suggested earlier, that the father/son relationship was distinct in impact on gender socialization. Perhaps the overall socialization pattern is more accurately considered to be a threshold effect, where a presence of either gender-typed parent within the home would foster a similar level of gender schematicity in the son.

Note, however, an analogous threshold did not occur with daughters. Jeanne Block (1973) explored the relationship between parents with various levels of gender typing as well as various levels of socialization of their children. She found that boys and girls responded differentially to the various combinations of parent gender typing and socialization. This finding, though dated, is based on a very persuasive forty-year longitudinal study and supports

the possibility that boys and girls exposed to the same environments develop their gender differentially.

The findings from testing the third and fourth hypotheses were that boys with gender-typed fathers and non-gender-typed mothers were more gender schematic than girls with either parent being gender-typed. While the threshold interpretation in sons is possible, supporting a differentiate trajectory of development in sons and daughters, a simple gender difference interpretation is also possible. That is to say, for this hypothesis, no differences were found between the two groups of boys because all the children were of the same gender, and boys are simply more gender schematic than girls.

Post-Hoc Comparison

In order to potentially correct the ambiguity described above, one unplanned comparison was added to the study. In this analysis, the same group that had been focused on was compared to other boys in the study. That is, boys with a gender-typed father and a non-gender-typed mother were compared to boys with two non-gender-typed parents. The results were that boys with a gender-typed father and a non-gender-typed mother were more gender schematic than boys with two non-gender-typed parents. While this finding did not definitely rule out the gender difference interpretation, it did confirm suspicions that parental gender types are related to children's gender schematicity, and that the threshold interpretation is feasible. Combining the unplanned comparison with earlier, planned comparisons, lends support to the

belief that both child gender and parental gender roles are important factors in children's gender development.

As can be seen from the various results, the relationship between children's gender schematicity and parental gender type classification is complex. Examination of the children's facilitated score means (see Table 2) indicate that there is no clear progression based on children's age, or parental classification. Clearly, the relationship between children's gender schematicity, age, sex, and parental gender typing deserves further examination.

Educational Implications

While this information bodes well for generating a greater understanding of gender development, it also has important educational implications for boys. The fact that boys with two non-gender-typed parents are less gender schematic than boys with a non-gender-typed mother and a gender-typed father highlights the possibility that non-gender-typed environmental conditions are associated with lower levels of gender schematicity in boys. This finding also suggests the value of further investigation into how socializing agents might be used to foster access to more diverse educational experiences for boys. Such research must clarify the links between parental, and other social influences, and educational choices in boys.

Another possible implication that deserves further study is the possibility that girls and boys develop gender along different trajectories. It is possible that boys and girls exposed to the same environments may interpret and internalize

these experiences in different ways. The current research, particularly the finding that boys and girls raised in the same type of parental environment demonstrated different levels of gender schematicity, supports this interpretation. But the origin of these of these inclinations and their implications on learning deserve further exploration.

In summary, the findings of the current study were as follows. Boys demonstrated higher gender schematicity than girls. There were no differences in gender schematicity levels in children in kindergarten and grade four. Boys with gender-typed fathers and non-gender-typed mothers were more gender schematic than girls with the same parent gender type combination, girls with a gender-typed mother and a non-gender-typed father, and boys with two non-gender-typed parents.

Implications for Further Research

The results suggest several directions for further research. First, future studies must be longitudinal in design and attempt to trace gender schematicity through developmental transitions such as school entrance, adolescence, and adulthood. It would be interesting to explore changes in gender schematicity when participants become parents themselves. Although longitudinal studies are expensive and time-consuming, they would give a more accurate picture of the developmental trajectory of gender.

Second, findings from the current research suggest that boys and girls raised in the same types of homes do not interpret and internalize gender the

same way. Interactions between parent sex, child sex, and parental gender roles, gender schematicity, attitudes, flexibility, and behaviours need further attention. When looking at gender development within children multi-dimensionally, we must also acknowledge that these same components of gender are present in the socializing agents within the child's environment. While trying to find links between the dimensions within individual children, we must also explore links between the dimensions in the child and the dimensions in his/her parents, siblings, and peers. Furthermore, the current research sought to explore the relationship between the cognitive aspects of gender in parents and their children. Use of behavioral measures as well as cognitive measures may reveal the nature of transmission of gender between parents and children.

While the current project began the process of investigating the indirect relationship between parental gender typing and child gender schematicity, further studies must explore the links between other components in this familial relationship. The limitations of the current study made the relationships found so far appear artificial when considered by themselves. In particular, many of the participants in the current study belonged to families where other children were also being raised, yet this complication was ignored. In order to study the family context more effectively, further links should be explored between children and their siblings. It is possible, and probable, that same-sex and other-sex siblings are also instrumental in children's gender development, yet few studies have explored the sibling relationship in detail. Furthermore, all the families in the

current study were two parent families, a convenient but distinctly minority constellation among possible family types. Other family constellations such as single parent families, gay couples with children, and blended families need to be studied. The effects of single parents raising all same-sex or all other-sex children would prove especially interesting and important, given the prevalence of single parents in modern society.

A third direction for further research stems from the small amount of variability in both the socio-economic circumstances and the ethnicity of the participants. This circumstance evolved by chance rather than by design. Results that are more robust may have been obtained had there been greater variability in these two variables. Studies of gender development in rural setting may also add to our understanding. Future studies must purposely seek participation by diverse families in order to clearly understand gender development and its relationship to environmental factors.

In spite of these limitations, however, the current research has clear implications for maximizing educational opportunities by diversifying the gender roles in boys. Current federal initiatives, such as the National Longitudinal Survey of Children and Youth, are focusing research on developing evidence-based intervention strategies to increase children's life outcomes (Statistics Canada, 2000). Realization that the early home life of children is key in their long-term educational outcomes validates efforts to understand how parents shape children's opportunities. Speculation that socializing influences differentially

impact on boys and girls needs further exploration. Through understanding the links between gender development in boys, girls, and their environments, we can better focus interventions on the most salient socializing agents. The current research suggests that some of these agents are parents, but it marks only the beginning in understanding the socialization of gender.

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Appendices

Appendix A

Appendix A: Letter to the Superintendent

DATE

Dear Mr. Beaumont,

I am a doctoral candidate in the Faculty of Education at the University of Manitoba. I am writing to you to request your permission to carry out a research project in your division. Please find enclosed a copy of the research proposal, which has been approved by my doctoral committee, as well as the Ethics Committee at the University of Manitoba.

My research will be looking at the relationship between the ways parents think and the way that their children think. I will be studying 80 grade 4 students and their parents, and 80 Kindergarten students and their parents. The research has been designed to cause minimal disruption and time commitment to the participants.

I would like to send home letters to the parents of grade four and Kindergarten students in several of the schools in the division. The letters would explain the study and ask for both parents' permission for themselves and their child to participate. Because past research has neglected the influence of fathers, I am particularly interested in their input. As such, I will be sampling only intact families of children living with their biological parents. The parents will be provided with my telephone number, and may call for further clarification. All data will be kept confidential, and no individuals will be recognizable in any research reports. Participation is voluntary and the participants may leave the study at any time without penalty.

Parents who agree to participate by returning the signed consent to the classroom teacher will

have 5 surveys sent home by the classroom teacher. They will include:

- a family information survey for one parent. It will take less than five minutes to complete.
- 2 personality surveys for each parent. The surveys will take less than 20 minutes to complete.

All five surveys will be returned to the classroom teacher. When the researcher visits the school, I will collect the consent forms. I will ensure that each child who will participate has a signed consent form, and that his/her parents have completed and returned the surveys.

I would like to conduct the child portion at a table and chairs in a school hallway outside the children's classroom. The child will be shown 24 picture pairs of

children's toys on a computer screen, one pair at a time, and asked to indicate as quickly as possible which item of the pair he/she would prefer. The child should be out of the classroom less than ten minutes. Once the data has been analyzed, a summary report will be provided to all participants.

I am most eager to conduct this research and I hope that you will agree that I may do so in your division. I would appreciate the opportunity to discuss this research with you either in person or over the telephone. My home telephone number is 474-XXXX. Please call me at your convenience so that we may further discuss this study. You may also contact my advisor, Dr. Kelvin Seifert, at 474-XXXX. I appreciate your consideration of this matter.

Sincerely,

Laura Sokal

Appendix B

Appendix B: Letter to the principals

DATE

Dear Mr. or Ms. X,

I am a doctoral candidate in the Faculty of Education at the University of Manitoba. I am writing to you to request your permission to carry out a research project in your school. Please find enclosed a copy of the research proposal, which has been approved by my doctoral committee, as well as the Ethics Committee at the University of Manitoba.

My research will be looking at the relationship between the ways parents think and the ways that their children think. I will be studying 80 grade 4 students and their parents, and 80 Kindergarten students and their parents. The research has been designed to cause minimal disruption and time commitment to the participants.

I would like to send home letters to the parents of grade four and Kindergarten students in several of the classes in your school. The letters would explain the study and ask for both parents' permission for themselves and their child to participate. Because past research has neglected the influence of fathers, I am particularly interested in their input. As such, I will be sampling only intact families of children living with their biological parents. The parents will be provided with my telephone number, and may call for further clarification. All data will be kept confidential, and no individuals will be recognizable in any research reports. Participation is voluntary and the participants may leave the study at any time without penalty.

Parents who agree to participate by returning the signed consent to the classroom teacher will

have 5 surveys sent home by the classroom teacher. They will include:

- a family information survey for one parent. It will take less than five minutes to complete.
- 2 personality surveys for each parent. The surveys will take less than 20 minutes to complete.

All five surveys will be returned to the classroom teacher. When the researcher visits the school, I will ensure that each child who will participate has a signed consent form, and that his/her parents have completed and returned the surveys.

I would like to conduct the child portion at a table and chairs in a school hallway outside the children's classroom. The child will be shown 24 picture pairs of children's toys on a computer screen, one pair at a time, and asked to indicate as quickly as possible which item of the pair he/she would prefer. The child should

be out of the classroom less than ten minutes. Once the data has been analyzed, a summary report will be provided to all participants.

I am most eager to conduct this research and I hope that you will agree that I may do so in your school. I would appreciate the opportunity to discuss this research with you either in person or over the telephone. My home telephone number is 474-XXXX. Please call me at your convenience so that we may further discuss this study. You may also contact my advisor, Dr. Kelvin Seifert at 474-XXXX. I appreciate your consideration of this matter.

Sincerely,

Laura Sokal

Appendix C

Appendix C: Instruction Letter to the Teachers

DATE

Dear Mr. or Ms. X,

Thank you for agreeing to allow me to conduct my research with your students. I understand that you have many responsibilities and commitments as a classroom teacher, and I appreciate your assistance with this project.

I am a doctoral candidate in the Faculty of Education at the University of Manitoba. My research will be looking at the relationship between the ways that parents think and the ways that their children think. I will be studying grade 4 students and their parents, and Kindergarten students and their parents. The project I am conducting has been approved by the University of Manitoba Ethics Committee.

I have attached letters to the parents of the children in your class. Because past research has neglected the influence of fathers, I am particularly interested in their input. As such, I will be sampling only intact families of children living with their biological parents. The letters explain the study and ask for both parents' permission for themselves and their child to participate. The parents are provided with my telephone number, and may call me for further clarification. All data will be kept confidential, and no individuals will be recognizable in any research reports. Participation is voluntary and the participants may leave the study at any time without penalty. Parents who agree to participate by returning the signed consent to you will have 5 surveys sent home. All five surveys will be returned to you in a sealed envelope. When I visit the school, I will collect and open the envelopes to ensure that each child who will participate has a signed consent form, and that his/her parents have completed and returned the surveys.

I would like to conduct the child portion at a table and chairs in a school hallway outside the children's classroom. All instruction regarding the data collection will be explained to the children by the researcher. The child will be shown 24 picture pairs of toys on a lap top computer screen, one pair at a time, and will be asked to indicate as quickly as possible which item of the pair he/she would prefer. The child should be out of the classroom less than ten minutes. Once the data has been analyzed, a summary report will be provided to all participants.

In summary, I am asking you to do the following

- Send home the parent information letter and consent forms on _____(date) with each student.
- Collect the signed consent forms as they are sent in with the children.
- Send the parental surveys home on _____(date) with the children who have returned consent forms.
- Collect the sealed envelopes from the children as they are returned to the school.
- Allow me to take each participating child into the hall for about ten minutes in order to administer the computerized test.

This research will help us to better understand the processes that effect children's behaviours, and ultimately, their opportunities in school. Please feel free to call either me (Laura Sokal) if you have any questions or my faculty advisor, Kelvin Seifert. My telephone number is 474-XXXX, and Dr. Seifert's telephone number is 474-XXXX.

Sincerely,

Laura Sokal

Appendix D

Appendix D: Letter to the Parents

DATE

Dear Parents,

My name is Laura Sokal and I am a Ph.D. student at the University of Manitoba. I have received permission from your child's teacher, principal, and the school division to carry out a research project at the school. I am writing you to invite you and your child to participate.

My research will be looking at the relationship between the ways that parents think and the ways that their children think. I will be collecting information from families where children live with both their biological parents in the same home.

If you decide to participate in this study, you should know that all information will be kept confidential, and no individuals will be recognizable in any research reports. Your surveys will be shredded at the end of the study. Participation is voluntary and you may leave the study at any time without penalty.

Parents who agree to participate will fill out personality surveys that will take less than 25 minutes for each parent. Children will participate at the school by choosing their favorite toys from pairs of pictures shown on a computer. The children's activities will take less than 10 minutes. For more information, please see other side.

I appreciate your consideration of this request. This research will help us to better understand the processes that effect children's opportunities in school. Please feel free to call me (Laura Sokal) if you have any questions (474-XXXX), or you may contact my faculty advisor, Dr. Kelvin Seifert at 474-XXXX.

Sincerely,

Laura Sokal

More detailed information about the parent and child roles in the research study:

Parents who agree to participate by returning the signed consent will have 5 surveys sent home. They will include a family information survey, and 2 personality surveys for each parent. The family information survey will take less than five minutes and can be filled out by either parent. The personality surveys will take each parent less than 20 minutes total to complete. The personality surveys are comprised of 30 descriptive words such as *independent*, *warm*, and *assertive*. You will be asked to circle a number indicating how well each word describes you or your partner. Each parent is asked to fill out the survey twice: once describing him/herself, and once describing his/her spouse. All five surveys are to be returned to the teacher in a sealed envelope. The researcher will open all envelopes, and will not discuss their content. All information is confidential.

Your child will participate in the hall outside the children's classroom. He/she will be shown 24 picture pairs of toys on a lap top computer screen, one pair at a time, and asked which toy he/she prefers. Your child should be out of the classroom for about ten minutes. A summary report will be given to all families who participate.

In summary, I am asking you for the following

- If BOTH parents agree to participate, and agree to have your child participate, please sign the attached consent form and return it to the classroom teacher by _____.
 - Complete the surveys that will later be sent home with your child and return to the classroom teacher by _____.
- 1) 2 personality surveys to be completed by mother (20 minutes or less)
 - 2) 2 personality surveys to be completed by father (20 minutes or less)
 - 3) Family information survey to be completed by either parent (less than 5 minutes)
- Allow me to take your child into the hall for about ten minutes in order to administer the computerized test

DATE _____

Child's name _____

School _____

Classroom teacher _____ Grade K 4

YES, I AGREE TO PARTICIPATE IN LAURA'S SOKAL'S RESEARCH PROJECT. I HAVE READ AND UNDERSTAND THE RESEARCH PROJECT OUTLINED ABOVE. I ALSO GIVE LAURA SOKAL PERMISSION TO CONDUCT THE COMPUTERIZED TEST OUTLINED IN THIS LETTER WITH MY CHILD.

MOTHER'S NAME _____ SIGNATURE _____

FATHER'S NAME _____ SIGNATURE _____

RESEARCHER'S NAME Laura Sokal SIGNATURE _____

Dear Grade Four Student,

My name is Laura Sokal and I am an adult student at the University of Manitoba. I am doing research in your school and am inviting you and your family to participate. I am sending another letter to your mom and dad, but this letter is especially for you.

My research will be looking at the relationship between the ways that children, moms and dads think. If you decide to take part, I will come to your school to talk with you. You and I will go into the hall and sit at a table and chairs outside your classroom. I will show you pairs of pictures on a computer, and you will press keys to tell me which picture you like better. This activity will take about 10 minutes. Your choices will not be shared with anyone, unless you choose to talk about them yourself. I will keep your answers private.

If you decide to take part in this project, you should know that no one else will know which pictures you choose. It is your own choice whether to take part or not, and you may leave the study at any time without penalty or consequences.

If you would like to take part, please sign below. Thank you very much for helping with my project.

.....

My name is _____.
(print your name here)

I agree to take part in Laura Sokal's research project.

(Sign your name here using ink)

Appendix E

Appendix E: Family Demographics Profile

This information will help to ensure that the children participating in the study from various schools have similar backgrounds. Please answer as many questions as you feel comfortable answering.

1. Child's Information

Child's Name _____ School _____
Classroom teacher _____ Grade K 4
Child's birthdate _____

2. Family Composition

Mother's name _____

Father's name _____

Other children in family :

_____ age ___ boy/girl
_____ age ___ boy/girl
_____ age ___ boy/girl
_____ age ___ boy/girl

3. Level of Education

Please indicate the highest level of education completed

Mother:

___ less than 8 years
___ 9-12 years
___ 13-16 years
___ more than 16 years

Father:

___ less than 8 years
___ 9-12 years
___ 13-16 years
___ more than 16 years

4. Income

Please indicate your annual family income before taxes

___ Under \$10, 000
___ \$10,001-\$25,000
___ \$25,001-\$40,000
___ \$40,001-\$55,000
___ \$55,001-\$70,000
___ 70,001+

5. Language usually spoken in the home _____

6. (Check all that apply)

Do you read ___, write ___, speak ___ English?

Appendix F

Appendix F: Bem Sex Role Inventory- Short Form

BSRI Questionnaire: About Yourself

Your Name _____

Your Child's Name _____

Your Child's School _____ Grade K 4

I am this child's ___mother ___father (please check one)

For each item, please indicate if the descriptive word is "like me" or "unlike me." On the seven-point scale, a score of 1 indicates most strongly that the descriptive word is "unlike me" and a score of 7 indicates most strongly that the descriptive word is "like me." Please circle the number on the seven-point scale that most closely reflects your answer. Your answers should reflect your own opinion of how well these words describe you. Please Do NOT discuss the questionnaire with anyone else either before or during completing it. Please do not skip any items.

This questionnaire should take less than five minutes. I sincerely appreciate your generosity in participating in this research project. Remember, you are indicating **how well these words describe YOU.**

	unlike me						like me	
1. Has leadership abilities	1	2	3	4	5	6	7	
2. Gentle	1	2	3	4	5	6	7	
3. Adaptable	1	2	3	4	5	6	7	
4. Assertive	1	2	3	4	5	6	7	
5. Tender	1	2	3	4	5	6	7	
6. Conscientious	1	2	3	4	5	6	7	
7. Dominant	1	2	3	4	5	6	7	
8. Compassionate	1	2	3	4	5	6	7	
9. Conceited	1	2	3	4	5	6	7	
10. Strong personality	1	2	3	4	5	6	7	
11. Warm	1	2	3	4	5	6	7	
12. Conventional	1	2	3	4	5	6	7	

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	unlike me					like me	
13. Forceful	1	2	3	4	5	6	7
14. Sympathetic	1	2	3	4	5	6	7
15. Jealous	1	2	3	4	5	6	7
16. Aggressive	1	2	3	4	5	6	7
17. Sensitive to the needs of others	1	2	3	4	5	6	7
18. Moody	1	2	3	4	5	6	7
19. Willing to take a stand	1	2	3	4	5	6	7
20. Eager to sooth hurt feelings	1	2	3	4	5	6	7
21. Reliable	1	2	3	4	5	6	7
22. Independent	1	2	3	4	5	6	7
23. Understanding	1	2	3	4	5	6	7
24. Secretive	1	2	3	4	5	6	7
25. Defends own beliefs	1	2	3	4	5	6	7
26. Affectionate	1	2	3	4	5	6	7
27. Tactful	1	2	3	4	5	6	7
28. Willing to take risks	1	2	3	4	5	6	7
29. Loves children	1	2	3	4	5	6	7
30. Truthful	1	2	3	4	5	6	7

Please place the completed questionnaire in the attached envelope and return to your child's teacher by _____. There should be five surveys in the sealed envelope returned by your family: 2 father's BSRI, 2 mother's BSRI and the family demographics survey.

Thank you again for your participation. Once the data has been analyzed, a summary report will be made available to all the participants. Questions? Call Laura Sokal (474-XXXX).

About Your Spouse

Your Name _____

Your Child's Name _____

Your Child's School _____ Grade K 4

I am this child's ___mother ___father (please check one)

For each item, please indicate if the descriptive word is "like him/her" or "unlike him/her." On the seven-point scale, a score of 1 indicates most strongly that the descriptive word is "unlike your spouse" and a score of 7 indicates most strongly that the descriptive word is "like your spouse." Please circle the number on the seven-point scale that most closely reflects your answer. Your answers should reflect your own opinion of how well these words describe your spouse. **Please Do NOT discuss the questionnaire with anyone else either before or during completing it. Please do not skip any items.**

This questionnaire should take less than five minutes. I sincerely appreciate your generosity in participating in this research project. Remember, you are indicating **how well these words describe YOUR SPOUSE.**

	unlike him/her				like him/her		
	1	2	3	4	5	6	7
1. Has leadership abilities	1	2	3	4	5	6	7
2. Gentle	1	2	3	4	5	6	7
3. Adaptable	1	2	3	4	5	6	7
4. Assertive	1	2	3	4	5	6	7
5. Tender	1	2	3	4	5	6	7
6. Conscientious	1	2	3	4	5	6	7
7. Dominant	1	2	3	4	5	6	7
8. Compassionate	1	2	3	4	5	6	7
9. Conceited	1	2	3	4	5	6	7
10. Strong personality	1	2	3	4	5	6	7
11. Warm	1	2	3	4	5	6	7
12. Conventional	1	2	3	4	5	6	7

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	unlike him					like him	
13. Forceful	1	2	3	4	5	6	7
14. Sympathetic	1	2	3	4	5	6	7
15. Jealous	1	2	3	4	5	6	7
16. Aggressive	1	2	3	4	5	6	7
17. Sensitive to the needs of others	1	2	3	4	5	6	7
18. Moody	1	2	3	4	5	6	7
19. Willing to take a stand	1	2	3	4	5	6	7
20. Eager to sooth hurt feelings	1	2	3	4	5	6	7
21. Reliable	1	2	3	4	5	6	7
22. Independent	1	2	3	4	5	6	7
23. Understanding	1	2	3	4	5	6	7
24. Secretive	1	2	3	4	5	6	7
25. Defends own beliefs	1	2	3	4	5	6	7
26. Affectionate	1	2	3	4	5	6	7
27. Tactful	1	2	3	4	5	6	7
28. Willing to take risks	1	2	3	4	5	6	7
29. Loves children	1	2	3	4	5	6	7
30. Truthful	1	2	3	4	5	6	7

Please place the completed questionnaire in the attached envelope and return to your child's teacher by _____ . **There should be five surveys in the sealed envelope returned by your family: 2 father's BSRI, 2 mother's BSRI and the family demographics survey.**

Thank you again for your participation. Once the data has been analyzed, a summary report will be made available to all the participants. Questions? Call Laura Sokai (474-XXXX).

Appendix G

Appendix G

Debriefing letter to parents

DATE

Dear Parents,

I have recently completed collecting data for my research project at your child's school. I am writing to thank you for your participation in the project, and to inform you of the intent of the project.

As you know, the purpose of the project was to study the ways that people think. The area of special interest in the project was gender. I wanted to look at how the ways that moms and dads think about gender is related to the ways their children think about gender.

The information you and your child provided will help me determine whether parents who use gender as a preferred way of thinking about objects, events and personal characteristics are more likely to have children with the same preference. People with this tendency are called *highly gender schematic*. High schematicity has been shown to affect the types of activities and educational opportunities children choose. By looking at the schematicity of parents and the schematicity of their children, we will be able to understand their relationship. This, in turn, will guide further research into ways of helping children to have better educational outcomes.

Please call me if you have any questions about the above information. I am also interested in your ideas about parental influences on children's gender roles. My telephone number is 474-XXXX.

Thank you again for your very generous support of this research. I will be sending a summary home with your child as soon as the data is analyzed.

Sincerely,

Laura Sokal

Appendix H

Appendix H
Parent Follow up Letter

March, 2000

Dear Parents, Teachers, and Administrators,

I am happy to report that I have completed the data collection and analysis for my doctoral dissertation. I am currently writing the report of the findings, but wanted to take this early opportunity to let you and your children know what I have found.

My research question involved looking at the relationship between the ways parents and children think, specifically in the area of gender. Some theories of gender development propose that children learn about gender roles in society by watching and imitating their parents. From this line of reasoning, it would follow that children whose parents are very traditional in their gender roles would have children who are also very traditional. Some research has shown that children with traditional gender roles, termed *gender schematic*, choose very traditional activities in the classroom. These children get lots of practice and become better at stereotyped activities than they are at activities that are stereotyped to the other sex. For example, a little boy who is very traditional may choose to work with blocks and building materials (which foster the development of mathematical skills) instead of choosing the dress up area (which fosters language development). For some children, whether an activity is traditionally masculine or feminine would not be considered. These children, termed *gender aschematic*, choose a wide variety of activities, and develop diverse skills. My research tested the assumption that traditional parents have gender schematic children.

My research supported three main findings. First, there was no relationship shown between the traditionalism of the parental gender roles and children's schematicity when the children were treated as a group. However, when the boys and girls were grouped differently, a difference did emerge. Boys with traditional fathers and non-gender-typed mothers were shown to be more schematic than girls in the same typed of families. This finding suggests that gender differences within the family are masked when we look at parents as a group and children as a group. When we look more carefully at family partnerships such as father/son, father/daughter, mother/son, mother/daughter, we see that these relationship do, if fact, operate quite differently.

Second, boys were more gender schematic than girls. This finding is supported by other research. This finding may be interpreted in light of the rigid gender roles that society holds for boys. Societal expectations for boys' behaviours are much more limited than those held for girls.

Third, there were no differences in children's schematicity in children in grade four and children in kindergarten. Most research supports kindergarten children being more schematic than children in grade four. However, recent research is now supporting a resurgence of gender schematicity in the middle years. This finding can be interpreted to mean that the pathway of gender development is still not well understood, or may be changing in light of changes in societal expectations.

Findings of this project will be presented in May in Waterloo, Ontario at a conference of the Developmental Section of the Canadian Psychological Association. A complete copy of the dissertation findings will be available in the University of Manitoba library after September, 2000.

Please accept my sincere gratitude for your help with my research project. The generous co-operation of the Fort Garry School division, the principals, teachers, secretaries, parents, and especially the children is greatly appreciated. Without your help, I could not have completed this project. Please feel free to call me (474-XXXX) if you would like further clarification. Again, thank you for all your help.

Sincerely,

Laura Sokal

