THE ACQUISITION OF GENDER STEREOTYPE COMPONENT LINKS

by

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Abstract

Deaux and Lewis (1984) have proposed that stereotypes be viewed as linked components, each encompassing specific content domains (such as beliefs about appearance, preferences, occupations and traits). Each component has a masculine and a feminine version. Adults are able to use the stereotyped associative links between items in the same component and those between items in different components to make judgments about individuals' behaviors and characteristics based on minimal information. The present study examined the acquisition of these associative connections in the gender stereotypes of 6 to 10 year olds. Seventy-six children (38 boys, 38 girls), aged 6, 8 and 10 years, were asked to make a number of judgments about an individual's clothing, occupational aspirations, toy preferences, and personality traits based on a single piece of cue information (a masculine or feminine item from a component). The types of associative links that children could use in making of interpersonal judgments changed with age. The 6-year-old children were able to make stereotyped judgments about both masculine and feminine items within the same component but were only able to make between-component stereotyped judgments when items of their own-sex typing (i.e. masculine items for boys, feminine items for girls) were presented as cues. The older children were be able to make within- and between-component stereotypic judgments about both masculine and feminine items. The results supported the propositions of schematic-processing theory (Martin & Halverson, 1981) and demonstrated the value of the Deaux and Lewis (1984) component-link model as a heuristic for the study of complex cognitive structures.

Table of Contents

List of Figures

The Acquisition of Gender Stereotype Component Links

There is no group distinction in human society as pervasive as gender. This basic divisor guides our socialization, interpersonal behavior, and thought processes. Our gender is the most salient of our personal characteristics, and the beliefs we hold about gender strongly influence our self image and our evaluations of others. The study of the organized gender knowledge structures, termed gender stereotypes, seeks to explain the nature of these belief systems, how they effect our social perceptions and judgments of others and how they are acquired and maintained. It is only through the detailed examination of the mechanisms of these stereotypes that we can fully understand how these complex cognitive structures influence our behavior towards others and the role choices we see for ourselves. This study, therefore, has been designed to investigate a crucial step in the forming of these stereotypes, that is, how children develop the network of associative links between the different content domains (appearance, preference, traits and occupations) that make up the gender stereotypes.

Sex-typing and the Structure of Gender Stereotypes

There is a wealth of theoretical and empirical literature dealing with sex-typing. This is the process by which children learn behaviors and acquire characteristics that lead them to conform with societal standards for appropriate gender behavior. These theories fall into two distinct camps; the mechanistic perspective and the organismic perspective. Social learning is currently the most prominent of the mechanistic theories. Researchers such as Mischel (1970) proposed that sex-typed behaviors are acquired through reinforcement for activities appropriate to the child's sex and punishment for behaviours considered inappropriate. As well, children learn to adopt sex-typed behaviors through the modelling of adults of their own gender. Cognitive-developmental theory, proposed by Kohlberg (1966) seeks to explain the sex-typing process from an organismic perspective. This theory proposed that the developmental changes in children's cognitive abilities lead to distinct changes in the way they perceive gender. When children fully comprehend the permanency of their own gender, they

can then seek to acquire behaviors which are appropriate with their sex. Unfortunately these theories shed little light into the initial formation of the stereotypes which influence what individuals believe is appropriate gender behavior.

A different approach to the study of sex role development is to examine the development of the gender stereotype and its precise nature and mechanisms. Through this approach, a better understanding of these processes can be acquired, and a clearer picture of how the stereotypes influence the adoption of sex-typed behaviors can be constructed. The embodiment of this new approach is gender schema theory; and it is from this base that the present study draws its predictions about the process of stereotype acquisition in young children.

From this cognitive perspective, gender stereotypes are defined as organized knowledge structures (called "schemas") consisting of constellations of interrelated beliefs about the appropriate behaviors and characteristics of each sex (Best, Williams, Cloud, Davis, Robertson, Edwards, Giles & Fowles, 1977; Deaux & Lewis, 1984; Del Boca & Ashmore, 1980; Jones, 1982). These schemas provide a guiding framework for the acquisition of information and the interpretation of the social world (Martin, 1985b; Martin & Halverson, 1981). Schemas can also bias thought processes by exaggerating between-group differences, enhancing out-group similarity, and by increasing attention to and memory for information that is consistent with the existing belief system or schema (Jones, 1982; Tajfel, 1981; Taylor & Fiske, 1978; Taylor, Fiske, Etcoff & Ruderman, 1978).

Deaux and Lewis (1984) have expanded the schema construct by describing stereotypes as being multiple-component cognitive structures. They proposed that a stereotype be viewed as a set of associations between gender labels ("male", "female") and gender-related, content-specific beliefs. Beliefs are organized by the content area (e.g., occupations) they represent and are labeled "components" of the stereotype. Each component has a masculine and a feminine version. The associative network of gender stereotypes

includes links between labels and components as well as links within and between different components.

The adult gender stereotype is proposed to contain four main components: role behaviors, occupations, traits, and physical appearance along with the gender labels. Each of the adult gender stereotype components has two versions containing items believed to be strongly associated with the masculine label or the feminine label. For instance, the masculine version of the occupation component contains items such as 'construction worker' and 'plumber' which are strongly associated with the label 'masculine occupations'. Conversely, the feminine version of the occupations component contains items such as 'nurse' and 'housekeeper' which are strongly associated with the label 'feminine occupations'. Each of these components becomes a part of the schema construct by three types of associative links, forming the complex network that is the adult gender stereotype. One type of associative link occurs between gender labels and the contents of the components. These links can also be used to make predictions about an individual knowing only their gender. For example, a person told only that someone is male can use the associative links between the male label and the items in the masculine version of the components to make predictions about the individual's role behavior, occupation, traits and physical appearance (Berndt & Heller, 1986; Deaux & Lewis, 1984).

The second kind of associative link occurs within components. The items that make up a component's contents are strongly linked according to whether they are masculine or feminine and these associations are used to make a variety of predictions about people (Deaux & Lewis, 1984). For example, a person told of an individual interested in cooking (a stereotypic feminine role behavior) is likely to use the within-component links and, even without knowing the gender of the person, predict that the individual also likes to sew (another stereotypic feminine role behavior) rather than do carpentry (a stereotypic masculine role behavior).

The third type of link occurs between components. Deaux and Lewis (1984) have found that adults, to some extent, have developed associative links between items from different components. For example, if individuals are told about someone wearing a dress (a feminine item in the physical appearance component) and they are asked to predict something about the person's role behavior, they are likely to make judgments based on associations between feminine versions of the two components and so predict that the person likes cooking more than carpentry. Thus, these three types of associative links allow individuals to infer much about a person, albeit somewhat erroneously, based on a single piece of information.

The Deaux and Lewis (1984) model outlines three types of associative links forming the schema construct of the adult gender stereotype. At some point in childhood, these complex components and linkages must begin to take shape and develop. The goal of this research was to consider developmental changes in stereotypes by investigating the nature of children's within- and between-component associations.

The Acquisition of Gender Label-Component Links

The schematic processing model of stereotype development (Martin & Halverson, 1981) was used in this study as a basis for explaining and predicting development of the complexity of the gender stereotype, with the Deaux and Lewis component model as an heuristic for the end-point of the acquisition process. The schematic processing model proposes that schemata emerge from children's inherent tendency to categorize, and thus simplify, information in the environment. Because of the wide range of societal beliefs and language about gender, one of the most obvious and basic social categories for the child is gender. Thus, a schema or stereotype is acquired for gender and allows the child to fit most incoming information into one of two simple categories: "for girls" or "for boys" . The gender schema guides information processing by establishing a tendency to perceive the world as easily divided on the basis of gender. By using this schema (called the "superordinate" schema), people, toys, clothes, activities, traits, and jobs are each slotted into the male or

female category, thereby simplifying the storage and retrieval of this information and initiating the formation of the label-component linkage.

Early in the development of children's self concepts, they come to realize that they also fit into a gender category. Once they are able to correctly identify themselves as a boy or a girl, the information they have learned from the superordinate gender schema takes on a new meaning. Items categorized as for their sex are now seen as "for me" and receive positive evaluations while items not categorized for their sex are viewed as "not for me" and receive negative evaluations. The egocentric tendencies of preschoolers also contribute to the stereotype building process as information that applies directly to their own sex is more salient than opposite-sex information (Wood & Martin, 1986). A narrower and far more detailed "own-sex schema" begins to emerge as the child seeks to learn more about things categorized as being "appropriate" for his/her own sex.

The Martin and Halverson (1981) schema theory describes the process by which children gather information about the sex-typing of items through their need to understand more about their own gender and about sex roles in general. Thus, as the child begins to acquire this sex-typed information, strong gender label-component links are formed as the child learns associations such as "trucks are for boys" and "dresses are for girls".

Several studies have documented the existence of links between gender labels and items in the various components in very young children . The appearance component involves learning the sex-typing of various external correlates of gender such as hair length, clothing, size, and shape. Thompson (1975) tested children aged 24, 30, and 36 months using, among a variety of other measures, a gender labeling task where children labelled a picture of a person as male or female on the basis of appearance clues such as clothing and hair length. He found that children as young as 30 months could label the pictures correctly at a level far above chance. Similarly, in a study by Martin and Little (1987), children aged 35 to 60 months were tested for their accuracy of knowledge concerning the sex-typing of various

items of clothing (such as dresses and suits). It was found that even the youngest group had a good understanding of the sex-appropriateness of items of clothing and this understanding increased with age and with their developing knowledge about the nature of gender itself.

The Deaux and Lewis model includes a role behavior component. One way that beliefs about role behaviors are exhibited by children is through their notions of appropriate toy preferences (for this reason, the term "role behaviors" will be replaced with "toy preferences"). The preference component contains beliefs concerning the sex-appropriateness of various toys. For example, one preference belief belonging to this component is that girls like to play with dolls but not trucks and that boys like to play with tool sets but not tea sets. Thompson (1975) found that children as young as 24 months had some ideas about the sex appropriateness of a variety of toys. Blakemore, LaRue, and Olejnik (1978) also found that by the age of two years, children were able to correctly identify the sex-typing of a wide variety of toys. Finally, Martin and Little (1987) found that children between 35 and 60 months were able to sort toys according to whether girls or boys liked to play with them and that this ability improved with age and understanding of gender.

The occupational aspiration component of the gender stereotype consists of beliefs concerning the sex-typing of various occupations and the appropriateness of girls or boys aspiring to have certain occupations. For example, one item in the occupational component might be that it is "appropriate" for a girl to want to be a nurse but it is not appropriate for her to want to be a police officer. Kuhn, Nash, and Brucken (1978) found that children as young as two-and-a-half had some ideas about the sex-typing of occupations and that this knowledge increased with age and gender understanding. Papalia and Tennent (1975) also found that children as young as 38 months realized that many occupations were considered appropriate for one sex and not the other. Similar findings have been reported by O'Keefe and Hyde (1983) who found that the understanding of the sex-typing of occupations was closely linked to the understanding of the stability of gender in the preschool years.

Looft (1971) found that elementary-aged children have highly stereotyped beliefs concerning the sex typing of various occupations. Garrett, Ein, and Tremaine (1977) asked first-, third-, and fifth-grade children about who they thought could do a variety of jobs. They inquired about forty possible occupations and found that children at all age groups had strong beliefs about the sex-typing of certain jobs. These beliefs were particularly evident in the youngest age group. For example, most of the children, especially the younger ones, rated police officer as being a masculine occupation. However, they also found that children's sex-typing of occupations decreased between the ages of 8 and 12, possibly because the children's expanded knowledge about the world and certainty about their own gender identity permitted them to allow exceptions to the rules about sex-typing they earlier had held so strongly. Finally, Ellis and Sayer (1986) found considerable sex-typing of occupational aspirations in Canadian children aged 6 to 14. In this case, however, no increases or decreases in sex-typing with age were found.

The personality trait component contains beliefs about the likelihood and appropriateness of boys and girls possessing certain personality characteristics. For example, it might be believed that a girl cannot be aggressive but that she can be gentle. Williams, Bennett, and Best (1975) studied the sex-typing of traits in kindergarten, grade one, and grade four children. They described a person with a specific trait to the children and asked them to identify whether the description was about a male or a female. The traits were chosen because they had been shown to be generally associated with gender (in pretesting, they were chosen as being associated with one gender by at least 75% of the subjects) and were worded in such a way that all children in the study could understand their meaning. They found that even the kindergarten children had an appreciable knowledge of sex trait stereotypes and that this knowledge increased with age. The children in the lowest age group "correctly" stereotyped a mean of 14 of the list of 24 adjectives. The mean scores increased considerably with the age of the child. These results have been replicated in studies conducted in the United States,

Ireland, and England (Best, Williams, Cloud, Davis, Robertson, Edwards, Giles & Fowles, 1977) as well as in Canada (Edwards & Williams, 1980).

The Acquisition of Within- and Between-Component Links

Unlike the extensive research conducted into the label-component associations, very little work has been done on the acquisition of within- and between-component links. Within-component links are those associations between items within the same component. As stereotypes develop, strong associative links should emerge between items with the same sex-typing label so that masculine objects and activities become associated with other masculine items and feminine items become linked with other feminine items. Thus, an interest in dolls becomes associated with an interest in tea sets and beauty kits and wearing a suit becomes linked with wearing a football shirt and not linked with wearing a dress. To adequately test for such associations, it is necessary to ask children to make judgments about others given component information but not information about the sex of the person. Only one study has used such a method. Wood and Martin (1987) found that children aged 38 to 73 months were able to use gender schemas to make judgments about a sex-unspecified child's toy preference when they were told a toy preference of that child. However, stereotypic responding occurred only when the initial information indicated a preference for toys appropriate to the subject's own sex. Wood and Martin (1987) hypothesized that this is due to the operation of the "own-sex" schema, that is, children learn first and acquire more knowledge about own-sex items. They therefore can make judgments and predictions based on this information more easily than they can make use of information about opposite-sex items.

As children get older and gain more experience, their superordinate gender schema should become more elaborate so that it contains a variety of information about both same-sex and opposite-sex items. With the elaboration of the gender schema for the opposite sex, children should begin to make stereotypic judgments about opposite sex components. Thus,

one goal of this study was to explore whether older children have developed the full range of within-component links. For example, will a boy predict that an individual who really likes dolls also will like hair sets as consistently as he would predict that an individual who likes trucks will like tool sets? The documenting of the acquisition of these within-component links for both same-sex and opposite-sex items was expected to yield important information about when children begin to use their stereotypes in a manner similar to adults.

A second type of cognitive association evident in adult stereotypes is the between-component link. Adults tend to use gender schemas to guide judgments about individuals' interests in one component based on information about their interests in another component (Deaux & Lewis, 1984). For example, an adult told that an individual is a nurse (an item from the feminine version of the occupation component) will tend to predict that this individual is more likely to wear dresses (an item from the feminine version of the physical appearance component) than suits (an item from the masculine version of this component). At some point children also must begin to make these between-component judgments, but no research has yet been conducted to determine when this acquisition occurs. The second goal of this study was to examine the development of between-component links. It was proposed that, as for within-component links, children will begin to make judgments based on own-sex information first because of the influence of the own-sex schema. At a later age, children also will begin to make between-component judgments based on opposite-sex information.

For children to begin making these within- and between-component connections, two basic cognitive developments are required. The first is the emergence of the concept of character identity. For children to make judgments about an individual's behavior or preference across different situations, they must have some understanding that individuals remain relatively consistent in their character and behaviors. As Aboud and Ruble (1986) note, there must be an "expectation of sameness" in character for judgments to be made about single items of information without knowing any other specific information relevant to the

judgment being made. Piaget (1970) proposed that this type of character constancy is developed in the concrete operational stage of cognitive development when the child has a clear understanding of both quality categorization (e.g. by colour) and quantity categorization (e.g. by size) as well as skills allowing for the use of superordinate categories and the ability to make cross-category judgments. These skills have been found to develop between the years seven to ten (Rotenberg, 1982).

A second cognitive process, occurring between the ages of 7 and 10 and related to the ability to form superordinate categories, is the emergence of psychological constructs. These are beliefs about the stable attributes of others which guide judgments about the behavior, preferences, and characteristics of others. Barenboim (1981) proposed that these constructs arise from behavioral comparisons which children make about the individuals around them. Given the saliency of the gender schema, we would expect that children come to compare the behaviors of males and females and eventually develop psychological constructs concerning masculinity and femininity. The emergence of these constructs and the understanding of constancy allow for the operation of between-component connections found in adult stereotypes. That is, if children possess constructs about masculinity and femininity and they assume these are stable across time and situations, they are now equipped to make inferences about an individual's behavior in several components based on information about only one component. For instance, a child could use the information that an individual likes dolls to predict that, due to the feminine nature of this individual's preference, they might also aspire more to a feminine profession such as nursing than to a masculine profession.

Several studies have also indicated that, between the ages of 7 and 10, children begin to use the sex-typing of individuating information (i.e., a particular person's feminine preferences) to make judgments. Before this age, children tend to make judgments based on concrete information (i.e., a gender label) given about a person, regardless of the sex-typing of individuating information (Berndt & Heller, 1985; Martin, 1985a; Zucker, Wilson & Stern,

1985). For example, when younger children are told about a boy who likes to play with dolls, they will tend to make judgments based on the fact that he is a boy, rather than on the fact that he has a feminine interest. Thus, they will predict that he would like masculine toys more than feminine ones. Older children pay more attention to the individuating toy interest information, and are more likely to choose feminine toys for the boy based on his previous interest in dolls. This change in type of information used to make judgments could be due to the increased ability of the older children to process multiple kinds of information simultaneously. Younger children may use the concrete gender labels more readily because they are simple, highly salient, one-item pieces of information they can easily process to make predictions (Wood & Martin, 1987). It appears that it is not until the middle-childhood years that children develop the ability to process many pieces of information at once and to use abstract psychological constructs such as masculinity and femininity. It would appear that the age to look for the emergence of between- and within-component links found in adult gender stereotypes would be between the ages of 6 and 10.

In summary, although little evidence exists concerning the development of within- and between-component links in stereotypes, developmental changes in associative networks are likely to be found. It appears that, at least within components, children tend to learn associations relevant to their own sex prior to learning associations relevant to the other sex. Four year olds have within-component associations relevant to their own sex (Wood & Martin, 1987). By the age of 6, we would expect that they would have learned the within-component associations also relevant to the other sex. A similar pattern of learning first about same sex associations may be found when children are asked to make between-component judgments. No direct evidence exists concerning whether the associations within- and between-component judgments differ. We might assume, however, that within-component associations would be learned prior to associations between components because it is a simpler cognitive task to learn associations within a category than

between categories.

The Present Study

This study was designed to investigate the development of the gender-related associations in 6-, 8- and 10-year-old children. Children's ability to use within- and between-component links was assessed by describing to each participant a child who is interested in a masculine or feminine item (cue item) from one of the components and asking the children to make judgments about how much that child would like other masculine and feminine items from the same and from different components (target items).

The first hypothesis was that because the children were all at least 6 years old, they should have fully developed within-component links that allow them to make inferences about individuals' preferences, appearance, traits, and occupational aspirations given other information in the same category. Specifically, children were expected make stereotypic judgments about both masculine and feminine versions of each component. Thus, they should give higher preference ratings to target items with the same sex-typing as the cue item (stereotype-consistent target items) than to target items with the opposite sex-typing to the cue item (stereotype-inconsistent target items). In other words, children should predict that someone with one masculine interest will have other masculine interests rather than feminine ones. It was predicted that within-component links would be present before between-component links because it is an easier and less complex cognitive process to draw associations between items in the same category than to understand the possible links between items in different categories.

The second hypothesis was that the ability to make same-sex between-component inferences appears before the ability to make opposite-sex inferences due to the operation of the own-sex schema. That is, children would be more likely to make stereotyped judgments when the cue item was an own-sex relevant characteristic than when the cue item was an opposite-sex relevant characteristic. Age differences in the use of between-component links

were expected. The older children were expected to be able to use these links in making stereotyped judgments about both own-sex and opposite-sex cue item characteristics. Thus, older children would give higher preference ratings to stereotype-consistent target items from another component than the cue item regardless of whether this cue item had the same or opposite sex-typing as themselves. Younger children were expected only to make these stereotyped between-component judgments when the cue item was an own-sex relevant characteristic. Summarized briefly, these hypotheses are:

1. CHILDREN FROM ALL THREE AGE GROUPS WILL RATE STEREOTYPE CONSISTENT TARGET ITEMS HIGHER THAN STEREOTYPE INCONSISTENT TARGET ITEMS WHEN THE CUE ITEM IS FROM THE SAME COMPONENT AS THE TARGET ITEM.

2. WHEN THE CUE ITEM HAS AN OPPOSITE SEX TYPING TO THE CHILD'S OWN SEX AND IS FROM A DIFFERENT COMPONENT THAN THE TARGET ITEM, ONLY 8- AND 10-YEAR-OLD CHILDREN WILL RATE STEREOTYPE CONSISTENT TARGET ITEMS HIGHER THAN STEREOTYPE INCONSISTENT ITEMS. CHILDREN FROM ALL AGE GROUPS WILL MAKE THESE BETWEEN-COMPONENT STEREOTYPED JUDGMENTS WHEN GIVEN AN OWN-SEX CUE ITEM.

Method

Subjects

Seventy-six children (38 boys and 38 girls) attending after-school care, Sunday schools, and soccer clubs in the Greater Vancouver area were interviewed for this study. Children from three age groups (6, 8 and 10 years) were tested. The mean age of the 6-year-old group was 77 months, (S.D.=3.9 months); the mean age of the 8-year-old group was 103 months, (S.D.=3.6 months) and the mean age of the 10-year-old group was 124 months, (S.D.=4.3 months).

The majority (91%) of the sample were Caucasian. The largest proportion of the children came from two-parent families (50%). Children from single-parent mother-headed families made up 33% of the sample, while the remainder were members of father-headed or joint-custody families. In families where the father lived in the home, 71% of these men had professional careers and the remainder worked in non-professional jobs. In families where the mother lived in the home, 40% of these women had professional careers, 43% had non-professional jobs and 11% worked in the home. Most of the children (83%) came from small families with one or no siblings. The average number of hours of television watched per week by children in the study was 9.4 hours (S.D.=7.4 hours).

Materials

To develop the preference judgment questions, three masculine and three feminine items were chosen to represent each component (traits, clothing, occupational aspirations and toy preferences). For an item to be selected, it had to be demonstrated as being sex-typed by at least 75% of the children in previous studies (see Appendix A).

Children were asked to make their judgments using a three-point smiley-face scale. The smiley-face scale is a three-point scale using three faces drawn on white 7.5cm by 7.5cm cards. The frowning face indicates not liking something, the neutral face indicates only liking something a little and the smiling face indicates liking something a lot. The children simply

pointed to the face they felt represented how much the child in the story would like the target item. Recent studies have demonstrated that children as young as 3-years-old have no problems using and understanding this scale (Martin & Little, 1987; Wood & Martin, 1987).

Information concerning the child's grade in school, number of siblings, family type, parent's occupation and number of hours of television watched was obtained via a parent questionnaire which was distributed with the parent consent forms (see Appendix B).

Procedure

Five female undergraduate research assistants were involved in interviewing the children for this study. Before data collection began, each assistant was trained in techniques of interviewing children. They were each told the importance of making the children feel comfortable with the interview and the necessity to smile, modulate the voice, and make eye contact with the child. The assistants were also thoroughly trained in the procedure of the interview. They were given standard interview formats and practiced interviewing at least three adults and children before they went into the field. The researcher watched each assistant give the interview and made suggestions in order to maintain as much uniformity in interview techniques as possible. The research assistants were not told the topic or the hypotheses of the study until after all data was collected.

Children were tested individually by one of the experimenters. The testing was conducted in the child's home, at the daycare, or school facility in a quiet area away from other children. Before data collection began, children were trained on the smiley-face scale using foods they like a lot, a little, and not-at-all as examples of preferences. They were shown which face represented the appropriate preference for the food. The children were then tested by asking them to point, in turn, to the face that indicates liking something a lot, a little, or not-at-all to ensure that they understood how to use the scale. This pre-testing procedure usually took less than three minutes.

For both within- and between-component conditions, questioning followed a set

format. The children were told about a child of unspecified sex who likes an item (cue item) from one of the components. Children were then asked to rate on the smiley-face scale how much the child they heard about would like a masculine and a feminine item (target item) from the same component (within-component condition) and how much the child would like a masculine and a feminine target item from each of the other three components (between-component condition). If a child indicated that he/she did not understand the meaning of a target item, the experimenter would give them a standard definition which the child could understand (see Appendix A for these definitions).

For the within-component condition, one masculine and one feminine cue item from each component was used. For each cue, ratings were made for one masculine and one feminine target item from the same component as each cue item. Each of the four components was tested, resulting in a total of 16 questions asked for this condition.

For the between-component condition, the procedure was the same as for the within-component condition except that the target item was from a different component than the cue item. For each masculine and feminine cue item, the child was asked to make preference ratings for a masculine and a feminine item from each component. This resulted in a total of 48 questions being asked for this condition.

Three pre-determined random orders of within- and between-component target items and cue items were constructed. Each order of the questionnaire was given to at least 24 children (at least four males and four females from each of the three age groups). Appendix B demonstrates the form that the questioning took for each component. In total, the testing took no longer than 15 minutes per child.

Scoring

The children's preference ratings for the target item were recorded. If the child pointed to a frowning face, this response was given a score of "1", a neutral face response was given a score of "2", and a happy face response was given a score of "3".

Results

Judgment-Type Effects

A repeated measures analysis of variance was used to examine whether within- and between-component judgments differed significantly. There were two between-subject factors (sex and age: 6, 8, and 10 years) and three within-subject factors (judgment-type: within- and between-component judgments; cue-type: same and opposite sex-typing to the subject's sex; and target-type; consistent and inconsistent with the sex typing of the cue item). The dependent measures were the preference ratings of the target items. The analysis revealed that there was no mean difference between within-component and between-component judgments, that is, the main effect for judgment-type, $F(2,70)=.89$, $p=.35$, was not significant. This analysis suggests that the patterns of responses for the two judgments were very similar. However, due to differing predictions for the two judgment types and to the complexity of the data, further analyses were conducted where each judgment type was analyzed separately to facilitate the interpretation of the results.

Within-Component Judgments. Children's within-component preference judgments were analyzed using a repeated measures analysis of variance. There were two between-subject factors, (sex and age: 6, 8, and 10 years) and three within-subject factors (cue-type: same and opposite sex typing to the subject; target-type: consistent and inconsistent with the sex-typing of the cue item; and component-type: clothing, occupation, toy preference, and traits). The dependent measure was the preference rating given to the target items.

As predicted in the first hypothesis, a significant main effect for target-type was found, $F(1,70)=245.20$, $p<.001$. Children predicted that others would like target items consistent with the sex typing of the cue item ($M=2.21$) more than target items that were inconsistent with the sex typing of the cue items ($M=1.58$). That is, when children made predictions based on masculine cue items, they gave significantly higher ratings on masculine target items than on feminine target items. When children made predictions based on feminine

cue items, they gave significantly higher ratings on feminine target items than on masculine target items. A significant main effect for age, $F(2,70)=4.00$ $p=.023$, also was found. Newman-Keuls post hoc analysis revealed that 6-year-old children tended to rate all items higher ($M=2.02$) than both the 8-year-old children ($M=1.83$, $p<.05$) and the 10-year-old children ($M=1.84$, $p<.05$). However, this age effect and the target-type effect were subsumed by a two-way interaction between age and target-type, $F(2,70)=17.37$, $p<.001$,
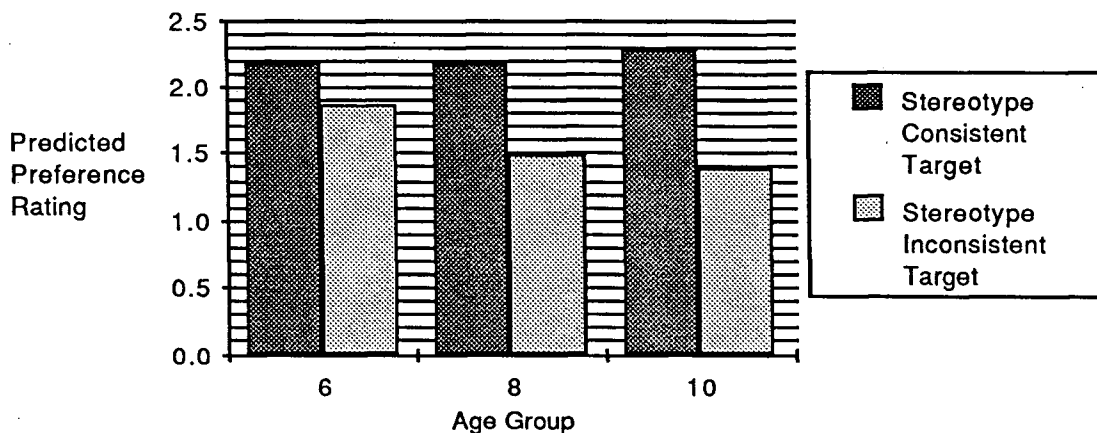
FIGURE 1: Children's Within-Component Predicted Preference Ratings as a Function of Age and Consistency of Target Information

as can be seen in Figure 1. Simple effects analyses showed that the preference ratings of consistent items were higher than those for inconsistent target items within each age group (6-year-old= $F(1,33)=29.39$, $p<.001$; 8-year-old= $F(1,33)=151.25$, $p<.001$; 10-year-old= $F(1,33)=180.58$, $p<.001$). A simple effects analysis using only the consistent target type measures revealed that the difference between age groups in the preference ratings for consistent items was not significant, $F(2,70)=.77$, $p=.47$. However, the same analysis using only the inconsistent target type measures revealed that the predicted preference ratings of inconsistent target items did significantly decrease with age, $F(2,70)=15.46$, $p<.001$. A Newman-Keuls analysis showed that 6-year-olds gave higher preference ratings to inconsistent items than did the 8-year-olds ($p<.01$) or the 10-year-olds ($p<.01$). As children

get older, they become more negative in their evaluations of items which do not fit the stereotype that has cued by the target information. This finding indicates that there is a developmental change in children's use of stereotypes for making judgments of other's preferences.

A significant two-way interaction was found between cue-type and target-type, $\underline{F}(1,70)=11.15$, $\underline{p}<.001$. As illustrated in Figure 2, when children's predictions were based on cue items with the same-sex typing as themselves (e.g., boys presented with a masculine cue item; and girls presented with a feminine cue item) the difference in the rating of consistent ($\underline{M}=2.27$) versus inconsistent target items ($\underline{M}=2.51$) was larger than if the prediction was based on an opposite sex-type cue item (consistent $\underline{M}=2.15$; inconsistent $\underline{M}=1.66$).
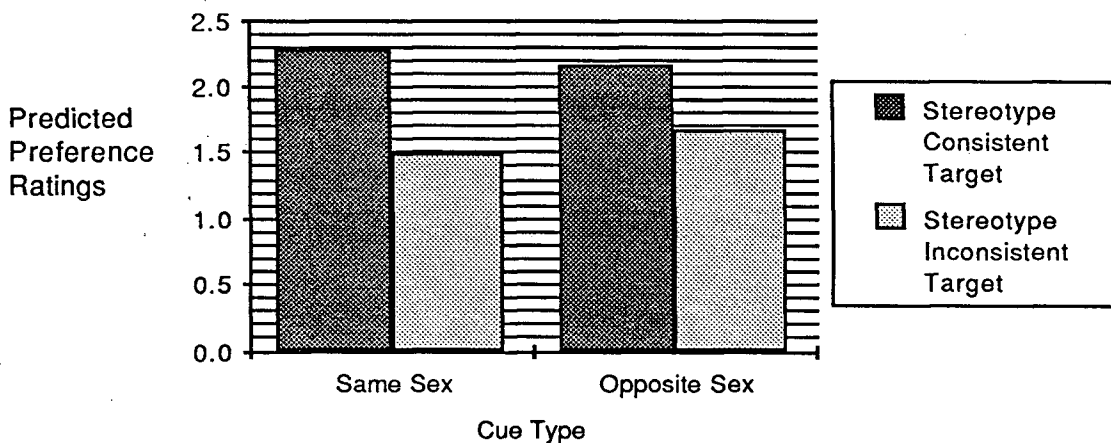

FIGURE 2: Children's Within-Component Predicted Preference Ratings as a Function of Cue Information and Consistency of Target Information

Simple effects analysis demonstrated that there was a significant main effect for target type both when the children were presented with a same-sex cue item, $\underline{F}(1,70)= 251.11$, $\underline{p}<.001$; and when the children were presented with an opposite-sex cue item, $\underline{F}(1,70)=50.6$, $\underline{p}<.001$. However, simple effects analysis using only the consistent target type items revealed that the difference between same and opposite sex cue type preference ratings for consistent target items was significant , $\underline{F}(1,70)=3.81$, $\underline{p}=.05$. As well, simple effects analysis using only the

inconsistent target type measures revealed that the difference between same and opposite cue type preference ratings for inconsistent target items was also significant, $F(1,70)=9.45$, $p=.003$. Thus, when given a same sex cue item, consistent target items are rated significantly higher and inconsistent target items are rated significantly lower than when an opposite sex cue item is presented to the child. These results indicate that stereotyping was stronger when the judgments were made about a child with the same sex-typed preferences as the subject.

An unpredicted significant main effect also was found for component-type, $F(3,210)=32.54$, $p<.001$. Newman-Keuls comparisons show that children tended to give higher ratings to any target items cued by clothing ($M=2.06$), traits ($M=2.08$) and toys ($M=1.88$) than to target items cued by occupations ($M=1.57$, p for all three comparisons<.01). As well, this effect was subsumed by a significant two-way interaction between target type and component type, $F(3,210)=36.89$, $p<.001$. As graphed in Figure 3, post hoc mean comparisons revealed that the degree of difference in preference ratings
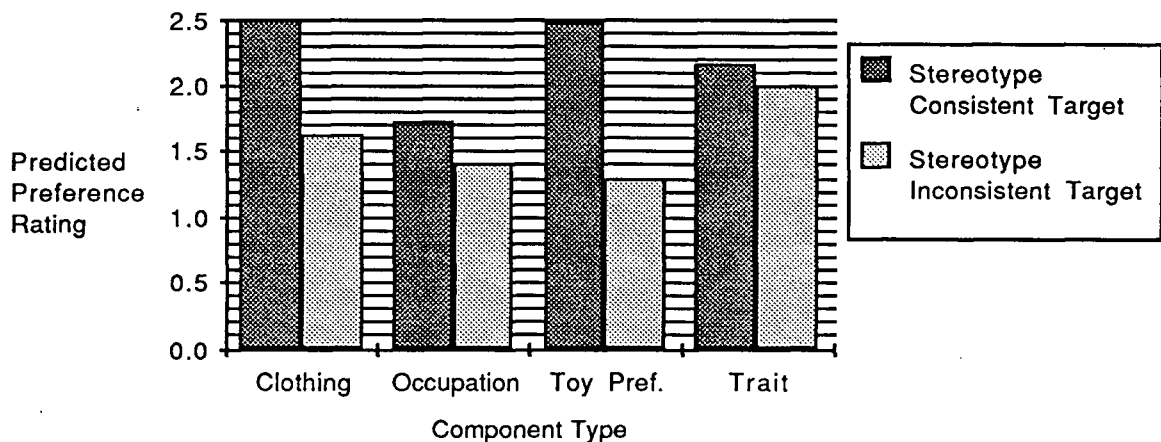

FIGURE 3: Children's Within-Component Predicted Preference Ratings as a Function of Cue Component Type and Consistency of Target Information

between consistent and inconsistent differed depending on component type. However, the difference between predicted preference ratings of consistent and inconsistent targets was significant for the clothing, occupation and preference components with consistent target items receiving higher ratings than inconsistent target items (clothing,

$F(1,70)=102.12, p<.001$; occupations, $F(1,70)=26.04$, $p<.001$; preference, $F(1,70)=210.46$, $p<.001$). This same pattern of responding was found for the trait component, with the difference between consistent and inconsistent target items ratings approaching significance, $F(1,70)=2.96$, $p=.09$. Although components differed somewhat, children were able to make stereotyped judgments given a cue from any of the components.

Between-Component Judgments. Children's between-component preference judgments were analyzed by means of a repeated measures analysis of variance. There were two between-subject factors (sex and age: 6, 8, and 10 years) and three within-subject factors (cue-type: same and opposite sex-typing to the subject; target-type (consistent and inconsistent with cue item sex-typing) and component type (clothing, occupation, toy preference and traits). The dependent measure was the preference ratings given to the target items.

As predicted in the second hypothesis, a significant main effect for target type was found, $F(1,70)=269.01$, $p<.001$. Again, stereotype consistent items ($M=2.17$) received higher preference ratings than inconsistent items ($M=1.58$) revealing that children did use gender stereotypes to make judgments about the interests of others. A significant main effect for age was also found, $F(2,70)=6.15$, $p=.003$. Newman-Keuls post-hoc analysis showed that 6-year-old children tended to give higher preference ratings overall ($M=1.99$) than the 8-year-old ($M=1.80$, $p<.05$) or the 10-year-old ($M=1.84$, $p<.05$) age groups. As well, stereotyping increased with age. A significant two-way interaction of target type and age was found, $F(2,70)=11.80$, $p<.001$, as can be seen in Figure 4. Simple effects analyses showed that the preference ratings of consistent items were higher than those for inconsistent target items within each age group (6-year-old= $F(1,33)=27.70$, $p<.001$; 8-year-old= $F(1,33)=112.31$, $p<.001$; 10-year-old= $F(1,33)=204.58$, $p<.001$). A simple effects analysis using only the consistent target type measures revealed that the difference between age groups in the preference ratings for consistent items was not significant, $F(2,70)=.55$, $p=.57$. However, the same analysis using only the inconsistent target type measures revealed that the
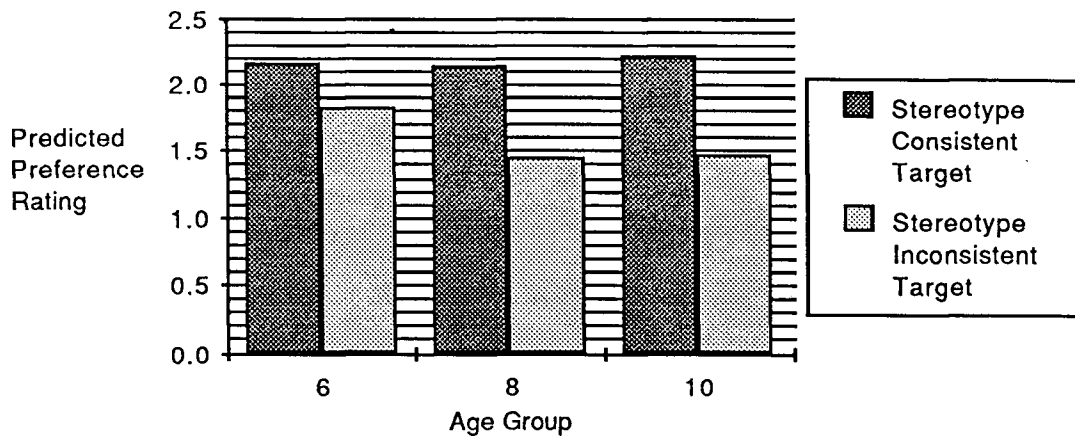
FIGURE 4: Children's Between-Component Predicted Preference Ratings as a Function of Age and Consistency of Target Information

predicted preference ratings of inconsistent target items did significantly decrease with age, $F(2,70)=14.41$, $p<.001$. A Newman-Keuls analysis showed that 6-year-olds gave higher preference ratings to inconsistent items than did the 8-year-olds ($p<.01$) or the 10-year-olds ($p<.01$). As with the within-component judgments, the increase in stereotyping was due to a significant decrease in the preference ratings of inconsistent target items between the 6-year-old group and the two older age groups.

A significant two-way interaction between cue type and target type, $F(2,70)=20.72$, $p<.001$, also was found. As illustrated in Figure 5, when children's predictions were based
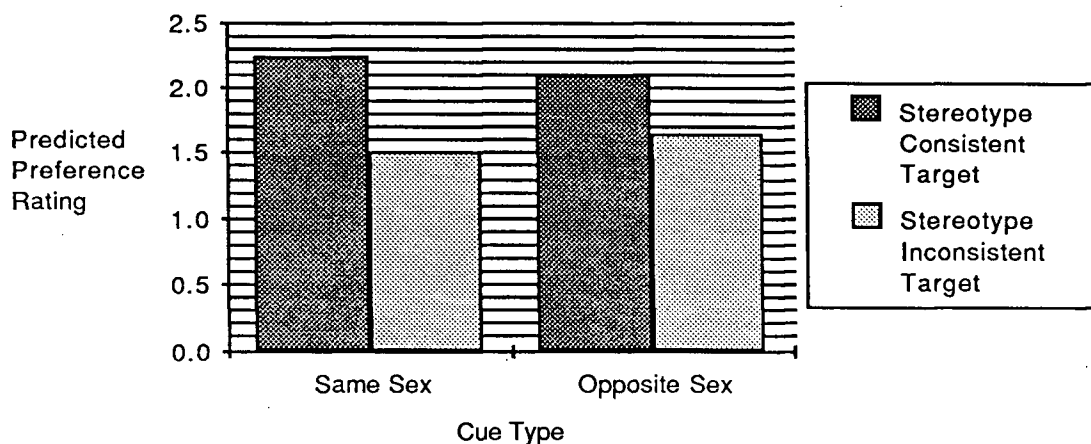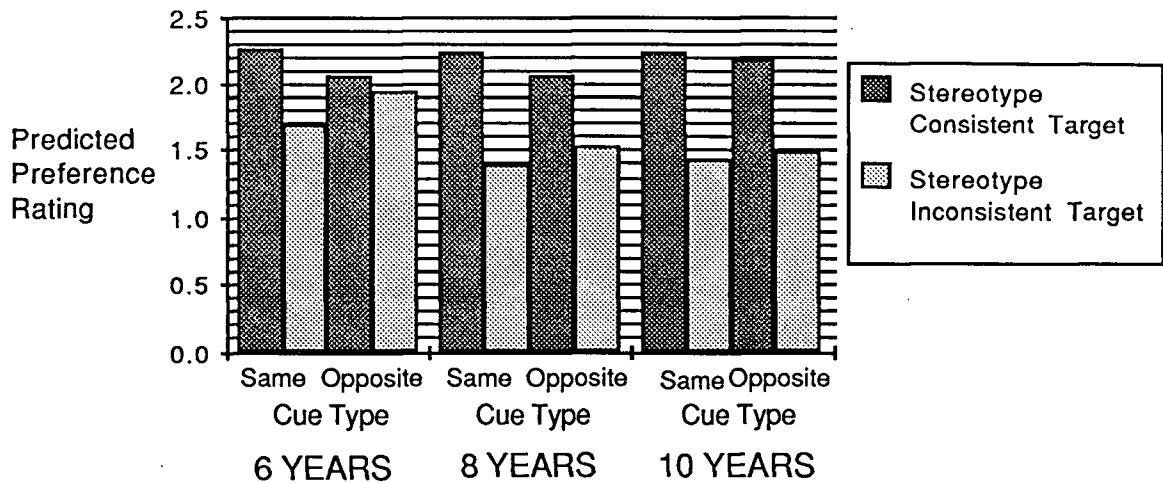

FIGURE 5: Children's Between-Component Predicted Preference Ratings as a Function of Cue Information and Consistency of Target Information

23

on cue items with the same-sex typing as themselves (e.g., boys presented with a masculine cue item and girls presented with a feminine cue item) the difference in the rating of consistent versus inconsistent target items was larger than if the prediction was based on an opposite sex-type cue item. Simple effects analysis demonstrated that there was a significant main effect for target type both when the children were presented with a same-sex cue item, $F(1,70)= 251.11$, $p<.001$; and when the children were presented with an opposite-sex cue item, $F(1,70)=50.6$, $p<.001$. However, simple effects analysis using only the consistent target type items revealed that the difference between same- and opposite-sex cue type preference ratings for consistent target items was significant, $F(1,70)=3.81$, $p=.05$. As well, simple effects analysis using only the inconsistent target type items revealed that the difference between same- and opposite-sex cue type preference ratings for inconsistent target items was also significant, $F(1,70)=9.45$, $p=.003$. Thus, when given a same-sex cue item, consistent target items are rated significantly higher and inconsistent target items are rated significantly lower than when an opposite sex cue item is presented to the child. These results indicate that stereotyping was stronger when the judgments were made about a child with the same sex-typed preferences as the subject.

From the second hypothesis, we may have expected to find a significant interaction among age, target type and cue type. Although it did not reach significance, $F(2,70)=2.26$, $p=.11$, the predicted age effect in the ability to make between-component stereotyped judgments was found (illustrated in Figure 6). Simple effects analysis showed that children in the 8- and 10-year-old age groups made stereotyped judgments when given both a same-sex (8-year-old=$F(1,23)=188.09$, $p<.001$; 10-year-old=$F(1,23)=123.32$, $p<.001$) and an opposite-sex cue item (8-year-old=$F(1,23)=35.35$, $p<.001$; 10-year-old=$F(1,23)=135.32$, $p<.001$). Six-year-old children made stereotyped judgments only when given a same-sex cue item and did not make stereotyped judgments when given an

opposite-sex cue item. That is, when 6-year-olds were given a same-sex cue item,

FIGURE 6:   Children's Between-Component Predicted
Preference Ratings as a Function of Age, Cue Information
and Consistency of Target Information

they gave stereotype consistent target items significantly higher preference ratings than they did for stereotype inconsistent target items ($F(1,23)=62.53$, $p<.001$). However, when these children were given an opposite-sex cue item, there was no significant difference between between preference ratings for consistent versus inconsistent target items ($F(1,23)=1.03$, $p=.32$).

An unexpected significant two-way interaction between sex and cue type was found, $F(1,70)=50.32$, $p<.001$. Simple effects anaysis showed that boys tended to give higher preference ratings when presented with an opposite-sex cue ($M=1.95$) than with a same-sex cue ($M=1.77$), $F(1,33)=29.12$, $p<.001$. Girls showed the reverse pattern and gave higher ratings when presented with an own-sex cue ($M=1.96$) than with an opposite-sex cue ($M=1.81$), $F(1,33)=21.68$, $p<.001$. This finding indicates that feminine items tended to receive higher preference ratings than masculine items for the between-component judgments.

The sex by cue-type interaction was subsumed by a three-way interaction among sex, cue type, and target type, $F(1,70)=7.76$, $p<.007$, as shown in Figure 7. Simple
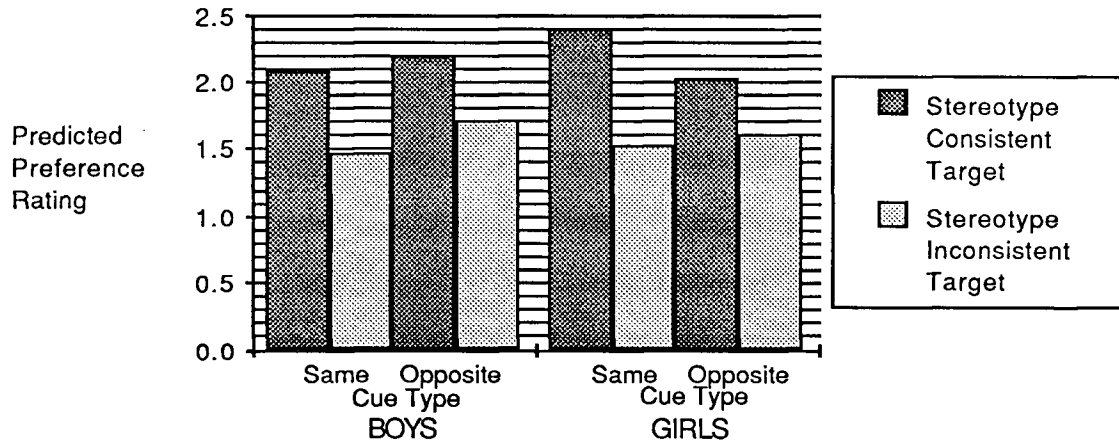
FIGURE 7: Children's Between-Component Predicted Preference Ratings as a Function of Sex, Cue Information and Consistency of Target Information

effects analysis showed that the cue-type by target-type interaction was significant for girls, $F(1,33)=31.99$, $p<.001$; but not for boys, $F(1,33)=1.37$, $p=.26$. Similar analysis only using the girl's responses showed that consistent items were rated higher than inconsistent items for both same- ($F(1,33)=201.93$, $p<.001$) and opposite-sex cue items ($F(1,33)=27.16$, $p<.001$). However, simple effects analysis using girls' responses only on consistent items showed a significant difference between consistent target item ratings for same- and opposite sex cue items, $F(1,37)=55.85$, $p<.001$; but this cue type effect was not significant for inconsistent target item ratings, $F(1,37)=2.00$, $p<.17$). This finding demonstrates that girls tended to rate feminine consistent target items more highly than masculine consistent target item, however, ratings of inconsistent items were not differentiated by the sex-typing of the item. Simple effects analysis of boys' preference ratings showed a significant cue type effect for both consistent target items, $F(1,33)=3.83$, $p=.05$, and inconsistent target items, $F(1,33)=19.60$, $p<.001$).

Illustrated in Figure 8 is another unexpected: a significant interaction among sex, cue type, and component type, $F(3,210)=55.93$, $p<.001$. For boys, feminine items (opposite-sex cue type) received higher predicted preference ratings than the masculine items (same-sex cue typed) in the clothing and toy preference components (clothing=$F(1,33)=68.00$, $p<.001$; toy

preference=$\underline{F}$(1,33)=67.30, $\underline{p}$<.001). Masculine items in the trait component received higher
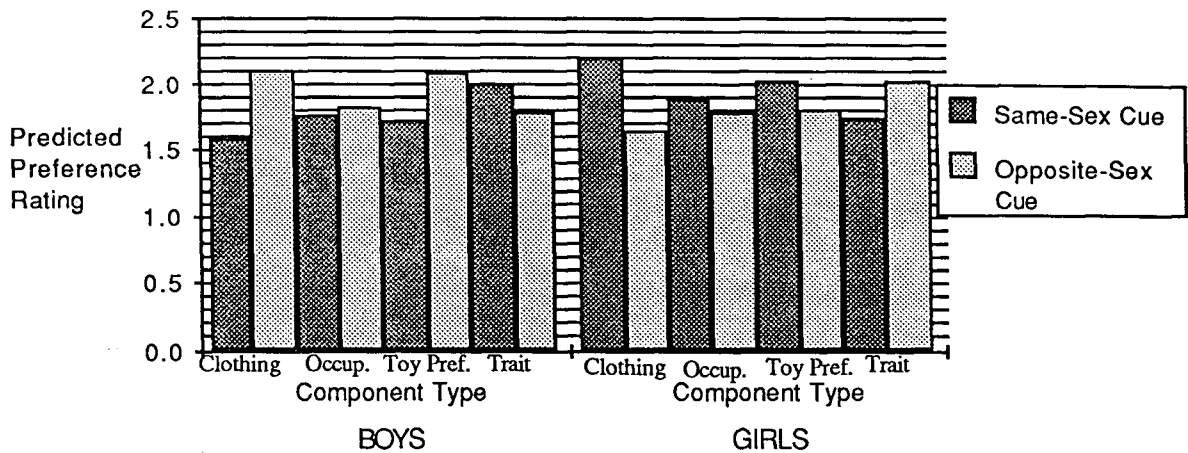
FIGURE 8: Children's Between-Component Predicted Preference Ratings as a Function of Sex, Cue Component Type and Cue Information

predicted preference ratings than the feminine items, $\underline{F}$(1,33)=7.76, $\underline{p}$<.01. However, in the occupations component, there was no significant difference between the ratings of masculine and feminine items, $\underline{F}$(1,33)=1.08, $\underline{p}$=.30. Girls demonstrated a similar pattern of responding, rating feminine items higher than masculine items in the clothing and preference components, (clothing=$\underline{F}$(1,37)=98.06, $\underline{p}$<.001; preferences=$\underline{F}$(1,37)=14.16, $\underline{p}$<.001). Masculine items were rated higher than feminine items in the trait component, $\underline{F}$(1,37)=16.86, $\underline{p}$<.001; and there was no significant difference between the ratings of masculine and feminine items for the occupations component, $\underline{F}$(1,37)=3.11, $\underline{p}$=.086. It is impossible to tell from these results if this is due to the choice of items or, rather, due to a pattern of stereotyping in children of this age group.

Finally, a two-way interaction between target type and component type was found, $\underline{F}$(1,70)=20.72, $\underline{p}$<.001, shown in Figure 9. Simple effects analysis showed that the ratings of consistent target items were significantly higher than the ratings of inconsistent items in each component (clothing=$\underline{F}$(1,70)=112.85, $\underline{p}$<.001; occupations=$\underline{F}$(1,70)=116.30, $\underline{p}$<.001; preferences=$\underline{F}$(1,70)=192.42, $\underline{p}$<.001; traits=$\underline{F}$(1,70)=118.00, $\underline{p}$<.001). When only

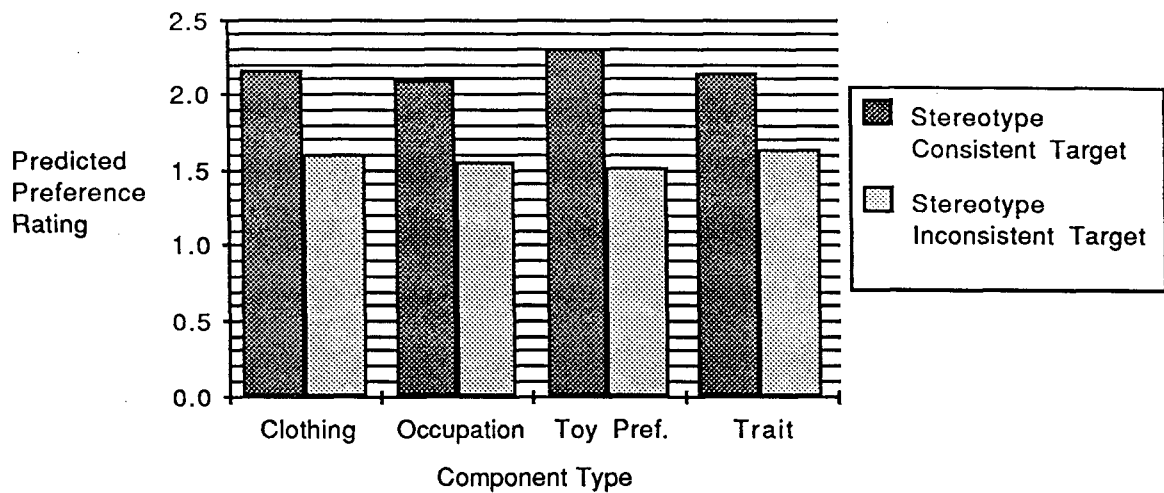consistent target items were compared using simple effects analysis, a significant main effect

FIGURE 9: Children's Between-Component Predicted Preference Ratings as a Function of Cue Component Type and Consistency of Target Information

for component type was found, $F(3,210)=6.61$, $p<.001$. Newman-Keuls analysis showed that the ratings of consistent toy preference ratings was significantly higher than the ratings of consistent occupation items ($p<.05$). There were no other significant differences in the ratings of consistent target items across components. When only inconsistent target items were compared using simple effects analysis, a significant main effect for component type was found, $F(3,210)=2.84$, $p=.04$. Newman-Keuls analysis showed that the ratings of inconsistent trait items were significantly higher than the ratings of inconsistent toy preference items ($p<.05$). Once again, there were no other significant differences in the ratings of inconsistent target items across components.

Discussion

This study was designed to investigate the development of the complex associations that constitute gender stereotypes. To explore these associations, a component model of stereotypes was used. In this model, gender stereotypes are viewed as networks of associations between gender labels and gender-related, content-specific beliefs. These beliefs are organized into stereotype components by content area. The gender stereotypes of adults not only have associative links between a gender label and component items but also between items from the same component and from different components (Deaux & Lewis, 1984). Most studies of the development of gender stereotypes in children have focused on the acquisition of links from gender label to component items. Such studies demonstrate that by the age of 6, children are very good at labelling whether certain items, preferences or activities are "for boys" or "for girls" (Kuhn et al. 1978; Martin & Little, 1986; Urberg, 1982; Williams et al. 1973). Unfortunately, few studies have examined the development of the other types of associative links, yet, to have a complete picture of stereotype development, more knowledge about the operation of these complex associative links and their acquisition process is required. For example, when do children develop the within-component associative links which allow them to use the gender stereotype to make predictions about a child's interest in trucks knowing that this child likes tool kits? Similarly, when do children acquire the more complex between-component associative links which enable them to make stereotyped predictions about a child's interest in being a nurse knowing only that the child likes to play with dolls?

The goal of this research was to answer these questions and gain a greater understanding of the growing complexity of children's stereotypes. This was accomplished by asking 6-, 8-, and 10-year-olds to make within- and between-component predictions about the preferences of other children. For each target item, the children in the study were not told the child's gender and were given only an item of information about one of the child's other

interests. This cue information item was either from the same or from a different content component as the item about which they were asked to make preference predictions. The results demonstrated that the nature of children's stereotypes changes with age; they become more elaborate and more types of associations develop both within- and between-components. With the acquisition of these associative links, the stereotype develops into a highly complex and powerful tool used in the everyday process of making interpersonal judgments.

Even the youngest children in the study had developed the within-component associative links which allowed them to use the gender stereotype to predict preferences when given only information about the child's interest in an item from the same component. There appears to be a developmental progression in learning to make within-component associations. Wood and Martin (1987) found that children between the ages of 3 and 5 could make within-component judgments only when they were cued with information relevant to their own sex but could not make these judgments when they were cued with information relevant to the opposite sex. In the present study, 6-year-old children demonstrated the ability to make these within-component judgments even when given information relevant to the opposite sex. Thus, by the age of 6, children have a fairly complex gender stereotype consisting of strong associative links between gender labels and items in many components as well as within-component links between items in the same components.

These firmly established within-component connections mark the acquisition of a more complex schema which guides the processing of social information. Previous studies have shown that younger children rely heavily on concrete categories (for example, "boy" or "girl") to process social information even in situations where they have been told other, more personal information (e.g., an interest) about someone (Wood & Martin, 1987). Very young children may not have the ability to use more abstract information such as preferences or personality characteristics to make decisions about other individuals. The present study has demonstrated that after the age of 6, children easily use information that is more abstract than

gender labels to make decisions about other individuals. Furthermore, they can use single pieces of information from a variety of components (clothing, occupations, toy preferences and personality traits) to make predictions about the other interests and characteristics (within the same component) of a child of unspecified gender.

Developing associative links between different components appears to be more difficult than developing within-component associations. Again, the pattern is that children first learn the associations relevant to their own sex and later acquire the associations relevant to the other sex. For instance, the present results demonstrated that children as young as six years have the ability to make judgments about another child's interest in an item from one component based on information about the target child's interest in an item from another component. However, the 6-year-olds in this study only made these between-component judgments when presented with a cue item relevant to their own sex. Children in the older age groups could make between-component judgments with ease given either an item relevant to their own sex or relevant to the opposite-sex For example, when a 10-year-old boy was told about a child who liked to play with dolls (a feminine cue item), he would predict that this child would wear dresses (a feminine target item). By contrast, a 6-year-old boy would have difficulty with this prediction, but would have no problem predicting that a child who likes to play with trucks (a masculine cue item) would be likely to wear a football shirt and trousers (a masculine target item).

These findings reveal several interesting aspects of the acquisition process for gender stereotypes. First, the multi-component cognitive structures, envisioned by Deaux and Lewis (1984) as the model of adult stereotyping, begin to take shape early in childhood. By the age of eight, children are using complex gender schemas to guide social judgments in much the same way as research has shown that adults do (Deaux & Lewis, 1981). It appears that 8-year-old children have developed an "expectation of sameness" for an individual's characteristics (Aboud & Ruble, 1986). Specifically, their willingness to predict on the basis

of limited information indicates that they believe individuals remain relatively consistent in their character and behaviors. If this understanding were not present, the children would not be able to make judgments about an individual's interests across many components with the ease and consistency demonstrated by the older children. The fact that the younger children could not make between-component judgments when given cue information relative to the opposite sex suggests that perhaps this understanding of character constancy is developed for self and own-sex before it is developed for the opposite-sex.

Second, the complete acquisition of between-component links found in the 8- and 10-year-olds may mark the full emergence of the psychological constructs of masculinity and femininity. When given a masculine or a feminine cue, children pay close attention to the sex typing of the item and use the constructs they have developed about either masculinity or femininity to guide their judgments. The cue item makes these constructs very salient to the child and brings a broad range of associations with masculine and feminine items readily to mind. Thus, children can use the over-riding construct of masculinity or femininity to make a wide variety of decisions about an individual's characteristics and preferences once they have decided into which of the two sex-typing constructs that individual best fits. It appears that younger children lack the over-riding sex-typing construct for the opposite sex which would allow them to make between-component judgments given information relevant to the opposite sex.

Third, the findings of this study indicate that the own-sex associations develop before the opposite-sex associations. This provides support for the schematic processing model of stereotype development (Martin & Halverson, 1981). This theory argues that the operation of the "own-sex" schema, which contains information relating specifically to the child's sex, leads children to develop and acquire more knowledge about own-sex items. The theory proposes that because children are interested in things they believe relate to them, the own-sex schema develops rapidly and potentially may become more complex than the superordinate

gender-stereotyping schema. The present results provide evidence for this proposition. First, the 3- to 5-year-old children are unable to make within-component judgments when given information relevant to the opposite sex (Wood & Martin, 1987) but all of the 6- to 10-year-old children in the present study had acquired these within-component opposite-sex associative links. This finding suggests that, within components, opposite-sex links develop later than own-sex links. Second, only the 8- and 10-year-old children in the present study had acquired the complex connections required to make between-component stereotyped ratings for opposite-sex target items. The 6-year-olds had only acquired these between component associative links for own-sex items. This finding suggests that, between components, opposite sex links develop later than own sex links. Third, stereotyping effects were stronger for both within- and between-component judgments when cued by an own-sex item than when cued by an opposite-sex item. Regardless of the kind of judgments involved, children appear to have stronger associative links for own sex information than for opposite sex information.

The early acquisition of such a powerful stereotyping ability supports cognitive views of stereotype development such as the schematic processing model (Martin & Halverson, 1981). The strength of the gender schema, and its efficiency in guiding the processing of social information allow the child to acquire rapidly a large knowledge base about masculine and feminine interests and characteristics. Once the child develops the cognitive capabilities to classify this information on more than one level, the component associations are acquired easily and the schema immediately becomes more complex and more efficient in the processing of information in the social world.

It is difficult to place findings such as those presented by this study within the realm of social learning theory. Children are making such a wide range of judgments using information in a variety of combinations that it is difficult to conceive of how they could have encountered all the same situations in the social world, learned from them and remembered

them for immediate recall at a later date. Indeed, it was noted by several of the experimenters how quickly the children in this study were able to make the prediction ratings. The children were not giving themselves enough time to recall a past situation in which they had encountered the cue information. Rather, the children appeared to be using another decision-making process which provided a ready framework allowing them to make very quick judgments with great confidence. Schemas for gender, as outlined by Martin and Halverson (1981), would provide the highly developed and readily available cognitive framework necessary for the kinds of rapid and efficient predictions made by the children in this study.

Another finding of interest was the increase in stereotyping with age in both within- and between-component judgments. This finding is consistent with the results of several other stereotyping studies with children in this age group (Best et al, 1977; Edwards & Williams, 1980; Williams, Bennett & Best, 1973). However, several other studies have found that stereotyping decreases or remains stable in middle childhood (Garrett, Ein & Tremaine, 1977; O'Keefe & Hyde, 1983; Urberg, 1982). Garrett, Ein and Tremaine (1977) suggest that this reduction in stereotyping is due to the child's expanded knowledge about the world, increased intellectual capabilities and certainty of their own gender identity. These factors allow the child to judge individuals using more than just the gender criterion.

The results of the present study indicate that other factors may be playing a role in children's interpersonal judgments thereby bringing about a sharp increase in stereotypic responding with age. Increased experience in the social world allows children to come into contact with more items that will be processed through the gender schema. As the child is faced with more information than he/she can handle, Taylor and Fiske (1978) propose that selective attention occurs. Only items that easily fit into the gender stereotype are noticed and remembered. Items which are ambiguous or disconfirm the stereotype are ignored and forgotten (Taylor, Fiske, Etcoff & Ruderman; 1978). The stereotype components become

much larger, but are filled only with items that are strongly associated with the gender label. Therefore, as the child gets older, they not only have a larger and more complex gender stereotype, they also have one that contains only items which have very strong associations with a particular gender. Thus, when they are called on to make judgments about items, these factors come into play and their responses tend to be more stereotyped than younger children.

A second source of the age effect in stereotyping is found in schematic processing theory. This theory proposes that as children develop the own-sex schema, they begin to give positive evaluations to things associated with their own sex and negative evaluations to items associated with the opposite sex (Martin & Halverson, 1981). As more items become evaluated in this manner, and as children become less egocentric, they may develop the ability to imagine this evaluation process occurring for other individuals. Therefore, when they are asked about the interests of another person, they assume that this individual also will rate own-sex things very positively and opposite-sex items negatively. Thus their ratings of target items become more stereotyped as they give high ratings to items which are consistent with the cue child's own-sex schema and lower ratings to target items which they feel are inconsistent with the cue child's own-sex schema. The net result is that the stereotyping effect becomes stronger with age.

One reason why the increase in stereotyping with age has not been found in some studies is that very little research has carefully examined developmental changes in the stereotyping of items which are not consistent with the gender schema. The present study clearly demonstrated that the increase in stereotyping scores with age occurred as a result of an increased tendency to give inconsistent target items low predicted preference ratings. For example, between the ages of 6 and 8, children begin to give very low ratings for items which are not consistent with the cue item's stereotyping. With an increased requirement to process more information about the social world, children may develop a mechanism to efficiently process information which is opposite to the expectations which are cued by a given

stereotypic piece of information. To this end, children may acquire associative links between feminine items and the label "not for boys" and between masculine items and the label "not for girls". Therefore, when an older boy is told about a child who has a masculine interest (such as "likes to play with trucks") and he is asked about the child's interest in dolls, he gives the doll a low predicted preference rating because he now understands that not only are dolls "for girls", but they are also "not for boys". This raises the possibility that a complete negative stereotype, containing beliefs about "what girls are not" and "what boys are not" may develop to work in conjunction with the primary gender stereotype.

The present findings also lead to speculation as to when gender stereotypes cease to become the single factor used in making interpersonal judgments and more varied types of personality constructs (such as "extrovert-introvert") come into play in the making of interpersonal decisions. Such a development could occur in adolescence when abstract thought processes are proposed to develop and children can imagine far more possibilities for themselves and others (Piaget, 1970). Perhaps at this stage they begin to notice items that do not fall into the gender stereotype and begin to develop new constructs to use in processing information and understanding the social world about them. The development of more psychological constructs would lead adults to become more flexible in their interpersonal judgments and thus lessen, to some extent, the impact of the powerful gender stereotype.

As children develop abstract thought, they also develop the capacity to tolerate ambiguities in the social world (Piaget, 1970). This allows information which does not fit into an existing stereotype to be noticed and remembered. Therefore, a store of information that is inconsistent with the stereotype is built up and by adulthood this collection of information may be large enough to weaken the impact of the gender stereotype and allow more differentiated and flexible gender-based interpersonal judgments. This body of disconfirming information may act as a "second-thought" process by which the individual makes a stereotyped judgment and then remembers that there is some disconfirming

information and the stereotyped judgment becomes more flexible. For example, a person is told about a doctor, and at first they automatically assume that the doctor is male. However, they remember a female doctor they once knew and immediately become open to the possibility that the doctor is a woman. Any future judgments they make about the doctor are influenced by this realization and the judgments about him/her become less stereotyped. This is clearly an important area for future stereotyping research.

This study also points to some other key areas for future research. For example, the development of the constructs of masculinity and femininity is a topic that has received little developmental study. Examination of the links and associations that develop with these constructs could reveal some interesting insights into the nature of these complex structures and their influence on social judgments in both children and adults. As well, an examination of specific clusters of strong associations that begin to develop at this time in childhood (e.g., some characteristics become more strongly associated than with other characteristics) could reveal a key step in the formation of implicit personality theories that adults may use to make judgments about other individuals.

These results can also be used in the development of programs to reduce the effects of stereotyping. The knowledge of when stereotypes become stronger and more complex leads to an understanding of the best time to introduce such programs. Before the child develops the strong stereotyped linkages and the self-confirming process becomes strongly rooted, information about non-sex typed (or cross-sextyped) items may be presented to the child. In order for this information to be processed, however, it will have to be made very salient and self-relevant to the child so that it is attended to and receives a positive evaluation. If successful, this process may break down the barriers between the masculine and feminine versions of the components and lead children to develop a broader and more flexible concept of masculinity and femininity and allow them to see more role options for themselves and for others.

Finally, this study has outlined a very effective way of studying the acquisition of complex cognitive structures. The Deaux and Lewis (1984) component-link model proved to be a most useful heuristic framework for the understanding of gender stereotypes. This model and the methods used to examine it could be applied to the study of other schemas and constructs such as the acquisition of racial stereotypes, the development of the concept of self or the changes in self image in adolescence. This new approach to these areas may lead to a clearer understanding of the nature of these complex cognitive phenomena.

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Appendix A
Item Selection

Trait Items

Trait items were chosen based on the results of a study conducted on six and eight-year-old Canadian children by Edwards and Williams (1980). They asked children to identify personality traits (paraphrased to be easily understood by the children) as being either most associated with males or with females. For the present study, traits were chosen which were shown to be clearly stereotyped as either masculine or feminine by the children in the older age group. All of these traits were identified by more than 85% of the children as being strongly associated with one sex or the other. These specific traits were chosen because the masculine and feminine traits were not direct opposites to each other (i.e., "weak" was not chosen because "strong" was on the masculine list). As well, the lists were designed to be equivalent in positive and negative evaluations of the traits. The traits are listed below in the wording that was used by Edwards and Williams (1980). The adult definition is noted beside each trait in brackets.

MASCULINE TRAITS:	FEMININE TRAITS:
1) gets into fights (aggressive)	1) crys a lot (emotional)
2) is a strong person (strong)	2) always says "thank you" (appreciative)
3) says bad words (coarse)	3) is a shy person (meek, mild)

Occupational Aspiration Items

Occupational aspiration items were chosen based on the results of a study conducted on Canadian children aged 6 to 14 by Ellis and Sayer (1986). They presented children with a list of 19 occupations and asked them to select the occupations they would like to take up when they grow up. Several occupations were aspired to only by boys and several were

aspired to only by girls. From these results, three of the occupations that children viewed as masculine were chosen, as were three of the feminine occupational aspirations.

MASCULINE OCCUPATIONS: FEMININE OCCUPATIONS:

1) construction worker   1) nurse

2) stockbroker*   2) hairdresser

3) plumber   3) seamstress*

Clothing Items

Clothing items were chosen based on the results of a study conducted on Canadian children aged 3 to 5 by Martin and Little (1987). Children were shown pictures of clothes and asked to choose whether a boy or a girl was most likely to wear it. The items for this study were chosen from the clothing items which greater than 85% of the oldest children agreed were mostly worn by girls (feminine) or mostly worn by boys (masculine). Because this study will not show pictures, the wording of the clothing items has to be changed somewhat in order to be clear about what type of clothing is meant. The original article shown in the pictures is noted in brackets beside the items.

MASCULINE CLOTHING: FEMININE CLOTHING:

1) suit (suit, shirt and tie)   1) blouse* (blouse and skirt)

2) shirt and tie (suit, shirt and tie)   2) skirt (blouse and skirt)

3) football shirt and trousers   3) dress

Toy Preference

The toy preference items were chosen based on the results of the Martin and Little (1987) study. Children were shown pictures of toys and asked who liked to play with them

most, boys or girls. The items chosen for this study were ones which were chosen by at least 85% of the older children as liked by boys mostly (masculine) or liked by girls (feminine).

MASCULINE TOY PREFERENCES ITEMS: FEMININE TOY PREFERENCE ITEMS:

1) truck   1) doll and crib

2) airplane   2) beauty set

3) tool kit   3) Barbie doll

*Definitions for Items- a few children in the study indicated that they did not understand the meaning of some items. Only three items were questioned: stockbroker, seamstress and blouse. Standard definitions were used in response to these questions. These definitions were:

Stockbroker: someone whose works with money all the time.

Seamstress: someone who sews clothes for other people.

Blouse: a frilly shirt.

With these definitions children were able to make judgments using these items.

Appendix B
Sample Question Format and Parent Questionnaire

Sample Question Format:

1. I know a child who really wants to be a construction worker when they[1] grow up. How much would this child:

    (BC)[2]   a) be a strong person?[3]

    (BC)   b) wear skirts?

    (BC)   c) like to play with beauty sets?

    (BC)   d) like to play with tool kits?

    (BC)   e) cry?

    (WC)   f) want to be a seamstress when they grow up?

    (BC)   g) wear shirts and ties?

    (WC)   h) want to be a stockbroker when they grow up?

2. I know a child who really gets into fights a lot. How much would this child:

    (WC)   a) cry?

    (BC)   b) wear suits?

    (WC)   c) say bad words?

    (BC)   d) wear blouses?

    (BC)   e) want to be a construction worker when they grow up?

    (BC)   f) want to play with a beauty set?

    (BC)   g) like to play with tool kits?

    (BC)   h) want to be a nurse when they grow up?

3. I know a child who really says "thank you" a lot. How much would this child:

    (BC)   a) wear suits?

    (BC)   b) like to play with dolls and cribs?

    (WC)   c) say bad words?

    (BC)   d) like to play with tool kits?

    (BC)   e) wear dresses?

    (WC)   f) be a shy person?

    (BC)   g) want to be a plumber when they grow up?

    (BC)   h) want to be a nurse when they grow up?

4. I know a child who really likes to play with tool kits. How much would this child:

    (BC)   a) be a strong person?

    (BC)   b) say "thank you"?

    (BC)   c) wear a dress?

    (BC)   d) want to be a hairdresser?

    (WC)   e) like to play with trucks?

    (BC)   f) wear suits?

    (WC)   g) like to play with Barbie dolls?

    (BC)   h) want to be a stockbroker when they grow up?

5. I know a child who wears suits a lot. How much would this child:

    (BC)   a) be a strong person?

    (BC)   b) want to be a construction worker when they grow up?

    (BC)   c) want to be a nurse when they grow up?

    (BC)   d) like to play with trucks?

    (WC)   e) wear shirts and ties?

    (WC)   f) wear skirts?

    (BC)   g) like to play with Barbie dolls?

    (BC)   h) cry?

6. I know a child who really wants to be a nurse when they grow up. How much would this child:

    (BC)   a) like to play with trucks?

    (BC)   b) wear football shirts and trousers?

    (BC)   c) say bad words?

    (WC)   d) want to be a construction worker when they grow up?

    (WC)   e) want to be a hairdresser when they grow up?

    (BC)   f) wear blouses?

    (BC)   g) like to play with dolls and cribs?

    (BC)   h) be a shy person?

7. I know a child who wears skirts a lot. How much would this child:

(WC)	a) wear suits?
(BC)	b) like to play with airplanes?
(BC)	c) want to be a nurse when they grow up?
(BC)	d) cry?
(BC)	e) want to be a plumber when they grow up?
(BC)	f) say bad words?
(WC)	g) wear dresses?
(BC)	h) like to play with beauty sets?

8. I know a child who really likes to play with beauty sets. How much would this child:

(BC)	a) want to be a hairdresser when they grow up?
(BC)	b) wear dresses?
(BC)	c) be a shy person?
(WC)	d) like to play with tool kits?
(BC)	e) hit people?
(BC)	f) wear a football shirt and trousers?
(BC)	g) want to be a construction worker when they grow up?
(WC)	h) like to play with a doll and crib?

Notes:

1. The pronoun "they" is used to avoid gender related pronouns.

2. These letters in brackets indicate whether the target item is testing for a within component link (WC) or a between component link (BC).

3. The cue statement will be repeated before each target question is asked.

Parent Questionnaire:

For this study to be complete, information on a variety of family variables is required so that we may have a better understanding of the factors which influence children's judgments of others. If you have consented to your child's participation in this study, it would be greatly appreciated if you would provide us with some of this information. You are not obliged to respond to any of the questions and all answers will remain strictly confidential.

1. Child's grade in school _____

2. Approximately how many hours of TV does your child watch per week? _____

3. Please check the category which best describes your family type:

      _____ two-parent family

      _____ single-parent, mother headed family

      _____ single-parent, father headed family

      _____ joint custody family

      _____ other family type

4. Mother's occupation _____

5. Father's occupation _____

6. Number of children in household _____